African Studies Centre
Research Series
1/1994

Tied to the land

Household resources and living conditions of labourers on large farms in Trans Nzoia District, Kenya

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Cover photograph: Labour camp on government farm in Trans Nzoia District (photo by Nina Tellegen)

ISBN 1 85628 913 3

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Acknowledgements

The present book is the result of a research project which was carried out in the context of the Food and Nutrition Studies Programme (FNSP) in Kenya. The project could not have been realized without the help of many persons. First of all, we would like to express our gratitude to Mr. J. Otieno (Chief Planning Officer of the Sectoral Planning Department) and Ms. L. Shitakha (Head of the Food and Nutrition Planning Unit) for their continuous support. During the preparation phase of the project, valuable information was gathered at four levels: national (Nairobi), provincial (Nakuru), district (Kitale) and farm level. In Nairobi, our informants were Mr. J. Mwanyike (Director of the Central Bureau of Statistics), Mr. M. Mukolwe (Deputy Director of Agriculture), Dr. G. Ruigu (Institute of Development Studies) and Mr. H. Hendrix (Rural Development Co-ordinator, Netherlands Embassy). In Nakuru, Mr. P.S. Muthui (Provincial Planning Officer), Mr. A.N. Kenyori (Deputy Provincial Planning Officer), Mr. J.K. Kiragu (Provincial Labour Officer) and Mr. J.O. Onyembo (Deputy Provincial Director of Agriculture) were very helpful. In Kitale, we benefited greatly from the assistance and knowledge of various officers: Mr. S.S.K. Limo (District Commissioner), Mr. D.O. Mijondo (District Development Officer), Mr. G.A. Owuori (District Agricultural Officer), Mr. R.K. Kisia (District Labour Officer), Mr. J.E. Owuor (District Statistical Officer), Dr. K.K. Bii (Regional ADC Manager), Mr. L.K.K. Chepkitony (Technical ADC Officer), Mr. S.J. Gathogo (Project Management Development Officer), and Ms. E. Kosgei (Home Economist). Finally, at farm level, valuable information was provided by various persons, notably Mr. J.H. Robinson, Mr. D. Kamau, Ms. H. Yego, Mr. S. Chege, Mr. M. Birech, Mr. M. Muchemi, Mr. A. Wafula, Mr. F. Sifuma, Mr. A. Mwangi, Mr. N. Karu, Mr. C, Wanyeri, Mr. S. Kamau and Mr. P. Wainaina.

Several of the above-mentioned district officers were also very helpful during the preparation and/or carrying out of the fieldwork. We are also grateful for the assistance during this phase by Dr. J.E.O. Aruwa (District Medical Officer of Health) and Ms. B. Muleshe (District Nutritionist). A special word of gratitude goes to the CBS Field Supervisor, Mr. Isaac K. Koskey, without whose knowledge of the district and surveying skills the fieldwork would not have passed as smoothly as it did.

We are very much obliged to Ms. Lieke Verstrate. She was of great help during the main study and was one of the two researchers of the in-depth study. Moreover, she was the co-writer of two of the four FNSP reports which came out of the Trans Nzoia project.

Various other persons were, at one stage or another, involved in the field preparations or one of the actual surveys: Ms. E. Irongi and Mr. J.O. Donge (Food and Nutrition Planning Unit, Ministry of Planning and National Development, Nairobi), Drs. Rudo Niemeijer and Ir. Wijnand Klaver (African Studies Centre, Leiden), and Mr. Rebson Dzale (Food and Nutrition Studies Programme).

We would also like to thank our assistants during the main stage of the fieldwork Joseph Abich (Food and Nutrition Studies Programme), Collins S. Chemai, Margare

Keana, Margaret Kuria, Wilfred J. Mandila, Beatrice M'mbone, Alice Nakhumicha, Dismas K. Ngetich, Zipporah Nyasaina, William Oduor, Silas K. Rono, Kennedy A. Shitakha, Evaline Wafula, Rose N. Wanyama, Lazarus Wekesa, and Jane-Rose Wepukhulu. Moreover, we are grateful to all the respondents in the more than 300 households we visited during the survey.

During the analysis and writing of the reports in Leiden, Drs. Willem Veerman was a great help. He also assisted with the additional analysis carried out for this book. A word of thanks also goes to Mr. Karl Dorrepaal, who took care of the production of the book, Ms. Nel van Betlehem-de Vink, who made the maps, and Ms. Ina Rike, who edited the text.

Finally, our gratitude goes to Prof. Jan Hoorweg and Dr. Piet Konings. Prof. Hoorweg was not only involved in the first stage of the research project, he also provided us with very valuable comments on the draft reports which preceded the present book. Piet Konings has been very helpful in collecting the relevant literature, while his comments on the first draft of this book have been very useful.

Foreword

In 1983, the Ministry of Planning and National Development in Nairobi, Kenya, and the African Studies Centre (ASC) in Leiden, The Netherlands, started the Food and Nutrition Studies Programme (FNSP). This programme, which was mainly funded by the Dutch Ministry of Development Co-operation, aimed to analyse contemporary trends and future needs concerning food and nutrition in Kenya, with a special focus on the interface between socio-economics, agriculture and nutrition. Major objectives of the programme were to do research on food and nutritional issues among vulnerable groups in rural Kenya, provide the ministry with these data, and strengthen the research capabilities of the Kenyan counterpart institutes.

During Phase 1 of the programme (1983-1989), the main research subjects were: (-) nutrition in rural development; (-) regional and seasonal fluctuations in food supply and nutrition; and (-) agricultural policies and agricultural production. Studies have been undertaken in several parts of Kenya, such as Central Province, Western Province and Coast Province. More than 25 FNSP research reports have been published. The last of the 14 research projects initiated during Phase 1 concerned the Trans Nzoia research project.[1] The general objective of this project was to provide knowledge of the food supply and nutritional conditions of the households of labourers on large farms. Fieldwork was carried out in 1989. The project embraced two, related studies: the main study and an in-depth study. The main study consisted of a survey among 46 large farms as well as a survey among 300 households, mainly labourers' households. Two FNSP research reports emerged from these surveys.[2] The in-depth study concerned a survey among one-fifth of the households selected for the main study and focused on two aspects of income generation, notably rural employment and social networks. An MA-thesis and an FNSP research report resulted from this part of the project.[3] The present book is largely based on these publications, although the central focus of the book shifted towards the dependency relations of the labourers to their employers. Food consumption and nutritional status are treated as being only two aspects of these relationships.

In November 1992, a two-days dissemination seminar on the FNSP-studies in Trans Nzoia District was held in Kitale, the district capital. The objectives of the seminar were (1) to disseminate the findings of the three studies among the district officials, (2) to discuss these findings with them, and (3) to formulate recommendations for policy and planning

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1 In 1989, Phase 2 (1989-1994) of the programme started, with increased emphasis on institution building and training of manpower. Research during this phase is mainly carried out by Kenyan researchers.

2 *Labour conditions on large farms in Trans Nzoia District, Kenya* (Foeken & Verstrate 1992) and *Household resources and nutrition of farm labourers in Trans Nzoia District, Kenya* (Foeken & Tellegen 1992).

3 *Households of agricultural wage labourers in Trans Nzoia District — Kenya. The role of non-farming activities and food links* (Tellegen & Verstrate 1990) and *Income generation of farm labourers in Trans Nzoia District, Kenya: rural employment and social networks* (Tellegen, Verstrate & Foeken 1992), respectively.

one of scale, the plantation generally being bigger and having a higher level of crop specialisation. Large farms tend to be more of the mixed type, i.e. either a relatively wide range of crops or a combination of crop cultivation and livestock rearing. Compared with plantations, fewer labourers are employed on a permanent basis and more on a casual basis during peak periods. However, also on plantations 'seasonal workers [...] may often account for a substantial proportion of the workforce in peak periods' (Sajhau & von Muralt 1987, 117).

The problem of trying to distinguish plantations from other types of large-scale farming occurs particularly in countries where both types are more or less common. In Africa, Zimbabwe and Kenya are good examples. It is probably no coincidence that in the two studies on Rhodesian agricultural workers (Chavunduka 1972 and Clarke 1977) no attempt is made to separate the two categories. Also in Kenya, 'a precise distinction between the plantation system of agriculture and mixed farming in arable areas [...] is hard to draw' (Odingo 1971, 114). One of the reasons is that although there are quite a number of 'real' plantations which are large and highly specialised (either coffee, tea, wattle or sugar cane), 'typical' plantation crops such as coffee and tea are also cultivated on large farms with a mixed farming system, even on small farms. Odingo (1971) describes an example of a 'mixed coffee farm' in Trans Nzoia where only nine per cent of the land was planted with coffee. Another reason for taking 'plantations' and 'large farms' together is the fact that in both agricultural systems there are estates with many labourers and holdings with very few. For instance, in 1990, there were 207 coffee plantations as well as 140 mixed farms in Kenya with 50 labourers or more, while on the other hand there were 84 coffee plantations with less than ten workers (Kenya 1991b, 85).

In short then, it may be argued that there are more similarities than differences between plantations and 'other' large farms, and this seems certainly the case as far as the labour conditions are concerned (indeed, this will be confirmed by the findings of the present study).[1] Therefore, in the discussion below (Section 1.3) of some of the literature on labour conditions on large-scale farms, no distinction will be made between the two categories.

1.2 The importance of large-scale farming for the national economy

During colonial times, the agricultural sector in Kenya was characterised by the existence of two geographically separated sub-sectors: (1) large-scale farms and plantations owned by settlers and located in the so-called settler areas involved in the production of cash crops such as wheat and coffee, and (2) a smallholder sector consisting of peasant households located in the so-called labour reserves, growing mainly food crops and some cash crops such as coffee on small parcels of land.

[1] This is in fact sustained by the ILO definition of plantations adopted in 1958, which read: "any agricultural undertaking regularly employing hired workers (...) which is mainly concerned with the cultivation or production for commercial products of coffee, tea, sugarcane, rubber, bananas, cocoa, coconuts, groundnuts, cotton, tobacco, fibres (sisal, jute and hemp), citrus, palm oil, cinchona or pineapple; it does not include family or small-scale holdings producing for local consumption and not regularly employing hired workers" (von Muralt & Sajhau 1987, 9).

During the struggle for Independence some of the main issues raised were the africanisation of firms and companies and the access to fertile land for the indigenous population. After Independence in 1963, many large farms were bought by Kenyans and a start was made with the subdivision of land. Some large farms were subdivided and sold to individuals or companies, or handed out to landless households who had to farm co-operatively under the supervision of a manager appointed by the government, while other large farms were taken over by the state (see Chapter 4 for details).

According to Shepherd (1981, 9), 'Kenya provides the most obvious example of both continuity and discontinuity between colonial and neo-colonial structures.' Due to the efforts described above, more Kenyans got access to land through settlement schemes on former white-owned land, africanisation of large farms took place and obstacles to competition between the large and small-scale agricultural sector were removed. At the same time, the (British) system of private property rights was not abolished but extended, many large farms were not subdivided and subsidies for the large farm sector were not removed.

Figures concerning land distribution in present-day Kenya show the consequences of a policy of subdivision *and* continuing support for large-scale farms. Within the country about ten million hectares of land are of medium to high potential for arable farming (Kenya 1991b, 93). Further, it can be calculated that in 1988 all large farms covered an area of about 2.5 million hectares (Kenya 1991b, 100). Keeping in mind that some of the large farms are (very large) ranches in low potential areas, one may conclude that between 20 and 25 per cent of all arable land in Kenya is used for large-scale farming. The continued support for the large farm sector by the Kenyan Government can be explained by both economic and political factors. Major economic considerations stem from the sector's contribution to food production, foreign exchange earnings and employment creation. What follows is an overview of data available concerning these three factors.

In 1988-1990, an average of nearly half of all sales to marketing boards came from large farms[2] (Kenya 1993, 118). Most of the marketed maize — the basic food in Kenya — is produced on large farms. Wheat is another important national foodstuff and can only be produced on relatively large farms. The same applies to such crops as seed maize and seed wheat. In terms of production for export, coffee and tea are extremely important. In 1988-1990, the two crops accounted for 46 per cent of the total earnings from export (Kenya 1991b, 56). In terms of foreign exchange, only tourism is more important for the country. It should be added, however, that not all coffee and certainly not all tea is produced on large farms only.

In 1989, almost 200,000 persons were employed on large farms, which equals about 30 per cent of the formal wage labour in the private sector and nearly 15 per cent of *all* formal wage labour, i.e. including the public sector (Kenya 1991b, 229-230). Most of these people (about 60 per cent) were working on coffee and tea plantations, followed by some 1 per cent in the 'mixed farming sector'. These figures concern permanent labourers only. For certain crops, such as coffee and maize, many seasonal labourers are needed during peak labour periods such as harvesting. For instance, it was estimated that in the 1980s almo

[2] The Kenya Central Bureau of Statistics defines large farms as farms with a land area of fifty acres (20 h and above. Farms between thirty and fifty acres are denoted as intermediate farms, while those with le than thirty acres are small farms (Kenya 1991b, 92).

half of the labour force on coffee farms was seasonal (Sajhau & von Muralt 1987, 120). The seasonal aspect of labour on large farms also offers many rural women access to wage labour. In 1979, about 37 per cent of all permanent labourers on the coffee estates were women. During harvesting, however, 80 per cent of the total labour force, i.e. permanent and casual labourers, consisted of females (Sajhau & von Muralt 1987, 122).

Despite these positive contributions to the Kenyan economy some negative remarks can be made as well. The large-scale agricultural sector is a major user of scarce foreign exchange, caused by the dependency on imported machinery and imported inputs such as chemicals and fertilizers. Furthermore, productivity on large-scale farms is often low, large tracts of land lie fallow and yields per hectare are often far below the estimated possible production. The fact that these negative characteristics of large farms together with an increasing pressure on arable land due to the high population growth (with about four per cent a year Kenya ranks among the highest in the world) have not led to a further subdivision of land can be explained by political factors. First of all, the large-scale agricultural sector offers Kenyan capitalists a means of investment within the country. Secondly, food produced on estates may decrease the dependency on food imports, thereby reducing prices of food for urban dwellers and avoiding (political) unrest (see Shepherd 1981). Finally, the political power of large farm owners should not be underestimated. The change of ownership from white-owned to Kenyan-owned farms has led to 'the emergence of a rich and powerful class of landed capitalists' (Hinderink & Sterkenburg 1987, 77) consisting of politicians and other wealthy men able to influence political decisions.

1.3 Labour conditions on large farms

One of the first studies on labour conditions on plantations took place under the auspices of the International Labour Office in 1963/64 (ILO 1966). The study was carried out in twelve countries, four of which were African. Conditions of employment were not satisfactory, even though there usually was some legislation. On many plantations, the permanent labourers had no written contract, making them very vulnerable vis-à-vis their employers. In almost all countries, minimum wages were fixed by law but since in many cases they were partly paid in cash and partly in the form of bonuses and benefits, the exact wage levels were difficult to establish. On those plantations where wages were fully paid in cash, the prescribed wage rates were usually paid by the employers. In general, employment conditions were somewhat better on larger plantations, at least for the permanent labourers. Wages were usually higher, while larger estates could not so easily neglect employment legislation, as was often done by the smaller ones.

The study also showed that living conditions of the labourers on the plantations tended to be very poor. Although in most countries the law prescribed housing facilities for the workers, and sometimes even set minimum standards, the workers appeared to be badly housed. This was the case on all plantations, but particularly on the smaller estates. Food patterns were very unsatisfactory. Not only were the labourers poorly fed, but diets appeared also to be very monotonous and unbalanced, mostly consisting of cereals, tubers and roots. Essential foods as meat, eggs, milk, and certain fruits and vegetables were hardly

ever consumed. The situation concerning hygiene, health and education was just as bad as that regarding housing and food consumption. The general conclusion was that

> plantation workers have low living standards. In fact their earnings do little more than provide a bare existence. In their family budgets, expenditure on food accounts for a large percentage of the total (...). (ILO 1966, 265)

Twenty years later another ILO study on plantations and plantation workers was published (Sajhau & von Muralt 1987). Unlike its predecessor this study was mainly based on existing sources. Very few of these referred to Africa, particularly as far as the labour conditions were concerned. Little had changed during these two decades. Wages were still low (lower than those in the industrial sector for instance), although usually higher than those of other agricultural workers. Wages on larger plantations were usually somewhat better than on smaller ones, partly because of the better economic position of the larger estates and partly because of the greater bargaining power of workers on larger plantations. Permanent workers were found to be in a better position than temporary workers, as the former tended to benefit from certain facilities, such as housing, a piece of land, free medical services, etc. In Kenya, despite its legislation regarding housing facilities for permanent workers on agricultural estates, housing was still very poor, in particular on the coffee and sisal plantations: '(...) in some areas workers still live in the same brick and mud quarters (...) as they did at independence, or in mud huts of a colonial type built during the colonial era' (Sajhau & von Muralt 1987, 154-155). Furthermore, overcrowded houses, besides poor sanitary and drinking water facilities, contributed to the poor health situation of the workers and their families. At the same time, however, medical services, which were usually prescribed by law, varied considerably between plantations. On smaller estates, they were often below average or even totally absent. In her article on Kenyan tea plantations Davies (1987, 16) also stresses that 'on the smaller tea plantations (50-100 hectares), owned by individuals rather than large agri-business firms, provision for basic needs is far poorer than on the big estates and in some cases, is virtually non-existent.'

So far, the discussion concentrated solely on plantation workers. As mentioned above studies on agricultural non-plantation workers are very few. The studies by Chavunduka (1972) and by Clarke (1977), both concerning Rhodesia (now Zimbabwe), are two exceptions. In both studies, the study populations consisted not only of plantation workers but also of workers on mixed farms, and the fact that both authors treated the two categories as one group seems to confirm our notion that, at least in the African context, the similarities between the groups are greater than the differences. The study by Clarke established that wages were low (also when payments in kind were included), that malnutrition among the workers' families was widespread, that food consumption was very one-sided and unbalanced, and that many workers and their family members suffered from bad health. Moreover, since the supply of labour usually exceeded demand, it was the employer who set the terms of contract which workers just had to accept. This created a high degree of dependence on their employers in all aspects of life. In this context, it is useful to quote Clarke (1977, 51-52) at some length:

> The links are not simply economic but also involve a high degree of (personal) socio-political subordination and dependence. (...) These (...) features are also

> reflected in the totality of employer control over workers. The landowner is not only the sole employer of the worker's family, but is also the landlord of his worker-tenants. This imposes an additional constraint on employees. Loss of job means loss of right of tenure, loss of basic subsistence and a high degree of insecurity. Workers also rely extensively on employer-initiated welfare policies which often re-inforce dependency links. The provision of education, the supply of rudimentary medical aid, the hope of 'retainer status' after retirement, the prospect of obtaining intermittent cash loans, and the local authority of the employer for discipline, order and obedience are dependent often on employer decision and inclination. In this respect, workers are 'tied' to the land.

In other contexts this situation is often described as one of semi-proletarianisation, i.e. circumstances 'in which the bulk of the workers have only partial control over some means of re-production' (Standing 1985, 4). It can be argued that labourers living on the farm with very little land at their disposal are almost fully proletarianised with very little access to productive resources other than their own labour, while others with access to larger pieces of land on the farm are less proletarianised and therefore more able to satisfy basic needs through the production of food.

According to Standing (*Ibid.*), semi-proletarianisation is a transitional phase in the development process. It is not maintainable because 'the ability to appropriate surplus is limited and workers with even partial control over some aspects of the production process have enhanced bargaining power and (...) have been liable to identify their aspirations in terms of escape from wage labour.' However, the description of the situation of agricultural labourers so far suggests that semi-proletarianisation could be a long-lasting situation, especially since more and more households will increasingly come to depend on their labour as the only means to generate income due to an increasing pressure on arable land caused by a further subdivision of already small plots among a large number of sons. Semi-proletarianisation can then be seen as a link in the process from non-proletarianisation to a situation of almost full proletarianisation.

The situation of proletarianisation of the labourers on large estates is detrimental to the living conditions of farm labourers but profitable for large farm owners. The employers can decide to employ a worker on a permanent or a casual basis. Furthermore, wages can be kept low because they do not have to cover the total costs of reproduction of labour because the workers are able to grow their own food. Evidence from Kenya suggests that indeed, at least during the 1970s, wages on large farms were quite low, in particular on the mixed farms (which are usually smaller than the plantations). In the Labour Force Survey of 1978 it was found that modal earnings of agricultural labourers were only one-quarter to one-half of the urban minimum wage (Collier 1989). Moreover, women, who are widely employed during peak labour periods, were paid 40-50 per cent less than men (Leitner 1976). These figures imply that 'an agricultural worker's family can obtain a similar income to a single worker in an urban industry only if three members of the family work' (*Ibid.*, 42), despite the fact that large farm owners belonging to an employers' association could officially be forced to pay the legally fixed minimum wages.

The possibilities agricultural workers have to change this situation of low wages and dependency on the willingness of the farmer to supply land, medical services and schooling, are rather limited. Because of this dependency diversification of income sources is not an easy option, since not only their own labour but also that of their household members must

be available on the farm whenever needed, and many farm owners do not allow labourers living on their farm to be employed or self-employed elsewhere. An increase in the amount of land for household use through 'unauthorized land use' ('squatting') is not an easy option either. In Kenya squatting is a common practice among labourers, or rather: labourers may be labourers because they are squatters on the farm concerned.[3] However, most squatters settled on the farms before Independence, and nowadays large farm owners will do everything to avoid unregulated occupation of land by labourer households or people from outside the farm.

In all attempts by farm labourers to improve their situation, their limited collective bargaining power, due to the large supply of labour, remains an obstacle. This large supply of labour could very well be one of the reasons for the poor performance of the labour unions as described by Leitner (1976), who maintains that during the first half of the seventies the influence of the Kenya Plantation and Agricultural Workers Union was almost nil. Other factors contributing to this poor performance, as suggested by Sajhau and von Muralt (1987), are the location of plantations within rural areas largely unaffected by developments within urban enterprises concerning labour conditions, and the composition of the labour force, which is characterized by a large number of seasonal workers and/or migrant labourers.

From the existing literature one gets the impression that plantation and farm workers belong to the poorer — if not the poorest — segments of society (Shepherd 1981, Davies 1987). The possibilities of an improvement in the living conditions of farm labourers seem to be rather limited. On the contrary, their situation is deteriorating on many farms through a shift from permanent towards insecure casual forms of employment, whereby employees do not receive any benefits. This may decrease costs for employers but large numbers of households are pushed 'back into early forms of individual household strategies for survival' (Loewenson 1992, 32). One aspect of these strategies might be the 'satisfaction of basic needs outside the market economy' (Clark 1985, 39). This can take the form of 'reciprocal exchange relationships' within social networks. Very little is known about the importance of these social networks in fulfilling basic needs, reason for giving this topic special attention in the present study.

In conclusion, it is fair to state that the scattered evidence available on labour and living conditions on large farms does not provide a positive picture. Due to the fact that households are tied to the land of someone else, and therefore have access to one productive resource only, i.e. their own labour, many of them are trapped in a vicious circle of poverty, malnutrition and bad health. This is illustrated by the following story of a farm worker (Goldfarb 1981, 34-5)

> Sometimes we'll be out there in the field. The grower will be on my back, telling me the tomatoes have to be in by the end of the week. The sun will be beating down on us. I'll be thinking to myself that half of us are in real bad trouble, the

[3] According to the definition of Mbithi & Barnes (1975, 1), squatters are "potential farmers and unemployed persons [who] occupy land for which they have no legal title for the purposes of establishing residence and/or cultivation". The settlement of these people dates from the 1920s (Furedi 1976, Henkel 1979, Kobiah 1984) and continues to the present day. The most salient goal of 'squatting' is "to acquire land" (Mbithi & Barnes 1975, 155), which is caused by a serious shortage of land in the squatter's home area (*Ibid.*, 152).

> men and women and the children. Maybe all of us are in trouble and should be going to a doctor. But if we don't get the tomatoes in pretty soon, none of us will be eating three meals a day and then we'll really need to see a doctor —and he'll tell us to eat! And how, I ask you, will we do that except by getting those tomatoes in right on time?

Notwithstanding all the reports of farm workers and the general data on wages and provisions for farm workers that have been collected, very little research has been done on nutritional status, sources of income and differences between casual and permanent labourers and labourers living on or outside the large farm. 'While accurate records exist of the number of cotton bales marketed or the value of export sales from the sector, a vast number of rural workers are unmonitored and their social and economic conditions unmeasured' (Loewenson 1992, 23). This book is an attempt to partly fill this gap.

2

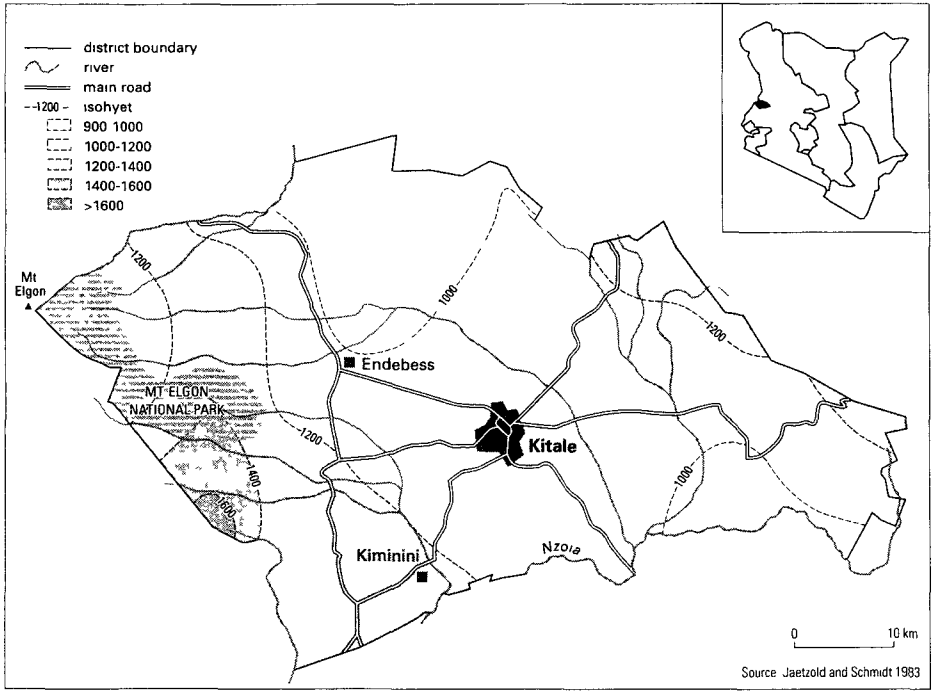
Trans Nzoia District

2.1 Main physical and agricultural characteristics

Trans Nzoia District forms the continuation of the fertile Uasin Gishu Plateau beyonc ('trans') the Nzoia River. Its topography is generally flat with gentle undulations, risinş steadily to Mount Elgon in the north-west (4,313m above sea-level) and the Cherangan Hills in the east (highest peak of 3,371m). Most of the district has an elevation betwee 1,800 and 1,900m. Only in the north, along the border with West Pokot District, does th altitude drop fairly rapidly to 1,400m above sea-level (Jaetzold & Schmidt 1983; Keny 1989b; Agatsiva 1985).

Trans Nzoia has a highland equatorial type of climate. Average annual rainfall range from 1,000 to 1,200 mm, with slight peaks during April-May and July-August. There is on dry period, starting mid-November and ending mid-March (Jaetzold & Schmidt 1983). I general, rainfall is fairly reliable, in the sense that annual averages tend to deviate not s much from the long-term annual mean. In the 1978-1992 period, there were three years tha annual rainfall was substantially less (i.e. 25-30 per cent) than the long-term mean (Keny 1989b; Kenya 1991b; Kenya 1994c). Monthly averages show much stronger fluctuation (Kenya 1994c) and as a result harvests can differ quite substantially. Average annua temperature in Kitale, the centrally located district capital, is 18.3°C, with a mean maximun of 25.0°C and a mean minimum of 11.7°C. August is the coldest month, with an averag temperature of 17.1°C (mean maximum 23.0°C, mean minimum 11.2°C) and March th warmest (average 19.6°C, mean maximum 27.0°C, mean minimum 12.2°C) (Jaetzold & Schmidt 1983; Agatsiva 1985).

The central part of the district consists of well-drained, very deep, red to dark-red soil (mainly ferralsols). These soils have a moderate to low fertility. The lower slopes of M Elgon are covered with red and brown clays, derived from volcanic ash, which have a hig fertility. The hills and steep slopes of Mt. Elgon, Cherangani and the north boundary zon towards West Pokot have rather shallow stony soils, with a variable fertility. In many case



Map 1 **Trans Nzoia District: annual rainfall** (mm)

only half of these areas is suitable for agriculture (Jaetzold & Schmidt 1983; Kenya 1989b Agatsiva 1985).

Topography, rainfall distribution, temperature and soil characteristics make the distric very suitable for maize growing and dairy farming. Most of the arable area of Trans Nzoi falls within agro-ecological zone UM4 (Upper Midlands sunflower-maize zone) (Jaetzold & Schmidt 1983). In the higher parts, with mean annual rainfall up to 1,400 mm, LH-zone (Lower Highland) predominate, either LH2 (wheat/maize-pyrethrum zone) or LH3 (wheat/ maize-barley zone). Coffee and tea can also be cultivated in these higher areas. All arabl land in Trans Nzoia, together 81 per cent of the total land area (Kenya 1984b), is of higl potential (Kenya 1987).

In terms of land use, livestock rearing is the most important activity in Trans Nzoia According to a land-use survey which was carried out in 1984, almost half of the arable lan surface in the district was used for livestock grazing (Agatsiva 1985). In 1988/89, som 150,000 heads of cattle were counted in the District, two-thirds of which being of higl grade (Friesians, Ayrshires, Guernseys, Sahiwals and their cross-breeds). Most of the mil produce went through KCC[1] Ltd. in Kitale, totalling almost 41 million kg in 1988/8 (Kenya 1991c). This equals about 12 per cent of the total KCC milk production in Keny (Kenya 1991b).

In 1988/89, about 68,000 ha (or 34 per cent of the arable land surface) was plante with commercial maize. Maize production reached a record level of 3.4 million 90 kg bags i these years (Kenya 1990b). If we compare such figures with a national figure of 5.4 millio bags of maize bought by the NCPB in 1988 and 7.0 million in 1989 (Kenya 1991b), it i evident that Trans Nzoia is a major maize granary of Kenya.

Besides maize, other important crops cultivated in Trans Nzoia are, in sequence c hectarage in 1989, beans, seed maize, commercial wheat, sunflowers, coffee, seed whea and tea (Kenya 1990b). A notable feature of agricultural production in the district is the ver modest role played by such 'traditional' cash crops as coffee and tea. In 1989, the are planted with coffee was about 1200 ha, or five per cent of the district's farming area, whil some 700 ha were under tea. The large farms mainly concentrate on maize and dairy (Keny 1994c).

2.2 Population

Trans Nzoia is one of the smallest districts in Rift Valley Province, covering 2,468 squa kilometers (Kenya 1989b). With almost 394,000 inhabitants in 1989 it accounted for abo two per cent of the Kenyan population (Kenya 1994a). Population growth has been ve fast during the last few decades. Between the censuses of 1969 and 1979, the averag annual growth was no less than 7.7 per cent (Livingstone 1986), making Trans Nzoia t fastest growing district of the country. Although population growth during the followi decade slowed down to an average of 4.2 per cent per year, it was still above the nation average. Population density increased accordingly, from 50 inhabitants per square kilome in 1969 to 160 in 1989 (Kenya 1970; Kenya 1994a). Locally, however, there are lar

1 Kenya Cooperative Creameries

differences regarding densities, being high in areas with settlement schemes or otherwise subdivided farms, and low in areas where large farms remained intact.

The above average population increase was mainly due to the influx of large numbers of immigrants. From the mid-sixties onwards many large farms in the district were subdivided into smaller units (see Section 2.3). This attracted not only a lot of new, small farmers, but also many landless and/or jobless people from other districts trying to find work on the remaining large farms in the district or in the district capital, Kitale.

During the 1960s, men were over-represented among the immigrants, causing a fairly skewed sex ratio of 110 (Kenya 1970). In the course of time, however, many of these labourers got married and founded families. As a result, with a ratio of 101 in 1989 the sex distribution in the district has become quite even (Kenya 1994a).

Another effect of the immigration influx is the ethnic heterogenity of the district. Most immigrants came from densely populated areas in neighbouring districts, in particular from Bungoma. As a result, about half the population belongs to the Luhya group (Kenya 1994a). With about one-fifth of the population, the Kalenjin are the second largest group. The Kikuyu, originating from the densely populated central part of the country, comprise about ten per cent of the population. The remaining seventeen per cent consist of people from various tribes, of which the Turkana (five per cent) is the most important group.

Trans Nzoia has only one real service centre: Kitale. It is here that nearly all shops, government offices, parastatal offices and other public services are concentrated. Other 'centres' hardly deserve that name, since they usually consist only of a few small shops and some modest offices of government officials at sub-district level. As a result, Kitale is really the 'heart' of the district and took part in the general population growth during the last decades: between 1969 and 1989, its population grew with a factor five (Kenya 1970; Kenya 1994a).

2.3 Large farms

During colonial times, Trans Nzoia was part of the so-called White Highlands, i.e. that part of the country which was designated as 'white settler' land. By 1920, 76 European farmers had settled in the district, with an average holding size of over 970 ha (2,400 acres). After completing a railway branch to Kitale in 1927, European settlement increased rapidly: in 1930 there were 315 farmers (Odingo 1971). Thus, Trans Nzoia became a typically large farm area.

Basing ourselves on the definition of a large farm as used by the Kenyan Central Bureau of Statistics, i.e. farms with a land area of twenty hectares (50 acres) and above, 376 large farms were counted in 1982. The average size was 504 ha (1260 acres). This means that in 1982 twelve per cent of all large farms in Kenya were located in Trans Nzoia, occupying eight per cent of the total large farming area in the country (Kenya 1984a). Due to the many subdivisions of large farms in the district, this figure had declined to three per cent in 1987. But this three per cent includes no less than 38 per cent of the large farms' area in Kenya planted with commercial maize in that year, illustrating again the importance of the district for the national food supply.

Farming systems

During the 1920s, maize cultivation — together with some coffee growing — was the dominant farming activity in Trans Nzoia. An invasion of flying locusts in 1928-29, followed by the worldwide collapse in prices of agricultural produce, marked the vulnerability of monocultures. Especially the maize cultivators were hit hard, because most of the maize was grown for export. So it was during the thirties that mixed farming of maize and livestock was propagated in order to reduce risks. But it was only after the Second World War that the system of mixed farming was gradually implemented (Odingo 1971).

In Trans Nzoia, over 90 per cent of the large farms are of the mixed type, i.e. a combination of maize and milk production. This is not to say that a 'typical' mixed farm in Trans Nzoia is only producing commercial maize and milk. Many of the farms have plots of sunflower and seed maize (in the central part of the district) or wheat, coffee, pyrethrum and tea (in the higher parts). With the development of the dairy sector, maize is also grown for silage making. Improved pastures are replacing natural fallow and become part of the crop rotation system.

Within the mixed farming system, either maize or dairy is the most important activity. In 1978, 30 per cent of the farms had maize growing as the main activity and 54 per cent dairy (Kenya 1980a). Four years later, these figures had shifted to 49 per cent and 41 per cent respectively (Kenya 1984a), indicating a growing importance of maize cultivation. Recently, however, farmers have shown more interest in dairying again.

Ownership

Under the Highlands Order in Council 1938-39, non-Europeans were effectively excluded from owning land or farming in the Kenya Highlands. In 1961, this law was abolished and from then on all races were free to own land and farms in these former 'white' areas (Odingo 1971). The 'great transfer of land ownership' started in 1962 when the first three farms came into African hands. Immediately after Independence in 1963, the transfer reached its peak: 70 farms were sold in 1964. By the mid-seventies the process was almost completed (Mogaka 1973).

During the 1970s, various types of land ownership could be distinguished (*Ibid.*):

1) Individually owned farms. All of these were large farms, many of them absentee-owned.
2) Group-owned farms. This could take three forms:
   a) Partnership farms. The number of partners varied considerably. In 1977, 43 per cent of this type of farm were owned by 2-7 partners (with an average of 3.1 partner). The remaining partnership farms (57 per cent) had many more owners, notably an average of 39 partners (Kenya 1977).
   b) Company farms. The main difference with the former category (2a) was that there should be at least 20 members to make a (registered) company. Members did not have to be active members, though. They chose a board of directors which in its turn appointed a manager. As with the partnership farms, the number of members showed great variations, partly because many companies appeared to have unregistered owners, besides the registered ones, while others had not. In 1977, 58 per cent of the company farms had an average of 245 owners (Kenya 1977).

c) Co-operative farms. In case of the so-called Ushirika-farms, free land was given to the landless, with the condition that farming should be done co-operatively under the guidance of a government appointed manager. A second type concerned the farms which were co-operatively farmed on a voluntary basis.

3) ADC-farms. The ADC (Agricultural Development Corporation) is a parastatal which has been responsible for the purchase of farms from Europeans and reselling them to African owners. In 1973, there were 24 ADC-farms (Henkel 1979); this figure had decreased to 9 in 1989.

4) Settlement schemes. Several former large farms have been bought by the government and were sub-divided into small-scale farms. In the so-called high-density schemes land was given out to the landless, with plot sizes varying from 4-6 ha. The low-density schemes were meant for farmers with some agricultural know-how, average plots being 8-16 ha in size (Odingo 1971). On most schemes, one plot of 40 ha (100 acres) was created, containing the buildings of the former large farm.

The distribution of the different types of large farm ownership in Trans Nzoia in 1976 is listed in Table 2.1. The different types of farms were fairly evenly spread over the divisions (the administrative level below the district; see map on page 23), with the exception of the co-operative farms which were mainly situated in the northern (Kwanza) and eastern (Cherangani) parts of the district. Individually-owned farms were somewhat underrepresented there (Ward *et al.* 1976c).

Since 1976, most farms which started as a company or a co-operative farm have been formally sub-divided among the members. This was a time-consuming process because many conflicts arose among the (former) members regarding the size of the plot each of them claimed and which had to be related to each member's financial contribution in the initial company or co-operative. By 1987, about one-quarter of these group-owned farms had been sub-divided. The average plot size was about 4 hectares (10 acres), ranging from 0.9 to 22 ha, with one exceptional case of 86 ha (information from Survey of Kenya, Kitale, November 1987). During the preparations for the present survey in April 1989, it appeared that practically *all* group-owned farms had *de facto* been sub-divided (see Chapter 3).

Table 2.1
Large farms in Trans Nzoia: types of ownership (1976)

type of ownership	number of farms	area (hectares)	average size (ha)
- individual	150	40,101	267
- partnership	99	38,086	385
- company	54	32,691	605
- co-operative	29	13,551	467
- ADC and others	61	61,931	1015
Total	393	186,360	474

Source: Ward *et al.* 1976a.

Of the individually-owned farms, some are run by the owners themselves (in general the smaller farms, but figures are lacking), others by a manager. An often-heard opinion is that the best managed farms are those which are run by the (individual) owners themselves. This was not confirmed by a survey in 1976 in which the level of management of 359 large farms was measured: 41 per cent had 'good' management, 45 per cent 'bad', while the rest occupied an in-between position. In general, it appeared that 'good' management coincided with larger sizes and 'bad' management with smaller sizes (Ward *et al.* 1976c). This might be explained by the fact that many of the larger farms are run by well-trained managers. The owners of the smaller large farms cannot afford to employ such a person, while they also have less access to labour and capital inputs.

2.4 Employment[2]

In 1970, a total of 22,623 persons were regularly employed in the formal sector in Trans Nzoia, of which 78 per cent worked in the agricultural sector (Henkel 1979). Twelve years later, in 1982, this figure had not changed (22,591; Kenya 1991b). In 1989, formal wage employment in Trans Nzoia provided work for 25,142 persons (*Ibid.*). In other words, in twenty years time formal employment increased with only 11 per cent. During the same period, however, the district population increased with more than 200 per cent. Labour opportunities in Kitale Town (the only town of some size in the district) are also scarce. In 1989, 5,495 persons were employed there: a decline (!) of 17 per cent compared with 1982 (Kenya 1991b).[3] These figures indicate that (1) jobs outside the agricultural sector are hard to find in Trans Nzoia, and (2) casual labour on large farms is the main source of cash income for many households in the district.

Those who are regularly employed in the agricultural sector are the 'permanent labourers' on the large farms. Permanent labourers can be divided into two groups: on the one hand, the technical and administrative staff (mechanics, tractor drivers, fence makers, bookkeepers, etc.) and, on the other, labourers engaged in livestock activities (herdsmen, watchmen, milkers, etc.). The latter are often Turkana, a semi-nomadic tribe living in the relatively arid region north of Trans Nzoia, as they are known to be 'good with cattle'. Permanent labourers receive a monthly salary and usually enjoy some benefits provided by the large farm owner, such as free housing, a small plot for their own use, cheap maize, and free medical services. On the other hand, however, they face restrictions in the sense that they — as well as their household members — are not allowed to seek employment outside the large farm they live on, and also regarding the use of their plot (no livestock, no maize when seed maize is cultivated in the vicinity).

2 This and the following section is largely based on interviews, done in 1987 during the first preparation stage, with some government officials in the district and with some owners/managers of farms of various sizes that we visited during the preparation period. Where other information is used, references are mentioned.

3 Compare, for instance, nearby Eldoret, where wage employment increased with 18 per cent during the same period.

as the possibilities of buying cheap maize and milk from the farm stock and receiving presents of food; (-) they face the same restrictions regarding the use of their small plot as the permanent labourers; (-) they are not allowed to work outside the farm. The main difference with the permanent labourers, then, lies in the remuneration of their work, being lower and irregular.

'Non-resident casuals' are mostly smallholders living on a sub-divided farm in the vicinity of the large farm(s) where they work, or members of landless households living outside the employer's farm. The main differences with the resident casuals are: (-) their labour is more season-bound, so their income from casual labour is lower; (-) they have less possibilities of sharing in such provisions as buying cheap maize and milk on the farm where they work; (-) on the other hand, they obviously do not face the restrictions regarding land use and seeking labour opportunities elsewhere.

Finally, the 'non-labourers' are smallholders like most of the households in the previous group, but with one major difference: nobody in the household performed any casual labour on a large farm during the year prior to the interview.

The data presented in this book concern the findings from three different, but related studies, notably: 1) a survey among large farms; 2) a general survey among households of labourers working on these farms as well as among non-labourers' households, and 3) an in-depth study of a sub-sample of labourers' and non-labourers' households. Fieldwork for all studies took place in 1989.

3.2 The large farm survey

The farm survey was carried out in March and April 1989. The large farms in the district were sampled according to two criteria:

• *Farm size.* Because the present study concerns a labourers survey, only those farms were included that could be expected to employ permanent labourers as well as casual labourers and that were keeping a labourers' administration. For these reasons, a minimum farm size of 100 acres was used as a selection criterium (instead of a minimum of 50 acres which is used by the Kenyan Central Bureau of Statistics in defining a large farm).

• *Type of ownership.* Besides the individually-owned farms, there were nine state-owned (ADC) farms in the district. Both categories were included in the sample frame. Finally, in some settlement schemes one or more plots of 100 acres or more exist. They were also included.

With the help of information from four different sources[1] an up-to-date list of 219 eligible farms was drawn up, including the sub-divided partnership farms that were still large farms. These 219 farms were grouped according to farm size: 100-199 acres, 200-499 acres, 500-999 acres and 1000+ acres. From the farms in each category a 20 per cent sample was drawn using a table with random numbers. Thus, a stratified sample of 46 farms was obtained. Sample frame and sample of the farm survey are shown in Table 3.1.

[1] • Ministry of Agriculture: List of farms in Trans Nzoia District; Kitale, approx. 1979; • Ministry of Agriculture: List of farms in Trans Nzoia District; Kitale, 1981; • Lists from the Divisional Headquarters of the Ministry of Agriculture (Endebess and Cherangani Divisions only); • Information from key informants (Ministry of Agriculture, Central Bureau of Statistics, Ministry of Lands and Settlement, Survey of Kenya).

Table 3.1
Large farm survey: sample

size category	sample frame	sample
• 100-199 acres	60	13
• 200-499 acres	59	13
• 500-999 acres	57	11
• 1000+ acres	43	9
total	219	46

For reasons of design and of representativity, two government farms were included in the sample (both in the 1000+ category, as all ADC-farms are very large), representing 20 per cent of the ADC-farms in the area. The geographical distribution of the farm sample is shown on Map 2 (p. 23).

The questionnaire of the farm survey consisted of two parts: 1) a general questionnaire regarding farming activities and aspects of the labour population; and 2) information from the farms' administrations of the casual labourers. The following topics were covered: farm characteristics (farm size, type of ownership, farming activities), permanent labourers (number, types, wage levels, provisions), squatters (numbers, history, employment, provisions), and casual labourers (numbers, recruitment, wage levels, provisions; numbers and payments per month, obtained from the labourers administration).

Regarding the labourers administrations, a few words must be said. Information was gathered for the period of March 1988 up to February 1989 (a whole agricultural season in the district). A 10 per cent sample of the labourers in the administrations was drawn and for each labourer the number of days (s)he worked on the farm in question was recorded as well as the earnings in each month.[2] The sampling of the labourers was not always easy as not all farms kept an accurate administration of the casual labourers. On relatively few farms well-organized monthly lists were available. Some had a system of two-weekly lists, while in other cases only weekly or even daily lists were kept. In such cases, the longest list within a certain month was chosen for sampling purposes.

For 13 of the farms, complete information could be collected on this point. For seven others, the information was nearly complete (9-11 months). With the help of the 13 complete farms, estimations could be made for the missing months of these seven farms

[2] The sampling procedure was as follows. Each tenth person on the lists in the administrations was selected, starting with the number ten on the list of March 1988. A system of 'continuously counting' was used, i.e. the first labourer to select for each following month depended on the number of labourers employed in the previous month. For example, if the list of March consisted of 37 labourers, the first labourer to be selected in April was the number three of that month. By doing so, it was prevented that certain labourers might be selected in (perhaps) each month. The monthly lists varied considerably in length. The names were never placed in alphabetic order. However, the labourers who worked regularly on a particular farm were usually on top of each month's list.

regarding three variables: the average number of labourers per month, the average number of labour days per month, and the average payments per month. By doing so, a sample of 20 farms was obtained.[3] All other farms had either very incomplete administrations, i.e. from one to six months (18 cases), or kept no administration at all (8 cases).

Because the data obtained from the labourers administrations are based on only half of the sampled farms, this information deviates somewhat from the averages for all large farms of 100 acres and more in the district. Table 3.2 shows the deviations from the general farm survey. It is mainly the larger farms where the better administrations were kept. Nevertheless, because of its uniqueness and importance, the data from the administrations will be discussed in Section 4.3.

Table 3.2
Large farm survey: labourers administrations (number of farms)

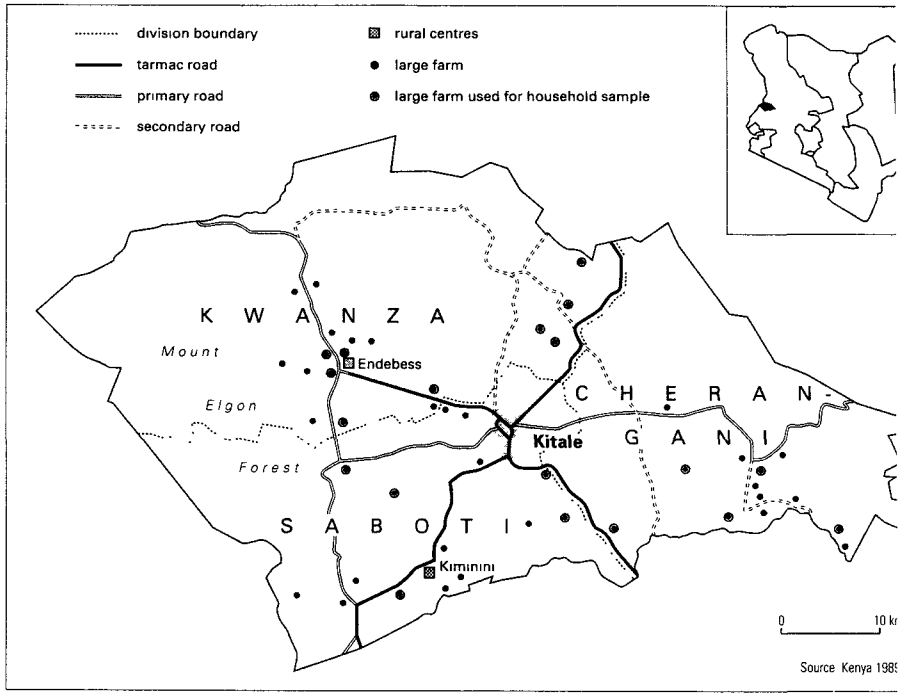
size category	complete	incomplete (9-11 months)	sample	general sample
• 100-199 acres	1	-	1	13
• 200-499 acres	3	3	6	13
• 500-999 acres	4	2	6	11
• 1000+ acres	5	2	7	9
total	13	7	20	46
• average farm size (acres)	1179	741	1025	711

It was a pleasant experience that the owners/managers of the farms were very co-operative regarding both parts of the survey. The only problem was that many labourers administrations were with the accountant for auditing during the survey period. As a result, the last farm questionnaire could only be completed in August 1989.

3.3 The household survey

Sampling procedures
For purposes of the household survey, the 46 farms of the farm survey were grouped into six geographical clusters. From each cluster, 1-4 farms were selected; only those farms could be selected that were known to employ enough labourers of one or more types. Map 2

[3] The values of the 'missing months' were estimated as follows. For all 20 farms, the months June to December were complete. First, for the 13 'complete' farms the June-December average values of the three variables were calculated. Next, for each of the remaining months, the ratio between the value of that month and the June-December average was calculated. Finally, for each of the seven 'nearly complete' farms, a value for the specific missing month was obtained by multiplying the June-December average per farm with the ratio obtained from the 13 complete farms. By doing so, five of the 20 months of March have an estimated value. The same applies to two months of April and of May, one month of January and two months of February.



Map 2 **Trans Nzoia District: farm sample and household sample**

shows the farms that were used for tracing the households.[4] The sample was as follows:
- 50 households of permanent labourers living on large farms: 'permanent labourers',
- 50 households of casual labourers living on large farms: 'resident casuals',
- 150 households of casual labourers living outside large farms: 'non-resident casuals',
- 50 households of persons who did not work as casual labourers: 'non-labourers'.

As far as the three categories of labourers are concerned, the selected numbers of households to a certain extent reflect the numbers that could be estimated from the data of the farm survey (being 1: 0.5 : 3.5).[5] Only the group of resident casuals is somewhat over-represented, but proportional representation would make the number of households in this category too small. The relatively large number of households of non-resident casuals also allows for sub-analysis (which is done in Chapters 5 and 7). The actual number of rural non-labourers' households in the district can be estimated at about 40,000[6], but this category solely functions as a comparison group.

Non-resident casuals could be found on nearby sub-divided farms and were traced by asking whether any (resident) household member had done casual labour on any large farm during the year prior to the interview. If this was not the case, the household was designated as 'non-labourer'.

In order to collect a maximum of information on nutritional conditions, the survey covered households with young children between the ages of six months and five years. Households without young children in this range were excluded but they proved to be very few.

Thus, the household survey included 300 households. To be sure, however, that enough households were included in each of the above categories, several extra households were interviewed. Moreover, after analysis, some households in the group of 'non-labourers' actually appeared to belong to the group of 'non-resident casuals', despite careful asking whether any household member had done casual labour. This was possible because each household was visited twice, i.e. first during the selection procedure (asking, among

Table 3.3
Household survey: sample, by study group

	permanent labourers	resident casuals	non-resident casuals	non-labourers	total
number of households	47	51	165	35	298

4 During the farm survey not only the numbers of the different types of labourers were asked for, but also the recruitment areas of the non-resident casuals.

5 For the 220 farms of 100 acres or more, the estimated figures (during *peak* labour periods) at district level are 3,900 households of permanent labourers, 2,000 households of resident casuals and 13,500 households of non-resident casuals.

6 This is estimated as follows: 72,669 households in the whole of the district (Kenya 1994a) minus 13,940 households in Kitale (Kenya 1994b) minus 19,400 labourer households (the sum of the three categories mentioned in footnote 5).

others, whether anybody had performed casual labour) and later on for the actual interview. The final study population is shown in Table 3.3.

Of all households, 80 per cent were approached on one occasion with the 'basic questionnaire', containing information regarding household composition, economic activities of household members, farming, food preparation of the preceding day, food consumption, anthropometry and health. The remaining 20 per cent of the households were visited for three whole days, every other day. On each occasion, all food preparation and consumption were observed. Moreover, a food preparation recall of the day before was done. In this way, a period of six days was covered for these 'observation households'.

The households of the permanent labourers and the resident casuals were easy to trace and were selected in the field by cluster sampling, starting from a random point within the main area of residence of the eligible households in the particular category. There was one limitation, however, notably regarding the resident casuals, who were present in sufficient numbers on three farms of the farm survey only. For tracing the households of the non-resident casuals, data regarding the main recruitment areas of the large farms in order to find 'their' casual labourers could be used. Almost without exception, these households were living on a neighbouring sub-divided farm. Again, cluster-sampling was used to select these households. Finally, the non-labourers' households were selected as the nearest neighbours of non-resident casuals.

The actual interviewing was done in four periods of eight days (six days work, two days off) from the end of June until the end of July 1989. Anthropometric measurements of the children and their mothers was done during the weekends and was organized with the help of village elders.

3.4 The in-depth study

The population of the in-depth study consisted of the 60 'observation households' of the main survey. These households were chosen because a lot of information was already available on them. Another reason was the fact that they could be considered to represent the 298 households in the main household survey, and thus the farm labourers' population in Trans Nzoia District (with, as was pointed out, only some over-representation of the resident casuals).

One household refused to be interviewed. During the analysis of the data regarding household income, three households turned out to have exceptionally high incomes: one in the group of permanent labourers and two in the group of non-labourers. As these households had a disproportionately large influence on group averages, they have been left out of the analysis. The final study population as used in this book, then, is shown in Table 3.4.

The sizes of the four study groups are rather small, which is only in the nature of an in-depth study. In general, this does not allow for statistical comparisons. However, during the analysis it appeared that the variations within the sub-groups are relatively small and the differences between the sub-groups are quite consistent, allowing presentation of data on sub-groups.

Table 3.4
In-depth study: sample, by study group

	permanent labourers	resident casuals	non-resident casuals	non-labourers	total
number of households	9	10	30	7	56

Field work took place in August 1989. Each household was interviewed for about two-and-a-half hours. A semi-structured questionnaire was used, containing a mixture of different interview techniques. The basic questionnaire of the main survey was used as a starting point. More detailed information about various subjects was desired, so data were collected about seasonality of farming and economic activities. Households were asked what kind of activities they had undertaken during the last twelve months. This part of the questionnaire consisted mainly of structured questions. Furthermore, information was gathered on the household budget, migration history, links with the area of origin and other social relationships, using open interview techniques. After discussing and checking the interviews, some households were visited again because clarification on some of the topics was needed.

Since most of the labour performed on the large farms is of a seasonal nature, information was gathered on the seasonal aspects of all economic activities carried out by the members of the households. Most of the respondents knew quite exactly when they planted and harvested maize and what type of economic activities they had undertaken during any particular month. Some households even showed calendars on which they had marked the dates of planting and harvesting. It is therefore assumed that the data about seasonal fluctuations regarding income generation and economic activities are fairly reliable.

Further information was asked on individuals, such as differences between the sexes in constraints on seeking jobs, especially non-agricultural employment. As to questions about migration and social networks, both husbands and wives were asked where they were born, how long ago they had come to Trans Nzoia, for what reason, and so forth.

For two reasons, special attention was paid to the importance of social networks by the respondents. First, most of the labourers were immigrants, so one could expect them to maintain links with their areas of origin. Second, agricultural labourers belong to the poorest strata in the rural societies and there is evidence in the literature that these households partly depend on these networks for their survival. Therefore, exhaustive accounts were obtained of the exchanges of the interviewed households with relatives and non-relatives, whether in cash or in kind. Information was collected on the closest relatives of both husbands and wives, how often they went there, how often they came to visit, what was given, where they lived, the costs of public transport and how long it took. The same questions were asked regarding other relatives and non-relatives in case goods or money were exchanged. A calculation was made of the total value of gifts and receipts during the whole year preceding the survey. In order to do so, food and other non-monetary exchanges were given a monetary value. Conversion values are the same as those used in the chapter on household

income (see Appendix 1), which makes comparison with other sources of income possible Non-food items were left out, because it was very difficult to estimate their values. These items are not commonly exchanged, however, so excluding them only results in a slight under-estimation. By asking *when* each exchange took place, an impression of the seasonal variation was obtained. Only actual exchanges for the preceding year were counted, so relatives who visit each other every two years, but not last year, were not included. Three kinds of exchanges were distinguished: cash, staple foods, and other edible gifts (staple foods in Trans Nzoia District are maize, beans, irish potatoes, sweet potatoes and bananas). In this way a better insight could be gained into the importance of social networks for the population's food supply.

The district where people were born is regarded as the area of origin. In all cases, relatives living in this district lived very close to the migrant's place of birth. Differences in fare and travelling time were very small, so taking the district as one area seemed logical and practical. The area of origin was defined for both husband and wife (wives) and relations with relatives on both sides were taken into consideration.

3.5 Some background data of the study population

Trans Nzoia is a district with a high percentage of immigrants from other districts. In the present study, two-thirds of the heads of households were not born in Trans Nzoia (see Table A1, p. 112). The four study groups showed no difference on this point. On average, the heads of the households had come to Trans Nzoia 16 years earlier. The duration of stay of the heads living *outside* the large farms (non-resident casuals and non-labourers) was four years longer than that of the heads living *on* the large farms (permanent labourers and resident casuals).

Because of the high inflow of people, the population of the district is very heterogeneous regarding ethnic background. In Table 3.5, the ethnic composition of the study population[7] is compared with that from two other sources, i.e. the census of 1989 and a

Table 3.5
Household study population: ethnic composition (%)

	present study* (N=49)	Schafgans 1988 (N=199)	CBS 1994 (N=393,680)
• Luhya	75.5	53.2	52.0
• Turkana	8.2	3.2	4.6
• Teso	6.1	4.8	3.3
• Kalenjin	4.1	16.1	21.3
• Kikuyu	-	9.7	9.6
• other	9.1	13.0	9.2
total	100	100	100

* *Source* Trans Nzoia In-depth Study 1989 It concerns heads of labourers' households only

7 The figures concerning the present study are derived from the in-depth study on rural employment and social networks (Tellegen, Verstrate & Foeken 1992).

survey held in 1986/87 (Schafgans 1988). It shows that there are many Luhya and Turkana among the labourers on large farms in the district, while Kalenjin and Kikuyu are under-represented.

Tables A2 to A5 (pp. 113-116) contain several demographic characteristics of the study population. It included 2556 persons, 91 per cent of whom were full-time residents, 3 per cent were usually living elsewhere, and the remaining 6 per cent could be considered part-time residents. Of the full-time residents (2331 persons), 37 per cent were adults and 63 per cent children (i.e., younger than 17 years of age).

Table 3.6a shows the age composition of the full-time residents in each of the four study groups. Compared with the Census of 1989 (Kenya 1994a), the age composition of the study population shows very little deviations, with the exception that the percentage of children is somewhat higher. This is due to the way of sampling: as stated, only households with at least one child between 6 months and 5 years of age were selected. In all study groups, the percentage of adult women was somewhat higher than the percentage of adult men. This is partly due to the fact that some of the male heads of households were married polygamously (Table A3, p. 114). Among the non-labourers, the percentage of polygamously married heads was somewhat higher (24 per cent) than among the heads in the labourers' households (17 per cent).

Table 3.6
Household study population: main characteristics, by study group (%)

	permanent labourers	resident casuals	non-resident casuals	non-labourers
a) age composition				
• children 0-10 yrs	47.6	46.8	47.0	44.8
• children 11-16 yrs	13.8	15.5	17.1	16.5
• adults 17-59 yrs	37.4	36.9	33.4	36.0
• adults 60+ yrs	1.2	1.1	2.5	2.4
• unknown	0.3	-	0.1	0.3
total	100	100	100	100
b) sex of heads of households				
• male	95.7	96.1	84.8	100
• female	4.3	3.9	15.2	-
total	100	100	100	100
c) educational level, by sex (adults: 17 years and older)				
• years of formal education:				
- males	4.9	4.8	5.7	7.4
- females	2.4	2.4	3.7	5.6
d) household size				
• average nr. of persons	7.4	7.4	8.8	8.9
• average nr. of consumer units*	4.7	4.8	5.3	5.4

* See note on consumer units in Appendix 1
Source: Appendix 2, Tables A2-A5 (see also for N's there)

Table 3.6b shows the percentage of female-headed households. They were almost exclusively found among the non-resident casuals. In this group, one out of every seven households was headed by a woman. Female-headed households were rarely found *on* the large farms, as it is almost exclusively men who are employed by the farm owners as permanent labourers or 'regular casuals'.

Table 3.6c offers some information regarding the educational level of the adult men and women. Important differences emerge, both between the sexes and between the study groups. In all study groups, the men had on average more years of formal education than the women. Furthermore, the educational level of both sexes in the two groups living on the farms was much lower than of those living outside the farms. The non-labourers in particular turned out to be a better educated group.

Table 3.6d shows the average household size of the study population. There are differences between the study groups: the households *outside* the farms were larger than the households *on* the large farms.

To summarize, the labourers *on* the large farms had a lower educational level, and had slightly smaller households than households located outside the farms. These households also comprised somewhat fewer children and more adults.

4

Labour conditions on large farms: the employer's perspective

4.1 Large farms: main features

In this section, the general characteristics of the large farms in Trans Nzoia will be discussed. Data are presented for the total farm sample (46 farms) and, where necessary, also for the four size categories. The smallest farms counted 100 acres (40 ha), the largest one 3905 acres (1562 ha). In the tables, the 'total' column concerns the average of all 46 farms, not the weighed average of the four size classes.

Ownership

Except for the two ADC-farms, all farms appeared to be privately-owned. Table 4.1 shows the place of residence of these farm owners. Most owners (68 per cent) called themselves full-time farmers and were living on the farm throughout the year. This is more than expected, given the prevailing impression regarding the large numbers of absentee-owners ('weekend farmers', 'suitcase farmers' or 'telephone farmers', as they are rather tentatively called). In practice, only 14 of the 44 owners fell into one of these categories. Eight of them were living in Nairobi, two in Eldoret, and one in Mombasa. For these people, the farm is

Table 4.1
Large farms: place of residence of the owner, by farm size*

	total	100-199	200-499	500-999	1000+
• on the farm	30 (68%)	11 (85%)	10 (77%)	6 (55%)	3 (43%)
• elsewhere	14 (32%)	2 (15%)	3 (23%)	5 (45%)	4 (57%)
total	44 (100%)	13 (100%)	13 (100%)	11 (100%)	7 (100%)

* The two ADC-farms are excluded in this table.
Source: Trans Nzoia Large Farm Survey 1989.

not their main activity and/or their main source of income. Among them were seven businessmen, a shopkeeper, a lawyer, a civil servant, a chairman of a union, and an undersecretary of state.

Table 4.1 also shows a breakdown according to farm size. It is clear that the owner's place of residence is correlated with the size of the farm: as farms are bigger, they are more often run by a manager. The average size of farms run by the owner was 433 acres, against 903 acres for farms run by a manager. Nevertheless, almost half of the very large farms were run by the owners themselves. This again belies the stereotype picture of the large farms being dominated by absentee-owners.

Farming systems

The large majority of the farms in Trans Nzoia District are of the mixed farming type, with maize cultivation and milk production as the main activities (Table 4.2). The average size of all 46 farms was 711 acres. A quarter of the land was used for the cultivation of maize (seed maize and commercial maize), six per cent for wheat, four per cent for several other crops (sunflower, coffee, oranges, avocadoes, beans, potatoes, etc.) and no less than 60 per cent for grazing, with 44 per cent consisting of 'natural pastures', i.e. fields that are extensively used for grazing purposes. Fifteen per cent was used for improved grazing.

There are different patterns of land use for the various farm sizes (Table 4.2). On the smaller farms (100-199 acres), the 'traditional' farming system of commercial maize and rough grazing predominated (about 80 per cent of the land). On the very large farms (1000 acres and more), 43 per cent of the land was used that way, while another 36 per cent was used in a more capital and management intensive way, i.e. for seed maize and improved grazing. In other words, as farms are larger, the land is used in a more intensive way.

Although maize and livestock can be found on nearly all farms, there are still important differences between the farms regarding land use. For example, seed maize was grown on

Table 4.2
Large farms: land use, by farm size

(N=)	total (46)	100-199 (13)	200-499 (13)	500-999 (11)	1000+ (9)
• average farm size (acres)	711	137	337	736	2051
• land use (%):					
- seed maize	14	9	6	12	17
- commercial maize	10	23	20	11	6
- wheat	6	5	6	7	5
- other crops	4	2	3	4	4
- rough grazing	44	58	55	51	37
- improved grazing	15	1	8	13	19
- houses, roads, fallow, etc.	7	2	2	2	12
total	100	100	100	100	100

Source: Trans Nzoia Large Farm Survey 1989.

half of the sampled farms, generally the larger ones. In Cherangani Division, seed maize was less frequently found. This may be caused by the relatively large distance to the factory of the Kenya Seed Company (west of Kitale), where all seed maize is processed. The cultivation of wheat is concentrated in Kwanza Division. Harvests show strong annual fluctuations, mainly because of hailstorms and floods. On some farms, sunflowers were cultivated, in one case in large quantities. Coffee was grown on less than a quarter of the farms, with a maximum surface of 120 acres. On some farms, the coffee plants had been neglected for a long time. Tea was not found on the sampled farms. The crop is mainly cultivated on farms smaller than 100 acres. Finally, a few farms had small plots of oranges (up to five acres), which were sold at the local markets or in Kitale.

Yields

Trans Nzoia is one of the major maize granaries in Kenya. Future increases of the national maize production will have to be realized by higher yields on the existing maize farms. On 39 of the 46 sampled farms commercial maize was cultivated. Table 4.3 shows the productivity figures for these 39 farms. The average maize production in 1988 was 44 bags of 90 kg per hectare (17.5 bags per acre). This is somewhat less than the average yield for the whole district in that year (50 bags per hectare) as mentioned by the Ministry of Agriculture (Kenya 1990b). Moreover, it is far less than what is considered as the yield potential in the district, namely 75 bags per hectare (Kenya 1989b). Yields differ substantially with farm size, as the larger farms (above 500 acres) realized a 50 per cent higher yield than the smaller ones (100-199 acres).

Table 4.3
Large farms: productivity of commercial maize, by farm size
(farms with commercial maize only)

(N=)	total (39)	100-199 (9)	200-499 (12)	500-999 (10)	1000+ (8)
• land under comm. maize (acres)	87	45	74	92	148
• production per hectare under commercial maize (bags of 90 kg)	44	34	44	50	51

Source: Trans Nzoia Large Farm Survey 1989.

On all sampled farms cattle was held. It concerned mainly grade cattle kept for milk production. Most milk is sold to the KCC-factory in Kitale. Only on the ADC-farms beef cattle was found (Kenya 1989b). On most farms also small livestock, i.e. sheep and goats, was present, but not in large quantities. Table 4.4 presents some figures regarding livestock on the sampled farms. On average, 170 head of cattle were kept on 420 acres of land, both rough and improved pastures. That means that one head occupied 2.5 acres. It was rather unexpected that the cattle density was about the same in all size categories, as one would

Table 4.4
Large farms: livestock density, by farm size

(N=)	total (46)	100-199 (13)	200-499 (13)	500-999 (11)	1000+ (9)
• average acreage for grazing*	420	81	212	471	1149
• average number of cattle	170	27	96	172	480
• acres per head of cattle	2.5	3.0	2.2	2.7	2.4

* Rough grazing plus improved grazing.
Source: Trans Nzoia Large Farm Survey 1989.

assume higher densities on larger farms because of the larger plots with improved grazing. The acreage per head of cattle on the two ADC farms in the sample was 1.9.

4.2 Permanent labourers

Information regarding the permanent labourers concerned the number of labourers, the types of labourers, their wage levels as well as the provisions for these people. On two farms there were no permanent labourers at all. According to the manager of one of these, the owner sold half of his farm to his former permanent labourers. After that, they worked for him as casuals when needed. On the other farm, all permanent labourers had shortly before the interview been fired and re-enlisted as (regular) casuals.

Numbers and wages

On average, 17 permanent labourers per farm were employed on the sampled farms (Table 4.5). Assuming that the farm sample was representative for all large farms of 100 acres and more in the district, it can be calculated that between 3,500 and 4,000 persons in Trans Nzoia were employed as permanent labourers at the time of the survey (1989). Compared with the about 17,500 persons who were regularly employed in the agricultural sector in 1970 (Henkel 1979), it seems that formal employment in the agricultural sector has declined considerably during the past two decades. The smaller large farms employed an average of only four permanent labourers, against 47 at the largest farms (Table 4.5). As mentioned

Table 4.5
Permanent labourers: numbers, by farm size

(N=)	total (46)	100-199 (13)	200-499 (13)	500-999 (11)	1000+ (9)
average number	17	4	10	18	47

Source: Trans Nzoia Large Farm Survey 1989.

above, two farm owners did not employ any permanent labourer, while the largest number of permanent workers found on one farm was 110.

Table 4.6 shows the different categories of permanent labourers, their numbers and their salary levels. The largest single group of permanent labourers concerned the dairy workers, with such tasks as herding and milking of the cattle. The second largest group were the farm workers, who perform all sorts of general farm work, such as fencing, plumbing, masoning, etc. Drivers can also be found on most farms, regardless of farm size. Watchmen, overseers, office workers and mechanics, however, are types of labourers that are (sometimes more, sometimes less) bound to a minimum farm size.

The salaries of the permanent labourers differed considerably, not only between the various types of labourers (which can be expected) but also between farms (Table 4.6). For some categories of labourers this can be caused by the specific skills that are needed (mechanics, office workers) or by the degree of responsibilities (overseers). It is less clear, however, why on one farm a farm worker or a dairy worker earned sh.200/- and on another one sh.500-600/-.[1] If one realizes that in 1988 the minimum salary was legally fixed at sh.354/- per month[2], these figures do show that on quite a number of farms salaries were very low indeed.

Table 4.6
Permanent labourers: numbers and salaries, by type of labourer

type of labourer	total number	nr. of farms employing	nr. of workers per farm	average salary (sh/month)	salary range (sh/month)
• dairy worker	271	42	6.5	350	200-510
• farm worker	243	27	9.0	332	200-600
• driver	120	40	3.0	505	240-900
• watchman	70	16	4.4	424	250-600
• overseer	41	24	1.7	742	200-1800
• office worker	30	10	3.0	865	265-2000
• mechanic	18	7	2.6	659	350-1400
• other	13	5	2.6	920	300-2100

Source: Trans Nzoia Large Farm Survey 1989.

Are salaries on larger farms higher than on smaller farms? In order to make a valid comparison between the salary levels of the permanent labourers on farms in different size categories, the three categories of labourers that are most common were analysed. Figure 1 shows the average wage level for the farm workers, the dairy workers and the drivers, and for different farm sizes. The figure offers a fairly consistent picture. Starting with a farm size of 200 acres, wages become higher as farms are larger. However, in the smallest size category (100-199 acres), wages are also relatively high. This applies especially to the

1 At the end of this chapter it is shown that lower wages are only to a limited extent compensated by better provisions.
2 Information from the District Labour Officer.

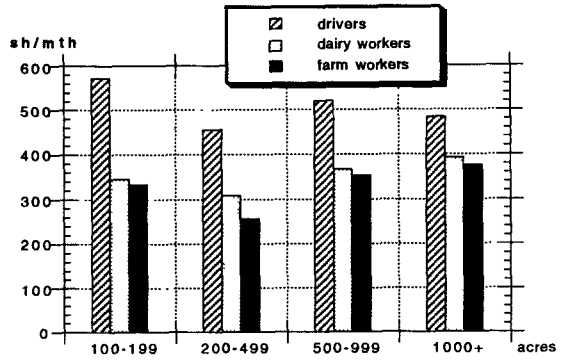


Figure 1
Permanent labourers: salary levels, by type of labourer and farm size[3]
(*Source:* Trans Nzoia Large Farm Survey 1989)

drivers. Usually, there is only one driver on the smaller farms and this person often has a rather familiar relationship with the farm owner.[4]

The average salaries of the permanent labourers on the two ADC farms in the sample were as follows: dairy workers sh.429/-, farm workers sh.425/- and drivers sh.550/- per month. In all three cases, this is well above the overall average as shown in Table 4.6 and also higher than the averages in the 1000+ acres size class.

Provisions

On nearly all farms, the permanent labourers were provided with a house (89 per cent), water supply (93 per cent), a latrine (91 per cent) and basic medical services (95 per cent). The latter usually implied first aid, some basic drugs and transport to a hospital if necessary. On one farm, the owner paid half of the costs for a private doctor. One of the ADC-farms was visited monthly by a private doctor.

On 95 per cent of the farm, the permanent labourers were given a piece of land for their own use. One farm owner gave a specification by type of labourer: 10 acres for the manager, 3-5 acres for the overseers and 1-2 acres for the other permanent labourers. On average, the labourers on the 42 farms had 1.0 acre at their disposal. A look at Table 4.7 shows that there is no clear relationship between the labourers' plot size and the size of the

3 The N's for the different columns in Figure 1 are as follows:

	100-199	200-499	500-999	1000+
farm workers	3	8	9	7
dairy workers	11	12	10	9
drivers	9	12	11	8

4 Information from the District Labour Officer.

Table 4.7
Permanent labourers: provisions, by farm size

(N=)	total (44**)	100-199 (12**)	200-499 (12**)	500-999 (11)	1000+* (9)
piece of land					
• % of farms	95	83	100	100	100
• average plot size (acres)***	1.0	0.6	1.1	1.3	0.9
sales of maize					
• % of farms	70	75	58	55	100
• average price (sh/debe)***	35	35	33	35	38
sales of milk					
• % of farms	32	8	25	45	56
• average price (sh/litre)***	3.0	3.0	2.3	3.2	3.3

* The averages for the two ADC-farms were 0.5 acres, 34 sh/debe and 3.1 sh/litre, respectively.
** Two farms without any permanent labourers have been excluded.
*** Only those farms where the labourers have a piece of land or where maize/milk is sold.
Source: Trans Nzoia Large Farm Survey 1989.

large farm, although as far as the first three size categories are concerned, plots are larger as farms are larger. At the two ADC-farms, one large maize field was destined for the labourers. The management took care o f ploughing and planting, after which the field was subdivided into plots of 0.5 acres each. The labourers paid for the fertilizer.

The labourers were not totally free regarding the use of their plot. On eight of the twenty-one farms with seed maize the labourers were not allowed to grow maize on their plots because the fields of seed maize were nearby. On the other thirteen farms no such restriction applied. It was generally forbidden to keep livestock.

On 70 per cent of the farms, the labourers had the opportunity to buy maize from the farm's stock (Table 4.7). The average price they had to pay was sh.35/- per *debe* (about 15 kg), which was substantially lower than the normal market price at the time of the survey (sh.45/-). This type of provision was most widespread among the smallest and the largest farms, while the average price was about the same in all size classes. One-third of the farms also offered the possibility to buy milk at a relatively low price, i.e. on average three shilling per litre instead of the normal market price of five. For rather obvious reasons (the number of cows), this provision is bound to larger farms. Prices of the milk, however, do not vary with farm size.

On most farms, the permanent labourers received gifts in the form of food (not to be confused with payments in kind). This usually consisted of meat, which was given at 35 farms (78 per cent; Table 4.8), mostly once a year, notably at Christmas. The amount given varied considerably, ranging from one to five kilograms per labourer. Other food items were given on relatively few farms. On five farms, some maize was given, either once a year or irregularly. In one case, this took the form of ten kilograms of maize flour. On eight farms, milk was given, varying from one-and-a-half litres per day to a few litres per year. In some cases, milk was given to part of the permanent labourers, on one farm to senior staff only,

Table 4.8
Permanent labourers: gifts of food, by farm size (% of farms)

(N=)	total (44*)	100-199 (12*)	200-499 (12*)	500-999 (11)	1000+ (9)
• maize	11	23	17	-	-
• milk	20	23	8	36	11
• meat	78	85	58	73	100
• sugar	16	15	8	18	22
• other**	9	8	-	9	22

* Two farms that had no permanent labourers have been excluded.
** Tea leaves (3 cases) and rice (1 case).
Source: Trans Nzoia Large Farm Survey 1989.

on another one to both senior staff and dairy workers. Finally, sugar was given on seven farms, on average one kilogram per year.

The large farms in Trans Nzoia differ very much regarding food gifts. At one extreme, there are eight farms where the permanent labourers did not get any gift. At the other extreme, there was one farm (155 acres) where they were given one *debe* of maize per fortnight, three pints of milk a day, and also four kilograms of meat and a packet of sugar per year. And on another farm (100 acres), the owner gave (during July and August, i.e. the difficult months regarding food supply) the amount of maize the labourers needed, two pints of milk daily, and at Christmas five pounds of meat and sh.200/- in cash.

Table 4.8 also shows for each size category the percentage of farms providing its permanents labourers with gifts of food. In general, it appears that gifts occur most frequently on the smallest and on the largest farms.

Wages and provisions

Is there a relationship between the wage level of the permanent labourers on the one hand and the level of provisions on the other? Because of the wide ranges of salaries for the same kind of work on different farms, one might expect that on farms where wages are low provisions will be better, and vice versa. In Table 4.9, the levels of two important types of provisions — the possibility to buy cheap maize from the farm and the size of the labourers' own piece of land — are related to the wage levels of the three most common types of permanent labourers (dairy workers, farm workers and drivers).

As far as the availability of cheap maize from the farms' stocks is concerned, Table 4.9 shows a positive instead of a negative relationship with the average wage level: on farms where cheap maize is available, the salaries of the farm workers are substantially higher. For dairy workers and drivers, it hardly makes any difference. In other words, lower wages for these two categories of labourers are not compensated by a provision like the availibility of cheap maize.

Regarding the labourers' own plot, there tends to be a weak relationship with the labourers' wage levels (Table 4.9). If the category of one acre or more is sub-divided into a

Table 4.9
Permanent labourers: wage level, by level of provisions (sh/month)

provision	dairy workers N	dairy workers wage	farm workers N	farm workers wage	drivers N	drivers wage
cheap maize from farm						
• not available	14	341	9	279	14	501
• available	28	355	18	359	27	489
own plot						
• less than 1 acre	21	360	12	340	18	513
• 1 acre or more	21	340	15	326	22	500

Source· Trans Nzoia Large Farm Survey 1989

category of one acre and a category of more than one acre (11 cases with on average 1.9 acres), it appears that the salaries of the labourers in the latter category are between sh.30/- and sh.50/- lower than the figures presented in the bottom row of Table 4.9. Hence, to a limited extent, lower salaries are compensated by a larger piece of land for the permanent labourers.

4.3 Casual labourers

Information regarding the casual labourers on the large farms was obtained from two sources. In the general questionnaire, the owners/managers were asked about the numbers of casuals during peak periods, the sources of recruitment, wage levels for specific tasks, and provisions. From the farms' administrations of the casual labourers it was possible to obtain detailed information concerning numbers, payments and sources of recruitment. These data were obtained from 20 farms and were collected per month for the period March 1988 to February 1989, i.e. the complete maize cycle of that year. The average size of these farms was 1025 acres, against 711 acres for the total sample.

Numbers

As mentioned before, the demand for casual labourers is related to the maize cycle. Generally, they are specially needed during weeding, top-dressing and detussling of seed maize, and harvesting. The latter activity consists of two stages: first cutting and stocking of the maize stems (usually in October-November), and then processing, usually in January. It is important to know that the level of mechanization was very low in 1989. In fact, all stages in the maize cycle, except ploughing, were mainly done by hand. Moreover, farm owners and managers were complaining of the sharply risen prices of machinery and spare parts, forcing them to hire even more casual labour than usual.

Figure 2 shows the monthly fluctuations of the average number of casual labourers per farm as well as the average total number of labour days per farm. Most striking perhaps is

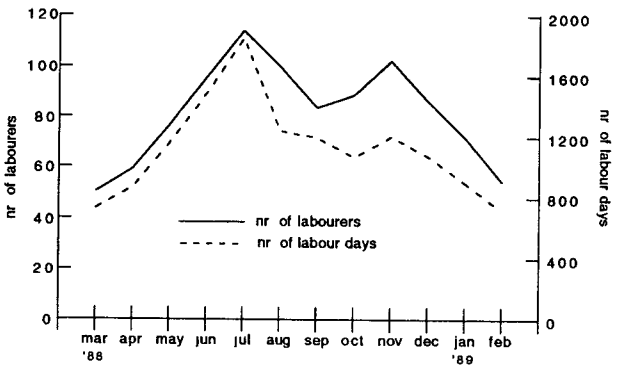


Figure 2
Average number of casual labourers and labour days per farm, by month

Note The figure is based on data from 20 farms, 13 of which had complete labourers administrations, while in the remaining ones 1 to 3 months were missing (see Section 3.2, footnote 3, p. 22)
Source Appendix 2, Table A6)

that during the months which are known to be the leanest ones regarding casual labour, i.e. February and March, some 50 casuals per farm were still employed, with a total of over 700 labour days per farm. Thus, on average, each labourer worked 14 days during these two months.

As outlined in Section 2.2, the maize cycle has two labour peaks, one for weeding, top-dressing and detussling, and one for harvesting. In 1988, the first peak took place during the months of June, July and August (Figure 2). Especially July was a busy month, because the seed maize has to be detussled during a relatively short time. During that month, the 20 farms employed on average 114 labourers, who performed 1850 working days, i.e. 16 days per labourer per farm. The second peak occurred in November, when the maize was cut and stocked. This is all done by hand. About 100 labourers per farm worked on average 1200 days, i.e. 12 days per labourer. Thus, during this second labour peak, the 'average' labourer worked 25 per cent fewer days than during the first labour peak, which may be due to his/her own harvest activities. For the processing of the maize, which is usually done in January, less labourers are needed.

If the 'shape' of Figure 2 is compared with what is considered as the general picture regarding the seasonality of labour in Trans Nzoia (Section 2.2), two points should be mentioned. First, as far as the number of labourers is concerned the figure does indeed show two labour peaks during the maize cycle, one in July and one in November. But if one looks at the number of labour days, there is in fact only one clear peak, notably in July.

Second, 'idle periods' in the sense that hardly any casual labourers are needed do not occur, at least not on the really large farms. Even during the leanest periods quite a number of casuals are employed.

Table 4.10 shows the number of labourers and labour days for farms of different sizes. It turns out that there is a relationship between farm size or acreage under maize on the one hand and number of labourers and of labour days on the other. This makes it possible to make a crude estimation of the number of casual labourers on the large farms in the whole district.[5]

On average, i.e. during a whole year, about 12,000 labourers per month were estimated to be employed on the (about 220) farms of 100 acres and more in Trans Nzoia. During the peak labour month, July, the number of labourers rose to over 17,000. During the leanest labour month, February, about 7,500 people still worked on the large farms. Regarding the number of working days, these were on average about 170,000 per month, with a peak of 275,000 in July and a minimum of over 100,000 in February.

Table 4.10
Casual labourers: number of labourers and labour days per month, by farm size (20 farms)

size (acres)	N	average farm size (acres)	average maize acreage*	aver. number of labourers per farm	aver. number of labour days per farm	aver. nr. of labour days per labourer
200-499	6	343	109	37	395	11
500-999	6	821	150	65	749	12
1000+	7	1912	454	144	2185	15

* Commercial maize plus seed maize.
Source: Appendix 2, Table A6

Table 4.10 also shows that on larger farms labourers work more days per month than on smaller farms (right-hand column). In other words, there is a smaller turn-over of labourers on larger farms. This points to a higher degree of labour continuity on these farms (which is confirmed in the next sections).

It is not always easy to find enough casual labourers on the own farm during peak periods. This applies especially to those farms located in a region with few subdivided farms. An example is the area between Kitale and Endebess (see Map 2, p. 23), where several very large farms are located. During peak periods labourers have to be found from rather far away, to be collected with trucks and after a day's work to be brought back again. On one of the farms where coffee was cultivated, it was very difficult to get enough labour

5 The procedure is as follows. The ratio between the average farm size of the total farm sample (711 acres) and the sample of the 20 farms (1025 acres) is 0.69 (if the acreage under maize, i.e. commercial maize plus seed maize, is used, the figure would be the same). This figure is used to transform a value for the 20 farms into a value for the 46 farms. Next, this recalculated value is multiplied by 219, i.e. the estimated number of farms in Trans Nzoia with a size of 100 acres or more.

for coffee-picking, because it coincided with labour peaks involving other crops, such as sunflowers.

Sources of recruitment
Casual labourers are recruited from various sources (Table 4.11). In first instance, family members of the permanent labourers are hired. During the relatively lean months, the main part of the labour needs on the farms can be fulfilled in this way.[6] During peak periods, however, other sources have to be tapped. On farms with resident casuals, i.e. casual labourers who are living on the farm (squatters and/or 'regular casuals'), these people form the second source of casual labour supply. Relatively few labourers from outside are needed on these farms, because many of the resident casuals and their household members are obliged to work for the farm owner if needed, on pain of being sent away. According to the farm owners/managers, only about 10 per cent of the labourers during peak periods comes from outside the farm.

Table 4.11
Casual labourers: sources of recruitment during peak periods, by farm size (all farms)

(N=)	total (45*)	100-199 (13)	200-499 (13)	500-999 (10*)	1000+ (9)
1) average number of casuals during peak periods	139	58	84	140	334
2) sources of recruitment (%)					
• family members of perm. lab.s	30	12	29	36	32
• 'casuals-on-the-farm'	11	-	-	7	20
• from outside	59	88	71	57	48
total	100	100	100	100	100

* There was one farm in the 500-999 acres category without any casual labourers.
Source: Trans Nzoia Large Farm Survey 1989

As said, many farms have to attract quite a number of casual labourers from outside during these periods. This applies especially to the smaller farms, as these have relatively few permanent labourers and usually no resident casuals. About 60 per cent of the casual labourers on all farms came from outside during peak periods, but for the farms in the lowest size category this figure amounted to almost 90 per cent (Table 4.11). The largest farms were able to recruit about half of the casuals needed during peak periods from the farm itself. In other words, in the category of 100-199 acres, the ratio between resident casuals and non-resident casuals (i.e., from outside the farm) during peak periods was about 1:7, but in the category of 1000 acres and more it was to 1:1.

Almost all non-resident casuals are living on nearby subdivided farms (former company farms, former co-operative farms, settlement schemes). On average, the distance

6 For the 20 farms with labourers administrations, 87 per cent of the casual labourers in March were recruited from this source.

between the homesteads of the non-resident casuals and the large farm where they go to work was 2.5 kilometers. In other words, the large majority of these casuals lived within walking distance and no transport had to be arranged by the large farm owner/manager.

Continuity in labour supply

From the data of the labourers administrations it is possible to calculate for each labourer the number of days (s)he worked during a whole year. This was done for 17 farms, i.e. the 13 farms with a complete administration and four farms of which only one month was missing (leading to a very slight underestimation).[7] Thus, a sample of 1685 labourers was obtained. First, a listing was made of the total number of days each labourer worked during the period under investigation (March 1988 to February 1989). Next, a classification according to the number of days worked was constructed. The classification consists of three categories: up to 60 days (two months), between 60 and 180 days (two to six months), and more than 180 days. For each category, number of labour days, total wages and area of recruitment were determined. The results are shown in Table 4.12.

During the twelve months under investigation, the 1685 labourers worked on average 97 days. First, there is the category of labourers who worked only now and then on the farms. In Table 4.12, this is the group with a maximum of 60 labour days. Almost half of the labourers belong to this group, performing only 11 per cent of the total number of labour days. On average, they worked for about four weeks, resulting in very modest earnings from this source of income. It is likely that most of these people were recruited during peak labour periods. Nevertheless, Table 4.12 shows that the majority of them (60 per cent) lived on the farms where they worked. If this figure is compared with the estimates by the owners/managers regarding the numbers and recruitment areas of the casual labourers during peak periods (Table 4.11), one must conclude that during peak labour periods the number of casuals recruited from outside the farms is smaller than is generally assumed.[8]

Table 4.12
Casual labourers: labour days, earnings and residency, by number of days worked per labourer

nr. of days worked per labourer	number of labourers N	%	total number of days worked N	%	aver. nr. of days worked	average earnings per labourer (sh)	residency: % living on farm
1-60	814	48	18,722	11	23	318	60
61-180	509	30	55,481	33	109	1427	80
181+	362	22	93,758	56	259	3641	92
total	1685	100	167,961	100	97	1374	73

Source: Trans Nzoia Large Farm Survey 1989.

7 The average size of these 17 farms was 1070 acres.

8 Comparison with Table 4.11 should be restricted to the farms in the two largest size categories. The average size of these farms is 1328 acres and the percentage of labourers recruited during peak labour periods from outside the farms is 47 per cent.

At the other extreme, we find the group of workers performing work on one and the same farm during at least 181 days. This applies to one-fifth of the sampled labourers. For this group, the income from casual labour was quite substantial. Apparently, the large majority of them were either family members of the permanent labourers or resident casuals.

Further sub-division of the group of casual labourers who worked at least 181 days on the same farm learned that almost ten per cent of these casuals performed at least 270 days (nine or ten months) of labour for the farm owner. The large majority of this group belong to the people who had been recruited as casuals on a more or less permanent basis, i.e. the group of 'regular casuals'.

Perhaps most striking in Table 4.12 is the fact that such a high percentage of labourers is recruited on the farms themselves. Of all casuals, almost three-quarters were living on the farm where they worked.[9] Especially those who performed casual labour very often had the farm as their place of residence. Above (Figure 2) we learned that there is a more or less stable amount of 'permanent' casual labour to do on the farms. We can now add that this is done by farm residents.

Wages

Information on wages comes from two sources. First, in the general survey questions were asked regarding the wage levels for the three main activities of casual labourers, i.e. weeding, detussling and harvesting. As far as weeding is concerned, comparisons between farms are difficult because wages are paid per day, per acre or per line (of various lengths). Detussling is mainly done on the larger farms (500 acres or more) and is usually paid per day. Finally, wages for harvesting are, with the exception of two farms, paid per bag of cobs. The second source is the labourers administrations, from which exact payments per labour day could be calculated. What follows is based on both sources.

From the general questionnaire, the average daily wage for either weeding or detussling appeared to be sh.13/-. This is below the legal daily wage as set by the government in 1988/89, which was sh.14/90. On 20 per cent of the farms (including the ADC-farms), daily wages were according to this level, on another 20 per cent wages were higher, but on the remaining 60 per cent wages were below the legal minimum. The lowest daily wage found was only sh.8/-, the highest amounted to sh.20/-. All the others were found in the range between sh.10/- and sh.15/-. If calculated per acre, weeding wages also appeared to vary considerably. On average, sh.87/- per acre could be earned, ranging from sh.60/- to sh.120/-.

Harvesting was paid per bag of cobs. The usual wage in 1989 was sh.3/- per bag and that was also the average wage on the 46 farms. However, on 19 per cent of the farms, wages were higher, while on 23 per cent the payment for one bag of cobs was less than the average. The lowest wage found was sh.2/- per bag (four farms), the highest was sh.5/- (one farm).

9 It should be noted that the 17 farms under investigation are not representative for the 46 farms of the total farm sample. For instance, there is one farm with very many (i.e. 300) squatter households included in the present sub-sample, so the percentage of labourers living on the farm may be too high.

To some extent, wages vary according to the supply of labour. One respondent stated that, depending on the number of labourers, wages for detussling varied between 10 to 15 shilling per day. For the same reason, coffee-picking on one of the farms was rewarded with either six or seven shilling per *debe*. Furthermore, two respondents mentioned that if many labourers were available, the wage for harvesting was sh.2/50 and otherwise sh.3/- per bag of cobs.

From the second source — the labourers administrations — the average earnings per labour day could be calculated. In the period from March 1988 to February 1989, this appeared to be sh.12/40. This is less than the average of sh.13/60 which was based on what the owners/managers had mentioned. However, the two figures do not necessarily conflict with each other, since the figures from the labourers administrations concern not only daily wages but also payments based on piece rates. When asked why wage levels were below the legal minimum, several respondents answered that 'their' casuals worked fewer hours per day than the legal level (7am to 2pm).

Because of the reasons mentioned in the beginning of this section, it is difficult to compare the wage levels for the different farm sizes. Only for the figures regarding harvesting enough cases are available for drawing comparisons. Table 4.13 shows that payments are somewhat better on the farms with a size of 100 to 200 acres. Between the other three size categories, the differences are small, however. In other words, based on these figures, there is no relationship between farm size on the one hand and wage level for casual labour on the other.

Table 4.13
Casual labourers: payments for maize harvesting, by farm size (shillings per bag of cobs)

(N=)	total (43)	100-199 (12)	200-499 (13)	500-999 (10)	1000+* (8)
average	3.04	3.29	3.02	2.83	2.94

* The average payment on the two ADC farms was sh.2/75.
Source: Trans Nzoia Large Farm Survey 1989.

Provisions

Like the permanent labourers, nearly all casuals are provided with some basic medical provisions. In practice, this usually means the provision of first aid and, if needed, transport to a hospital. On several farms, the casual labourers — i.e. both the resident casuals and the non-resident casuals — were able to buy maize and milk from the farm stores. On nearly half of the farms, maize could be bought at an average price of sh.36/- per *debe* (Table 4.14). This was the same price as paid by the permanent labourers. Milk was sold on only 17 per cent of the farms. The average price the casuals had to pay was sh.3/10 per litre, which was considerably below the market price.

Table 4.14
Casual labourers: provisions, by farm size

(N=)	total (45**)	100-199 (13)	200-499 (13)	500-999 (10**)	1000+* (9)
sales of maize					
• % of farms	46	31	54	36	67
• average price (sh/*debe*)***	36	35	36	33	38
sales of milk					
• % of farms	17	-	23	9	44
• average price (sh/litre)***	3.1	-	2.8	3.0	3.4

* The averages for the two ADC-farms were 34 sh/*debe* and 3.1 sh/litre, respectively.
** One farm in the 500-999 acres category had no casual labourers.
*** Only those farms where maize/milk is sold
Source: Trans Nzoia Large Farm Survey 1989

Sales of maize and milk to casual labourers are not clearly related to farm size (Table 4.14), although both types of sales were most frequent on the largest farms. Milk sales did not occur at all on the smallest farms. As mentioned in the previous chapter, this may be rather obvious, because these farms cannot keep many cows.[10]

On one-third of the farms, the casual labourers received some gifts of food each year. As with the permanent labourers, this mainly took the form of one to five kilograms of meat at Christmas (Table 4.15). Maize, milk and sugar were given on only a few farms. On one farm, the owner sometimes gave some money in order to buy food. From Table 4.15 one might conclude that the owners of larger farms are more prone to give their casuals something extra than the ones on smaller farms.

Table 4.15
Casual labourers: gifts of food, by farm size (% of farms)

(N=)	total (45*)	100-199 (13)	200-499 (13)	500-999 (10*)	1000+ (9)
• maize	9	15	8	-	11
• milk	7	-	-	30	-
• meat	29	15	15	40	56
• sugar	7	8	-	-	22
• other**	2	-	-	-	11

* One farm in the 500-999 acres category had no casual labourers.
** Tea leaves (1 case).
Source: Trans Nzoia Large Farm Survey 1989.

10 It is not possible to compare the average prices between the four size categories, because numbers are too small.

Farm owners differ considerably concerning extra rewards for the casual labourers. On most farms, the casuals did not receive anything extra. On the other hand, one farmer gave four *debes* of maize, four kilograms of meat and two kilograms of sugar 'after completion of the work'.

Resident and non-resident casual labourers

As the present chapter deals with casual labourers from the large farms' perspective, all casuals were treated sofar as one group. However, as outlined in Chapter 3, two categories of casual labourers can be distinguished: resident casuals (living on the large farms) and non-resident casuals (living outside the large farms). Moreover, in Section 2.3 mention was made of two categories of resident casuals: the squatters and the so-called 'regular casuals'. However, from the viewpoint of labour opportunities, wages and provisions, the latter two groups are in a similar position. Now we will treat resident and non-resident casuals separately for two reasons: (1) the resident casuals have better access to casual work and usually enjoy the same provisions as the permanent labourers, and (2) the non-resident casuals do not face the restrictions regarding the use of their plots and carrying out of work outside the farms. Thus, regarding the first point, the casuals on the farm may be better-off, but concerning the second point the opposite may be the case.

On at least seven of the 46 sampled farms, casual labourers and their families were living on the farm itself, their numbers ranging from seven on a farm of 815 acres to 300 on one of the largest farms of the sample, and involving 60 to 2000 persons, respectively. On nine other farms, there had been squatters in the past. In seven cases they had been removed, mostly in the 1984-86 period. Of the two remaining cases, on one farm they were given part of the farm in 1977, while on the other there had been ten households of whom some disappeared because of the death of the labourer and others bought land from other farms. Squatters are still regarded by many farm owners as a potential threat. As one respondent mentioned, sons of permanent labourers were not encouraged to work on the farm 'as they may become squatters'. Concerning the farms where squatters were present during the survey, it was not known how long they had been living there.

As said, resident casuals usually enjoy the same benefits as the permanent labourers. On most of these farms (86 per cent), a piece of land was provided by the farm owner, sometimes of the same size as that for the permanent labourers, but on average smaller. On one farm, they had only a small garden at their disposal, while the permanent workers were provided with half an acre there. Concerning the sales of maize and milk, gifts and medical services, there was no difference between these casuals and the permanent labourers.

On some farms, non-residential casual workers could also benefit from some provisions. For instance, on almost half the farms they were able to buy relatively cheap maize from the farm's stock, on eight farms cheap milk was available, while basic medical aid was provided on most farms as a standard facility. Since these workers are recruited from outside the farm, it is obvious that none of these labourers had access to a plot on the farm's land.

4.4 Conclusions

Based on the results of the present study, it was estimated that in 1989 between 3,500 and 4,000 people in Trans Nzoia were employed as permanent labourers on large farms. Many of these employees performed types of labour that were not related with specific agricultural activities (notably the farm workers, watchmen, drivers, overseers, office workers and mechanics). The category of dairy workers forms an exception, as the number of these employees is related to the importance of dairying on the farms. In other words, an increase of the number of permanent labourers in the district can be realized with an increase of dairy activities. From our data, it is possible to estimate the growth in employment for dairy workers as a result of an extension of the land used for grazing (in other words, given the same, low level of mechanization). For example, an increase of the grazing surface of 25 per cent would need some 335 extra dairy workers in the district (i.e. on farms of 100 acres and more).[11] The number of casual labourers on the district's large farms in 1988/89 was estimated to range from a minimum of 7,500 during the leanest period (usually in February) to a maximum of more than 17,000 during the busiest period (usually in July). The fluctuations of the demand for casual labour are highly related to the maize cycle. Hence, a shift towards more maize cultivation would involve more employment for casual labourers. An increase of the area under maize (both commercial maize and seed maize) with 25 per cent would lead to an estimated increase of the casual labour force of some 1,850 persons the whole year through and about 4,000 during the (short) peak period.[12] With a 'formal sector' labour force of about 25,000 persons in 1989 (Kenya 1991b) and a total labour force of 154,000 persons in 1987 (Kenya 1989b), one may conclude that the possibilities for creating extra employment in Trans Nzoia by means of the large farm sector are limited.

In the study design, farm size was considered an important variable, as it was expected that provisions on larger farms would be better than on smaller farms. Table 4.16 offers a summary of wages and provisions for both permanent and casual labourers. For reasons of simplicity, the four size classes have been regrouped into two categories, i.e. up to 500 acres (the 'smaller' farms) and 500 acres and above (the 'larger' farms). As far as the wages for the permanent labourers are concerned, the table shows that in general wages are higher on larger farms. We have hypothesized that the relatively high average wage for the drivers on the smaller farms is due to the often familiar relationship of these people with the farm owners. Daily wages for casual labourers are also somewhat higher on the larger farms, but piece work such as harvesting is paid less. Provisions like a piece of land for the labourers and the possibility to buy cheap maize and/or milk from the farm are more frequently found on the larger farms. This applies to both the permanent and the casual labourers. Moreover, the average piece of land for the permanent labourers is also somewhat larger on the larger farms. The price the labourers have to pay for maize from the farm is the

11 This estimation is based on the assumption of a linear relationship between acreage used for grazing (rough grazing plus improved grazing) and the number of dairy workers, and can be calculated from the data in Table 4.2 and Table 4.6.

12 Estimation based on the assumption that technology does not change. It should be noted that larger farms use relatively more casual labour for maize cultivation than smaller farms (see Table 4.10, p. 40), which may partly explain the higher maize yields on the larger farms (see Table 4 3, p 32).

Table 4.16
Permanent and casual labourers: summary of wages and provisions, by farm size*

			farm size (acres): 100-499 (N=26)	500+ (N=20)
wages				
• permanent labourers	= dairy workers (sh/month)		349	389
	= farm workers (sh/month)		290	375
	= drivers (sh/month)		531	514
• casual labourers	= weeding/detussling (sh/day)		12.8	13.8
	= harvesting (sh/bag of cobs)		3.16	2.88
provisions				
• permanent labourers	= piece of land:	- % of farms	92	100
		- size (acres)	0.9	1.1
	= sales of maize:	- % of farms	67	78
		- price (sh/*debe*)	34	36
	= sales of milk:	- % of farms	17	50
		- price (sh/litre)	2.65	3.25
• casual labourers	= sales of maize:	- % of farms	43	50
		- price (sh/*debe*)	36	35
	= sales of milk:	- % of farms	13	25

* The averages only apply to the farms for which the various variables are applicable
Source: Sections 4.2 and 4.3

Table 4.17
Provisions for labourers, by labourers category

	permanent labourers (N=46)	resident casuals (N=7)	non-resident casuals (N=46)
• cheap maize from farm (% of farms)	70	86	46
• cheap milk from farm (% of farms)	32	29	17
• piece of land (% of farms)	95	86	-
• size of piece of land (acres)*	1.0	0.7**	-

* Only those farms where the labourers have a piece of land
** Based on six cases, as one case is missing.
Source: Trans Nzoia Large Farm Survey 1989.

same, but milk is more expensive on the larger farms. The general conclusion is that in terms of both wages and provisions, the labourers are generally better-off on larger farms.

In the study design, three categories of labourers were distinguished: permanent labourers (living on the farm), resident casual labourers (also living on the farm) and non-resident casual labourers (living outside the farm). As far as the two types of casual labourers are concerned, it was found that they usually enjoy the same facilities as the permanent labourers. Table 4.17 summarises the provisions for the three categories of labourers. One can conclude that from the perspective of the large farms, the permanent labourers could be considered as relatively better-off, certainly in comparison with the non-resident casuals. First of all, they had a regular income. On most farms the permanent labourers could buy relatively cheap maize from the farm's stock. Moreover, they were provided with one or more extras in the form of gifts of food. On one-third of the farms they could also buy cheap milk. All these benefits apply to the resident casuals as well. The only difference between them and the permanent labourers was the smaller plot they had at their disposal. Of course, this is not to say that households of permanent labourers are in a better economic position than households of resident casuals and households of non-resident casuals. For instance, both categories of labourers living on the farm as well as their family members are usually not permitted to work outside the farm. This puts severe limitations on the households' possibilities to obtain an income other than from the labour on 'their' large farm. For a valid comparison of the economic situation of the three groups it is necessary to include all sources of income. This is done in the next chapter.

5 Household resources

5.1 Introduction

In this and the coming chapters, the labourers' living conditions are discussed from the perspectives of the workers themselves, i.e. the data are derived from the main household survey and from the in-depth study (see Chapter 3). Three categories of labourers are compared: • 'permanent labourers', almost without exception living on the farms[1]; • 'resident casuals', employed on a casual basis and also living on the farms; and • 'non-resident casuals', also employed on a casual basis but not living on the farms. The rationale behind this categorization was presented in Chapter 3. For comparison purposes a fourth group of households is added, notably those in which nobody had performed any labour on a large farm during the year under investigation, the so-called 'non-labourers'.

Two types of household resources are distinguished in the present chapter: farming activities and rural employment.[2] Farming activities concern all agricultural acitivities of a primary nature, i.e. the production of food for self-subsistence, cash crops that are sold unprocessed, and livestock products, either for home consumption or for selling purposes. Rural employment is defined as all income-generating activities other than those directly related to the household's own farm production.[3] Thus, selling part of the maize harvest is not regarded as rural employment, but selling roasted maize cobs is. Because in the rural parts of Trans Nzoia income-generating opportunities outside the own household are found mainly on the large farms, rural employment is sub-divided into two types: agricultural wage labour (on large farms, and either permanent or casual) and non-agricultural employment. Within the latter category, a sub-division is made between regular employment and self-

1 There was for instance one administrative employee on one of the largest farms in the sample who was not living on the farm itself.

2 Potentially, there are two other sources. First, income derived from social networks, such as remittances and gifts. These are dealt with in Chapter 6. Second, income from renting houses and land. This appeared to be of no importance among the study population.

3 See for instance Tellegen 1993.

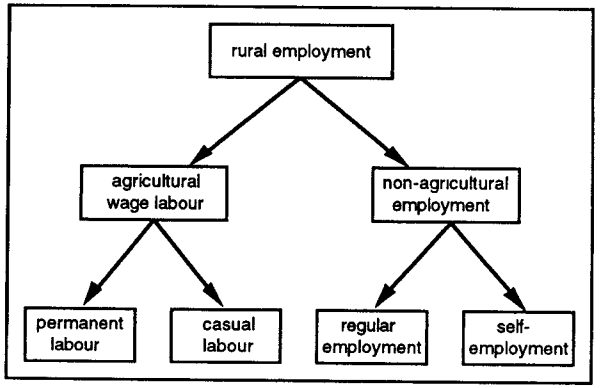


Figure 3
Components of rural employment

employment. Regular employment consists of wage labour outside the agricultural sector and has a more or less permanent character. Many households, however, do not have access to such jobs, only leaving them with some form of self-employment as an additional source of income. Figure 3 shows the components of 'rural employment' as they are dealt with in this book.

5.2 Farming activities

Table 5.1 shows the average size of the farm land that households had at their disposal. In general, labourers had smaller plots than non-labourers, while labourers living *on* the large farms had smaller plots than labourers not living on the farms. It is especially in the group of resident casuals that land was very scarce indeed. Half the households in this category were completely landless. These are the 'regular casuals' living in labour camps. The other half — the squatters — had on average about one acre for food production. At the other extreme we find the non-labourers, with an average plot size of almost five acres. The landless households in the non-labourers' category concern cases where the head (and possibly also the spouse) has some type of regular employment (such as teaching).

In order to gain insight into the available labour for farming tasks within the households, for each household the number of farm labour equivalents (f.l.e.'s) was calculated (Table 5.1).[4] The number of farm labour equivalents runs more or less parallel with plot size, being somewhat less than one f.l.e. per acre. With roughly twice the number of f.l.e.'s per acre, the resident casuals formed an exception.

4 The number of farm labour equivalents consists of the number of persons engaged in farming, standardized for age and according to the other activities they are involved in. For calculation, see Appendix 1.

Table 5.1
Land and labour, by study group

(N=)	permanent labourers (44)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
• average plot size (acres)	0.9*	0.5	2.1	4.8
• % landless households	19.1	49.0	13.3	8.6
• % households with more than 3 acres	8.5	-	20.6	48.6
• farm labour equivalents	1.2	0.9	1.8	2.8
• farm labour equivalents/acre	0.7	1.8	0.9	0.6

* Three permanent labourers owning a comparatively large piece of land (of 5.5, 15 and 26 acres, respectively) *outside* the farm have been excluded. If these cases are included, the average plot size becomes 1.8 acres.
Source: Appendix 2, Table A7

Maize is the main crop in Trans Nzoia. Almost all households with a plot of land cultivated maize, intercropped with beans (Table 5.2a). Some households living on the large farms were not allowed to plant maize because of the proximity of fields with seed maize. However, this restriction seemed to apply to relatively few households, because almost 90 per cent of the households living on a large farm and with access to a piece of farm land appeared to cultivate maize (Table A8, p. 119). Apart from maize and beans, irish potatoes, sweet potatoes and bananas are the other staple crops cultivated in Trans Nzoia. As can be seen in Table 5.2a, these crops were mainly grown by households living outside the large farms. Only about ten per cent of the households grew vegetables (other than the small

Table 5.2
Staple crops, by study group (%)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
a) % households cultivating:				
• maize	72.3	43.1	81.8	88.6
• beans	66.0	37.3	75.8	85.7
• other staples	8.5	11.8	46.7	48.6
b) value of production (KSh)				
• per household	1735	833	3484	7990
• per consumer unit*	348	162	667	1497

* A consumer unit (cu) is an adult equivalent based on energy requirements (see Appendix 1).
Source: Appendix 2, Tables A8-A9.

quantities of vegetables grown in the tiny home gardens[5]) and about five per cent any type of fruit. It is noteworthy that in only one of the 98 households living *on* the large farms some vegetables were cultivated and in not a single one fruits (Table A8). With the exception of one household cultivating some sugar cane, typical cash crops were not cultivated at all in the sampled households. However, many households sold some staple crops now and then in order to obtain some cash.

Table 5.2b shows the estimated value of staple production.[6] It is not surprising that the production value, either measured per household or per consumer unit, in the group of resident casuals was very low indeed and among the non-labourers by far the highest. In other words, labourers, and the ones living on the large farms in particular, produced much less food than non-labourers.

The answers on the question to what degree the household was usually able to grow enough food to feed the family throughout the year, confirmed the latter conclusion (Table 5.3). Only five per cent of the households living on the farms were usually self-sufficient regarding staple foods, against twenty per cent of the households in the category of non-resident casuals and over fifty per cent of the non-labourers. It follows that nearly all labourers on the large farms had to buy food. It is important then to note that many of the households living on the large farms had the possibility to buy maize on the farm at a relatively low price. This might help them to overcome periods of food shortages (see Chapter 4), but because wages were usually low on the large farms, one can nevertheless state that in terms of food security the households living on the large farms were in a quite unfavourable situation.[7]

Table 5.3
Food self-sufficiency, by study group

(N=)	permanent labourers (46)	resident casuals (51)	non-resident casuals (163)	non-labourers (34)
• always/usually enough	6.4	4.0	19.8	54.5
• sometimes enough	19.1	7.8	13.0	18.2
• not enough/insufficient	57.5	64.7	50.0	18.2
• does not farm	17.0	23.5	17.2	9.1
total	100	100	100	100

Source: Appendix 2, Table A10.

5 A home garden is a very small piece of land around the house with an estimated size of about 0.05 acres. Only some vegetables were usually grown there. Home gardens are therefore not regarded as a 'piece of land' as used in for instance Table 5.1.

6 The value of staple production has been calculated by estimating a price for 90 kg bags of maize, beans, sweet potatoes, irish potatoes and bunches of bananas, based on prices collected during the survey (for further information, see Appendix 1).

7 The percentage of resident casuals stating "does not farm" in Table 5.3 is much lower than the percentage of landless in Table 5.1. This can be explained by the fact that home gardens were not counted as a plot of land in Table 5.1, but obviously these households did grow some food crops.

Again not surprisingly, about 65 per cent of the households not able to grow enough food, mentioned lack of land as the main constraint (see Table A10, p. 121). This applied to 78 per cent of the permanent labourers and 86 per cent of the resident casuals. 'Not being allowed to grow certain crops' was mentioned by only ten per cent of the households living on the large farms.

Apart from the cultivation of food crops, some households also kept livestock other than poultry (Table 5.4). Livestock was concentrated in the households living outside the large farms, because households living on the large farms were not allowed to have livestock. The three households in the group of permanent labourers and the two in the group of resident casuals possessing cows kept their animals outside the large farm.

Table 5.4
Livestock, by study group

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (34)
• % households with livestock	64	3.7	47 9	57.1
• livestock equivalents per household	0.2	0.2	1.3	2.1*

* One household with almost 22 livestock equivalents is excluded here Otherwise, the average would be 2 9
Source· Appendix 2, Table A11

In order to compare households possessing different types of livestock, the number of livestock equivalents per household can be calculated.[8] This confirms the picture described above: households *on* the farm had on average only 0.2 livestock equivalents, against 1.3 livestock equivalents in the labourers' households living outside the large farms. Again (i.e., in addition to plot size and the value of crop production), the non-labourers are clearly in a better position than the labourers.

5.3 Rural employment

Data on permanent agricultural labour can be found in Appendix 2, Table A12 (p. 122). With a few exceptions, this economic activity is limited to the designated group of permanent labourers. Other kinds of economic activities, agricultural casual labour and non-agricultural employment, however, are to a greater or lesser extent spread over all groups. What follows in the present section therefore is a discussion of various aspects of these two categories of economic activities.

8 Grade cows, ungraded cows, bulls and oxen are equal to 1.0 livestock equivalent (l.e.), calves (grade and ungraded) 0.33 l.e., donkeys 0.70 l.e., sheep 0.20 l.e. and goats 0.14 l.e.

Agricultural casual labour

Table 5.5 presents some data on casual labour on the large farms in Trans Nzoia. In the labourers' households, on average 1.7 persons performed casual labour on large farms during the agricultural year of 1988/89 (i.e. from March 1988 to February 1989). Obviously, most persons engaged in this type of activity can be found in the two categories of households selected as such. Still, also in the households of the permanent labourers an average of 1.1 persons performed casual labour. These concerned the wives and in some cases older children of the heads (who worked as a permanent labourer).

Table 5.5
Agricultural casual labour, by study group*

	permanent labourers	resident casuals	non-resident casuals	non-labourers
• number of persons per household	1.1	1.7	1.9	-
• number of months per worker	6.0	8.1	6.0	-
• income per worker (sh)	1590	2901	1924	-
• income per working month/worker (sh)	325	358	321	-
• income per month per hh (sh)	292	609	609	-

* For N's, see Appendix 2, Table A13
Source: Appendix 2, Table A13

Each worker did casual labour during on average six to eight months (Table 5.5) These were not necessarily whole months, however, as can be deduced from the figures regarding the average income per worker per month. Basing ourselves on the average daily wage for weeding and detussling that was found in the farm survey[9] (sh.13/-), it follows that the labourers from the group of resident casuals worked for 28 days during those months. In other words, they did work for whole months. For the non-resident casuals and the permanent labourers this figure was 25 days. The latter figure, like the income figures in Table 5.5, indicates that also for the households of the permanent labourers casual labour was an important source of income.

Table A13 (p. 124) shows some more interesting features regarding casual labour on large farms. More than three-quarters of the labourers were engaged in seasonal activities like weeding, planting, harvesting and topdressing. This type of work provided them with a job for about five months a year. There were also casual labourers working as herdsman watchman, foreman, driver or office worker, types of employment one would not expect to be *casual* labour. Indeed, these people worked as a *casual* labourer for about ten months a year. This is in line with what was found in the farm survey, where ten per cent of the casual labourers appeared to work for at least 270 days a year.[10] Further calculation reveals that almost 60 per cent of the resident casuals worked that long. Of the non-resident casuals 34 per cent performed casual labour for nine months or more. Although this may have been

9 See Chapter 4, page 43.
10 See Chapter 4, page 43.

done on more than one large farm, it is nevertheless likely that at least some of them did so on one and the same farm. In other words, not only 'regular casuals' (recruited as casual labourers on a permanent basis and living on the farm) performed casual labour the whole year through, but some non-resident casuals did as well.

On average, the labourers in the three categories of casual labourers' households earned about sh.320-350 per working month (Table 5.5). Because the resident casuals worked more days per month than the casuals in the two other categories, their monthly income per labourer was also highest. On household level, monthly incomes were the same in the households of the resident casuals and the non-resident casuals and twice as high as in the households of the permanent labourers.

Non-agricultural employment

Because most households did not grow enough food to feed themselves throughout the year and casual labour provided them with an income for about half a year only, many households had to find other sources of income in order to satisfy basic needs. However, possibilities to find sources of income outside the farming sector are limited. For most types of non-agricultural wage labour some education is needed and many types of self-employment — like trading, running a business or baking and selling *mandazi* (a kind of doughnut) — require at least some starting capital. Agricultural wage labourers often lack both education and capital. This can explain the small number of persons in the households of the labourers living outside the farms engaged in non-agricultural employment, as is shown in Table 5.6. In the households living on the large farms, hardly anybody appeared to have a job outside the farming sector. This is not surprising, however, as farm owners generally forbid their resident-labourers to work outside the farm, on pain of being removed. In the non-labourers' households, on average almost one person was engaged in non-agricultural employment, mainly in wage labour.[11]

Table 5.6
Non-agricultural employment, by study group

(N=)	permanent labourers (46)	resident casuals (51)	non-resident casuals (163)	non-labourers (35)
nr. of workers per household				
• wage labour	0.1	0.1	0.4	0.7
• self-employment	-	0.1	0.2	0.2
total	0.1	0.2	0.6	0.9
income per household (sh)				
• wage labour	262	1,050	3,080	9,954
• self-employment	-	243	1,494	779
total	262	1,293	4,574	10,733

Source: Appendix 2, Table A14.

Despite the restrictions on working outside the large farms, a few persons from tl households of the resident casuals succeeded in doing so, resulting in an average annu income of almost sh.1300 per household in this group. Given the difficult circumstance this may look reasonable, but compared with the non-resident casuals and in particular tl non-labourers the amount of money earned this way was very modest indeed. For the pe manent labourers on the large farms this source of income was negligible. This is mo likely due to the fact that it was the head of the household who already had a permanent jc on the farm, but possibly also because the farm owners can control these people better th households of squatters living on the fringes of the farm.

The relatively high average income earned per worker in the group of non-laboure (see Table A14, p. 125) was caused by the comparatively large number of persons engag in jobs such as teaching, nursing and office work. For those jobs quite some education required and they were therefore in most cases not accessible to the group of non-reside casuals (see Table 3.6, p. 28).

Sexual division of labour

Table 5.7 shows some aspects of the sexual division of types of employment discussed the previous section. There are important differences between the three categories labourers' households on the one hand and the non-labourers' households on the other. the latter group very few women were engaged in rural employment. For the women in tl labourers' households, rural employment appeared to be very normal. The table also show however, that they had little choice as regards the type of employment, being mainly bour to casual labour on large farms.

Table 5.7
Sexual division of rural employment, by study group

	permanent labourers		resident casuals		non-resident casuals		non-labourers	
	Male	Female	Male	Female	Male	Female	Male	Fema
• nr. of persons involved	56	49	56	46	197	215	31	4
• idem, as % of all adult men/women	82	64	79	59	70	69	46	6
• % workers engaged in rur. casual labour	18	84	86	93	65	88	-	-
• % workers engaged in non-agric. empl.	2	6	9	2	24	6	74	50
• nr. of months worked (per worker)	11.1	6.4	10.1	5.4	7.9	6.1	9.7	6.5
• income per worker per month (sh)	462	253	463	298	615	340	1164	1350

Source: Appendix 2, Table A15.

[11] The very few self-employed people and, as a consequence, the very modest income from this source rather surprising. In the in-depth study, where this source of income (as well as other sources) was de with at much greater length, self-employment turned out to be more common than wage labour (s Tellegen, Verstrate & Foeken 1992, Tables 3.3 and 3.7). This applied in particular to the non-laboure It seems that households were more inclined to mention regular, steady jobs while they only menti less regular, less remunerative activities when especially asked about them. In other words, the figures Table 5.6 on self-employment may be an underestimation.

Except for the group of resident casuals, men more often had steady jobs than women (Table 5.7). Men also worked longer periods than women. This may be due to other tasks women have, such as the responsibility for food production and all kinds of domestic work. This leaves them less time to undertake economic activities outside the household.

The income of women per working month was much lower than that of men (the non-labourers' exception is based on only two women). This was partly caused by the different types of work women and men were engaged in. For example, men were involved in more regular types of casual labour and better paid wage labour for which some education is needed. Another reason can be that women worked fewer days per month than men. Finally, an often heard complaint during the survey was that even for the same type of work women were paid less than men.

The dependence of women on rural casual labour for obtaining some cash income implies that in general they are able to realize this only during specific periods of the year. Indeed, it was found that the peak labour requirements on the large farms — i.e. the planting and weeding period and the stocking of maize period — are mainly covered with female labourers.[12] Comparing these findings with the reported 'difficult months' (see Figure 4 below), it is clear that for women it was difficult to obtain cash during the months that were experienced as being the most 'difficult' ones in terms of food security, namely July and August. However, the peak in income from casual labour during the previous months (April, May and June) might help to buy food during this 'hungry season'.

Constraints in relation to rural employment

As part of the in-depth study, each respondent (with the exclusion of the non-labourers' category) was asked whether (s)he found it difficult to find work, and if so, why. For each main category of rural employment — rural casual labour, permanent agricultural labour, and non-agricultural employment — only the main constraint was asked for. Table 5.8 offers an overview.

Regarding casual labour on large farms, a large majority of the respondents mentioned the seasonal character of this type of labour as the main problem. On the other hand, 16 per cent had no problem finding casual labour, but almost 40 per cent of these were members of households of permanent labourers (Table A16, p. 127), and for these people it was much easier to get casual work than for those who were living outside a large farm. Lack of jobs as the main constraint was only mentioned by respondents living outside the large farms (Table A16). Nevertheless, it seemed that agricultural casual work was accessible for nearly all respondents. Many respondents, however, preferred casual work of a longer duration, so that a more regular income might be obtained.

Concerning permanent labour on large farms, the lack of jobs was mentioned most frequently as the main constraint (Table 5.8). This could also be induced by the fact that during the survey, a number of permanent labourers were turned into casual labourers by the farm owners or managers. They were still allowed to live on the farm, but turning them into casuals made it easier for the large farmers to remove them eventually or pay them less for

[12] See Tellegen, Verstrate & Foeken 1992, 32-33.

Table 5.8
Constraints mentioned in relation to rural employment, by type of activity (%, N=49)

	casual agricultural labour	permanent agricultural labour	non-agricultural employment
• seasonality	70	-	-
• lack of jobs	8	30	2
• no time	2	-	2
• distance	2	2	2
• have to know employer	2	12	2
• lack of capital	-	-	60
• not allowed by farm owner	-	2	20
• lack of skills	-	-	6
• other reasons	-	16	-
• difficult, but no reason mentioned	-	18	-
• no problem	16	16	6
• no answer	-	4	-
Total	100	100	100

Note: Farm labourers' households only
Source: Appendix 2, Table A16

the same work. Another constraint often mentioned was the long time before a large far owner was willing to employ somebody as a permanent labourer. Even casual laboure who had been working for more than ten years for the same farm owner and who we eager to become a permanent labourer were not easily offered a steady job. One of the con plaints several respondents mentioned was that 'you have to bribe the manager to become permanent', while other respondents told that the manager of the farm they worked on on employed people of his own ethnic group. In short, to become a permanent labourer on large farm was very difficult.

To start a certain business, capital investments are needed, but most households lacke the means to do so. This explains the high number of respondents mentioning lack of capit as the main constraint regarding non-agricultural employment (Table 5.8). Quite a number respondents had definite ideas about the type of self-employment they would like to unde take. As one respondent said, 'there are no shops around, so enough customers; the on problem is capital'. A majority of the permanent labourers and about 40 per cent of the res dent casuals mentioned as main constraint that they were not allowed to do non-agricultur work (Table A16). As noted before, many large farm owners forced 'their' permanents an if present, 'their' casuals to work solely on the farm, under penalty of being dismissed sent away. There were also some respondents who said that it was no problem to find no agricultural employment, but all of these were located outside the large farms.

The respondents were also asked whether constraints regarding rural employme differed for men and women. Regarding agricultural casual labour, over half of the re pondents said that being a man or a woman made no difference in finding work. Others (per cent), however, stressed that women were more fit for such labour as planting and to dressing, while men were more often hired for heavier jobs, such as carrying bags of maiz Some respondents also stressed the existence of differences in wages for men and wome

Two respondents mentioned even differences of sh.10-15 per day. It was not clear whether this was a general phenomenon or whether it occurred only in exceptional cases.

Rather surprisingly, almost one-third of the respondents said that there were no differences between the sexes in finding a job as a permanent labourer on a large farm. Among the permanent workers on the farms, very few women — working as an administrative employee on one of the very large farms — could be found. In general, the type of work permanent labourers performed was considered to be too heavy for women. Others said that many men did not allow their wives to work permanently because they had to be at home for domestic tasks and to take care of their husbands and children. The same applied to regular non-agricultural employment.

As far as self-employment was concerned, there were many types of work that were sex-bound. Some respondents, for instance, reported that selling of maize and vege-tables could only be done by women because men were not allowed to carry edible goods. Other types of work, such as carpentry and masonry, were considered to be too hard for women.

5.4 Household income

Tables 5.9 and 5.10 provide information on the income situation of the households. As mentioned before, total household income comprises the value of the household's own farm activities (crop cultivation and livestock production), the income from agricultural labour (on large farms), and the income from non-agricultural employment (non-agricultural wage labour and self-employment). The household's cash income consists of the latter two categories, plus the earnings from farm sales (crops, animals, milk).[13] As could be expected from the discussion so far, by far the highest average income — both per household and per consumer unit — was found among the households of the non-labourers (Table 5.9). The households of the resident casuals clearly had the lowest incomes. In terms of cash income the differences between the four categories were smaller, however, because the income of the lower income groups (on the farm) consisted for a larger part of money income than the income of the households outside the farm. This can also be seen when looking at the

Table 5.9
Household income, by study group (sh)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
• total income per household	9,625	6,950	12,131	21,714
• total income per consumer unit	2,104	1,518	2,318	4,217
• cash income per consumer unit	1,698	1,363	1,484	2,497

Source: Appendix 2, Table A17

13 See Appendix 1 for the calculation of several of these income components.

Table 5.10
Composition of household income, by study group (%)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
• agricultural wage labour	78.7	80.4	41.5	-
• non-agricultural employment	0.7	6.5	18.5	36.6
• farming income	20.6	13.1	40.0	63.4
total	100	100	100	100
• income from agricultural wage labour as % of household cash income	98	90	65	-

Source: Appendix 2, Table A18.

composition of the total household income, as shown in Table 5.10. The income of th households *on* the large farms was derived from labour on those particular farms. Th remainder consisted of the households' own food production. Income from non-agricultur employment was negligible (permanent labourers) or very modest (resident casuals). Th other extreme was found with the non-labourers, who derived their income from farmin and non-agricultural employment. Finally, the non-resident casuals occupied an in-betwee position, with labour on large farms and their own farming being about equal components c their income. In conclusion then, household income was lower as the dependency on agr cultural wage labour was greater.

Table 5.10 also shows that 98 per cent of the monetary income of the permanei labourers' households was derived from the labour the household members performed o the farm they lived on. This consists of earnings from both permanent labour by the head c the household and casual labour by his family members. For the resident casuals, this figui was 90 per cent, while the non-resident derived 65 per cent of their cash income from labou on the farms. For these two groups, it concerns only casual labour.

In order to interpret the absolute income levels of the four study groups, the figure are compared with the average monthly consumption expenditures of *all* rural households i Kenya in July 1989 (i.e. at the time of the survey).[14] Two expenditures' figures ar presented in Table 5.11, one for the expenditures on food (which includes the value c home-produced food[15]) and one for the expenditures on all items, i.e. including clothing household goods, education, transport, etc. The latter expenditure level can be denoted a the *average livelihood level* of the rural population in Kenya, weighed for household size The average livelihood level in 1989 equaled a household income of about sh.12,000 pe

14 Calculated from the Rural Household Budget Survey 1981/82. For method of calculation, see Appendi 1.

15 It is not clear how the value of home-produced food has been calculated, i.e. either in terms of the mark value or in terms of the value of seed and fertilizer, and whether all home-produced food or only the no sold part of it was included. Therefore, it should be stressed that the comparison figures are at be indications.

Table 5.11
Monthly income and estimated monthly expenditures*, by study group (averages)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
• monthly income (sh/hh) (this survey)	802	579	1011	1714
• estimated monthly expenditures (sh/hh) (Rural Household Budget Survey 1981/2)				
- on food	678	678	840	840
- on all items	1028	1028	1328	1328

* Monthly expenditures refer to July 1989, are calculated from the Rural Household Budget Survey 1981/82 and are corrected for 1989 prices and household size. Because permanent labourers and resident casuals fall within one household size category and non-resident casuals and non-labourers in another, average expenditures are the same for these groups. The figures refer to the average actual expenditures of all rural households in Kenya and include the value of home-produced food, which makes them comparable with the income figures. For method of calculation, see Appendix 1

year. Although the expenditure figures are estimates, they nevertheless enable us to assess the livelihood level of the four study groups. Table 5.11 shows that the average monthly income of the resident casuals did not even reach the average level of food expenditures in rural Kenya, let alone the expenditures on all items. The average income of the permanent labourers and the non-resident casuals did exceed the average level of expenditures on food, but was lower than the total expenditure level. It is only in the group of non-labourers that income clearly exceeded the average expenditure level. The conclusion is that, even considering that income figures can never be more than a fairly rough estimation, the resident casuals in particular must be considered a very poor group.

5.6 Seasonality of income-generating activities

According to the general literature on seasonality, many rural households in Third World countries face one or two periods of 'stress' each year. Usually, this stress is felt in the form of depletion of food stocks and lack of money to buy necessary items (including food). The households of the in-depth survey were asked whether they had experienced 'difficult months' regarding their food situation during the twelve months prior to the interview. Figure 4 shows the responses referring to the labourers' households only (data on the group of non-labourers and on the different groups of labourers are presented in Appendix 2, Table A19, p. 130). It is clear that the period from June to September, and especially July and August, were felt to be 'difficult months'. Stores of food from the preceding harvest were depleted by then, while the new crop could not yet be harvested.

The main mechanism to cope with 'difficult months' is money with which the necessary food purchases can be done. As stated, money comes from three potential sources: farm sales, income from agricultural wage labour and income from non-agricultural

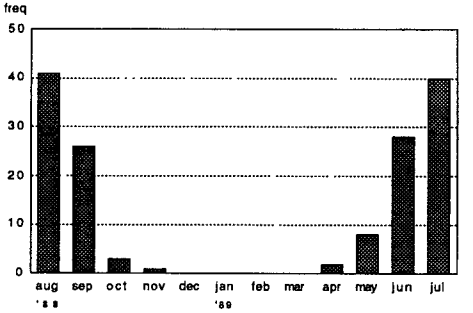


Figure 4
'Difficult months', as mentioned by the respondents
(farm labourers only; *source:* Appendix 2, Table A19)

employment. The monthly variations of the incomes from these sources are shown in Figure 5.

Farm sales consisted almost entirely of staples that were sold: maize, beans, irish potatoes, sweet potatoes and bananas. Typical commercial crops like fruits and sugar cane were hardly cultivated. It is obvious then, that the income derived from farm sales was highly seasonal, being concentrated in the period from December to March. Most households sold part of their yield immediately after the harvest, in some cases because of an urgent need for money, in other cases because of lack of storage facilities. The relatively high farm sales of the households in the group of non-labourers in January and March can be explained by the need to buy inputs for the new crop. The figure shows that most households living on the large farms were hardly able to sell anything. Their harvests were simply too small, partly because of the small plots and partly because of the restrictions imposed on them regarding crop cultivation. However, these households still sold some part of their harvest, indicating an urgent need for cash.

The income from agricultural labour consists of the salaries of the permanent labourers on large farms and the daily earnings of casual labourers. The salaries of the permanent labourers were very stable throughout the year, at a level of about sh.350 per month (Table A20, p. 131). In other words, the fluctuations in the incomes from agricultural wage labour in Figure 5 actually reflect the fluctuations in the earnings from casual labour on the large farms in Trans Nzoia.

Figure 6 shows the average monthly earnings from casual labour on large farms aggregated for all labourers' households. A clear seasonal picture emerges. April, May and June 1989 were busy months, with such activities as planting and weeding. With about sh.450 per household, earnings reached an absolute peak in May. November and December 1988 formed another peak. This was a period of maize harvesting. The figure also shows

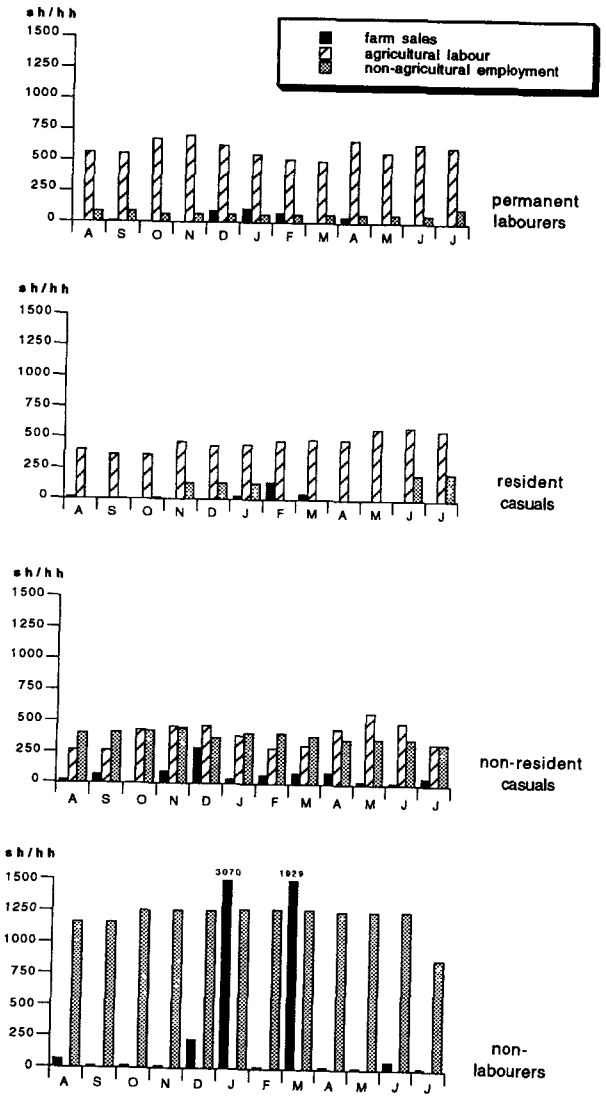


Figure 5
Monthly incomes from farm sales, agricultural wage labour and non-agricultural employment, by study group (sh)
(*Source:* Appendix 2, Table A20)

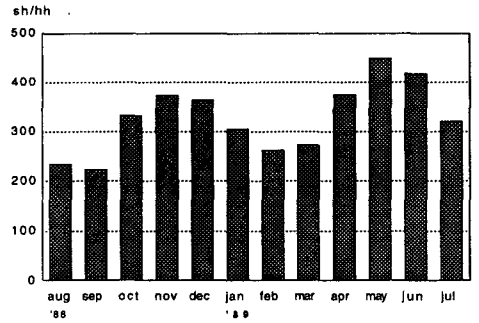


Figure 6
Monthly earnings from casual labour on large farms (sh)
(farm labourers only; *source:* Appendix 2, Table A20)

that August-September 1988 and February-March 1989 were the periods that casu labourers were least needed. Nevertheless, even in the leanest month (September), tl households of the study population earned an average of sh.253 from casual labou indicating there is always some casual labour to do on the large farms (Table A20).[16]

Income from non-agricultural employment comes from two sources: regular emplo ment and self-employment. The first is generally considered as the most secure way prevent seasonal stress. It is only in the group of non-labourers that both regular emplo ment and self-employment contributed substantially to the households' income. This is co firmed by Figure 5, and it also shows that this was a regular source of income the whc year through. As far as the non-resident casuals were concerned, their earnings from no agricultural employment did show some seasonality, which was caused by the month variations in the income from self-employment (Table A20, p. 131). These variations we small, however.

5.6 Squatters, regular casuals and landless

The successive District Development Plans always refer to two particularly vulnerat groups in Trans Nzoia, notably squatters and landless households.[17] In the present sectic special attention will be paid to these two groups. In order to do so, two sub-analyses w be carried out, one by means of a breakdown of the category of resident casuals into a su

16 The same conclusion was drawn in Section 4.3. Comparison of Figure 6 with the average numbe labour days from the farm survey (Figure 2, p. 39) shows that the highest labour peak in 1988 took pl in July, i.e. two months later than in 1989. Apparently, the maize cycle started in 1989 about one-an half month earlier than the year before, implying that households cannot rely in advance on cer earnings from casual labour in specific months.

17 See for instance Kenya 1980b, 12, and Kenya 1989b, 49.

group of squatters and a sub-group of regular casuals, and another one by dividing the category of non-resident casuals into sub-groups according to farm size, including a category of landless households.

Forty-five per cent of the group of resident casuals could be classified as squatters, the remainder being households of regular casuals. In Table 5.12 some characteristics of the two sub-groups are presented.[18] The two groups show certain similarities. First, they have very little land: 70 per cent and 86 per cent respectively had access to only one acre or less. Secondly, the average household income is low, particularly in the households of the squatters. Most or nearly all of the households' monetary income is derived from casual labour on large farms.

Table 5.12
'Squatters' and 'regular casuals': household resources

(N=)	'squatters' (23)	'regular casuals' (28)
• household size (persons)	8.1	6.9
• plot size (acres)	0.7	0.4
• household income (sh/cu)	1180	1796
• income from agricultural wage labour (sh/cu)	824	1568
• idem, as % of total cash income	86	95

Source: Trans Nzoia Household Survey 1989

In Table 5.13 the characteristics of the landless households[19] are listed in the column '0 acres'. For comparison, three different plot size classes have been added. All households are derived from the category of non-resident casuals, so the category of 'regular casuals' — of whom many households also have no land at their disposal — is excluded here. The table shows first of all that 45 per cent of the households of the non-resident casuals were either landless or near-landless (0.1-1.0 acres). Only one-fifth of the non-resident casuals had a plot of at least three acres (which is considered to be the absolute minimum plot size for an average Kenyan farming household in order to feed themselves). The table also reveals that it was in fact only the latter group that could be said to have a reasonable income, comparable with that of the non-labourers (and despite the comparatively large households in

[18] Regarding the study group of resident casuals, a sampling problem occurred. On only 3 of the 46 farms comprising the farm survey, enough households of this category were present for sampling purposes. As a result, the 'squatters' in Table 5.12 are from one (very) large farm only. There is no reason to believe, however, that their situation is different from the 'general squatters' in the district. Concerning the 'regular casuals', these households were selected on three large farms, of which the majority on a very large ADC-farm. As the level of provisions for the labourers on the two ADC-farms in the farm survey was generally above average (see Chapter 4), the findings concerning the 'regular casuals' in this section might even deviate in a positive direction from the general situation of the 'regular casuals' in Trans Nzoia.

[19] Landless households are defined as households with no land at all or with only a home garden (estimated at 0.05 acres).

Table 5.13
'Landless' and 'non-landless' households: household resources

plot size (acres) (N=)	0 (22)	0.1-1.0 (52)	1.1-2.9 (57)	3.0+ (34)
• household size (persons)	7.0	8.1	8.8	10.8
• plot size (acres)	0	0.7	2.1	5.8
• household income (sh/cu)	1516	1640	2351	3818
• income from agricultural wage labour (sh/cu)	754	783	768	612
• idem, as % of household cash income	55.5	67.4	59.0	26.0

Source: Trans Nzoia Household Survey 1989.

this group). Total household incomes were particularly low among the landless and near landless households and about the same as that of the 'regular casuals'. In terms of cas income, agricultural wage labour (read: casual labour) contributed about 60 per cent to that.

The latter figure was lower than expected, but this can easily be explained. Among th landless and near-landless households there was a group with a relatively high income fror non-agricultural employment, such as teachers, extension officers, etc., or people with business of some size. If such cases are excluded, the really poor (near-)landless emerge i.e. those who are often mentioned as one of the vulnerable groups.[20] Three-quarters of th (near-)landless households appeared to belong to this group. Since they are defined a having a very low income from non-agricultural employment, it is not surprising that the depended to a very large extent on casual labour on the large farms in order to make a living over 90 per cent of their cash incomes was derived from this source.

5.7 Conclusions

In this chapter, the three major elements comprising household income were discussed: th income from the households' own farming activities, the income from labour on large farm (either permanent or casual) and the income from non-agricultural employment (eithe regular employment or self-employment). The households living on the large farms an working there as casual labourers (the resident casuals) appeared to be the poorest grou There are several reasons for this. First, these households often did not have access to lan for food cultivation, while those who had could avail of only very small plots. Half of ther were in fact landless. Thus, average farm production was very small indeed. Secondly, the were usually unable to engage in non-agricultural employment; mainly because the larg farm owners did not allow them to work outside the farm, but also because of their low leve of education and lack of starting capital. Hence, for their income the resident casual depended almost entirely on casual labour on the farm they lived on. Sixty per cent of thes

[20] To be precise, these 'poor' (near-)landless are defined as those households in the 0 and 0.1-1.0 acr categories with a combined annual income from non-agricultural income and/or farming (livestock) whic is less than sh.500/cu.

people worked for at least 270 days on 'their' farm during the year under review. For others, labour and wage income was of a more irregular character. But for all casual labourers applied that it is always an insecure source of income, dependent on factors such as weather conditions, possible mechanisation and possible dismissal.

Although the permanent labourers experienced some of the same disadvantages as the resident casuals — such as the ban on working outside the farm and the restrictions regarding the use of their own plot — they were nevertheless in a somewhat better economic position. First, they had a regular income, be it that the average salary was quite low. Secondly, they had access to a larger plot than the resident casuals (although still only one acre on average) and were able to realize a higher agricultural production. Moreover, family members of the head of the household (who was the permanent labourer) performed casual labour at the large farm they lived on, just as the resident casuals did. All this resulted in an income that was almost forty per cent higher than that of the resident casuals.

The next group, in increasing sequence of average income level, were the non-resident casuals. In comparison with the permanent labourers and the resident casuals they had larger plots and were thus able to realize a higher agricultural production. They also had easier access to non-agricultural employment. As a result, their income was on average more than fifty per cent higher than that of the resident casuals. Compared with the permanent labourers, however, their income was only ten per cent higher.

Finally, with a household income that was eighty per cent higher than that of the former group, the category of non-labourers' households was by far the wealthiest. They obtained this income mainly from two sources. The first source concerned their own farms, because the average plot size of these farms was much higher than that of the other three study groups. The second source was non-agricultural employment, in particular regular employment. The members of the non-labourers' households had a much higher educational level than in the other groups, which qualified them for better-paid jobs.

It must be noted that the groups of (i) 'non-resident casuals' and (ii) 'non-labourers' consisted of farming households living outside the farms who (i) either or (ii) not performed casual labour on the index farm. The result should not be interpreted as if it is better for casual labourers to go and live outside the farm (in which case they may even lose the right to work there); instead, the results mean that among the smallholders surrounding the large farms, it is the poorer ones who tend to be engaged in casual work on the large farms. Still, the poorer households are not as poor as casuals who live on the farm, for reasons indicated above.

Sub-analysis showed that within this group of resident casuals, a sub-division could be made between 'squatters' and 'regular casuals', the former being the poorest group, particularly in terms of the household's monetary income. This was due to the fact that, although they live on the large farms, they have less access to casual work than the regular casuals living in the labour camp and the family members of the permanent labourers. Moreover, they are usually not allowed by the farm owner to do casual work on another farm. In monetary terms, the regular casuals appeared to have a household income that was almost comparable with that of the permanent labourers. Nevertheless, the latter were less poor because they could dispose of a larger plot for growing their own food.

Finally, most of the landless as well as the near-landless households living outside t large farms also suffered severely from a lack of resources. They usually perform casu labour during the peak periods only. Hence, the (near-)absence of access to land forc these people to try to find other kinds of (marginal) income sources, but, as was stat earlier, these are not easy to find, and certainly not in the rural areas.

6 Social networks[1]

Social networks are generally regarded an important mechanism to prevent or solve seasonal stress.[2] This can take several forms. Labour shortages in agriculture may be lessened by relatives who come and help during peak periods. Family members living elsewhere may be asked to provide temporary shelter for one or more children, so that less mouths have to be fed. Finally, food (or money to buy food) may be obtained through family ties.

A study carried out in 1986-87 revealed that the majority of the population in Trans Nzoia District are immigrants, originating from other districts.[3] In this chapter, an analysis is made of the extent to which these relationships contribute to household income. The analysis is not restricted to networks with the area of origin, but also includes relationships with relatives and non-relatives in other districts. First, attention will be paid to some general characteristics of the immigrants. Second, we will assess the degree in which social networks were 'exploited', in the sense that an (additional) income was obtained from it. This includes the question whether the various categories of social relationships differed in this respect. Third, the seasonal aspects of the exploitation of social networks will be explored. In that context, attention will be paid to the question whether differences between agricultural cycles in Trans Nzoia and in the areas of origin helped to solve food shortages.

6.1 Immigration

Table 6.1 shows the districts of origin of both the heads of the households and their spouses. About two-thirds of both heads and spouses were born outside Trans Nzoia. These people, i.e. living in Trans Nzoia at the time of the survey but born outside the district, are referred to as immigrants.

1 This chapter is entirely based on the in-depth study and was co-written by Lieke Verstrate.
2 See for instance Foeken 1990.
3 See Schafgans 1988, 30. According to this study, 80 per cent of the heads of the surveyed households were born outside Trans Nzoia.

Table 6.1
District of origin of heads of households and their spouses* (N)

	head	spouse
• Trans Nzoia	15	18
• Bungoma	20	17
• Kakamega	6	7
• Turkana	4	4
• Other**	4	8
Total	49	54

* Farm labourers' households only.
** Uashin Gishu, West Pokot, Siaya, Elgeyo Marakwet, Busia, Uganda.
Source: Appendix 2, Table A21.

Most immigrants originated from the two districts bordering Trans Nzoia in the south: Bungoma and Kakamega. As a result, 75 per cent of the study population belonged to the Luhya tribe. This was a much higher percentage than the 52 per cent of the 1989 Population Census (Kenya 1994a) for the district population as a whole. This indicates that the Luhya are over-represented in the rural labourer's population of Trans Nzoia. The same applied to the Turkana, while such tribes as the Kalenjin and the Kikuyu are very much under-represented in comparison with the general population.

Table 6.2 offers some information on the numbers of migrants and the average length of stay in Trans Nzoia for the different study groups. It only concerns the heads of the households. In all groups the percentage of immigrants was high, in particular in the group of permanent labourers and the group of non-labourers. The latter group was also the group with the highest average length of stay of the heads. All non-labourers came to Trans Nzoia before 1970. Of the total of 34 immigrated 'heads' of households of farm labourers, almost half came to Trans Nzoia more than 15 years ago. Only seven (21 per cent) came during the second half of the 1980s. Three of these seven were living on a large farm, one as a permanent labourer, the other two as resident casuals and all three had settled with the help of relatives. The other four belonged to the group of non-resident casuals. Compared with the other households in this group, these four had only a very small piece of land at their disposal, namely 0.7 acres, against an average of 1.8 acres for the whole group. This can be

Table 6.2
Immigrants, by study group (heads of households only)

(N=)	permanent labourers (8)	resident casuals (7)	non-resident casuals (19)	non-labourers (6)
• % of total population	89	70	63	86
• average length of stay (years)	15	12	19	28

Source: Trans Nzoia In-depth Study 1989.

related to the fact that, first, during the 1980s no more redistribution of land by the government took place, and second, land prices increased greatly during that period, so that immigrants found it increasingly difficult to acquire land outside the large farms.

In explaining migration flows, a distinction between push factors and pull factors can be made. Push factors concern the reasons to leave the area of origin, while pull factors concern the motives to migrate to a certain area. Both the heads of the households and the spouse(s) were asked why they had left their home area and why they had come to Trans Nzoia District. Reasons for leaving the area of origin differed substantially for men and women. Regarding the men, in many cases the parental holding in the area of origin was too small to provide all the sons with a living. Since work was not locally available either, one or more of them were forced to leave the home area and make a living somewhere else. People mentioning this reason generally came from Kakamega and Bungoma. They described their area of origin as crowded, with too many people and without possibilities of buying land or finding wage labour. Also soil erosion was mentioned as a cause of increasing poverty in the home area. People from Turkana only left when they were on the brink of starvation. Because of repeated droughts and cattle diseases, many cattle had died and with them their only source of food and income. What was left of the family, went to Trans Nzoia to find work. Usually they had no relatives already living in the District to help them on their arrival. All Turkana households in the sample were living on the large farms at the time of the study, because they are the favoured dairy workers (see Table A21, p. 132).

Women usually mentioned that they came with parents or husbands, or that they had met 'a future to be' (husband) who lived in Trans Nzoia. Sometimes they were sent to a brother or a sister already living in the district, because food was not sufficient at home to feed them all. One woman mentioned that she wanted 'a change of environment'. In general, the women were dependent on the decisions of their parents or husbands regarding the question whether to leave and where to go to. Leaving because of quarrels or because of abusive stepmothers were reasons of a more individual nature. Others stated that they had left because they were always sick in their home area while 'in Trans Nzoia the climate is better'.

Reasons for coming to Trans Nzoia (pull factors) differ and the answers to this question seemed to be influenced by the actual situation of the respondent. Some came already before Independence to work as farm labourers on a white man's farm. An example was a permanent labourer on a large farm. After his marriage in 1957, he and his wife left Bungoma District and came to Trans Nzoia. Both started wandering around to find work as many people did in those days. At one of his jobs, on a white-owned farm, he had learned to grease cars, which he was still doing on the farm where he lived at the time of the interview. Respondents mentioned that there were more jobs in Trans Nzoia compared with Bungoma. They complained, however, that it was difficult to obtain an additional income because employers did not allow them to work outside the farm. There was no possibility of going back to Bungoma either, since all the family land had been sold there and most relatives also had left the area.

Regarding the men, looking for work was most frequently mentioned as the main reason for coming to the district. All who said so were working as casual labourers at the

time of the survey. Six of the men stated that they wanted to buy land, which they did. On said he came to do business and had retired from trading in Trans Nzoia some years befor the interview. Women said they came to the District with their husband, or came to marry o to visit relatives. In contrast with most of the men, they never migrated without a place o relatives to go to.

Not everyone had come straight to the place where they lived in 1989. They al originated from rural areas, but in some cases they had gone first to towns like Nakuru an Eldoret, where they found work. At one time or another they had a fight with their boss — like the man who quarrelled with the manager of the hotel where he worked — and wer fired. Thereafter they went to Trans Nzoia to find another job instead of going back to thei area of origin.

From the foregoing we can conclude that although for men migration can usually b seen as a 'desperate move', differences regarding the degree of necessity did occur. In th case of the Turkana people migration was an act of survival, since no means of making living were available in the area of origin. Families from crowded parts of Bungom migrated in order to find better living circumstances. In Trans Nzoia a cash income could b obtained and possibilities of acquiring land were greater. Others came only to find a ne employer.

6.2 Social networks and income transfer

As part of the in-depth study, all respondents were questioned about the types and numb of exchanges with relatives and/or non-relatives. Every household in the sample appeared t have relations with relatives and/or non-relatives with whom cash or food was exchange Usually only small exchanges occurred, but in some cases hundreds of shillings change hands. The example in Box 1 (p. 74) may serve as illustration. In order to assess the im portance of these relationships as a source of income, the monetary value of what the hous holds received from (non-)relatives ('receipts') as well as what they gave away to the ('gifts') during the year preceding the in-depth study was calculated.[4] The results are show in Table 6.3.

Table 6.3
Receipts and gifts, by study group (sh/hh)

(N=)	permanent labourers (9)	resident casuals (10)	non-resident casuals (30)	non-labourers (7)
- receipts	923	481	480	234
- gifts	1374	876	1048	2744
- balance*	-451	-395	-568	-2510

* Receipts minus gifts.
Source: Appendix 2, Table A22.

4 For the calculation of the value of receipts and gifts, see Appendix 1.

Box 1

An example of exchange relationships

The family lived on a very small plot on a large farm, where they worked as casual labourers. The husband was born in Trans Nzoia District, his parents came in 1952 from Amkura in Busia. His father had some misunderstandings with his brothers after grandfather died, so he went to look for a job on a white man's farm. The wife was born in Bungoma, where her parents were still living. In 1986, at the age of 23, she came to Trans Nzoia to stay with her sister, who was working as a casual labourer. She wanted a change of environment. Husband and wife met each other on this farm.

The husband's father was a neighbour, living with some of his (the husband's) younger brothers and sisters. His mother stayed in Chepchoina (Trans Nzoia) with one of his sisters. It took three hours by bike to get there. The husband had a plot of one acre there, so he visited his mother and sister every week, meanwhile checking his farm. The last time he went there, in July, he gave his sister 40 maize cobs, some sugar and tea, but normally he did not give anything. She gave him sh.50 on this occasion. This sister never came to visit him. His other brothers and sisters all stayed with his father. He helped his father by supplying him with paraffin and money when somebody fell ill (which did not happen last year). His father helped him during the difficult period of the year with maize. For instance, in May (1989) his father gave him three *debes*.

The parents-in-law were living in Bungoma. It took one hour to get there with a *matatu*, costing sh.20. The wife went there monthly from October to January and in February and April in order to buy fish, which she sold in Trans Nzoia. In February she went for a memorial after a burial. Normally, she took with her some kilograms of sugar or sh.100 as a dowry payment. Last time she went, which was in April, she brought them four kilograms of sugar, tobacco, six loaves of bread and tea. During the whole year, she gave an amount of sh.700 as part of the dowry. Each time she came her parents gave her a chicken, which is one of the traditional Luhya gifts to visiting guests. They never came to visit their daughter in Trans Nzoia. Her brothers and sisters who still lived with their parents came to visit her in the school holidays, which are in April, August and December. Last time they came already in July and brought one kilogram of meat and an amount of maize cobs. The previous time they brought a tin of tilapia fish. She gave them both sh.20 for the bus fare when they left. One of her sisters, the one she stayed with during the first few months after she came to Trans Nzoia, was living nearby. They helped each other with small things, the exchanges being more or less equal. A similar relationship existed with the non-related neighbours; they lent each other small amounts of money or a tin of maize.

Table 4.6 reveals that on average, all study groups were net-givers. In other wo the households' social networks did not function as an additional source of income; on contrary. This applies especially to the group of non-labourers. The very high nega balance of this group was caused by one household with an extremely high gift value. If household is excluded, the non-labourers' balance becomes much smaller, namely sh.1C In general, the table shows that as household income was higher, receipts were smaller gifts bigger, at least in absolute terms.

If the total value of receipts and gifts is expressed as a percentage of the (estima annual income during the same period (see Table 5.9, p. 60), the picture becomes differ In particular for the households living on the large farms receipts and gifts formed a s stantial value in cash and/or food. If the value of the receipts is added to the household come, the permanent labourers and the resident casuals gave away an amount equalling at one-eighth of their already low total household income.

Table 6.4 presents a breakdown of the average receipts and gifts according to typ relationship. It shows that the negative balance was mainly caused by the relatively h values of the gifts to the relatives of the husbands (parents, brothers and sisters) and parents of the wife (or wives). The parents of the husband, if still alive, received m followed by the brothers and sisters of the husband and the parents-in-law (the parents of wife). The relation with the parents-in-law is a traditional obligation because of the do payment, which is spread over many years. In order to keep the parents-in-law satisf small gifts are regularly donated to them.[5] The sampled households all had children un five years old, so parents and parents-in-law were in most cases alive. Since most child were still young, many of them lived in the households of their parents. Therefore, changes with 'children' were quite modest. In some cases however, the head of the hou hold was the grandfather living together with his children and grandchildren. In these hou holds support from other children, who were married, was sometimes received. The c positive balance was found with the category of non-residential household members children.

Table 6.4

Average value of receipts and gifts, by type of relationship (sh)* (N=49)

type of relationship	receipts	gifts	balance*
• parents of husband	76	352	-276
• parents of wife (wives)	115	235	-120
• brothers/sisters husband	98	273	-175
• brothers/sisters wife (wives)	81	110	-29
• non-residential household members + children	165	36	+130
• others***	25	67	-42
Total	560	1073	-513

* Farm labourers' households only.
** Receipts minus gifts.
*** Cousins, a niece, a stepmother, 2nd/3rd wives living elsewhere, and neighbours.
Source: Appendix 2, Table A22.

5 See for instance the case study in Box 1, p. 74.

Six households had members living elsewhere, both migrant and non-migrant households. Some of these household members stayed in the area of origin. On average, together with the children, they were the only relatives who supported the household instead of gaining from it.

The geographical distribution of the households' exchanges more or less reflects the foregoing. The balance between receipts and gifts with the area of origin of the head of the household was more negative than the balance with other districts. i.e. minus sh.362 and minus sh.150, respectively. These relationships concerned to a relatively large extent the head's parent(s). There were seven households of farm labourers, however, with a *positive* exchange balance with their area of origin. One household belonged to the group of permanent labourers, one to the resident casuals and five to the group of non-resident casuals. It is noteworthy that in all seven cases the husband's parents had died and in three cases also the wife's parents. Two of the households consisted of (grand)parents, children and grandchildren and received support from a child. In another case, gifts were received from brothers and sisters. Two other households, with very low incomes, were supported by the wife's parents.

The figures presented so far hide important differences between the households: fifteen households of farm labourers appeared to be net-receivers instead of net-givers. Eleven of these were households with an income lower than the so-called *average livelihood level*[6] (i.e. below sh.12,000 per year). However, only in two cases did the household income increase substantially (with about 20 per cent) due to the support of relatives. One of these was a female-headed household receiving about sh.2,000 a year from the non-resident husband. The other one was supported by married children, to an amount of about sh.1,500. The balance of the other thirteen net-receivers ranged from sh.10 to sh.600. The latter household was headed by a widow who had no money to visit her relatives and was supported by her daughter.

Table 6.5, presenting data on households of farm labourers only, confirms the earlier notion that the balance between gifts and receipts is related to household income. The lowest income group consisted on average of net-receivers; the other groups were net-givers,

Table 6.5
Receipts and gifts, by household income class* (sh)

household income (sh) (N=)	<5,000 (7)	5,000-9,999 (17)	10,000-19,999 (17)	20,000+ (8)
- receipts	406	487	778	390
- gifts	322	989	1258	1513
- balance**	+84	-502	-480	-1123

* Farm labourers' households only.
** Receipts minus gifts.
Source: Trans Nzoia In-depth Survey 1989.

6 See Section 5.4.

especially the highest income category. Moreover, the gifts of the lowest income gro consisted mainly of food (71 per cent of the value of all gifts), but the receipts mainly cash (69 per cent). For the highest income category the reverse was true (36 per cent and per cent, respectively).

As noted earlier, whether one or both of the husband's parents were still alive equally important in deciding the balance between receipts and gifts. In 73 per cent of t net-receiving households, both parents of the husband were not alive anymore. In the gro of net-givers, this figure was 32 per cent. Another way of showing the importance of tl variable is by calculating the balance between receipts and gifts for the households with t husband's parents still alive and the households where both parents had died. Although bc groups appeared to be net-givers, the difference was substantial: sh.919 and sh.52, respe ively. The wife's parents played a less important role in determining the balance. In the n receiving and the net-giving group the percentage households of which one or both of t wife's parents were still alive was around 75 per cent.

6.3 Seasonal aspects of social networks

Figures 7 and 8 show the monthly fluctuations regarding the number of exchanges by t sampled households. Because the exchanges were generally quite modest in monetz terms, only the frequencies of the exchanges have been used to assess the monthly var tions. Again, only the labourers' households are included in the aggregated data.

Both the number of receipts and the number of gifts show the same pattern (Figure It is clear that the negative balance between receipts and gifts occurred throughout the ye That means that even during the months that were mentioned as being 'difficult' — June

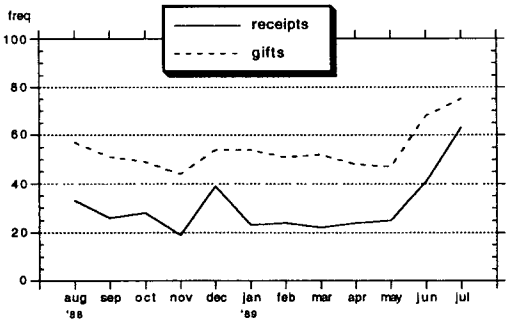


Figure 7
Number of receipts and gifts per month
(farm labourers' households only; *source:* Appendix 2, Table A24)

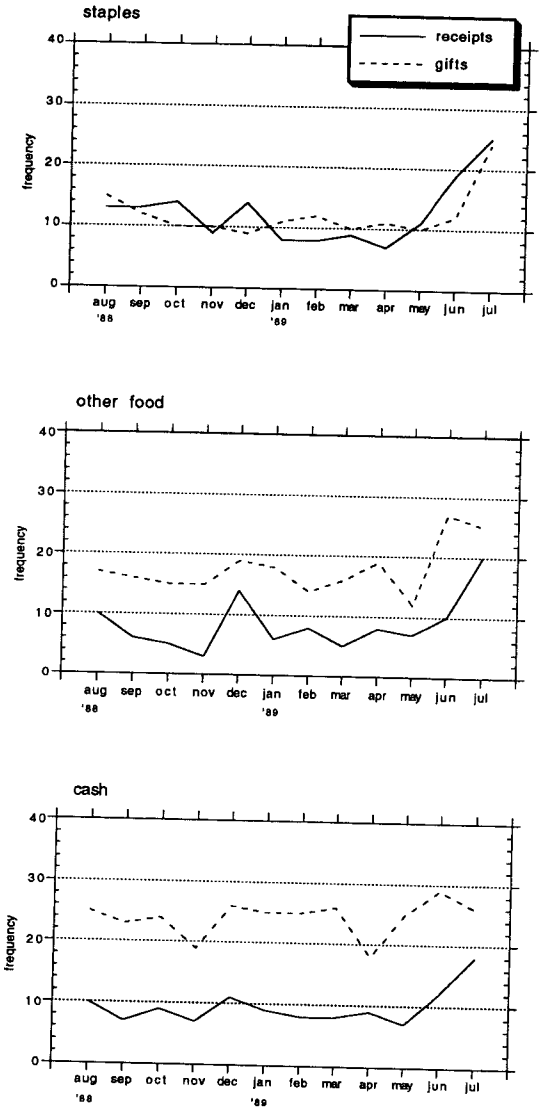


Figure 8
Number of exchanges per month, by type of exchange
(farm labourers' households only; *source:* Appendix 2, Table A24)

September (see Figure 4, p. 63) — the households of the sample gave on average more frequently goods or money than they received it. Although the receipts showed a clear peak in June/July, the same occurred with the gifts.

There are differences, however, according to type of exchange. A distinction has been made between exchanges of staple food (maize, beans, irish potatoes, sweet potatoes, bananas), other food items (such as tea or sugar) and cash. Figure 8 shows that the negative balance between receipts and gifts was mainly caused by the exchanges of money: the sampled households far more often gave money than received it. 'Presents' of cash were somewhat more frequent in June and July, i.e. immediately after the peak in earnings from casual labour (see Figure 6, p. 65). The 'dip' in April is probably caused by the fact that earnings from casual labour were relatively low at that time, while, on the other hand, farm inputs had to be bought. Receipts and gifts of staples were more or less in balance throughout the year (see the top diagram in Figure 8). Receipts of staples were highest in June, July and August, i.e. in three of the months that were mentioned as being 'difficult' in terms of food security. However, the number of gifts of staples was also high during this period of the year.

So far in this section, all exchanges with different areas have been grouped together. It is interesting to consider, however, how households living in areas with different agricultural cycles may help each other in solving possible food shortages. In Trans Nzoia, maize and beans are the principal crops and seeding of both crops usually takes place in April. The beans are harvested in July-August, the maize in December. Fresh maize can be consumed from October onwards. As mentioned before, the period from June to September was considered to be the most difficult time as food stocks were depleting.

Some of the districts surrounding Trans Nzoia have similar agricultural cycles (like Uasin Gishu), some have very different cycles (like West Pokot), others have slightly different cycles (like Bungoma, Kakamega and Busia). Of these, only Bungoma can be used for the present analysis because the number of exchanges with other districts were too small. Although Bungoma has about the same rainfall pattern as Trans Nzoia, seeding of maize and beans usually takes place earlier in the year (February-March). Harvesting is done from August to November (Jaetzold & Schmidt 1983). In some areas, Katumani maize is cultivated. This crop has a growing cycle of only three months, making two harvests possible, i.e. one in June-July and one in January. Millet is also cultivated in Bungoma which is harvested in June. Thus, the 'difficult' period differs between farmers, depending on the types of cereals that are cultivated. According to the respondents, the variety of crops in Bungoma was greater. Several different cereals were cultivated as well as various types of fruits, groundnuts and cassava. Some respondents complained about the 'boring' food they ate in Trans Nzoia, mainly consisting of maize, vegetables and some beans. In their home areas, they said, dishes were much more varied.

Figure 9 gives an impression of the monthly fluctuations of the exchanges by those households of farm labourers having links with Bungoma District (see Table A25, p. xxx for data on the different groups). The figure first of all shows that the number of receipts and gifts were more or less in balance. Exchanges reached the highest levels in January and in the May-July period. The relationships of these periods with the 'difficult' periods i

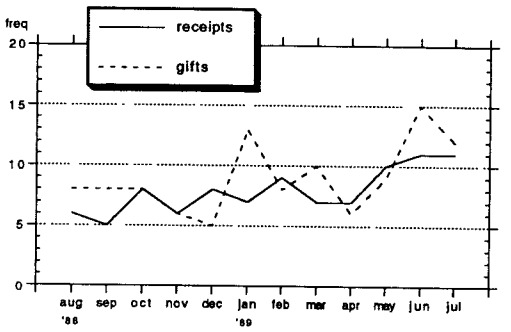


Figure 9
Monthly number of exchanges with Bungoma District
(farm labourers' households only; *source:* Appendix 2, Table A25)

terms of food security were not very clear, however. The peaks in the gifts in Figure 9 were primarily caused by peaks in the category 'other'. The same applied to the June-July peak in receipts. All this does not mean that links with relatives or other people are not season-bound. This can be demonstrated by also taking non-material exchanges into account, such as the performance of labour during peak periods. Some individual cases will illustrate this.

In nine cases, the Trans Nzoia households and their relatives in other districts helped each other with planting and harvesting. Women helped their own kin when extra labour was needed there and the men assisted theirs. This points to different agricultural cycles, as otherwise people would have been busy on their own fields. One woman always helped her parents, living in Chesamis in Bungoma District, with planting in April and harvesting in December. She obtained maize from them in June, when she needed it, and returned it in January. During the latter month, her younger brothers and sisters came to her in Trans Nzoia for the school holidays and because she had plenty of food at that time. Another woman went in September to her relatives in Siaya to help them with the cultivation of their plot. She brought them some maize, because it was the start of the difficult period there. In yet another household, maize was obtained from parents living in Malakissi, Bungoma, in January and June. These parents cultivated the fast-growing Katumani maize variety, so they had two harvests a year. A Turkana man always received his nephews and nieces in his house in January, i.e. shortly after the maize harvest in Trans Nzoia. This is in the middle of the dry period in Turkana District, so milk production is very modest then. His family came to visit him and, according to him, 'ate half of his harvest'. One man went in June to Kamakuywa, Bungoma, to help his parents with the harvesting of the maize. He did not bring home any staples, but at least he was fed there. It meant one mouth less to feed in Trans Nzoia, where this is the difficult time of the year.

Some households had relationships with relatives who were living outside Trans Nzoia but not in the area of origin. Most of these relatives were living in towns like Eldoret,

Webuye, Naivasha, Nakuru, Nairobi and Lodwar. Food was rarely exchanged with these people. Some of them usually brought a packet of sugar, tea or cooking fat when they came to Trans Nzoia and got some beans or maize from the farm in return. Two of them were children with a job. They sometimes sent money to their parents and received some home-grown food in return. Another case concerned a husband living in Nakuru, who was working in the building industry. When he came home, he gave part of his income to his wife and took some maize and/or beans (depending on the time of year) with him to town. Finally, in two households maize was exchanged for bananas and irish potatoes with brothers and sisters in Bungoma. This happened in July, which is the difficult period in both districts.

6.4 Conclusions

Trans Nzoia is an immigration area: the majority of the farm labourers were born outside the district. Most of them came from the two bordering districts in the south, Bungoma and Kakamega. The men's motives for coming to Trans Nzoia had mostly to do with a lack of resources in the area of origin. For women, these 'push' factors were less important, as most came with their parents or in order to marry with a man living in Trans Nzoia.

All households maintained relationships with family members in the area of origin, as well as with family members living elsewhere and with non-family members. Since most of the labourers were quite poor, it was expected that the maintenance of social networks might serve as an additional (be it modest) household resource. However, this appeared not to be the case. On the contrary, in monetary terms, most households spent more on gifts for people living elsewhere than what they received in turn. Although in general, the monetary value of these gifts and receipts — in the form of staple foods, other food, or cash — was quite modest, the two poorest groups, i.e. the permanent labourers and the resident casuals, spent about one-eighth of their incomes on gifts.

For about thirty per cent of the labourers' households, social networks did serve as a net source of income. However, for only two households it added substantially to the household's income. In general, two factors determined to a great extent whether the balance of receipts and gifts was either positive or negative: the income level of the household (positive balances were particularly found in the lowest income category) and the question whether one or both of the husband's parents were still alive.The wife's parents played a less important role in this regard.

Exchanges with relatives and non-relatives took place throughout the year. There was a peak in June, July and August, i.e. during the months that were generally mentioned as being 'difficult' in terms of food security. However, this peak occurred for both receipts and gifts, and also for all types of exchanges. That does not mean that the exploitation of social networks was not, at least to a certain extent, season-bound, as could be seen from individual examples.

7 Living conditions and nutritional status

This chapter deals with three important aspects of the labourers' livelihood and of their family members. First, some basic amenities will be presented: the quality of the house, housing facilities, living densities, and access to firewood and drinking water. Second, food consumption patterns are discussed: food habits, levels and composition of energy and protein intake, and the level of food self-sufficiency. Third, the nutritional condition of the study population is dealt with for both the children and their mothers.

7.1 Housing, firewood and drinking water

Housing conditions

In Table 7.1a the type of houses in the four study groups are presented. By law, large farm owners must provide their permanent labourers with a house. The table shows that this is not always the case: one out of each eight permanents had built his own house. One labourer had bought a house from the farm owner. The remaining 85 per cent all said they rented a house from the farm owner, but no one paid rent. The same applied to half of the resident casuals. These were the 'regular casuals' who were living in the same labour camp as the permanent labourers. The other half of the resident casuals had built their own houses. This was the group of 'squatters', living on the fringes of the farms.[1] Households living outside the large farms usually built their own houses. Those renting a house paid an average rent of sh.89/- per month.

[1] The figures in Table 7.1a concerning the resident casuals reflect the fact that the majority of these households had to be selected from only two, very large farms. One of these was an ADC farm with a lot of 'regular casuals' living in the same labour camp as the permanent labourers. This is the group who rented a house from the farm owner. The other farm was individually-owned, with many 'squatters' living on its fringes. These people built their houses themselves.

Table 7.1
Type of house, by study group

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
a) type of house (%)				
• self built	12.8	49.0	90.8	94.3
• bought	2.1	2.0	0.6	-
• rented	85.1	49.0	8.0	5.7
total	100	100	100	100
b) housing facilities (%)				
• latrine present	57.4	64.7	84.3	97.2
• store present	36.2	37.3	44.2	57.1
c) living densities				
• average number of houses	1.6	1.7	1.8	1.9
• average number of rooms	2.2	2.0	2.8	3.7
• number of occupants per house	5.1	4.9	5.9	5.7
• number of occupants per room	4.1	4.5	4.1	2.9

Source. Appendix 2, Tables A26 and A5

Figures for two important housing facilities, i.e. a latrine and a store, are presented Table 7.1b. It is rather surprising that almost half of the permanent labourers did not have latrine at their disposal, more than among the resident casuals.[2] Apparently, living in labour camp does not automatically imply good sanitary facilities. Moreover, 40 per cent of those who did have a latrine shared it with one or more other households (see Table A26, 137). The percentage of households with a latrine was much higher among those livir *outside* the large farms. However, also among these households, about 30 per cent shared latrine with one or two neighbours. Regarding the households living on the farms, just ov one-third had a store. Undoubtedly, this partly reflects their modest agricultural productio due to small plot sizes and restrictions regarding the cultivation of maize (see Chapter 4 Nevertheless, the percentage of households of the non-resident casuals having a store w only slightly higher. And although the situation was better in the households of the no labourers, even there over 40 per cent did not dispose of a store.

Living densities are shown in Table 7.1c. As far as the number of houses per con pound is concerned, the study groups showed hardly any difference. That can not be said the average number of rooms per compound: the houses of the households living outside t large farms had more rooms than those on the farms. This applied in particular to t housing of non-labourers. As a result, living densities — measured as the number occupants per room — in this study group were more favourable than in the other groups.

[2] It is the more surprising as 91 per cent of the farm owners/managers mentioned providing their p manent labourers with a latrine. See Section 4.2, p. 35.

Firewood

The large majority of the rural households in Africa use wood as the main source of fuel. Due to increasing population densities in the rural areas, however, firewood is becoming more and more scarce. Table 7.2a shows where the selected households in Trans Nzoia collected their firewood. The figures in this table (as well as those in the next table) refer to the wet season only, because there appeared to be hardly any difference between wet and dry seasons.

Table 7.2
Firewood, by study group

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (163)	non-labourers (33)
a) location of firewood (%)				
• on own farm	2.1	2.0	6.7	21.2
• on large farm of employer	87.2	80.4	8.0	-
• elsewhere	10.6	17.6	85.3	78.8
total	100	100	100	100
*b) firewood collection**				
• collecting time (hours per week)	5.5	4.7	4.5	4.0
• collected amount (bundles per week)	2.4	2.4	2.7	2.3
• expenses on firewood (sh/month)	28	18	49	54

* For N's, see Appendix 2, Table A27.
Source: Appendix 2, Table A27.

Households living on the large farms found their firewood mainly on the large farm they were living on. Nevertheless, 11 per cent of the permanent labourers and 18 per cent of the resident casuals had to collect their wood outside the large farm. For the households living outside the large farms, 'elsewhere' — such as roadsides — was the main source. About one-fifth of the non-labourers found the necessary wood on their own farms, indicating farms of a fairly substantial size.

In each study group about 2.5 bundles of wood were collected each week (Table 7.2b). Apparently, this was not enough to cover the firewood needs, because an additional amount of money was spent each month on the purchase of this type of fuel. The households living outside the farms spent much more on firewood than those living on the farms. Partly, this may reflect differences in household size (see Table 3.6, p. 28) and, as far as the non-labourers are concerned, in household income level.

Drinking water

Clean drinking water is another important determinant of a household's quality of life and a major factor related to the health situation of the population. Trans Nzoia is a humid area, annual rainfall being about 1,000 to 1,200 mm. It means that for their water needs many households can rely on surface water, because rivers, ponds, wells and small reservoirs are

Table 7.3
Source of drinking water, by study group (%)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
• river/pond/well/reservoir	47.8	57.9	82.7	72.9
• improved water source	51.1	42.1	9.7	7.1
• other	1.1	-	7.6	20.0
total	100	100	100	100

Source: Appendix 2, Table A28.

seldom dry. The figures in Table 7.3 confirm this situation: for many households, one these sources formed their water supply. There appeared to be no differences between w and dry seasons in this respect. *Improved* water sources, such as taps, were mainly fou *on* the large farms, although certainly not on all farms, as only half of the permane labourers benefitted from this provision. The situation of the resident casuals w comparable with that of the permanent labourers.[3]

In each study group, the majority of the households were living within a relative short distance of their drinking water source, i.e. less than 10 minutes walking (see Tab A28, p. 139). Households located at more than half an hour walking from the near drinking water source were few in all study groups. In general, the permanent labourers a the non-labourers were in the most favourable position in this respect.

7.2 Food consumption

Food habits

Tables A29-A32 (pp. 140-143) contain information on the menus of the sampled hou holds on the day prior to the interview, listing the percentage households consuming cert dishes and ingredients as well as the amounts consumed per household. Table 7.4 give summary as far as the ingredients are concerned.

Maize meal was by far the most important ingredient, usually eaten as *ugali* and (maize porridge, stiff and thin respectively). Vegetables (cabbage, green leaves) and be ranked second in importance. The households in the four study groups did not differ m in this respect. Milk, either as a sole drink or in tea, was consumed in two-thirds of households and in reasonable amounts. Especially among the non-labourers, milk c sumption was relatively high. The fact that among the permanent labourers the consumpt of milk was also fairly high, may be related to the easy availability of milk on quite a num

3 Again (see footnote 1 of this chapter) the figures regarding the resident casuals reflect the wa sampling. Those with an improved drinking water source are found on the ADC farm with the 'reg casuals' and the majority of those with the other type(s) on the large individually-owned farm wit many 'squatters'.

Table 7.4
Main ingredients, by study group

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (163)	non-labourers (35)
% households consuming				
• maize flour	100	96	96	76
• beans	30	39	53	40
• leafy vegetables	45	39	28	18
• cabbage	68	65	68	56
• fresh milk	64	55	65	67
• sugar	77	80	71	71
• fat	70	61	54	67
average amount consumed (gr/cu)				
• maize flour	436	426	395	314
• beans	105	114	221	145
• leafy vegetables	61	47	38	30
• cabbage	82	72	76	57
• fresh milk	198	172	142	240
• sugar	40	49	30	39
• fat	11	12	7	9

Source: Appendix 2, Table A30-A31

of farms and usually at a comparatively low price.[4] Besides the ingredients listed in Table 7.4, other foodstuffs were consumed either in very small amounts (such as sweet potatoes, irish potatoes and beef) or hardly at all. Examples of the latter were cassava, fruits, eggs and fish. As a whole then, the diet of the sampled households was very one-sided (mainly consisting of maize, legumes and vegetables) and predominantly vegetarian (93 per cent of the energy and 85 per cent of the proteins were from plant sources). This applied to all study groups.

Energy and protein intake

Individual foodstuffs differ considerably in water and energy content. For that reason, foods are converted into energy or nutrient equivalents. Moreover, households differ in size, sex distribution and age distribution, factors that influence the nutritional needs and the level of food consumption. Therefore, in the remainder of this chapter food consumption is expressed in terms of kilocalories and grams of protein per consumer unit.[5]

Information regarding energy and protein intake can be found in Tables A33-A35 (pp. 144-146). The data cover the average intake per consumer unit per day, the distribution of the households at different intake levels, the intake composition according to food groups and macro-nutrients, the percentage of energy and protein intake derived from home production in general as well as from the different food groups. Table 7.5a shows the

4 See Section 4.2, p. 36.
5 For a note on consumer units, see Appendix 1.

Table 7.5
Energy and protein intake, by study group

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (163)	non-labourers (35)
a) energy intake				
• average (kcal/day/cons.unit)	2324	2261	2252	2581
• % households with energy intake				
- 100+% of requirements*	15	24	17	43
- <60% of requirements*	23	29	28	26
b) protein intake				
• average (gr/day/cons.unit)	60	57	66	70
• % households with protein intake				
- 100+% of recommendations**	66	57	70	74
- <60% of recommendations**	9	14	5	3

* Energy requirements have been calculated at 2960 kcal/day per consumer unit.
** A safe level of protein intake is estimated at 50 grams per consumer unit per day
Source: Appendix 2, Table A33

average energy intake per consumer unit on the recall day. Energy intake in the nc labourers' households was higher than in the households whose members perform (eitl permanent or casual) labour on large farms. On average, the difference amounted to mc than 300 kcal per consumer unit. Compared with the calculated energy requirements of 29 kcal per consumer unit[6], the average energy intake in the three labourers' households w 600-700 kcal below that level. Accordingly, in 25-30 per cent of these households, ener intake was less than 60 per cent of the requirements (i.e. less than 1776 kcal per consun unit). Rather surprisingly, this also applied to the non-labourers' group.

Table 7.5b shows the levels of protein intake in the households of the four stu groups. An amount of 50 grams can be calculated as the aggregate safe level of prot intake.[7] The table reveals that in all study groups the average protein intake was higher th that. Nevertheless, protein intake was clearly higher in the groups *outside* the large farms.

The composition of the energy intake according to food groups is presented in Fig 10.[8] The importance of maize meal in the daily diet is once more revealed. The figure sho that the energy composition was very much the same for the four study groups. Cere contributed 70 to 75 per cent and all other food groups less than 10 per cent. The o exception concerned the energy from animal products in the group of non-labourers, wh was clearly higher (both absolute and in per cents) than in the other groups (see Table A p. 145). This was mainly the result of the comparatively high milk consumption.

Figure 11 shows which part of the energy and protein intake was derived from hor produced food. Before discussing these data, however, it should be mentioned that the c

6 Based on WHO/FAO/UNU 1985, 133. This level corresponds with about 2000 kcal per capita.
7 Based on WHO/FAO/UNU 1985, Table 55. For calculation, see Appendix 1. It should be noted that level represents a minimum figure, because it does not account for biological variation betw household members in both protein recommendations and actual protein intake.
8 For reasons of readability some food groups in Figure 10 have been grouped together.

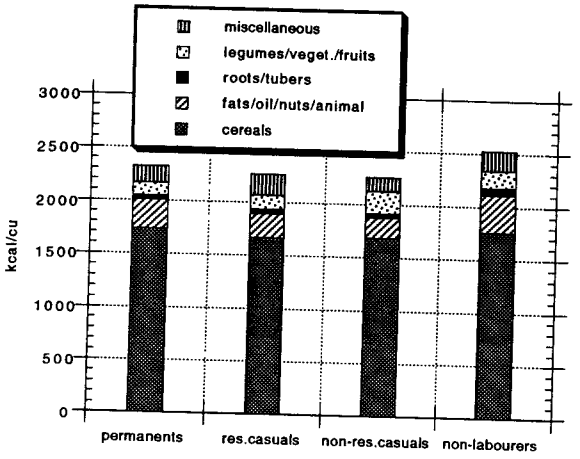


Figure 10
Composition of energy intake, by study group
(*Source:* Appendix 2, Table A34)

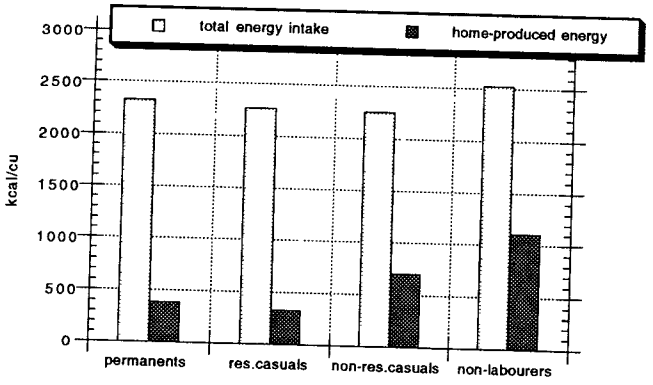


Figure 11
Energy intake and home-produced energy, by study group
(*Source:* Appendix 2, Table A35)

sumption data were collected in July — i.e. a month during which food from the previous harvest is finished — and that this does not necessarily reflect the situation throughout the year. However, the months of June to September are regarded by respondents as the most difficult ones as far as food security is concerned (see Figure 4, p. 63). During these months many households — and especially the ones on the large farms — are forced to buy almost all the food they need, putting a heavy burden on their (scarce) financial resources.

As could be expected from the production value of staples (see Table 5.2, p. 52) as well as from the qualitative data regarding food self-sufficiency (see Table 5.3, p. 53), the degree of food self-sufficiency among the households living *on* the farms was much lower than among those living outside the farms (Figure 11). In the households living *on* the large farms only 16 per cent of the energy intake and 25 per cent of the protein intake was derived from their own production. For the households *outside* the farms these figures were 34 per cent and 43 per cent, respectively. Figure 11 not only shows substantial differences between households living on and living outside the farms, but also that the group of non-labourers — despite their comparatively large plots (Table 5.1, p. 52) and their comparatively high production value of staples (Table 5.2, p. 52) — still obtained less than half their energy intake from their own production. It must be noted, however, that half of the households in this group had a plot of less than three acres (see Table A7, p. 118). It was (obviously) in the households with a reasonable plot size (over three acres) that home-produced energy covered a large part of the energy needs. This applied also to about one-fifth of the non-resident casuals.

A look at the different food groups (Table A34, p. 145) reveals some differences between the study groups. Regarding legumes and vegetables, all groups were to a smaller or greater extent self-sufficient, but regarding roots, tubers and starchy staples only the households outside the large farms managed to reach a fairly high level of self-sufficiency. To a lesser extent, the same applied to cereals and animal products. These differences reflect the differences in plot size and the restrictions regarding land use for the households on the large farms (as they were, for instance, forbidden to keep livestock).

7.3 Nutritional status

This section contains data on the nutritional status of the study population. Of all children aged between 6 and 120 months height and weight were measured and expressed in the usual anthropometric indicators, i.e. height-for-age, weight-for-height and weight-for-age (see Box 2, p. 90). Weight and height of the children's mothers were also measured. Detailed data on the mothers can be found in Table A36 (p. 147) and on the children in Tables A37-A43 (pp. 148-154).

The mothers
Information was collected for almost 350 women. Because only mothers of children up to ten years of age were measured, the group of adult women is mainly restricted to women of child-bearing age (see Table A36, p. 147). The results are presented in Table 7.6.

Box 2
Anthropometric indicators

It is general practice to standardize height and weight measurements mutually and for age by calculating height-for-age, weight-for-height and weight-for-age with the aid of international growth references. In this study the reference values of the WHO (1983) reference population were used.

Height-for-age expresses the height of a child as a percentage of the corresponding median height of children of the same age in the reference population. Height-for-age values of 90 per cent or less are generally regarded as evidence of stunting, indicating that the child has failed to grow satisfactorily during lengthy periods in the past. Therefore, height-for-age is commonly regarded as an indicator of nutritional history reflecting social and economic conditions.

Weight-for-height expresses the weight of a child as a percentage of the corresponding median weight of children of similar height in the reference population. Weight-for-height values below 80/85 per cent can be regarded as evidence of wasting, indicating acute malnutrition. Different values of weight-for-height (80, 85, 90) have been used as critical cut-off point by different authors. In the present report we have used w-h(85), as this comes closest to the mean minus two standard deviations, which is commonly used in the alternative way of classification (using "z-scores"). Weight-for-height is an indicator of present nutritional condition, easily influenced by health and showing the greatest variation among young children.

The weight of a child can also be expressed in terms of of *weight-for-age*, often used as a 'shortcut measure' because it reflects both previous growth and present nutritional condition and is used for a broad classification of malnutrition. Children with less than 60 per cent of the standard weight for their age are generally regarded as severely mal-nourished, while those with a weight-for-age between 60 and 80 per cent as malnourished.

Table 7.6
Mothers: anthropometry, by study group (averages)

(N=)	permanent labourers (52)	resident casuals (55)	non-resident casuals (185)	non-labourers (38)
• weight (kg)	54.9	53.2	55.6	58.7
• height (cm)	160.5	160.9	161.1	162.8
• weight-for-height* (%)	96.9	93.5	97.5	101.1

* The anthropometric data for the mothers were standardized using a table for weight-for-height published by Jelliffe (1966).
Source: Appendix 2, Table A36.

There are important differences between the women in the four study groups. T women in the non-labourers' group were heavier than in the three categories of labour households. And because they were only slightly taller than the other three groups, th average weight-for-height was also much better (101.1 per cent). The women in the hou holds of the resident casuals clearly had the poorest nutritional condition at the time of survey, with an average weight-for-height of only 93.5 per cent.

The children
A total number of 1004 children between 6 months and 10 years of age were exami during the survey. Of these, 48 per cent were girls and 52 per cent boys (see Table A37 148). In Tables A39-A43 (pp. 150-154), the results are presented according to three groups (6-23, 24-59 and 60-119 months). In the text, only the children of 6-23 and 24 months are taken into account. Moreover, the two age categories are put together, beca otherwise numbers are too small. Where necessary, reference is made to specific groups.

In Table 7.7 some main results are compared with earlier national surveys. present survey reveals that among the children in households engaged in labour on l

Table 7.7
Summary of anthropometry from various sources

	year of survey	reference	no. of children	age group (months)	average H-A	% children <HA(90)	average W-H	% chil <WH(
Kenya: rural	1987	Kenya 1991d	6957	6-60	95.6	19.6	101.0	2.5
Trans Nzoia: rural	1982	Kenya 1983	103	3-60	95.2	19.1	102.5	2.8
Tr. Nzoia: labourers*	1989	present study	486	6-59	94.6	23.0	95.4	4.1

* The category of non-labourers is excluded here.

farms (and most rural households in Trans Nzoia probably are) no less than 23 per cent of the children were stunted. This percentage was higher than the national figure of 1987 and also higher than the Trans Nzoia figure of 1982. The same applied to the percentage children that could be considered wasted.

In Figure 12 the average height-for-age and weight-for-height of the children per study group are presented. For three of the four study groups — the resident casuals, the non-resident casuals and the non-labourers — height-for-age figures were more or less in line with the income figures (see Table 5.9, p. 60): the average height-for-age was lowest among the children in the group with the lowest average income (the resident casuals), highest in the group with the highest average income (the non-labourers), with the group of non-resident casuals in both respects in-between. The fourth group, i.e. the permanent labourers, however, clearly deviates from this pattern: the average income in this group was the second lowest, while average height-for-age of the children was highest. A breakdown according to age groups (see Table A41, p. 152) shows that the cause of this high height-for-age could be found in the tallness of these children at very young age (6-23 months).[9] As the children grew older, however, height-for-age continuously declined. In contrast, the children in the group of non-labourers showed the reverse trend, while the height-for-age level of the children in the two groups of casual labourers remained fairly constant. Assuming that height-for-age reflects the environmental circumstances in which a child grows up, these circumstances were evidently not favourable for the children of the permanent labourers on the large farms.

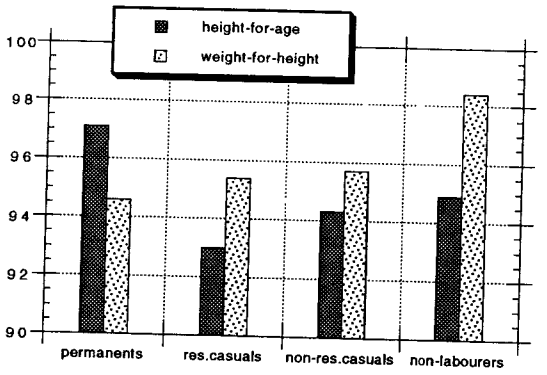


Figure 12
Children: height-for-age and weight-for-height, by study group
(children 6-59 months; *source:* Appendix 2, Tables A40-A41)

[9] This may tentatively be attributed to a better start in life, but data are lacking to confirm this.

The differences in average weight-for-height of the children in the three labourers' c tegories were quite small. Moreover, weight-for-height of these children was substantia lower than that of the children of the non-labourers. This picture reflects the average lev of energy intake (see Table 7.5, p. 87). Once more, however, the group of permane labourers formed an exception: the children's weight-for-height in this group was lower th one might expect from the energy intake figures. Undoubtedly, this can be related to t relatively high height-for-age of the very young children (6-23 months); not only were th tall, but also thin.

Table 7.8 shows for each study group the percentages of children that were in so way malnourished. The percentages of children being stunted in the four study grou reflect the average height-for-age figures presented in Figure 12. Stunting appeared to very common among the children of the resident casuals (29 per cent) and was also wi spread among the non-resident casuals (25 per cent). But even in the wealthiest group, i the non-labourers, still one out of each six children was stunted. About ten per cent of t children in labourers' households were wasted (here defined as a weight-for-height bel 85 per cent of the reference). In the households of the non-labourers very few was children were found.

Table 7.8
Children: malnutrition, by study group* (% children of 6-59 months)

		permanent labourers	resident casuals	non-resident casuals	non-laboure
• stunted:	<HA(90)	10.8	29.0	25.3	17.1
• wasted:	<WH(85)	13.1	11.8	8.6	1.3
• malnourished:	<WA(80)	22.5	31.0	31.2	28.3
• severely malnourished:	<WA(60)	1.2	2.4	2.1	

* For N's, see accompanying appendices.
Source: Appendix 2, Tables A40-A42.

An indicator for the overall nutritional condition of children is weight-for-a Children with a weight-for-age of less than 80 per cent of the reference are genera considered malnourished. This applies to no less than almost one-third of the children in households of casual labourers (both resident and non-resident casuals). Nevertheless, t percentage is only slightly higher than that of the non-labourers. Severe malnutrition — a weight-for-age of less than 60 per cent of the reference — was not found among children of the non-labourers. However, among the casual labourers, more than two cent of the children could be considered severely malnourished. In sum then, stunt wasted and generally malnourished children were found in all four study groups, bu particular in the households of casual labourers. In this respect it appears to make difference whether these households reside on or outside the large farms.

7.4 Squatters, regular casuals and landless

In Section 5.6, three sub-groups were introduced: squatters and regular casuals (a sub-division of the category of resident casuals) and landless households (a sub-group of the non-resident casuals). In terms of household resources, the squatters and landless appeared to be the poorest categories, while the regular casuals were to a certain extent comparable with the permanent labourers. In the present section, this sub-analysis is continued by presenting some data on food consumption and of the nutritional conditions of the adult women and the children.

Table 7.9 shows the findings regarding these variables for the squatters and the regular casuals. First, energy intake was low, but in particular in the households of the squatters (one should not forget that the survey took place during the period of the year that food shortages are most likely to occur). Second, the nutritional condition of the mothers in the households of the regular casuals was quite poor, certainly compared with the squatters. Third, as far as the nutritional condition of the children between six months and five years of age is concerned, the two groups showed substantial differences. Wasting was very common among the children of the squatters, which may be related to the low level of energy intake. Among the children of the regular casuals wasting was far less common. This group, however, was conspicuous for its very high percentage of children with a height-for-age below 90 per cent of the reference: no less than one out of every three children in this group appeared to be stunted. In the squatters' households, this was the case with one out of every four children, which nevertheless is a high proportion as well.

In Table 7.10 the food consumption and nutritional characteristics of the landless households are compared with three other farm size classes.[10] Although the average energy intake level was quite low among the landless households, it was even lower in the near-

Table 7.9
'Squatters' and 'regular casuals': food consumption and nutritional status

	'squatters'	'regular casuals'
households:		
• energy intake (kcal/day/cu)	*(N=23)* 2076	*(N=28)* 2412
mothers:		
• average weight-for-height	*(N=25)* 96.5	*(N=30)* 91.1
children 6-59 months:	*(N=34)*	*(N=41)*
• average weight-for-height	95.1	95.7
• percentage wasted (WH<85)	20.6	4.9
• average height-for-age	94.1	92.1
• percentage stunted (HA<90)	23.5	34.1

Source: Trans Nzoia Household Survey 1989

[10] In Section 5.6, landless households were defined as households with no land at all or with only a home garden (estimated at 0.05 acres). This is the category with "0 acres" in Table 5.10. The category with 0.1-1.0 acres are being referred to as the 'near-landless'.

Table 7.10
'Landless' and 'non-landless' households: food consumption and anthropometry

farm size (acres):	0	0.1-1.0	1.1-2.9	3.0+
households	*(N=21)*	*(N=52)*	*(N=57)*	*(N=34)*
• energy intake (kcal/day/cu)	2190	2093	2300	2456
mothers	*(N=25)*	*(N=56)*	*(N=61)*	*(N=43)*
• average weight-for-height	98.3	93.7	99.7	98.8
children 6-59 months	*(N=42)*	*(N=97)*	*(N=114)*	*(N=74)*
• average weight-for-height	92.3	95.4	96.8	96.3
• percentage wasted (WH<85)	19.1	11.3	6.2	5.4
• average height-for-age	94.5	94.0	94.1	94.9
• percentage stunted (HA<90)	31.0	28.9	24.6	16.2

Source: Trans Nzoia Household Survey 1989

landless group (i.e., with one acre or less). The level of the latter category was comparabl with that of the squatters, a group that resembles in certain ways the near-landless (n unlimited access to casual labour on the large farms and an own plot smaller than one acre The mothers' weight-for-height was surprisingly high among the landless and one i tempted to relate this to the absence of a plot of land the women had to cultivate. Finally, th nutritional condition of the children in the landless households was very poor, one-fift being wasted and almost one-third stunted. However, the percentage of children bein stunted in the households with a plot size between 0.1 and 3.0 acres was also very high.

As mentioned in Section 5.6, there are some households with a relatively high incom from non-agricultural sources among the (near-)landless. Three-quarters of the (near-)land less households depended to a very large extent on agricultural wage labour for their livel hood and all of these were very poor. Excluding the more well-to-do households did nc lead to substantial changes of the figures in Table 7.10 although energy intake wa somewhat lower (2015 kcal/cu/day for the landless) and the percentage children bein stunted somewhat higher (34 per cent in both the landless and the near-landless house holds).

7.5 Conclusions

Regarding such living facilities as housing, firewood and drinking water, it made a diffe ence whether a family lived *on* or *outside* a large farm. Families living *on* a large farm — th permanent labourers and the 'regular casuals' — were usually provided with a house, coul collect most of their firewood on the land of the large-farm owner, and had relatively goc access to improved drinking water. Families *outside* the large farms had to build their ow houses, had to find their firewood mainly 'elsewhere' and depended on surface water fc their water needs. In one respect, families *on* the farms were worse off than those outsic the farms, namely regarding the presence of a latrine. Rather surprisingly, almost half th

permanent labourers had no latrine at their disposal. In other words, in quite a number of labour camps this facility was not provided by the large farm owner. Finally, in terms of housing conditions, the non-labourers distinguished themselves positively from the other three groups.

The daily diet of the study population predominantly consisted of maize meal, legumes and vegetables. Three-quarters of the energy intake was derived from maize alone. The four study groups hardly differed in this respect. The only animal product that was consumed in appreciable quantities was fresh milk. Overall, the level of energy intake was rather low. In only one-fifth of the households the recommended level per consumer unit was reached. Regarding protein intake, the situation was better. In comparison with the group of non-labourers, the three categories of households with one or more labourers on a large farm all showed a low level of energy intake. This partly reflects differences in household income: the higher the household income, the higher the energy intake. Most food had to be bought. This applied in particular to the households living on the large farms, who depended for 85 per cent of their energy intake on purchased food. Still, even the group with the largest plots and the highest food production bought over half the food consumed.

Compared with the results of the Third Rural Child Nutrition Survey held in 1982, the nutritional condition of the labourers' children seven years later was worse. Malnourishment was widespread in all four study groups. Stunting appeared to be most common in the two groups of casual labourers. In general, the children of the non-labourers were in a better condition. The differences between the study groups partly reflected differences in household income (height-for-age) and differences in energy intake (weight-for-height).

As far as the nutritional condition of the mothers was concerned, substantial differences between the study groups could be discerned. The women in the households of the non-labourers appeared to be in good condition, while the women in the households of the resident casuals showed the lowest weight-for-height.

Sub-analysis showed that three sub-groups can be considered as being of particular concern in terms of food consumption and/or nutritional condition: the squatters and the regular casuals, who are both living on the large farms, and the landless and near-landless (with one acre or less) who are living outside the farms.

Conclusions

The present study took place in 1989 and was carried out in Kenya's Trans Nzoia Distı The district is known for its favourable climate for growing all kinds of crops and for rais cattle. During the colonial period, the whole district consisted of large, white-owned far After Independence, many of the farms were sub-divided into smallholdings. Today, sc 220 large farms of 100 acres and more remain, covering about 60 per cent of the distri surface. The large majority of these farms are of the mixed type, i.e. maize cultivation dairy farming.

On nearly all large farms, a number of labourers were employed on a permanent ba they earned a monthly salary and were living on the farm itself. These were the 'permar labourers'. Most of them were either involved in the dairying part of the farm's activitie performed all kinds of general farm work (as fence makers, watchmen, drivers, etc.). N there was a group of labourers who were also living on the large farms, but who w recruited as casual labourers: the 'resident casuals'. This group could be sub-divi according to the 'regularity' of being recruited as a casual labourer and according to wl they were living on the farm. First, the so-called 'regular casuals' performed casual lat nearly all year round and they were living in the same labour camps as the permar labourers. Unlike the latter group, however, they usually had no plot for their own use, (best a very small one. Second, the 'squatters' were located at the fringes of the large fa They also performed casual labour on the farm, but not as regularly as the regular casu Finally, there was a group of labourers living outside the large farms: the 'non-resi casuals'. They performed casual labour during the peak labour periods, such as weed top-dressing, and harvesting. For comparison purposes, a group of households in wl nobody had performed any labour on a large farm (the 'non-labourers') was also include the survey.

An important general conclusion from the present study is that (in 1989) labou Trans Nzoia was used in an exploitative manner by quite a number of employers. average, the wages for both permanent and casual labourers were below the legal minim Although on some farms payments were clearly higher than on others (and sometimes

above the legal minimum), it must be stressed that on several farms wages were very low indeed. Moreover, as far as the permanent labourers were concerned, lower salaries were only to a limited extent supplemented with a higher level of provisions (such as a small plot for subsistence production, cheap maize and milk).

Not only financially, but also legally the labourers were in a bad position. As mentioned above, it turned out that quite a number of casual labourers worked on a more or less permanent basis on one and the same farm. However, it proved to be very difficult for these 'regular casuals' to obtain the status of permanent labourer: for the employer 'regular casuals' were cheaper and easier to fire than permanent labourers. Nevertheless, the position of permanent labourer was not as secure as one might think: on at least one farm all of them had been turned into (regular) casuals shortly before the survey. This seems to confirm the earlier noticed tendency to employ a greater proportion of casual or temporary workers in the total workforce (Laing & Pigott 1987).

These unfavourable conditions of the labourers living on the farms — i.e. the permanent labourers and the resident casuals — were exacerbated by the restrictions on the use of their own little plots and on working outside the farms. On farms where seed maize was cultivated in the vicinity of the labourers' plots, the latter were not allowed to cultivate maize. Keeping livestock was simply forbidden. Even worse was the employers' ban on working outside the large farms, on pain of being evicted. This applied not only to the head of the households, but also to the family members who were suitable to work on the farm as well. It meant that these households were seriously hampered in obtaining a reasonable income. For their whole livelihood, they depended on what the owner of the large farm they lived on was willing to offer them. In other words, we can subscribe to the conclusions drawn by Von Muralt & Sajhau (1987, 14) that the price paid for stable employment and certain basic amenities is total dependence and the absence of freedom of movement and choice of employment. It also shows that Laing & Pigott's (1987) notion regarding the integration of more than one family member of the household in the estate's production system is not just typical for plantation production but for large-scale mixed farming as well. The same might apply to their conclusion that the recruitment of several household members provides the employer with a rationale for keeping wages low.

This resident labourers' dependency was also illustrated by the way they managed to obtain a cash income. In the households of the permanent labourers, 98 per cent of their cash income was derived from agricultural wage labour; for the regular casuals, this was 95 per cent, and for the squatters 86 per cent. For the permanent labourers and for the regular casuals, the only other source of income was the households' own agricultural production. But again, the land on which this (very modest) production was realised belonged to the large farm owner. In other words, the labourers living on the farms were in all respects tied to the land of someone else. Only the squatters, living on the fringes of the large farms and therefore less easy to 'control' for the farm owners or managers, managed to realise a modest income out of activities outside the large farm they were living on. However, through their labour for the farm owner as well as through the land he allowed them to use, this group also depended on the farm owner for most of their income sources.

Since many of these households originated from areas where there was an even greater lack of income sources, most of them could not rely on any additional income from social relationships; on the contrary, it appeared that from the little they earned, quite a substar part was spent on gifts to family members (mainly parents) in the area of origin. Her compared with the (casual) labourers living *outside* the large farms, and particul compared with the households that did not rely on agricultural wage labour at all for t income, the households of labourers living *on* the large farms were very poor indeed.

As a result of all this, living conditions were very bad among the resident labourers some respects though, they were better off than the non-resident labourers and even the r labourers, thanks for example to the provision of a house by the farm management (altho housing was very simple indeed), a latrine (although quite a number of them did not h one), drinking water (half of them had access to improved drinking water) and the po bility to collect firewood on the farm itself. However, such facilities did not reduce pove which was reflected by, for instance, the low levels of energy intake, the very one-si diets, the poor nutritional condition of both children and mothers, and accordingly, the h percentage of malnourished, stunted and wasted children. Earlier studies in Zimbabwe showed that children of agricultural workers in the commercial farming areas had a v poor nutritional status (Laing & Pigott 1987).

So far, the casual labourers living *outside* the large farms were treated as one gro This turned out to be a very heterogeneous category, however. Sub-analysis revealed about one-third of them were either landless or near-landless (with up to one acre) depended to a large extent on agricultural wage labour for their livelihood. In term household income, food intake and nutritional condition of women and children, th (near-)landless appeared to resemble the resident casuals on the large farms. At the o extreme, there was a category of non-resident casuals who had a farm of at least three ac For this group, the casual labour performed by one or more of their family mem contributed relatively little to household income. In that sense, these households w comparable with the category of non-labourers, who appeared to be best off in all respe The general conclusion is therefore that there is a negative relationship between importance of agricultural wage labour for the labourers' household income on the one h and the livelihood level on the other. In other words: dependency in the sense of being to another man's land in terms of labour and/or food production, means poverty.

The findings of the present study confirm the picture regarding labour and living c ditions on plantations and mixed farms as described in the literature of the last two or th decades: plantation and farm labourers belong to the poorest segments in society. Return to the notion of proletarianisation as introduced in Chapter 1, we are now able to assess degree of proletarianisation for each category of labourers. Households living outside large farms which are hardly or not at all involved in agricultural wage labour can considered non-proletarianised. They have access to pieces of land, grow crops for h home use and sale and are often involved in non-agricultural types of employment. They free in the allocation of their productive resources such as land and labour and are dependent on the large farms. Semi-proletarianised households can live both on and off farm. Those living on the farm do have access to small pieces of land and can grow som their food. However, they are not free in the allocation of their labour because many f owners do not allow their workers to be engaged in other income-generating activities a form agricultural labour. Semi-proletarianised households living outside the farm are th

with access to small pieces of land only. For their livelihood they are dependent on the most accessible source of income, i.e. wage labour on a large farm. Since they cannot grow enough food for it to be a profitable source of income, they are often not able to generate money in order to start a small business. Therefore, despite the relative freedom they have concerning the allocation of their labour, they are very dependent on the large farms. Almost fully-proletarianised households are those living on the farm with access to tiny pieces of land or no land at all. All members of these households are usually involved in agricultural labour, which provides them with little money, often not enough to satisfy basic needs. Therefore, they are dependent on the willingness of the large farm owners to provide them with work, food or other provisions. Another group of households falling in this category are the landless households outside the large farms. They are often completely dependent on agricultural labour, but contrary to those households residing on the farm they do have the possibility to try to find employment elsewhere. However, due to their low educational level and their lack of capital other ways of generating income are often not accessible.

In an earlier study on the tea plantation sector in Kenya, Davies (1987) came to the conclusion that living conditions of workers on the estates, although rather poor, were nevertheless better than those in the areas where the workers came from. In fact, this was no more than a hypothesis, since Davies had only aggregated data regarding the prevalence of under-nutrition at district and sub-district level. Therefore, she stressed the importance of studies in which living conditions of estate workers are compared with those in the recruitment areas. To a certain extent, the present study is the first of this kind, in the sense that living conditions of workers resident on the estates are compared with living conditions of labourers from elsewhere, as well as with non-labourers. It has been demonstrated that, generally speaking, for those households which relied to a large extent on agricultural wage labour for their livelihood, it did not make a real difference whether they were living either on or outside the large farm: they were all very poor. Nevertheless, the study also shows that it is too simple to speak of 'the workers' on the estates, as is usually done in studies concerning labourers on estates: different categories of labourers showed different degrees of poverty and different levels of under-nutrition. As noted above, permanent labourers were somewhat better-off than casual labourers. Moreover, certain types of permanent labourers — usually those not engaged in the agricultural activities as such — had a much higher income level than others.

A frequently mentioned finding in the literature on plantation labour concerns the size of the estate: in general, labour and living conditions tend to be better on larger estates. Although in the present study we are dealing with mixed large farms instead of plantations and most of the large farms in Trans Nzoia are much smaller than most plantations, it was nevertheless found that wages were slightly higher and provisions were somewhat better on larger farms. Again, however, we should stress that even on the farms with the highest wages and the best provisions, labourers were poor.

The bad labour and living conditions on plantations and large farms are often ascribed to the poor performance of labour unions. Referring to the first half of the 1970s, Leitner (1976) argued that the dependency of the labourers on their employers was largely due to the fact that the labour union's influence was almost nil. It seems that around 1990 nothing had changed in this respect. Another agent in this context is the government itself, notably the Ministry of Labour at district level. One of the tasks of the District Labour Officer is t that employers observe the government's regulations concerning wages and provision farm labourers. Compared with other ministries, however, the office of the Ministı Labour was very modest in terms of staff, equipment and money. Even though it known that many employers ignored the government's rules, the Labour Officer simpl not have the means to do very much about it. For instance, a running car was the prerequisite for successful actions against law-violating employers, and this was ex what was lacking (in 1992, the Trans Nzoia Labour Officer was supplied with a good c one of the European embassies in Kenya for a period of three months, with which a nu of farms could be visited, resulting in an immediate rise of the wages up to the mini level set by the government). Thus, the often rather remote locations of many estate only limits the labour union's influence, as Sajhau & Von Muralt (1987) argue, but alsc of the government. Furthermore, due to the ownership of large farms by influential pe such as businessmen and (former) politicians, the political will to change the situati farm labourers is rather limited.

The labourers on the large farms have very few prospects of escaping from situation of poverty. Of the main ways usually open to poor households to meet basic r — diversification of income sources and the 'exploitation' of social networks (see Se 1.3) — neither of these turns out to be a realistic strategy. Diversification of income so is effectively obstructed by the employers. And social networks are a source of exp instead of income, because the family in the area of origin is in most cases even poorer. result, the quotation from Clarke (1977) in Section 1.3 (page 6), where he stresses the degree of subordination and dependence of the labourers, which is reflected in the control of the employers over the workers, also applies to the farm labourers in T Nzoia. They are in all respects tied to the land of the farm owners.

Appendic

Appendix 1:
Notes on calculations

1 CONSUMER UNITS

For the analysis of survey findings at household level, it is important to standardize household size. The most common way is a straight count of the number of household members, which means that each member receives an equal weight. For certain (e.g. demographic) purposes, this is quite appropriate. For other purposes, however, a weighted summation is often needed because the requirements of household members differ from each other. For example, the food consumption of a child is less than that of an adult, but this is also true for other needs: shelter, clothing, transport.

An approximation of the relative needs is offered by a physiological weighting, namely according to the nutritional requirements of individual household members. This incorporates various biological characteristics: age, sex, physiological status and physical activity level and it offers a fair approximation of overall requirements, also because food consumption forms a large part of overall consumption.

The weights obtained in this way are expressed as "consumer units". One consumer unit (cu) stands for the consumption equivalent (here: in terms of required energy) of a nominal adult male. The reference adult male of 20-29 years in Trans Nzoia District is estimated to need 2960 kcal per day. All other individuals are expressed as a ratio of this unit (adult male equivalents) on the basis of their estimated nutritional energy requirements. For the calculation of these requirements, international recommendations were used (WHO/FAO/UNU 1985). Further assumptions that were made in order to fit the reference standard to the circumstances in Coast Province concerned body size, pregnancy and lactation, activity patterns and disease. For instance, pregnant women have received 0.1 cu extra because of the extra energy they require. The energy requirements of the various age and sex groups expressed in terms of consumer units, are as follows:

age	male	female	age	male	female	age	male	female
0yr	0.3cu	0.3cu	8-10yr	0.7cu	0.7cu	30-39yr	1.0cu	0.8cu
1yr	0.4cu	0.4cu	11-16yr	0.8cu	9.7cu	40-59yr	0.9cu	0.7cu
2-4yr	0.5cu	0.5cu	17-19yr	0.9cu	0.7cu	60yr+	0.7cu	0.6cu
5-7yr	0.6cu	0.6cu	20-29yr	1.0cu	0.8cu			

2 RESIDENCY

Residency type of household members

If a household member was not a full-time resident, the frequency of visits was used to determine the residency type of a person. Those who came home several times a week were counted as full-time household members. Those who came home weekly, monthly or between terms were defined as part-time household members. Those who came several times a year, yearly or less frequently were defined as non-residents.

Calculation of consumer units of household members residing elsewhere

Because full-time residents consume a larger part of the household food supply than part-time and non-residents, adaptations have been made in order to get a clear picture of the actual number of consumer units within the households. Several categories of household members can be distinguished. Based on the amount of time they spent at home, calculations are made whereby partly-present household members are calculated as a ratio of full-time household members. Schooling children have been given higher ratios because they are expected to spend more time at home and to be more dependent on the household than adults staying elsewhere.

Non-residential household members,
Regularly absent household members,
and Commuters:

Frequency of visits:	*Ratio*
several times a year	0.10
between terms	0.25
every month	0.15
every week	0.35
several times a week	0.45

Visitors have been deleted

Schooling children:

Frequency of visits:	*Ratio*
several times a year	0.10
between terms	0.25
every month	0.30
every week	0.45
several times a week	0.55

Income calculation of household members living elsewhere

Household members not permanently present in the household will not only consume less than full-timers but it is also expected that a smaller share of their income will be spent on household needs. Because heads of households are expected to devote a larger share of their income to the household compared to other household members residing elsewhere, different adaptations concerning the income earned have been made.

Regularly absent household members:

Head of the household

Frequency of visits:	*Ratio*
several times a year	-
between terms	0.40
every month	-
every week	-
several times a week	0.80

Other household members

Frequency of visits:	*Ratio*
several times a year	0.10
between terms	-
every month	-
every week	0.40
several times a week	0.40

[continues on next page]

Non-residential household members:

Head of the household

Frequency of visits:	*Ratio*
once a year	0.30
several times a year	0.30
between terms	0.40
every month	0.40
every week	0.75
several times a week	-

Other household members

Frequency of visits:	*Ratio*
once a year	0.10
several times a year	0.10
between terms	0.30
every month	0.25
every week	0.40
several times a week	0.40

Commuters:

Head of the household

Frequency of visits:	*Ratio*
once a year	-
several times a year	-
between terms	-
every month	-
every week	0.85
several times a week	0.85

Other household members

Frequency of visits:	*Ratio*
once a year	-
several times a year	-
between terms	-
every month	-
every week	0.75
several times a week	0.75

The income of schooling children has been counted as 100 per cent because they presun undertake activities during the school holidays and all income is given to their parents.

When the income earned is more than sh.1000 the calculations made above are used. \ the income earned is less than sh.1000, the incomes as calculated above are multipli 80%.

3 FARM LABOUR EQUIVALENTS

In order to calculate the available farm labour within the households, only persons wh they worked on the household's plot have been taken into account. Each adult aged years who was not employed full-time, was counted as 1.0 farm labour equivalent (f Those who were employed full-time were counted as 0.25 f.l.e., while those who employed part-time were counted as 0.50 f.l.e. Adults who were schooling were counted as 0.50 f.l.e.

Children who were schooling have been counted as 0.25 f.l.e., while children who d go to school have been counted as 0.50 f.l.e. Persons older than 60 were counted as f.l.e.

4 VALUE OF HOME-CONSUMED FOOD PRODUCTION

In order to assess the income in kind from the households' farming activities for home consumption, the following calculations were made. Data about the last harvest of maize, beans, irish potatoes, sweet potatoes, bananas, and some less common food crops like sorghum, millet, peas, *njahe* and *sukuma wiki* were collected. This information was available in different quantities: 90 kg bags, *debes* (about a sixth of a 90 kg bag) and *ngoro ngoros* (about one-eighth of a *debe*) for maize, beans, irish potatoes, sweet potatoes, millet, sorghum, and peas; bundles for *sukuma wiki*; and bunches for bananas. Furthermore, information was collected about how many 90 kg bags, *debes*, *ngoro ngoros* or bunches had been sold. The sold amounts of food crops were subtracted from the harvested amount. The difference was considered to be the income in kind from farming. Because more food crops were bought than sold, it was decided to use the prices of bought food crops for calculating an average price for home-consumed food production. The average prices of a 90 kg bag were used as the basis for the average prices for *debes* by dividing the average price of a 90 kg bag by 5.8, and for *ngoro ngoros* by dividing the average price of a 90 kg bag by 45. Because bananas are always measured in bunches, the average buying price as mentioned by all respondents was used, i.e. sh.30 per bunch. The prices used for the estimation of the monetary value of home-consumed production of food crops are as follows:

	90 kg bag	*debe*	*ngoro ngoro*
maize	250	43	5.6
beans	400	69	8.9
irish potatoes	150	26	3.3
sweet potatoes	150	26	3.3
millet	500	86	11.1
sorghum	500	86	11.1
peas, *njahe*	110	19	2.4
sukuma wiki	85	1 (bundle)	-

5 VALUE OF LIVESTOCK AND MILK PRODUCTION

The income in kind received from livestock consists of the value added during the last year (off-take rate) and the production of milk. In order to calculate the off-take rate, prices of cattle were needed. Only prices of bulls and ungraded cows were available. The value of a grade cow was estimated to be 2.5 times the value of an ungraded cow, and the value of a sheep one-fifth and of a goat one-seventh of that of an ungraded cow. Thus, the following prices (sh.) were obtained:

grade cow	3750	grade bull	2000	sheep	300
ungraded cow	1500	ungraded bull	2000	goat	215

Data collected during the household survey showed that the death rate among grade and ungraded cows was very high. The number of calves was not enough to make up for the death of cows. Therefore, no off-take rate was calculated for cows. Taking into account the death rate among bulls and the number of calves in the sample, the off-take rate of a bull was estimated at 13 per cent and of an ungraded bull at 20 per cent. The off-take r goats is 30 per cent, while that of sheep is only 10 per cent due to a high death rate.

The value of the milk production was calculated as follows. The average con price of one litre of milk in 1989 was sh.5. According to a Dairy Development P Report (Kenya 1989a) grade cows, with a very intensive way of farming, gave six lit milk a day. Because of the extensive way of dairy farming, it was assumed that grade of households in the sample gave about half that amount, i.e. three litres a day. Hov cows do not produce the same amount of milk during the wet and dry season. I assumed that during six months an average cow gave three litres a day and during the six months two litres, resulting in a total production value per year of sh.4,565 per cow. The production of local cows was estimated at an average of about one litre pe adding up to an income of sh.1,825 a year.

Based on all calculations described above, the income in kind from cattle is:

grade cow	4565	ungraded bull	400
ungraded cow	1825	sheep	30
grade bull	260	goat	65

6 AVERAGE RURAL HOUSEHOLD MONTHLY CONSUMPTION EXPENDITURE

The monthly expenditures are derived from the data of the Rural Household Budget S 1981/82 (see Kenya 1988). The expenditures cover all expenses, including the val home-produced food. Monthly expenditures are presented per household size class, the four study groups those expenditure levels were chosen that were according t average household sizes (measured in number of persons) of the groups. In order to g expenditures in July 1989 prices, the expenditure levels of 1981/82 were multiplied b being the ratio between the lower income index of consumer prices in Nairobi in July and that of 1981/82 (see Kenya 1990a and Kenya 1986a). Thus, the method of calcu was as follows:

	permanent labourers	resident casuals	non-resident casuals	non labour
• household size class	6-7	6-7	8-9	8-
• monthly expenditure, 1981/82 prices				
- on food	357	357	442	44
- on all items	541	541	699	69
• monthly expenditure, July 1989 prices				
- on food	678	678	840	84
- on all items	1028	1028	1328	132

7 VALUE OF RECEIPTS AND GIFTS

In order to be able to compare the value of receipts and gifts with the household income, both types of exchanges had to be given a monetary value. For the value of staple foods and of milk, the same conversion rates have been used as for the assessment of household income (see above). For 'other food items', the market prices that prevailed during the survey were used. For instance, in August 1989 a packet of sugar costed sh.8 in Kitale, so that amount was used as the monetary value of that exchange.

Appendix 2: Basic data

This appendix contains the data which form the base for the data presented in the Chapters to 7. All data are presented by study group (except Table A38) in the following 43 tables:

Table A1
Migration
(heads of households)

	permanent labourers	resident casuals	non-resident casuals	non-labourers
A) area of origin (%)				
(N=)	(47)	(51)	(165)	(35)
• Trans Nzoia	31.9	33.3	34.5	31.4
• Bungoma	17.0	31.4	38.2	28.6
• Turkana	25.5	23.5	6.1	-
• Kakamega	8.5	5.9	7.3	17.1
• Uasin Gishu	4.3	2.0	4.8	-
• Busia	2.1	-	3.6	-
• Nandi	-	2.0	2.4	2.9
• West Pokot	-	-	0.6	8.6
• Elgeyo Marakwet	4.3	-	-	2.9
• Siaya	4.3	-	0.6	-
• other districts	2.1	2.0	1.2	8.5
Total	100	100	99.3	100
B) number of years in Trans Nzoia				
(N=)	(32)	(33)	(108)	(24)
• average number of years	13.6	12.7	17.5	15.0
• distribution (%):				
<=5 years	18.8	21.2	17.9	25.0
5-15 years	50.0	45.5	34.0	33.3
>15 years	31.3	33.3	48.1	41.7
total	100	100	100	100
C) reason for coming to Trans Nzoia (%)				
(N=)	(32)	(33)	(108)	(24)
• to buy farm	-	-	40.7	41.7
• to find work	93.8	90.9	46.3	33.3
• to join family	6.2	6.0	10.2	16.7
• other reason	-	3.1	2.8	8.3
total	100	100	100	100

Source: Trans Nzoia Household Survey 1989.

Table A2
Study population: age groups, by residency

		permanent labourers	resident casuals	non-resident casuals	non-labourer
full-time residents	00-10yrs	159	169	627	133
	11-16yrs	46	56	228	49
	17-19yrs	17	21	79	24
	20-29yrs	43	47	152	40
	30-39yrs	33	46	126	22
	40-59yrs	32	19	88	21
	60+yrs	4	4	34	7
	unknown	1	-	3	1
	- subtotal	335	362	1337	297
part-time residents	00-10yrs	-	6	20	
	11-16yrs	1	5	20	2
	17-19yrs	2	2	17	7
	20-29yrs	5	2	31	2
	30-39yrs	1	-	10	-
	40-59yrs	1	1	8	3
	60+yrs	-	1	-	
	unknown	-	-	-	-
	- subtotal	10	17	106	14
non-residents	00-10yrs	1	1	6	1
	11-16yrs	-	2	5	-
	17-19yrs	1	1	5	-
	20-29yrs	2	2	22	4
	30-39yrs	2	2	12	2
	40-59yrs	-	-	4	1
	60+yrs	-	-	-	-
	unknown	-	1	1	-
	- subtotal	6	9	55	8
Total		351	388	1498	319

Source: Trans Nzoia Household Survey 1989.

Table A5
Household size

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) persons				
• average	7.4	7.4	8.8	8.9
• distribution (%)				
1-3	2.1	5.9	3.6	2.9
4-5	25.5	21.6	12.7	17.1
6-7	34.0	27.5	20.6	8.6
8-9	19.1	21.6	26.1	25.7
10-14	17.0	23.5	32.1	42.9
15+	2.1	-	4.8	2.8
- total	100	100	100	100
*B) consumer units**				
• average	4.7	4.8	5.3	5.4
• distribution (%)				
-1.9	-	-	2.4	-
2.0-3.9	40.4	37.3	18.2	22 9
4.0-5.9	34.0	35.3	42.4	34.3
6.0-7.9	25.5	21.6	33.3	37.1
8.0-9.9	-	5.9	3.6	5.7
10.0+	-	-	-	-
- total	100	100	100	100

* See note on consumer units in Appendix 1.
Source: Trans Nzoia Household Survey 1989.

Table A6
Data from the labourers administrations
(20 farms)

	1988 mar	apr	may	jun	jul	aug
• average number of labourers	50	59	77	96	114	100
• average number of labour days	732	866	1158	1485	1849	1238
• aver. nr. of days per labourer	14.6	14.7	15.0	15.5	16.2	12.4
• average payments (sh)	9685	10871	14637	19606	25384	15947
• aver. payments per labour day (sh)	13.2	12.6	12.6	13.2	13.7	12.9

	sep	oct	nov	dec	1989 jan	feb
• average number of labourers	84	89	102	86	72	54
• average number of labour days	1194	1065	1200	1070	897	718
• aver. nr. of days per labourer	14.2	12.0	11.8	12.4	12.5	13.3
• average payments (sh)	15666	14705	16480	14464	12005	8409
• aver. payments per labour day (sh)	13.1	13.8	13.7	13.5	13.4	11.7

Source: Trans Nzoia Large Farm Survey 1989.

Table A7
Farm land and farm labour

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) farm land				
• total acreage	1.8	0.5	2.1	4.8
• distribution:				
no land	9	25	22	3
0.1-0.99 acres	16	11	26	2
1.00-2.99 acres	18	15	83	13
3.00-9.99 acres	2	-	30	12
10+ acres	2	-	4	5
B) farm labour				
• nr. of farm labour equivalents	1.2	0.9	1.8	2.8
• farm labour equivalents per acre	0.7	1.8	0.9	0.6

Source: Trans Nzoia Household Survey 1989.

Table A8
Crops

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
• nr. of households cultivating crops	38	26	143	31
• idem, by crop:				
- maize	34	22	135	31
- beans	31	19	125	30
- bananas	-	4	30	8
- sweet potatoes	2	2	40	7
- irish potatoes	2	-	7	2
- fruit	-	-	15	-
- vegetables	-	1	26	4

Source: Trans Nzoia Household Survey 1989.

Table A9
Staple crops: yields

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) production per household				
• maize (kg)	524	243	995	2634
• beans (kg)	54	29	91	183
• sweet potatoes (kg)	6	7	92	35
• irish potatoes (kg)	1	-	2	1.2
• bananas (bunches)	-	0.0	0.3	1.7
B) production value per household				
• production value (sh)	1735	833	3484	7990
• distribution (N):				
sh 0	11	27	32	4
sh 1-499	6	2	9	1
sh 500-1,499	10	10	21	3
sh 1,500-4,999	18	10	68	12
sh 5,000+	2	2	35	15
C) production value per consumer unit				
• production value (sh)	348	162	667	1497
• distribution (N):				
sh 0	11	27	32	4
sh 1- 99	5	3	11	1
sh 100-499	17	15	47	9
sh 500-999	11	6	44	4
sh 1,000+	3	-	31	17

Source: Trans Nzoia Household Survey 1989

Table A10
Food self-sufficiency

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) "Able to grow enough to feed the family?"				
• always enough food grown	2	1	14	11
• usually enough	1	1	18	7
• sometimes enough	9	4	21	6
• not enough	20	21	68	5
• completely insufficient	7	12	13	1
• does not farm	8	12	28	3
*B) constraints concerning food crops cultivation**				
(N=)	(36)	(37)	(102)	(12)
• no land available	28	32	65	4
• no labour available	2	-	5	1
• poor soil	2	-	12	3
• need to sell crops	1	1	4	1
• not allowed to grow crops	1	4	-	-
• other	2	2	19	4

* Only households growing "sometimes enough", "not enough" or "completely insufficient", as mentioned under A
More than one answer was possible
Source: Trans Nzoia Household Survey 1989

Table A11
Livestock

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) total number of animals				
• graded cow	6	-	62	26
• grade bull	-	-	12	3
• grade calves	-	-	22	23
• ungrade cow	3	4	51	39
• ungrade bull	-	-	33	11
• ungrade calves	-	-	15	9
• ox	-	-	12	2
• donkey	-	-	2	3
• goat	3	3	15	4
• sheep	-	32	155	59
• chicken	244	160	693	170
• duck	11	26	46	18
• goose	4	2	5	1
• rabbit	-	2	29	4
• dove	7	7	56	16
B) number of households with:				
• cows	3	2	55	17
• ox/donkey	-	-	4	3
• sheep/goat	1	5	54	17
• poultry	42	36	141	30
C) number of animals per household				
• cows	0.2	0.0	1.2	3.2
• ox/donkey	-	-	0.1	0.1
• sheep/goat	0.1	0.7	1.0	1.8
• poultry	5.7	3.9	5.0	6.0
*D) livestock equivalents**				
• average number	0.2	0.2	1.3	2.9**
• distribution (N):				
no livestock	44	44	86	15
0.1-0.99 l.e.	1	3	24	3
1.0-1.99 l.e.	1	-	18	-
2.0-4.99 l.e.	1	4	28	9
5.0-9.99 l.e.	-	-	5	6
10.0+ l.e.	-	-	4	2

* Livestock equivalents (l.e.'s) consist of cows (both grade and ungraded), bulls, oxen (all 1.0 l.e.), calves (0.33 l.e.), donkey's (0.7 l.e.), sheep and goats (0.14 l.e.).
** There is one household in the group of non-labourers with almost 22 livestock equivalents. When leaving this case out the average becomes 2.4 for the non-labourers.
Source: Trans Nzoia Household Survey 1989.

Table A12
Agricultural permanent labour*

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) persons involved				
• total number of persons involved	51	1	5	2
farm manager	2	-	-	-
foreman	5	-	1	1
dairy worker/herdsman	14	-	1	1
watchman	4	-	-	-
shamba boy/lady	4	-	-	-
farm driver	6	-	2	-
farm office personnel	3	-	-	-
general farm worker	5	1	-	-
other activities	8	-	1	-
B) number of months worked (for N's, see under A)				
• total number of months	11.8	12	12	12
farm manager	12	-	-	-
foreman	12	-	12	12
dairy worker/herdsman	12	-	12	12
watchman	12	-	-	-
shamba boy/lady	12	-	-	-
farm driver	11.8	-	12	-
farm office personnel	12	-	-	-
general farm worker	10.6	12	-	-
other activities	12	-	12	-
*C) income earned (sh)** (for N's, see under A)*				
• income earned per worker	5348	5760	6072	4680
farm manager	8700	-	-	-
foreman	8136	-	5760	5760
dairy worker/herdsman	3201	-	6000	3600
watchman	2949	-	-	-
shamba boy/lady	4050	-	-	-
farm driver	6480	-	6600	-
farm office personnel	10400	-	-	-
general farm worker	2670	5760	-	-
other activities	7305	-	5400	-

* The permanent labourers in the two categories of casual labourers and in the category of non-labourers cc non-residential household members. The income from this source is only partly included in the calculation households' income.
** These are averages for persons undertaking permanent labour, not for households within the different g The period concerned is the agricultural cycle of 1988/89 (March 1988 to February 1989).
Source: Trans Nzoia Household Survey 1989.

Table A13
Agricultural casual labour

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) persons involved				
• total number of persons involved	51	91	321	-
seasonal worker	35	45	267	-
dairy worker/herdsman	3	7	12	-
foreman	1	2	1	-
watchman	-	15	5	-
shamba boy/lady	-	-	4	-
farm driver	1	2	6	-
fam office personnel	-	1	1	-
other activities	11	19	25	-
B) number of months worked (for N's, see under A)				
• number of months worked	6.0	8.1	6.0	-
seasonal worker	4.9	6.3	5.5	-
dairy worker/herdsman	6.7	10.6	9.0	-
foreman	5.0	12.0	12.0	-
watchman	-	10.1	11.8	-
shamba boy/lady	-	-	9.3	-
farm driver	2.0	12.0	6.2	-
farm office personnel	-	12.0	8.0	-
other activities	9.2	9.0	8.8	-
C) income earned (sh) (for N's, see under A)*				
• income earned per worker	1590	2901	1924	-
seasonal worker	1092	1899	1741	-
dairy worker/herdsman	2340	3619	2265	-
foreman	5040	5244	1500	-
watchman	-	4417	4368	-
shamba boy/lady	-	-	3075	-
farm driver	900	4740	3267	-
farm office personnel	-	3600	9600	-
other activities	2719	3339	2430	-

* These are averages for persons undertaking casual labour, not for households within the different groups.
The period concerned is the agricultural cycle of 1988/89 (March 1988 to February 1989).
Source: Trans Nzoia Household Survey 1989.

Table A14
Non-agricultural employment

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) number of persons engaged in				
• wage labour	4	6	66	26
• self-employment	-	4	29	8
total	4	10	95	32
B) income per worker				
• from wage labour (sh)	3075	8927	7701	13399
• distribution (N):				
up to sh 999	1	1	9	3
sh 1,000- 4,999	2	2	33	7
sh 5,000- 9,999	1	1	12	5
sh 10,000-19,999	-	1	5	4
sh 20,000+	-	1	7	7
• from self employment (sh)	-	3094	8500	3406
• distribution (N):				
up to sh 999	-	3	3	1
sh 1,000- 4,999	-	-	11	5
sh 5,000- 9,999	-	-	6	2
sh 10,000-19,999	-	1	6	-
sh 20,000+	-	-	3	-
C) residency of workers (N)				
• wage labour				
- full time residents	-	3	39	18
- part time residents	2	-	12	3
- non residents	2	3	15	5
total	4	6	66	26
• self employment				
- full time residents	-	4	23	8
- part time residents	-	-	4	-
- non-residents	-	-	2	-
total	-	4	29	8

Source: Trans Nzoia Household Survey 1989.

Table A15
Rural employment: sexual division of labour

	permanent labourers		resident casuals		non-resident casuals		non-labourers	
	male	female	male	female	male	female	male	female
A) persons involved	*56*	*49*	*56*	*46*	*197*	*215*	*31*	*4*
agricultural labour	*55*	*46*	*49*	*43*	*132*	*190*	*2*	-
• casual labour	10	41	48	43	128	190	-	-
• permanent labour	45	5	1	-	5	-	2	-
non-agricultural labour	*1*	*3*	*5*	*1*	*48*	*13*	*23*	*2*
• temporary employment	-	-	2	-	25	2	10	-
• regular employment	1	-	3	-	23	4	13	1
• domestic labour	-	3	-	1	-	7	-	1
self-employment	-	-	2	2	*16*	*12*	*6*	*2*
• trading	-	-	-	-	1	7	-	1
• self-employment	-	-	2	-	15	3	6	-
• food preparation	-	-	-	2	-	2	-	1
B) months worked	*11.1*	*6.4*	*10.1*	*5.4*	*7.9*	*6.1*	*9.7*	*6.5*
agricultural labour	*11.0*	*6.3*	*10.3*	*5.7*	*6.9*	*5.7*	*12*	-
• casual labour	6.9	5.8	10.3	5.7	6.7	5.7	-	-
• permanent labour	12.0	10.6	12.0	-	12.0	-	12.0	-
non-agricultural labour	*12 0*	*7.0*	*9.0*	*2.0*	*9.5*	*9.8*	*9.8*	*7.0*
• temporary employment	-	-	4.5	-	7.8	8.5	8.2	-
• regular employment	12.0	-	12.0	-	11.3	10.0	11.0	12.0
• domestic labour	-	7.0	-	2.0	-	10.1	-	2.0
self-employment	-	-	*7.5*	*1.0*	*10.9*	*8.2*	*8.7*	*6.0*
• trading	-	-	-	-	7.0	5.4	-	12.0
• self-employment	-	-	7.5	-	11.2	12.0	8.7	-
• food preparation	-	-	-	1.0	-	12.0	-	0.04
*C) income earned (sh)**	*5123*	*1619*	*4673*	*1611*	*4857*	*2074*	*11286*	*8777*
agricultural labour	*5107*	*1587*	*4022*	*1691*	*2442*	*1701*	*4680*	-
• casual labour	1989	1493	3986	1690	2300	1701	-	-
• permanent labour	5799	2358	5760	-	6072	-	4680	-
non-agricultural labour	*6000*	*2100*	*10680*	*160*	*9723*	*3199*	*45928*	*15740*
• temporary employment	-	-	2700	-	4816	3525	5688	-
• regular employment	6000	-	16000	-	15056	3350	20001	31080
• domestic labour	-	2100		160	-	3020	-	400
self-employment	-	-	*5588*	*600*	*10331*	*6767*	*3937*	*1814*
• trading	-	-	-	-	2100	3029	-	3600
• self-employment	-	-	5588	-	10880	14600	3937	-
• food preparation	-	-	-	600	-	8100	-	28

* These are averages for persons undertaking rural employment, not for households within the different groups.
Source: Trans Nzoia Household Survey 1989.

Table A16
Rural employment: constraints, by type of activity
(frequencies)

	permanent labourers (n=9)	resident casuals (n=10)	non-resident casuals (n=30)	non-labourers (n=7)
A) agricultural casual labour				
• seasonality	6	9	19	4
• lack of jobs	-	-	4	1
• no time	-	-	1	-
• distance	-	-	1	-
• have to know employer	-	-	1	-
• lack of capital	-	-	-	-
• not allowed by farm owner	-	-	1	-
• lack of skills	-	-	3	-
• other reasons	-	7	-	-
• difficult, no reason mentioned	-	9	-	-
• no problem	3	1	4	1
• no answer	-	-	-	1
total	9	10	30	7
B) agricultural permanent labour				
• seasonality	1	-	13	1
• lack of jobs	-	-	-	-
• no time	-	-	-	1
• distance	-	-	1	-
• have to know employer	2	3	1	1
• lack of capital	-	-	-	-
• not allowed by farm owner	-	-	1	-
• lack of skills	-	-	-	-
• other reasons	1	3	3	-
• difficult, no reason mentioned	-	3	6	-
• no problem	4	1	3	-
• no answer	-	-	2	1
total	9	10	30	7
C) non-agricultural employment				
• seasonality	-	-	-	-
• lack of jobs	-	-	1	-
• no time	1	-	-	-
• distance	-	-	1	1
• have to know employer	-	-	1	-
• lack of capital	3	5	21	3
• not allowed by farm owner	5	4	1	-
• lack of skills	-	1	2	-
• other reasons	-	-	-	-
• difficult, no reason mentioned	-	-	-	-
• no problem	-	-	3	3
• no answer	-	-	-	-
total	9	10	30	7

Source: Trans Nzoia In-depth Study 1989.

Table A17
Household income

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) total household income				
• per household (sh)	9,625	6,950	12,131	21,714
(standard deviation)	(6,915)	(4,535)	(10,746)	(18,898)
• distribution (N):				
up to sh 2,500	2	10	9	1
sh 2,500-4,999	12	7	28	3
sh 5,000-7,499	9	16	29	4
sh 7,500-9,999	8	9	25	5
sh 10,000-14,999	8	6	32	5
sh 15,000-24,999	5	3	28	7
sh 25,000+	3	-	14	12
• per consumer unit (sh)	2,104	1,518	2,318	4,217
(standard deviation)	(1,545)	(971)	(1,861)	(3,855)
• distribution (N):				
up to sh 499	-	8	5	3
sh 500- 999	11	8	24	1
sh 1,000-1,499	14	12	31	3
sh 1,500-2,499	7	15	55	8
sh 2,500-4,999	13	8	35	10
sh 5,000+	2	-	15	10
C) cash income				
• per consumer unit (sh)	1,698	1,363	1,484	2,497
(standard deviation)	(1,184)	(948)	(1,384)	(3,010)
• distribution (N):				
up to sh 250	-	2	9	8
sh 250-750	8	12	35	4
sh 750-1,250	17	14	44	4
sh 1,250-1,999	7	12	46	5
sh 2,000-2,999	8	9	15	4
sh 3,000-3,999	5	-	5	3
sh 4,000+	2	2	11	7

Source: Trans Nzoia Household Survey 1989

Table A18
Sources of income

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) income earned (sh/cu)				
• *agricultural employment*	*1609*	*1179*	*742*	*17*
casual labour	362	1164	701	-
permanent labour	1247	15	38	17
• *non-agricultural employment*	*7*	*74*	*330*	*1496*
temporary employment	-	6	83	289
regular employment	6	68	232	1204
domestic labour	1	0	15	3
• *self-employment*	-	*83*	*233*	*209*
trading	-	-	37	47
self-employment	-	80	182	162
food preparation	-	3	14	-
• *farming*	*487*	*182*	*1017*	*2495*
home production	241	129	432	819
farm sales	81	26	182	731
cattle	165	27	403	900
rent	-	-	-	45
total income per consumer unit	2104	1518	2318	4217
B) share of different income sources (%)				
• *agricultural employment*	*78.7*	*80.4*	*41.5*	*0.5*
casual labour	16.8	79.3	40.6	-
permanent labour	61.8	1.0	0.9	0.5
• *non-agricultural employment*	*0.7*	*4.4*	*12.4*	*28.5*
temporary employment	-	0.3	4.2	10.6
regular employment	0.6	4.1	7.3	17.9
domestic labour	0.1	0.0	0.9	0.0
• *self-employment*	-	*2.1*	*6.1*	*7.3*
trading	-	-	0.9	1.4
self-employment	-	1.9	4 8	509
food preparation	-	0.2	0.4	-
• *farming*	*20.6*	*13.1*	*40.0*	*63.4*
home production	14.7	10.3	21.8	27.5
farm sales	3.4	1.3	6.1	13.9
cattle	2.5	1.5	12.1	21.0
rent	-	-	-	1.0
total	100	100	100	100

Source: Trans Nzoia Household Survey 1989

Table A19
'Difficult months' as mentioned by the respondents
(August 1988-July 1989; numbers)

	(N)	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*
Permanent labourers	(9)	6	6	0	0	0	0
Resident casuals	(10)	7	6	0	0	0	0
Non-resident casuals	(30)	28	14	3	1	0	0
Non-labourers	(7)	4	3	2	1	0	0

	(N)	*Feb.*	*Mar.*	*April*	*May*	*June*	*July*
Permanent labourers	(9)	0	0	1	1	5	7
Resident casuals	(10)	0	0	0	1	3	8
Non-resident casuals	(30)	0	0	1	6	20	25
Non-labourers	(7)	0	0	2	2	5	6

Source: Trans Nzoia In-depth Study 1989.

Table A20
Components of monthly cash income
(August 1988 - July 1989; shilling per household)

	Aug.	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*April*	*May*	*June*	*July*
Permanent labourers (N=9)												
farm sales	0	11	0	0	89	108	78	0	46	0	0	0
permanent labour	356	356	356	356	356	343	343	343	343	343	343	343
casual labour	205	192	316	345	266	206	172	156	320	226	293	271
regular employment	17	17	0	0	0	0	0	0	0	0	0	0
self-employment	67	67	67	67	67	67	67	67	67	67	67	122
Resident casuals (N=10)												
farm sales	18	0	0	0	0	30	140	49	0	0	0	0
permanent labour	53	53	53	53	53	53	53	53	53	53	53	53
casual labour	343	304	305	410	380	394	420	433	421	532	536	511
regular employment	0	0	0	0	0	0	0	0	0	0	85	85
self-employment	0	0	13	133	133	133	0	0	0	0	120	135
Non-resident casuals (N=30)												
farm sales	22	66	4	94	287	40	69	87	96	22	16	58
permanent labour	8	8	8	8	8	8	0	0	0	0	0	0
casual labour	257	254	425	450	463	377	288	312	449	580	498	338
regular employment	187	194	187	216	223	248	248	248	248	248	229	214
self-employment	215	219	211	224	148	163	163	140	116	120	133	121
Non-labourers (N=7)												
farm sales	64	13	13	13	227	3070	13	1929	16	13	64	13
permanent labour	0	0	0	0	0	0	0	0	0	0	0	0
casual labour	0	0	0	0	0	0	0	0	0	0	0	0
regular employment	521	521	614	614	614	614	614	614	614	614	614	236
self-employment	642	642	642	642	642	657	657	654	642	642	642	642

Source: Trans Nzoia In-depth Study 1989

TAble A21
Area of origin of heads of households and their spouses
(frequencies)

	permanent labourers (n=9)		resident casuals (n=10)		non-resident casuals (n=30)		non-labourers (n=7)	
	men	women	men	women	men	women	men	women
• Trans Nzoia	1	2	3	3	11	13	1	1
• Bungoma	3	1	4	4	13	12	4	4
• Kakamega	2	1	1	1	3	5	-	1
• Turkana	2	2	2	2	-	-	-	-
• Uasin Gishu	-	-	-	1	2	-	-	-
• West Pokot	-	-	-	1	-	1	1	1
• Siaya	-	-	-	-	1	1	-	-
• Elgeyo Marakwet	1	1	-	-	-	-	-	-
• Murang'a	-	-	-	-	-	-	1	1
• Busia	-	2	-	-	-	-	-	-
• Uganda	-	1	-	-	-	1	-	-
Total	9	10	10	11	30	33	7	8

Source: Trans Nzoia In-depth Study 1989.

Table A22
Receipts and gifts, by type of relation
(shilling per household)

	permanent labourers (n=9)			resident casuals (n=10)		
	receipts	gifts	balance	receipts	gifts	balance
• parents husband	79	503	-424	114	202	-88
• parents wife/wives	19	214	-195	175	252	-77
• brothers/sisters husband	117	290	-173	110	283	-173
• brothers/sisters wives	164	106	+58	80	112	-32
• non-residents/children	498	139	+359	-	5	-5
• others	46	122	-76	2	22	-76
total	923	1374	-451	481	876	-395

	non-resident casuals (n=30)			non-labourers (n=7)		
	receipts	gifts	balance	receipts	gifts	balance
• parents husband	63	357	-294	4	1082	-1078
• parents wife/wives	126	235	-109	38	603	-565
• brothers/sisters husband	189	266	-177	28	654	-626
• brothers/sisters wives	157	110	-63	136	278	-142
• non-residents/children	119	15	+104	28	-	+28
• others	26	65	-39	-	127	-127
total	480	1048	-568	234	2744	-2510

Source: Trans Nzoia In-depth Study 1989.

Table A23
Geographical distribution of receipts and gifts
(shilling per household)

	permanent labourers (n=9)			resident casuals (n=10)		
	receipts	gifts	balance	receipts	gifts	balance
• district of origin	249	1200	-951	160	494	-334
• other districts	673	174	+499	320	381	-61
total	922	1374	-452	480	875	-395

	non-resident casuals (n=30)			non-labourers (n=7)		
	receipts	gifts	balance	receipts	gifts	balance
• district of origin	98	292	-194	53	686	-633
• other districts	381	755	-374	180	2058	-1878
total	479	1047	-568	233	2744	-2511

Source: Trans Nzoia In-depth Study 1989

Table A24
Seasonality of exchanges, by type of exchange
(August 1988 - July 1989; number of exchanges per month)

	Aug.	*Sept*	*Oct*	*Nov*	*Dec.*	*Jan*	*Feb*	*Mar*	*April*	*May*	*June*	*July*
PERMANENT LABOURERS (N=9)												
• all exchanges receipts	7	4	4	2	5	6	4	2	2	63	9	14
gifts	6	4	5	3	8	11	6	9	4	3	14	12
• staples receipts	1	1	2	1	1	1	2	0	0	0	2	3
gifts	2	0	1	1	1	3	0	1	0	1	2	4
• other food receipts	2	1	0	0	1	1	0	0	0	2	3	4
gifts	1	1	1	1	2	2	2	3	1	1	5	3
• cash receipts	4	2	2	1	3	4	2	2	2	1	4	7
gifts	3	3	3	1	5	6	4	5	3	1	7	5
RESIDENT CASUALS (N=10)												
• all exchanges receipts	3	4	3	2	7	6	2	4	5	4	9	12
gifts	14	7	9	10	10	11	7	8	9	5	10	16
• staples receipts	2	3	3	2	3	4	1	3	3	4	6	6
gifts	6	4	3	3	1	1	3	2	2	2	3	6
• other food receipts	1	0	0	0	2	1	1	1	2	0	1	4
gifts	1	1	2	2	5	4	1	1	4	0	3	4
• cash receipts	0	1	0	0	2	1	0	0	0	0	2	2
gifts	7	2	4	5	4	6	3	5	3	6	4	6
NON-RESIDENT CASUALS (N=9)												
• all exchanges receipts	23	18	21	15	27	11	18	16	17	18	23	37
gifts	37	40	35	31	36	32	38	35	35	36	44	47
• staples receipts	10	9	9	6	10	3	5	6	4	7	11	16
gifts	7	8	6	6	7	7	9	7	9	7	7	14
• other food receipts	7	5	5	3	11	4	7	4	6	5	6	12
gifts	15	14	12	12	12	12	11	12	14	11	19	18
• cash receipts	6	4	7	6	6	4	6	6	7	6	6	9
gifts	15	18	17	13	17	13	18	16	12	18	18	15
NON-LABOURERS (N=7)												
• all exchanges receipts	3	2	2	6	2	3	2	5	4	2	6	5
gifts	11	9	6	8	10	11	11	10	10	9	11	12
• staples receipts	1	1	1	2	1	1	1	2	2	1	1	3
gifts	3	2	2	1	2	1	2	2	1	2	3	2
• other food receipts	2	1	1	3	1	2	1	3	2	1	4	2
gifts	1	1	1	1	2	3	2	1	2	1	1	2
• cash receipts	0	0	0	1	0	0	0	0	0	0	1	0

Table A25
Seasonality of exchanges with Bungoma District
(August 1988 - July 1989; number of exchanges per month)

	(N)	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*
Permanent labourers	(9)						
receipts		0	1	1	0	1	2
gifts		1	1	1	0	1	2
Resident casuals	(10)						
receipts		0	1	2	1	0	1
gifts		1	2	2	0	0	1
Non-resident casuals	(30)						
receipts		6	3	5	5	7	4
gifts		6	5	5	6	4	10
Non-labourers	(7)						
receipts		3	2	2	0	1	2
gifts		3	1	1	1	2	2

	(N)	*Feb.*	*Mar.*	*April*	*May*	*June*	*July*
Permanent labourers	(9)						
receipts		2	0	2	1	2	0
gifts		0	0	0	1	1	0
Resident casuals	(10)						
receipts		0	1	1	2	4	4
gifts		2	1	2	1	4	4
Non-resident casuals	(30)						
receipts		7	6	4	7	5	7
gifts		6	9	3	7	10	8
Non-labourers	(7)						
receipts		2	0	0	1	3	0
gifts		1	0	2	4	2	1

Source: Trans Nzoia In-depth Study 1989.

Table A26
Houses

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) number of houses				
• average	1.6	1.7	1.8	1.8
• distribution (%)				
1	51.1	52.9	51.5	26.7
2	36.2	29.4	27.9	25.5
3	12.8	11.8	15.8	18.8
4+	-	5.9	4.8	29.0
- total	100	100	100	100
B) rooms				
• average	2.2	2.0	2.8	3.7
• distribution (%)				
1	31.9	43.1	26.7	11.4
2	36.2	31.4	25.5	17.1
3-4	27.7	19.6	32.1	34.3
5+	4.3	5.9	15.8	37.1
- total	100	100	100	100
C) facilities				
• store (%)	36.2	37.3	44.2	57.1
• fire places (average number)	1.1	1.1	1.2	1.2
• latrine (%):				
- individual	23.4	25.5	56.4	74.3
- shared	34.0	39.2	27.9	22.9
- none	42.6	35.3	15.8	2.9
total	100	100	100	100
D) type (%) (N=)	(47)	(51)	(163)	(35)
• self built	12.8	49.0	90.8	94.3
• bought from farm owner	2.1	-	-	-
• bought from labourer	-	2.0	0.6	-
• rented from farm owner	85.1	49.0	0.6	-
• rented from landlord	-	-	8.0	5.7
total	100	100	100	100

Source: Trans Nzoia Household Survey 1989.

Table A27
Firewood

	permanent labourers	resident casuals	non-resident casuals	non-labourers
A) location during wet season (%)	(47)	(51)	(163)	(33)
• on own farm	2.1	2.0	6.7	21.2
• on large farm of employer	87.2	80.4	8.0	-
• elsewhere	10.6	17.6	85.3	78.8
total	100	100	100	100
B) collection time (wet season)	(47)	(51)	(165)	(33)
• hours per week	5.5	4.7	4.5	4.0
C) collected amount (wet season)	(47)	(51)	(162)	(32)
• number of bundles	2.4	2.4	2.7	2.3
D) expenses on firewood	(46)	(51)	(163)	(35)
• shilling per month	28	18	49	54

Source: Trans Nzoia Household Survey 1989.

Table A28
Drinking water

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (165)	non-labourers (35)
A) drinking water source (%)				
• river/pond/well/reservoir	47.8	57.9	82.7	72.9
• improved water source	51.1	42.1	9.7	7.1
• other	1.1	-	7.6	20.0
total	100	100	100	100
B) distance to drinking water source (%)				
• 0-10 minutes	74.5	56.9	52.4	71.4
• 11-30 minutes	18.1	38.2	34.8	25.7
• 31-60 minutes	5.3	4.9	9.7	2.9
• >60 minutes	2.1	-	3.0	-
total	100	100	100	100

Source: Trans Nzoia Household Survey 1989.

Table A29

Food consumption: dishes

(N=)	permanent labourers (47)	resident casuals (51)	non-resid. casuals (164)	non-labourers (35)	dish nr. (see below)
% households consuming dish listed					
uji	57.4	70.6	59.1	31.1	10
ugali	100.0	92.2	91.5	75.6	11
other cereal dishes	17.0	25.5	31.7	28.9	12,40,41
legume dishes	17.0	19.6	24.4	15.6	30,31,33
roots & tuber dishes	10.6	11.8	4.3	8.9	50,54,55,57
vegetable dishes	93.6	88.2	86.0	66.7	60,67
fish/meat/egg dishes	10.6	9.8	12.2	11.1	44-48
single food items	19.1	15.7	16.5	26.7	99
snacks	4.3	-	0.6	-	15,16
tea	74.5	70.6	65.2	71.1	1
miscellaneous	4.3	9.8	2.4	2.2	2,3,5,83
*average amount consumed per household (grams)**					
uji	203	341	313	165	10
ugali	1939	1693	1874	1587	11
other cereal dishes	452	490	988	960	12,40,41
legume dishes	337	360	711	397	30,31,33
roots & tuber dishes	126	153	71	145	50,54,55,57
vegetable dishes	795	607	668	554	60,67
fish/meat/egg dishes	130	37	91	153	44-48
single food items	233	296	219	332	99
snacks	41	-	3	-	15,16
tea	804	498	633	937	1
miscellaneous	9	24	24	1	2,3,5,83

list of dishes

1	tea	31	peas/beans with roots	54	cassava
2	coffee	33	groundnuts	55	irish potatoes
3	cocoa	40	rice	57	sweet potatoes
5	milk	41	maize & beans/githeri	60	leafy vegetables
10	uji	44	fish, cooked	67	mushrooms
11	ugali	45	fish, fried	83	soup
12	maize	46	meat, cooked	99	any ingredient taken by itself, or with addition of salt.
15	chapati	47	meat, roasted		
16	mandazi	48	eggs		
30	peas/beans	50	bananas		

* The weights concern the sum of the ingredients before preparation, i.e. excluding added water.
The data refer to the results of one-day household recalls.

Source: Trans Nzoia Household Survey 1989.

Table A30

Food consumption: ingredients 1

(% households consuming ingredients listed)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (164)	non-labourers (35)
Cereals				
maize: fresh	4.3	3.9	3.0	-
maize: dry	14.9	21.6	29.9	24.4
maize flour	100.0	96.1	96.3	75.6
rice	-	-	-	2.2
wheat flour	4.3	-	0.6	-
millet flour	2.1	-	1.2	-
bread	-	-	2.4	6.7
mandazi	2.1	-	1.2	-
cerelac/biscuits	2.1	3.9	-	2.2
Grain legumes				
pigeon peas	-	-	0.6	-
beans	29.8	39.2	53.0	40.0
groundnut	-	-	0.6	-
green peas	-	-	0.6	-
Roots, tubers & starchy staples				
cassava	-	2.0	-	-
cooking banana	-	-	1.2	2.2
sweet potato	4.3	3.9	6.7	4.4
irish potato	12.8	11.8	3.7	6.7
Vegetables				
leafy vegetable	44.7	39.2	28.0	17.8
tomato	4.3	3.9	5.5	11.1
cabbage	68.1	64.7	68.3	55.6
mushroom	2.1	-	-	-
Fruits				
sweet banana	-	-	0.6	2.2
mango	-	-	1.8	-
citrus (whole or juice)	2.1	-	3.0	-
sugar cane	-	-	0.6	-
passion fruit	2.1	-	-	-
Meats & animal products				
beef	6.4	-	6.7	8.9
other meat	-	-	0.6	-
poultry	4.3	3.9	0.6	-
eggs	-	3.9	3.7	2.2
milk	63.8	54.9	64.6	66.7
fish: fresh	-	-	0.6	-
fish: dried	-	2.0	3.0	2.2
Seeds & nuts				
simsim	-	-	0.6	-
Miscellaneous				
sugar	76.6	80.4	71.3	71.1
soda	-	-	1.2	-
fat/blueband	70.2	60.8	53.7	66.7
beer	-	-	0.6	-
other*	4.3	-	1.8	2.2

* Sweets, main ingredients of prepared drinks, salty ingredients and spices.

Source: Trans Nzoia Household Survey 1989.

Table A31

Food consumption: ingredients 2

(average amount consumed per consumer unit, in grams)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (164)	non-labourers (35)
Cereals				
maize: fresh	7	5	6	-
maize: dry	41	41	73	55
maize flour	436	426	395	314
rice	-	-	-	5
wheat flour	7	-	0	-
millet flour	1	-	2	-
bread	-	-	3	11
mandazi	0	-	0	-
cerelac/biscuits	0	1	-	0
Grain legumes				
pigeon peas	-	-	1	-
beans	105	114	221	145
groundnut	-	-	0	-
green peas	-	-	1	-
Roots, tubers & starchy staples				
cassava	-	9	-	-
cooking banana	-	-	2	22
sweet potato	19	14	24	24
irish potato	20	20	12	10
Vegetables				
leafy vegetable	61	47	38	30
tomato	2	6	2	6
cabbage	82	72	76	57
mushroom	6	-	-	-
Fruits				
sweet banana	-	-	0	1
mango	-	-	1	-
citrus (whole or juice)	2	-	2	-
sugar cane	-	-	0	-
passion fruit	0	-	-	-
Meats & animal products				
beef	14	-	8	24
other meat	-	-	1	-
poultry	8	6	3	-
eggs	-	1	1	1
milk	198	172	142	240
fish: fresh	-	-	0	-
fish: dried	-	0	3	1
Seeds & nuts				
simsim	-	-	1	-
Miscellaneous				
sugar	40	49	30	39
soda	-	-	0	-
fat/blueband	11	12	7	9
beer	-	-	8	-
other*	0	-	0	0

* Sweets, main ingredients of prepared drinks, salty ingredients and spices.

Source: Trans Nzoia Household Survey 1989.

Table A32

Food consumption: food groups

(grams)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (164)	non-labourers (35)
Average amount consumed per household				
cereals	2340	2170	2508	2713
legumes	524	588	1197	1107
roots, tubers, starchy staples	197	209	189	294
vegetables	694	549	602	655
fruits	12	0	15	3
animal products	1055	728	829	1634
fats, oil seeds, nuts	55	47	41	58
miscellaneous	195	208	215	259
• total	5071	4499	5596	6724
Average amount consumed per consumer unit				
cereals	493	473	479	496
legumes	105	114	224	187
roots, tubers, starchy staples	40	42	38	72
vegetables	151	125	116	119
fruits	3	0	3	2
animal products	220	179	157	341
fats, oil seeds, nuts	11	12	8	11
miscellaneous	41	49	40	50
• total	1063	994	1064	1278

Source: Trans Nzoia Household Survey 1989.

Table A33

Food consumption: nutrients
(per consumer unit)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (164)	non-labourers (35)
Energy				
• average (kcal)	2324	2261	2252	2581
• s.d.	756	927	819	862
• distribution: % of requirements*				
100+	15	24	17	43
80-99.9	34	18	27	11
60-79.9	28	29	28	20
<60	23	29	28	26
	100	100	100	100
Proteins				
• average (grams)	60	57	66	72
• s.d.	24	26	29	30
• distribution: % of requirements**				
100+	66	57	70	74
80-99.9	15	20	12	9
60-79.9	11	10	13	14
<60	9	14	5	3
	100	100	100	100
Fats				
• average (grams)	32	28	26	40
• s.d.	26	21	17	27
Contribution macro-nutrients to energy intake				
carbohydrates	1793	1783	1756	1930
proteins	289	252	234	363
fats	242	226	262	287

* Energy requirements are put at 2960 kcal per consumer unit per day.

** A safe level of protein intake is estimated at 50 grams per consumer unit per day. For calculation, see Appendix 1.

Source: Trans Nzoia Household Survey 1989.

Table A34

Food consumption: energy composition
(kcal/day/consumer unit)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (164)	non-labourers (35)
a) food groups				
cereals	1732	1668	1684	1747
legumes	70	93	175	133
roots, tubers, starchy staples	37	44	39	81
vegetables	43	36	33	35
fruits	2	0	2	2
animal products	174	120	124	278
fats, oil seeds, nuts	103	104	70	121
miscellaneous	162	195	126	202
• total	2324	2261	2252	2581
b) home-produced				
cereals	270	232	476	836
legumes	70	49	139	101
roots, tubers, starchy staples	6	11	30	53
vegetables	27	25	19	22
fruits	0	0	1	0
animal products	12	9	36	85
fats, oil seeds, nuts	2	3	0	2
miscellaneous	0	0	0	0
• total	385	328	702	1099
(b) as percentage of (a)				
cereals	16	14	28	48
legumes	100	53	79	76
roots, tubers, starchy staples	16	25	77	65
vegetables	63	69	58	63
fruits	0	0	50	0
animal products	7	8	29	31
fats, oil seeds, nuts	2	2	0	2
miscellaneous	0	0	0	0
• total	17	15	31	43

Source: Trans Nzoia Household Survey 1989.

Table A35

Food consumption: protein composition

(grams/day/consumer unit)

(N=)	permanent labourers (47)	resident casuals (51)	non-resident casuals (164)	non-labourers (35)
Food groups				
cereals	40.0	38.5	39.5	41.0
legumes	5.8	7.5	14.1	10.9
roots, tubers, starchy staples	0.7	0.7	0.6	1.0
vegetables	3.3	2.7	2.4	2.7
fruits	0.0	0.0	0.0	0.0
animal products	10.5	7.2	8.7	16.3
fats, oil seeds, nuts	0.0	0.0	0.2	0.0
miscellaneous	0.0	0.0	0.1	0.0
• total	60.3	56.6	65.6	71.8
Home-produced				
cereals	6.3	5.4	11.2	19.6
legumes	5.8	4.1	11.2	8.2
roots, tubers, starchy staples	0.2	0.1	0.4	0.5
vegetables	2.1	2.0	1.4	1.8
fruits	0.0	0.0	0.0	0.0
animal products	1.6	1.2	2.3	4.6
fats, oil seeds, nuts	0.0	0.0	0.0	0.0
miscellaneous	0.0	0.0	0.0	0.0
• total	16.0	12.8	26.5	34.7

Source: Trans Nzoia Household Survey 1989.

Table A36

Mothers: anthropometry and health

	permanent labourers	resident casuals	non-resident casuals	non-labourers
sample composition				
17-29 yr	30	29	92	21
30-39 yr	13	22	61	11
40-59 yr	9	5	31	6
unknown	-	-	2	0
• total	52	56	186	38
weight				
• N	52	55	185	38
• average (kg)	54.9	53.2	55.6	58.7
• distribution (%)				
<40	0	2	1	0
40-45	6	9	7	3
45-50	19	27	17	8
50-60	48	47	50	53
60+	27	15	25	37
	100	100	100	100
height				
• N	52	56	186	38
• average (cm)	160.5	160 9	161 1	162.8
• distribution (%)				
<145	0	0	1	0
145-150	8	0	5	0
150-155	10	14	10	16
155-160	21	30	29	26
160+	62	55	56	58
	100	100	100	100
weight-for-height				
• N	52	55	185	38
• average	96 9	93.5	97.5	101.5
• s.d.	12 2	10 9	14.0	14.0
• distribution (%)				
<80	4	9	7	3
80-85	14	13	8	5
85-90	12	20	17	11
90-95	23	20	16	21
95-100	21	13	17	11
100+	27	25	36	50
	100	100	100	100
reported illness				
• N	52	56	186	38
• ill during past week (average)	2.5	2.4	3.4	2.7
• distribution (%)				
0 days	54	54	39	39
1-3 days	15	16	15	32
4-6 days	2	4	8	8
7 days	29	27	38	21
	100	100	100	100

Source: Trans Nzoia Household Survey 1989.

Table A37
Children: study population

	permanent labourers	resident casuals	non-resident casuals	non-labourers
all children				
boys	77	80	306	60
girls	71	77	275	58
• total	148	157	581	118
6-23 months				
boys	12	18	58	13
girls	15	13	64	9
• total	27	31	122	22
24-59 months				
boys	33	22	117	23
girls	28	28	97	20
• total	61	50	214	43
60-119 months				
boys	32	40	131	24
girls	28	36	114	29
• total	60	76	245	53

Source: Trans Nzoia Household Survey 1989.

Table A38
Children: weight and height, by sex and 3-12 months age groups

A) WEIGHT (kg)

boys N	boys average	boys s.d.	age age (months)	girls N	girls average	girls s.d.
16	8.0	1.0	06 - 09	13	6.9	1.2
13	8.3	0.8	09 - 12	21	7.8	1.4
13	8.9	1.3	12 - 15	17	8.7	1.3
19	9.3	1.6	15 - 18	16	8.6	1.5
19	10.2	1	18 - 21	14	9.8	1.9
20	10.2	1.7	21 - 24	18	9.9	1.6
12	9.7	1.1	24 - 27	14	10.4	1.4
16	10.6	1.8	27 - 30	15	11.0	0.9
31	12.8	1.8	30 - 36	23	11.9	1.8
37	13.1	1.8	36 - 42	27	12.8	2.0
31	14.4	2.5	42 - 48	34	14.1	2.0
65	15.2	2.2	48 - 60	55	14.8	2.1
49	16.6	2.2	60 - 72	43	15.9	2.4
54	18.7	2.8	72 - 84	41	17.9	2.6
45	20.4	2.9	84 - 96	42	19.5	2.8
39	22.3	2.8	96 - 108	38	21.9	3.1
32	24.7	3.4	108 - 120	38	24.7	3.4

B) HEIGHT (cm)

boys N	boys average	boys s.d.	age months	girls N	girls average	girls s.d.
15	69.5	2.9	06 - 09	10	65.8	3.7
13	69.2	3.3	09 - 12	20	69.9	5.5
13	74.0	2.9	12 - 15	17	73.7	5.3
19	73.9	4.3	15 - 18	15	74.8	4.3
18	79.6	3.7	18 - 21	14	79.3	5.3
20	79.9	4.8	21 - 24	17	78.9	5.1
12	78.2	3.8	24 - 27	14	80.8	3.8
16	80.5	5.7	27 - 30	15	84.1	4.1
30	90.8	5.1	30 - 36	23	88.9	8.7
36	90.8	5.1	36 - 42	28	90.7	7.9
31	95.7	7.7	42 - 48	34	95.9	7.3
65	100.4	7.2	48 - 60	55	99.9	7.0
48	105.9	6.6	60 - 72	43	104.6	6.4
54	113.5	7.4	72 - 84	41	11.4	7.5
45	117.8	6.7	84 - 96	41	116.5	7.3
39	122.2	5.8	96 - 108	37	122.3	5.0
32	127.3	6.3	108 - 120	38	127.7	8.5

Source: Trans Nzoia Household Survey 1989.

Table A39
Children: illness

	permanent labourers	resident casuals	non-resident casuals	non-labourers
6-23 months				
• N	27	31	122	22
• nr. of days ill (average)	3.4	2.9	2.8	2.5
• distribution (%)				
0 days	33	52	48	59
1-3 days	15	6	13	5
4-6 days	26	10	9	5
7 days	26	32	30	32
	100	100	100	100
24-59 months				
• N	61	50	214	43
• nr. of days ill (average)	2.3	1.9	2.6	2.1
• distribution (%)				
0 days	53	64	51	53
1-3 days	15	12	15	21
4-6 days	15	4	8	5
7 days	18	20	26	21
	100	100	100	100
60-119 months				
• N	60	76	245	53
• nr. of days ill (average)	1.6	2.0	2.0	2.7
• distribution (%)				
0 days	62	59	58	49
1-3 days	17	15	16	17
4-6 days	13	8	6	4
7 days	8	18	20	30
	100	100	100	100

Source: Trans Nzoia Household Survey 1989.

Table A40
Children: weight-for-height

	permanent labourers	resident casuals	non-resident casuals	non-labourers
6-23 months				
• N	26	27	116	22
• average	91.8	95.0	94.7	101.2
• s.d.	8.8	9.2	10.7	9.0
• distribution (%)				
<80	12	4	4	-
80-84	8	11	13	-
85-89	19	19	17	-
90-94	27	11	21	32
95-99	19	26	18	23
100+	15	30	27	45
	100	100	100	100
24-59 months				
• N	59	48	210	41
• average	95.8	95.6	96.2	96.9
• s.d.	10.8	7.9	7.7	7.3
• distribution (%)				
<80	10	4	1	-
80-84	-	6	3	2
85-89	14	15	18	17
90-94	24	21	25	20
95-99	19	23	21	29
100+	34	31	31	32
	100	100	100	100
60-119 months				
• N	58	71	238	51
• average	94.7	95.8	94.4	95.7
• s.d.	7.9	8.4	6.9	6.5
• distribution (%)				
<80	3	3	2	2
80-84	5	6	6	4
85-89	22	13	15	10
90-94	19	23	30	33
95-99	19	32	28	25
100+	31	24	19	25
	100	100	100	100
all children				
• N	143	146	564	114
• average	94.6	95.6	95.1	97.3
• s.d.	9.4	8.3	8.1	7.8

Source: Trans Nzoia Household Survey 1989.

Table A41

Children: height-for-age

	permanent labourers	resident casuals	non-resident casuals	non-labourers
6-23 months				
• N	26	27	116	22
• average	97.4	93.2	94.9	93.9
• s.d.	5.4	5.5	6.4	4.6
• distribution (%)				
<85	-	7	4	-
85-89	8	22	20	23
90-94	35	30	31	36
95-99	27	30	29	32
100+	31	11	16	9
	100	100	100	100
24-59 months				
• N	59	48	211	41
• average	96.9	92.9	94.0	95.4
• s.d.	6.8	6.2	6.6	6.5
• distribution (%)				
<85	-	6	9	2
85-89	12	23	17	12
90-94	29	38	31	44
95-99	36	25	29	27
100+	24	8	14	15
	100	100	100	100
60-119 months				
• N	58	71	238	51
• average	95.7	93.8	94.3	96.3
• s.d.	5.9	4.6	5.6	5.2
• distribution (%)				
<85	3	4	3	-
85-89	12	10	17	4
90-94	34	49	36	29
95-99	26	32	31	53
100+	24	4	13	14
	100	100	100	100
all children				
• N	143	146	565	114
• average	96.5	93.4	94.3	95.5
• s.d.	6.2	5.3	6.1	4.8

Source: Trans Nzoia Household Survey 1989.

Table A42

Children: weight-for-age

	permanent labourers	resident casuals	non-resident casuals	non-labourers
6-23 months				
• N	26	31	119	22
• average	87.7	83.6	86.0	89.3
• s.d.	11.6	12.3	14.7	10.2
• distribution (%)				
<60	4	6	4	-
60-69	-	6	8	-
70-79	15	16	23	27
80-89	31	39	33	23
90-99	38	29	13	32
100+	12	3	19	18
	100	100	100	100
24-59 months				
• N	59	48	211	41
• average	90.5	84.2	86.4	89.4
• s.d.	14.0	10.1	12.0	13.6
• distribution (%)				
<60	-	-	1	-
60-69	7	8	7	2
70-79	17	25	21	27
80-89	22	35	33	32
90-99	37	27	27	20
100+	17	4	10	20
	100	100	100	100
60-119 months				
• N	58	71	239	52
• average	86.4	83.7	83.7	88.7
• s.d.	11.8	10.8	11.7	11.2
• distribution (%)				
<60	-	1	3	-
60-69	12	7	8	-
70-79	19	21	27	17
80-89	33	45	34	48
90-99	21	21	21	13
100+	16	4	8	21
	100	100	100	100
all children				
• N	143	150	569	115
• average	88.3	83.9	85.2	89.0
• s.d.	12.8	10.8	12.5	11.3

Source: Trans Nzoia Household Survey 1989.

Table A43

Children: h-a * w-h classification

(% children in respective condition)

			permanent labourers	resident casuals	non-resident casuals	non-labourers
6-23 months						
•N			26	31	119	22
	h-a	w-h				
malnourished	<90	<85	4	7	7	-
wasted	>=90	<85	15	7	10	-
stunted	<90	>=85	4	22	17	2-
normal	>=90	>=85	77	63	66	23
			100	100	100	77
24-59 months						
•N			59	48	211	41
	h-a	w-h				
malnourished	<90	<85	2	4	2	-
wasted	>=90	<85	8	6	3	2
stunted	<90	>=85	10	25	23	15
normal	>=90	>=85	80	65	42	83
			100	100	100	100
60-119 months						
•N			58	71	239	51
	h-a	w-h				
malnourished	<90	<85	2	3	3	-
wasted	>=90	<85	7	6	5	6
stunted	<90	>=85	14	11	17	4
normal	>=90	>=85	78	80	74	90
			100	100	100	100

Source: Trans Nzoia Household Survey 1989.

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