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MALAWI

Estate Land Utilisation Study

The Tea Plantations of Malawi

The Report of the Tea Estate Surveys 1996 and 1997

by

R J G Steele , J L Bosworth, S J Gossage and C Mataya*

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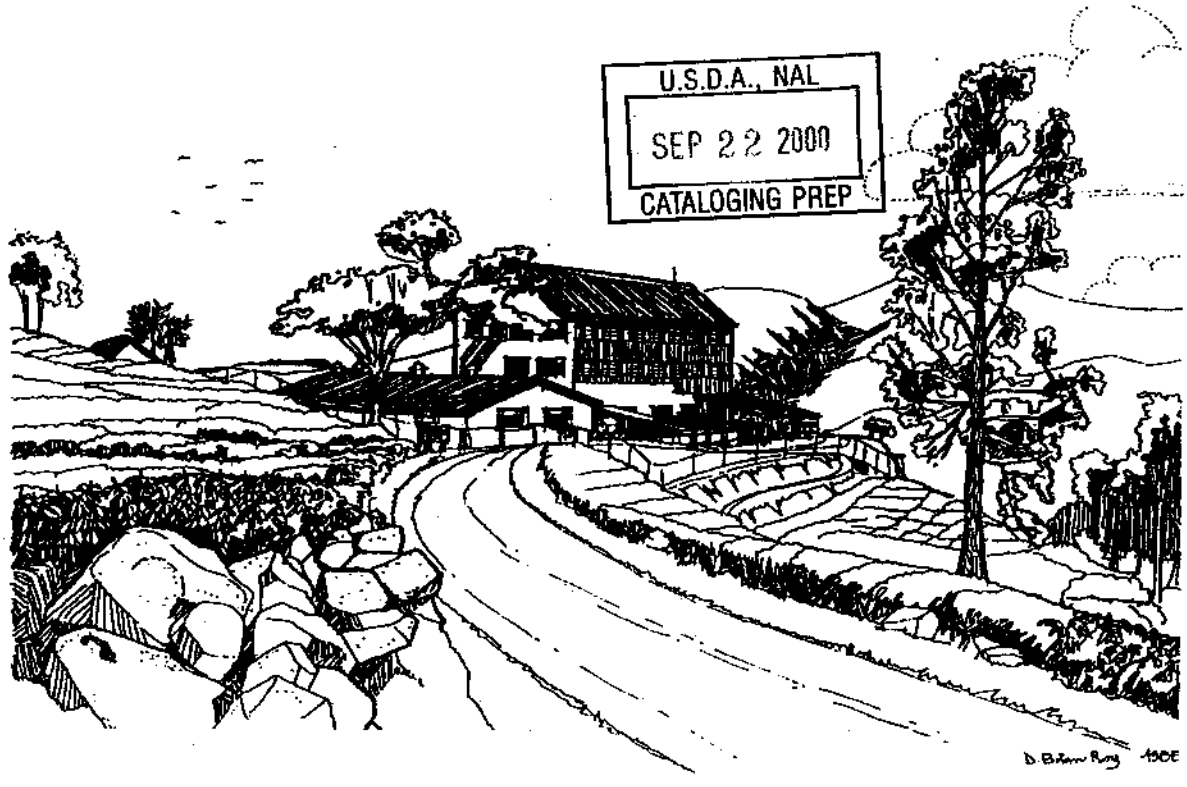
The Estate Land Utilisation Study was conducted under the co-ordination of the Ministry of Lands and Valuation, Government of Malawi over the period July 1995 to April 1997 in order to inform the land reform policy process. The study was funded by a grant-in-aid from the Overseas Development Administration of the British Government.



Courtesy Tea Association of Malawi Ltd.

Acknowledgement

The ELUS team would like to record their thanks to the members of the Tea Association of Malawi who willing gave up their time to complete our questionnaires, and especially those who allowed us to visit their estates and took part in our interviews. Particular thanks are also due to the workers and villagers who participated in the detailed tea survey and gave us the benefit of their frank opinions

*Dr Mataya is Senior Lecturer and Head of the Department of Rural Development, Bunda College of Agriculture, University of Malawi

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Introduction

This report combines the findings of two surveys, the Postal Survey and the Detailed Tea Survey . It looks at the tea estates from three points-of-view: those of the estate managers, those of the estate workers and those of the communities living around the estates.

The surveys

The tea estates study was designed as a two part exercise:

1. A postal questionnaire to be completed by General Managers of companies and their estate managers in order to gain basic data for comparison with the sample surveys of tobacco estates.
2. Follow-up verification survey of five estates taken at random to verify postal census data and obtain more detail, particularly with respect to land utilisation.

The postal questionnaire was completed by November 1996. The project was extended to, *inter alia*, allow fieldwork on five estates for the Detailed Tea Survey to be completed in April 1997. For this second survey the team was joined by Dr Charles Mataya, Head of Rural Development at Bunda College.

The Socio-Economic Environment at Thyolo and Mulanje

Although war torn and virtually deserted when the first European settlers arrived there, the Thyolo/Mulanje area is now one of the most densely populated in Malawi. The high land pressure and low productivity of the smallholdings contribute to a situation where much of the economic and social life of the region revolves around the estates. Thus any change in the structure and institutional set-up of the plantations is likely to have far-reaching implications as regards equity and efficiency in resource use, poverty and food security at household level in the area.

In 1986 there were 18 tea companies operating in Mulanje, Thyolo and Nkata Bay. Together with the Smallholder Tea Authority and the Tea Research Foundation they ran 65 estates[1]. At the time of writing there are only seven left running 42 estates (the actual number of estates is open to interpretation depending on how companies group several units into one). The degree of rationalisation and amalgamation is illustrated by the fact that one company alone produces over 40 % of the crop and there are only four proprietary companies left.

Contribution to the Economy

The tea plantation industry has assets exceeding K 1,000 million and provides some 420,000 months of employment per annum with direct cash wage costs of K92 million. This equates to K 2,600 per labour year (i.e. one person working for 12 months) . Of this wage bill 54% goes to permanent field labour, 20% to seasonal labour, and 15% to casual labour. In addition to their contribution to the local economy the plantations pay in around K57 million to government revenues in the form of taxes, levies, duties etc. Tea ranks third as an earner of foreign exchange, making up 6% of exports by value in 1996.

Land Use

- ◊ 50% of the total area of tea estates was found to be under crops being mostly tea (37%), macadamia (5%), and coffee (3%).
- ◊ 32% of the land was under woodland being mostly plantation forest (20%), evergreen forest (10%), with 1% under open natural woodland and less than one percent under woodland regrowth and upland grass.
- ◊ Around 65% of the land was estimated as suitable for the most important rainfed annual crops being grown under "improved traditional management" and only 1% of this as still being underutiilised.
- ◊ Land use planning and soil and water conservation were assessed as good, and outstanding in comparison with majority of tobacco estates in Malawi, providing for a well planned, balanced and sustainable estate plantation agriculture.

[1] Tea Vignettes, 50th Anniversary 1936-1986 Tea Association of Malawi Ltd

Production Systems

◊ Cropping systems on the plantations tend to be straight-forward with an obvious bias towards specialisation in what the company regards as its core business. Of the 32 estates reported on in the postal survey, 31 grew tea, 18 grew tea and macadamia, and 12 grew tea and coffee. Only 8 grew all three crops.

◊ The threat of encroachment has had an effect on cropping policy since companies are now anxious to plant up land that might otherwise be perceived as lying idle by surrounding villagers.

◊ 40 % of estates run dairy herds, seven have beef and several allow villagers to run goats and cattle on their land.

Estate Labour Management (From Interviews with Management)

◊ There are approximately four months of active tea plucking , from December to March during which a majority of workers are hired either on full time or as part-time basis.

◊ In the field, labour will be categorised by shift length. Men usually work 8 hours and women and young person 6 hour shifts. Some men may, however, work the shorter shift and vice versa. The management claim that the differentiation between take home pay for men and women is based on shift length rather than gender.

◊ Wage rates for field and factory unskilled staff are set without worker or union participation. An Industrial Relations Committee (IRC) within the Tea Association is responsible for reviewing wage rates and recommending new levels, usually annually. This year the association awarded a wage rise of 22% in a year when rural inflation topped 40%.

◊ The maximum weekly pay for a plucker encountered during this exercise was K191, but over the same period (one of the busiest in the year) only about 35% of pluckers made more than K100 per week.

◊ Leave pay and severance pay are provided for permanent staff on all estates. About 60% on average are actually housed on the estate, although some estates house all permanent staff

◊ All the estate workforce have access to a clinic either on the same estate or a neighbouring one. Six estates have what may be described as a cottage hospital.

Labour Supply

◊ All the estates visited mentioned labour shortages as one of their most acute difficulties. On the Mulanje estates the main reason quoted was the recent departure of Mozambican refugees to their homes. Closer to Blantyre at Thyolo the reasons given were the availability of alternative employment in urban centres and competition from the tobacco estates in other regions.

◊ In addition to a shortage of actual people to work in the high season, there are severe absenteeism problems once labour are recruited.

◊ Five of the six senior managers stated that labour would only work long enough to earn a certain amount of money and then absent themselves for the rest of the week.

◊ Strikes are common in the industry and may require the intervention of the Labour Officer and unions to resolve.

◊ Most of the estates seem to exist amicably with most of the villages, but when pressed will refer to one or two village heads who present problems.

◊ The policy adopted by estates to allowing villagers access to resources will vary according to their relationships with the village and past disputes. Some estates permit no access at all. One large group of estates allows access to firewood and *makuli* without restriction and permits goats and cattle to graze around the tea fields. Another allows people to collect firewood once a week under controlled conditions.

◊ None of the estates permit outsiders to cultivate on their land. When encroachment takes place it is met with a firm response.

Estate Labour Profile (Based on Worker Interviews)

This section draws on the results of a detailed survey of tea estate employees and their households, and information from the study on Estate Food Security and Nutrition in Malawi conducted by the Agricultural Policy Research Unit of Bunda College, in order to describe the demographic characteristics, incomes, and employment conditions, of the labour force within the plantation tea sector. The field interviews were conducted in a very low-key manner, and the survey objectives explained clearly to the respondents, in order as far as possible not to raise expectations.

◊ although overall women are only 27% of the labour force, they are 100% of the employees on the 6 hour shift, while only 3% of the employees on the 8 hour shift are female. Thus, there remains a strong gender division between the 8 hour and 6 hour shift workers.

◊ Although the mean household size for all tea estate workers is 4.7 persons, mean household sizes among 6 hour shift workers and factory employees are smaller, at 3.3 persons. Employees in the 6 hour shift category are more likely to be divorced or widowed, a factor which might explain the difference in household sizes.

◊ The majority of the respondents originated in either Mulanje or Thyolo district, suggesting there are not significant numbers of immigrants in the estate labour force. The remainder came from other districts in southern region, or from Mozambique.

◊ Only 48% have received primary education, and the percentage with secondary school education is zero or close to zero.

◊ The mean wage obtained from the 8 hour employees (MK349) does not substantially differ from that obtained from wage information provided by the tea companies (MK379).

◊ Very few employees were able to report any deductions from their incomes, although some were suspicious that the costs of benefits like meals and housing are deducted at some point. Only four respondents were aware of deductions from their pay, these being an amount for the purchase of seed maize from the estate, an amount for a contribution to an estate social facility, an amount for salt, and a penalty for an unfinished plot. The highest of these was for seed maize at K9. It therefore appears likely that the information provided by tea companies in the postal survey was a reflection of the take home wages of employees, and did not include substantial amounts for non-wage costs.

◊ For 1995-96, the postal survey information gives an averaged income for male field workers of MK3,888, and for females working all year round of MK1,443. If figures are taken for December to May only (i.e.: a seasonally employed worker), average male wages were MK2,125, and those for females MK773.

◊ A substantial proportion, 25%, of tea estate employee households contain more than one income earner either from the same estate or neighbouring estates.

◊ 36% of households have some form of income in addition to their earnings from the tea estates.

◊ The Estate Food Security and Nutrition study found that 99% of estate employees in Mulanje district received "rations" of varying descriptions, and that these formed an important part of the diet of tea estate workers, but not of their households. The reason for this is that the "rations" are given in the form of cooked food, consumed on the estate during working hours, rather than as foodstuffs to be taken away and prepared at home.

  Thus rations usually go to the employee, and this in part accounts for the poorer nutritional status of under 5 children in tea estate households compared with that of estate-dwelling under 5s in Kasungu and Mangochi districts.

◊ All respondents received one cooked meal per day, usually lunch in the form of nsima and beans or pigeon peas, and sometimes porridge or tea at other times, particularly when it is rainy.

◊ Almost all of the housing provided had cement flooring, and the majority (74%) was of brick construction. Roofing was iron sheets in the main (79%). Many houses are one or at most two roomed.

The condition of housing appears to vary substantially from estate to estate. No respondent reported paying any rental charges for the housing.

- ◊ Medical facilities were available to all respondents in the sample, and in most cases to other members of their households. The facilities had been well used by respondents during the previous month; each respondent or family having made an average of two visits to the clinic.
- ◊ All medical facilities visited treated at least 800 cases per month, and the largest treated an average of 12,000 patients per month or 100,000 per year
- ◊ Conditions in the labour compounds were criticised by several of the medical attendants, who noted unacceptable sanitation levels and the dilapidated condition of some housing. They also commented on the incidence of employment-related injuries and illnesses, mostly cuts from tea bushes, and pesticide contamination.
- ◊ Most clinics have outreach programmes dealing with health issues like hygiene and sanitation, nutrition, malaria prevention, STDs and AIDS awareness, and family planning. Medical service provision is clearly an area where many tea estates do make a substantial positive contribution to the local community in addition to health of their workforce.
- ◊ Regarding other perks, such as free protective clothing, credit etc. many of the benefits cited by management are available only to limited categories of employees, usually more skilled employees.
- ◊ It is generally accepted in the industry that the scheme plucking system can encourage the use of unpaid household labour, including that of children, although no unpaid household members were encountered during the survey.
- ◊ Most of the employees are engaged without a formal contract, and the majority have only verbal agreements of employment.

Women on the Tea Estates

- ◊ In the detailed Tea Employee survey, 72% of the women interviewed were household heads, 67% being divorcees and 11% widowed.
- ◊ Women's monthly incomes are much lower than those of men, the sample average being K194 during March 1997, compared with K382 for the men in the sample. Only 28% of the women had estate housing (mostly in dormitories), while 44% of the male interviewees received housing.
- ◊ Women do not have equal opportunities to increase their incomes and are less likely to have the opportunity to do overtime or earn bonuses from piece work. Their annual incomes are also likely to suffer because they are less likely to be employed all year round.

Children on the Tea Estates

- ◊ Over 2,000 "young persons"(YPs) are employed annually on tea estates. Tea companies more recently have adopted a policy of not employing children under 14 years of age.
- ◊ However, villagers frequently said children as young as 10 years old work in the estates.
- ◊ Headmasters of schools on some of the estates were interviewed and mentioned the problem of children dropping out of school in order to work on the estates.

Access to land

- ◊ 49% of all estate employees were found to be living in landless households.
- ◊ Those most likely to be resident on the estate and to be provided with housing, were also the most likely to have no access to land off the estate.
- ◊ All seasonal employees in the sample had access to land off the estate, but only 50% of casual employees in the sample did.
- ◊ Of those respondents who were landless, five gave the reason of a general shortage of land in the area, while another five explicitly blamed the tea companies for creating land shortage in the area. Two said

they had lost their own land directly to a tea estate. Others attributed land shortage to population growth, the refusal of people in the area to lend land, and their own status as an immigrant to the area.

Attitudes to Estates

- ◊ Respondents were asked to name positive things about the estates. The most popular response was "nothing" (36%), followed by money/income (31%). Other responses were less popular, e.g.: food provision (10%), regular payments, and alleviating poverty (each 7%), medical provision, good supervisors, "everything" (5% each) good hours, and not having to work in the rain (2% each).
- ◊ The most common complaint was about low salaries (28%), followed by complaints that the work is too arduous (23%). Harsh treatment was named by 21% of respondents, and poor housing by 19%. 15% did not like the long or erratic working hours.
- ◊ A number of improvements were suggested, directed to owners, managers and to government. For owners, 20% of people thought an increase in salary would improve things, followed by 13% who thought there was nothing owners could do. Less common answers included paying better overtime rates, letting people choose the jobs they wanted to do, giving food allowances instead of cooked food, improving physical conditions and the working environment, and that owners and employees should be involved in decision-making together.
- ◊ For managers, increasing salaries again was the most common recommendation (32%), followed by a number of less common recommendations including setting specific working hours, setting lighter tasks, being honest, "whatever they can", taking decisions together, retiring long serving employees, improving physical conditions and the working environment, and paying sick pay.
- ◊ Again, for government, the most common response was to increase salaries (12%), followed by redistributing land (10%), and then by imposition of a higher minimum wage, and closer monitoring of labour conditions (8% each). Others thought government should provide ADMARCs near to the estates, or get estates to allow employees to cultivate on the estates, and that government should do more to ensure housing is habitable.
- ◊ Most of the respondents said they prefer working long hours if it means earning more money, contradicting the views of some estate managers that employees are only motivated to work a certain number of hours per week and then absent themselves in order to do other things.

Tea Estates and the Local Community (From Group discussion in the Villages)

- ◊ It is apparent that villagers' perceptions of the ownership of the land under tea estates during the 1900s to 1950s diverge strongly from official accounts.
- ◊ Every one of the villages visited claimed to have experienced either eviction from within the estate, or to have been forced to incorporate members of other villages displaced from the estate, at one time. The earliest of these village moves recounted was in 1936, the latest in 1963.
- ◊ Many of the tea plantations have relinquished some of their land area to villagers at various times. However, none of the villages visited mentioned this, and one claimed the neighbouring estate had even acquired additional land which should have belonged to the villagers.
- ◊ The extent of land shortage appears to be serious in many of the villages visited, particularly those in Mulanje district. Villagers reported diminishing land-holding sizes since the 1960s.
- ◊ All of the villagers perceived that unused land is available inside the tea estates, in particular citing areas planted to guatemala grass, to blue gums, and dambo areas. Villagers are aware of the potential use of guatemala grass for mulching on the estates, but tended to claim that most of the grass was not used for this, and was planted merely in order to prevent villagers from planting crops. In one case, it was judged that the estate is only using around half of its land.
- ◊ It does not appear that there is a well-developed land market in the area, but some rental activity does take place.

- ◊ While villagers evidently wanted additional land to increase their maize harvests, many said that additional land would be used for cash-generating crops, in particular vegetables and fruit in dambo areas.
- ◊ The evidence suggests that land husbandry measures are far from adequate in the villages visited, and that if, following a land redistribution, similar practices were to be followed, any gain in poverty alleviation and food security would be likely to be short-lived. A substantial programme of extension advice, and probably credit provision, would be necessary in order to make any redistribution worthwhile.
- ◊ People from three of the five villages visited had been involved in encroachment on neighbouring estates since 1994.
- ◊ The encroachment issue has clearly soured relations between some tea estates and some of their neighbouring villages, and has contributed to substantially increased costs for those estates who now employ large private security forces. Nevertheless, the extent and incidence of encroachment should not be exaggerated. Not all tea estates experience encroachment, and at the time of the study it was not a serious problem on any of the estates visited.
- ◊ While villagers' access on to tea estates for the collection of resources is restricted, villagers do obtain a variety of resources from estates. In some instances this is officially sanctioned by the estates, but it is also acknowledged, and was discussed with villagers, that resources are acquired without permission.
- ◊ In the villages visited, up to ¾ of households were said to be dependent to a greater or lesser extent on estate employment.
- ◊ It was reported also that meals on estates are very important in the local diet, particularly during the months from September to February, when many households eat only one meal per day. One village reported that own crops are likely to last a maximum of 2 or 3 months. Pure subsistence was not considered an option by any of the village groups.
- ◊ Cash crops were not reported to be widely cultivated in the villages visited. Tobacco was not grown, and only three smallholder tea growers were found.
- ◊ It was apparent that survival for many villagers involves balancing a number of different sources of food and income, and that although many are partially dependent on tea estate income, the seasonality of tea estate labour forces many to seek alternatives. Some of these alternatives are also superior in providing higher incomes than tea estate work.

Financial Performance (Data supplied by Management)

- ◊ Of the 1996 crop 67 % was produced by the plantations. These companies also produced about one-third of the national coffee crop in the same year.
- ◊ Although tea remains the main source of revenue for the plantation companies, the 8% contributed by macadamia may be expected to increase as more land is converted from tea.
- ◊ In the relatively good year reported here, coffee provided 17% of revenue from only 3% of the total area occupied by plantations-a ratio of 4.6:1. Tea in contrast provided 70% from 34% of the land- a ratio of 2:1.
- ◊ The average net margin per ha was estimated at just over K6,000 in 1996 for the companies responding to the postal questionnaire, with a return on capital in the region of 60%.
- ◊ Compared with other estates in Malawi the return to cropped area was only exceeded by large tobacco estates over 500ha in size (K25,921) and sugar. Otherwise in terms of return per total area tea and tobacco estates were much the same.
- ◊ The results of the detailed survey tend to confirm the reliability of the data contributed by the company heads completing the postal questionnaire.
- ◊ Gross margin figures were calculated of K13,000 for tea, K26,000 for coffee and K21,000 for macadamia.

Comparison with other estate typologies

Land Use

- ◊ In terms of the physical utilisation of the land, the tea estates present a fairly uniform and different picture in comparison with most of the tobacco based estates and the sugar estates. At the time of the survey, there were 33 tea estates with an average size of around 1,400 hectares. There were estimated to be a total of around 30,000 tobacco estates with an overall average size of 34 hectares but ranging from 10 to 10,000 hectares.
- ◊ The tea and tobacco estate land use at this level was found to be broadly similar with crop/fallow and woodland/grass as the main land use categories accounting for around 50% and 34% of the total land area respectively in each of the estate types. The sugar estates are quite different in having a higher percent of the total area under crop/ fallow (61%) and relatively little under woodland (5%).
- ◊ The tobacco estates have overall about 36% to 64% crop to fallow land while the tea and sugar estates have almost no fallow since they have very little annual crop
- ◊ Over half of the tobacco estates surveyed were found to produce less than three quarters of what they required for curing tobacco and domestic use while the tea estates (and reportedly the sugar estates) are self sufficient at least on a company basis, in net wood requirements.
- ◊ In terms of land suitability (for the most important rainfed annual crops being grown under "improved traditional management"), approximately 78% of the tobacco estate land was found to be suitable overall, compared to around 65% of the tea estate land (detailed survey only). The lower proportion of suitable land on the tea estates is a result of the steepness of much of that land.
- ◊ Most of this otherwise unsuitable land is still suitable for tea and other perennial crops which have a permanent cover and so protect the soil better than annual crops against erosion. With all the wetland included in the sugar estate boundaries, something like 80% of the sugar estates would be expected to be suitable.
- ◊ Land husbandry on the tea and sugar estates was found to be good, and even outstanding in comparison to the majority of tobacco estates in Malawi.
- ◊ Although a majority of tobacco estates were found to use some of the principles of land use planning in developing their layout, only a very small number had made and followed a comprehensive overall layout plan.
- ◊ On the cropped land, around half (51%) of tobacco estates visited were judged to have the rather weak irregular rotation with natural or weedy fallow, and only 20% with the much better systematic rotation with natural or weedy fallow.
- ◊ Comparable estimates were made of overall underutilisation of the "suitable" land on the tobacco and tea estates. The tea estates were almost certainly the best in this respect with only around 1% of the suitable land on estates in the detailed survey assessed as being underutilised. While, as with most indicators on the tobacco estates there was much variability, the overall percent of suitable land found to be underutilised was 29%. Underutilisation on the sugar estates was not assessed.

Supported Population

- ◊ Tea estates employ around 43,000 employees, compared with 110,000 direct employees plus 282,000 tenants on the tobacco estates. Not accounting for the 11,000 Sugar estate employees, the tea plantations therefore provide 11% of jobs in the estate sector.
- ◊ The number of persons supported by tobacco estates was calculated at 1,116,078, providing a measure of persons supported per hectare of tobacco estate land of 1.15 nationally. A similar exercise was carried out for tea estates, which revealed a total of 177,225 people are supported by tea estates This translates into an average of 3.73 persons supported per hectare of tea estate land, including those supported by factory employees involved in processing. On this measure, tea estates out-perform tobacco estates by a wide margin.

◊ In general standards of living for the permanent tea estate labour force appear to be broadly comparable with those on the tobacco estates, with better cash incomes and perhaps better housing provision, but poorer food provision. Notwithstanding this, the seasonality of employment means that certain categories of tea estate employees are considerably worse off, in particular women whose access to higher income employment is restricted, as is their access to estate housing.

Returns to Resources

◊ The tea plantations are only moderately more productive than the tobacco estates with respect to cropped land, but fall well below sugar estates.

◊ The return to labour is calculated against labour months invested in the estate in one year. Tea estates provided a better return on this basis than all except sugar and the largest tobacco estates, despite using more labour in total to produce their main crops of tea, macadamia and coffee.

◊ The apparently very low relative return on capital for tea reflects the moderate profitability of the plantations versus the high capital investment required for production and processing. In contrast the tobacco estates, especially the smaller ones, have few long-term assets and hence show a high return to capital.

1. Introduction

1.1. Background to the ELUS report series

This document forms part of the reporting series for the Estate Land Utilisation Study centred around a main narrative report which includes an overview of the tea plantation industry. The Estate Land Utilisation Study was funded as a project by the Overseas Development Administration[2] of the British Government in order to contribute to a better understanding of the effectiveness (physical, social and economic) of land utilisation on estates compared with that on customary and other land, and the potential impact of land policy options.

A major project component was the conduct of a survey of the "tobacco estates" which make up most of the leasehold sector. To a certain extent the studies of the tea and sugar estates were supplementary to this main component[3].

1.2. Methodology

1.2.1. Postal Survey

The plantation industry which although dominated by tea production is active in other plantation crops such as coffee and tree nuts, is highly organised with a powerful grower's association and relatively few holding companies. It was decided to make use of this structure and the ELUS Team Leader addressed the Board of Directors and Heads of Company meeting held at the Tea Association of Malawi headquarters on 14th December 1995 to explain the purpose of the tea estates study and obtain the co-operation of the companies. It was agreed at this meeting that a postal questionnaire would be sent out to all the companies (at that time numbering ten) to gather basic facts and that this exercise would be followed up by the ELUS team visiting a random sample of five estates.

In preparing the questionnaire the ELUS team received close co-operation from the tea companies and was able to spend a day at a plantation and be given additional familiarisation briefings by senior staff from one of the larger companies. Once the questionnaire was designed it was thought better to deliver it in person to the Heads of Companies to provide an opportunity for further explanation and to field any queries. This distribution took place in May 1996.

The completed questionnaires were sent back by the end of November 1996. One company failed to complete the forms despite frequent reminders and was eventually counted as a nil return. Despite this disappointment the exercise was deemed a success and in practical terms provided ELUS with data based on a near-census rather than the more usual sample survey.

Preliminary analysis of the postal survey data was completed by January 1997, by which time the Estate Land Utilisation Study was in the process of writing up five other studies in preparation for project completion at the end of March. Due to the time constraint the follow-up survey was not undertaken and only basic tables and charts were available for the final presentation seminar held on the 11th March. This presentation gave rise to a lively discussion on the merits of an unverified postal survey and the meeting requested that ODA consider funding an extension to the project to enable the verification study to take place. This was agreed at the subsequent output to purpose project review.

1.2.2. Detailed Survey

The Detailed Tea Survey was based on a random sample of five companies drawn from the original ten, by this time reduced by a take-over to nine (now seven). One estate was then drawn from each of the companies to give an initial sample of five units. Subsequently it was discovered that one of these estates was currently changing over from tea to macadamia as its main crop and could not be regarded as representative of a fully functional estate. A replacement was drawn at random from the same company while retaining the transitional estate as a case study.

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[2] Now re-named the Department for International Development

[3] To provide a comparison, there are about 30,000 such estates in Malawi occupying a million hectares of land. Tea estates number 37 and cover 48,000 hectares and there are only 2 sugar estates.

The ELUS team of Land Utilisation Specialist, Rural Sociologist and Farming Systems Specialist was strengthened by engaging Dr Charles Mataya, Head of Rural Development at Bunda College as a consultant for the second survey. The fieldwork for the Detailed Tea Survey was completed by this group in April 1997

1.3. Brief History of the Plantations

The tea estates in Malawi date back some 100 years and Malawi was the first country in Africa to export tea. In the late nineteenth century the Lake Malawi region was torn by war and traversed by slave traders. When missionaries and traders began arriving in the 1880s they found the society and economy in disarray. In the highlands of the south (which became known as the Shire Highlands) population was concentrated in stockaded villages on hill tops, agricultural production was disrupted, and communities were left exposed to famine. There were large tracts of uninhabited land into which the game population was expanding accompanied by tsetse infestations. Europeans began to acquire these empty spaces, and this was to exert a lasting influence on the history of the area[4].

Some of the estates established at this time were far larger than could be sensibly utilised with the restricted range of commercial farming enterprises then available. Consequently, allowing migrants to settle on otherwise spare land in exchange for their labour would have seemed a sensible option. Estates owners were then able to impose a system of labour rent known as *thangata* on all those communities who were residing on estate land. Thangata was a form of land labour rent whereby Africans resident on European land were obliged to work for the owner for period of two months in lieu of paying cash. This period could be extended to six months or more if the worker failed to meet his hut tax obligations. It appears to have been a common assumption at the time in several colonies that the native Africans formed a large pool of untapped labour and that all would benefit from a cash economy based on agriculture. In the event, with their own crops to tend and limited use for wages (which were far lower than those which could be obtained by emigration to South Africa), the Africans proved to not share the work ethic of the European farmers and labour shortage rather than excess was the rule.

Aware that British Central Africa had very little in the way of mineral resources the first Commissioner of the Protectorate, Harry Johnston, was of the opinion that the economic development of this area would depend on a healthy growth of the European plantations, rather than peasant agriculture. Although official policy thus supported and subsidised the estates sector, colonial Malawi never became a settler economy along the lines of Kenya or Southern Rhodesia and at times both smallholder production and emigration to the mines of Rhodesia and South Africa were central to the economy. Labour shortages threatened the success of the plantation economy and partly in response to this problem the government imposed a hut tax which would require able-bodied men to work for cash wages in order to fulfil their tax obligation.

Low wage structure appears to have been the major attraction to investment in the tea industry in Malawi during the colonial and later periods. Wages in the industry were exceptionally low by world standards. In 1910 the Colonial Office report commented that "even with a smaller yield than Ceylon, tea would be a most profitable crop in Nyasaland as labour is at least 50 % cheaper". The Lomwe people who migrated from Mozambique to escape forced labour conditions on the *prazos* were the major source of labour for the plantations growing cotton and later tea in Thyolo and Mulanje. Being migrants, the Lomwe had little alternative to residence on estate land and thus incurred thangata.

Later in the century tea areas expanded rapidly and outstripped the available labour supply. In partial response some estates adopted government recommendations to improve living conditions on the estates. For example, in 1936 Lujeri estate established its own hospital and dispensary and immediately noticed a fall in absenteeism through illness. However, despite recognising the problem no effort appears to have been made to improve the wage structure of estate workers. In fact quite the opposite. As observed by Vaughan and Chipande, both the tea estates and government began to rationalise the low wages on the pretext that since most estate workers had their own gardens and wives to work them, there was no need to pay them higher salaries. In this context, a man's salary was perceived as only one part of family income. A further rationalisation of low wages was based on a 1940s nutrition survey conducted in Mulanje which appeared to indicate that married men had much better diets than unmarried men who were subsisting on rations provided by the estates. In attempt to redress this situation, most estates began providing a free cooked midday meal in addition to the weekly food rations.

[4] Much of the background to the tea industry is taken from Women in the Estate Sector of Malawi, The Tea and Tobacco Industries M Vaughan and G H R Chipande 1988 and Magomero; Story of An African Village. White, Landeg 1987 (Cambridge)

The role of women in the structure of the tea estate economy was the "invisible" one of producing and processing food, and performing all domestic labour which freed their husbands to work for estates for low wages. Although some women were employed to pluck tea, the engagement was meant to supplement shortfall in labour supply and was mostly on casual or part-time basis. Chores assigned to women on the estates included mostly weeding and hoeing of fire-breaks, cutting and collection of grass, drawing water and carrying earth or bricks for construction.

Child labour on tea estates has existed for a long time. As discussed in Westrop (1964) cited in Vaughan and Chipande, jobs undertaken by children included collection of tea seed, application of artificial manure, knotting of fronds of palm leaves with which the bags of the tea leaf were tied, the covering of the newly pruned tea with prunings to prevent scorching, and light weeding.

As regards crop options David Livingstone, on visiting "Maravi" , advocated the production of cotton based on a peasant agriculture. However, as mentioned above, the economy was in disarray by the time the first settlers arrived and it was thought that plantations growing coffee would be the best option. The failure of coffee due to pest problems led to interest in other crops such as rubber and tea. Henry Brown is credited[5] with planting the first tea on Lauderdale and Thornwood estates at Mulanje in 1891 using seed produced by Jonathan Duncan in Blantyre. Tea expanded into the Thyolo area in the 1930s. Most of the tea companies were started by individuals and some of these concerns remain in family hands. A number were taken over by companies with well-known brand names, such as Brook Bond and J Lyons, but these have themselves given way to more generalised plantation companies.

In the 1930s and early 1940s the industry was supported by its involvement in the International Tea Regulation Scheme which restricted world production and stabilised prices. During this period of growth a number of companies operating in India began investing in Nyasaland as a hedge against the increasing political tension in the Indian Subcontinent. The ITR scheme ended after the war, leaving the industry exposed to fluctuations. Despite this in 1964 tea accounted for 29% of Malawi's exports compared with 6% in 1996. This proportional change is due not to a drop in production, but to the rise of tobacco as the main export after years of lagging behind tea.

1.4. Structure of the plantation industry

1.4.1. Present day ownership

In 1986 there were 18 tea companies operating in Mulanje, Thyolo and Nkata Bay. Together with the Smallholder Tea Authority and the Tea Research Foundation they ran 65 estates[6]. At the time of writing there are only seven left running 41 estates (the actual number of estates is open to interpretation depending on how companies group several units into one). The degree of rationalisation and amalgamation is illustrated by the fact that one company alone produces over 40 % of the crop and there are only four proprietary companies left. Of the original model of a totally family-run (i.e. no salaried management) estate only one remains.

This process of change is understandable in the face of recent price fluctuations and narrow margins. Two take-overs occurred during the period of this study, bringing the majority of estates into the orbit of international groups. On the positive side this should enable the industry to weather price fluctuations and provide access to new capital badly needed to replant and modernise. A possible negative effect might be a growing tendency to take a global view of operations and close marginal operations with consequent loss of jobs. As an early sign of this, two leased estates newly acquired via a larger take-over are scheduled for sale when the leases expire this year.

Owing in part to the changing ownership of the industry, there appears to be a sea-change in management policies. It was noticeable during our interviews how managers who had worked on plantations elsewhere in the world had a more liberal attitude to personnel management, welcomed union activities, and have ideas on how the tea association should change and modernise itself.

[5] Tea. A Handbook to Malawi's Tea Industry. Compiled for Tea Association of Malawi by Central Africana Ltd, Blantyre 1991

[6] Tea Vignettes, 50th Anniversary 1936-1986 Tea Association of Malawi Ltd

Table 1-1 Area of Land and Number of Estates Controlled by 9 Plantation Companies (as at July 1996)

		Average Size
1	Total Area of Estates	5,344
	Number of Estates in Company	7
2	Total Area of Estates	12,707
	Number of Estates in Company	18
3	Total Area of Estates	8,240
	Number of Estates in Company	1
4	Total Area of Estates	1,925
	Number of Estates in Company	4
5	Total Area of Estates	4,543
	Number of Estates in Company	1
6	Total Area of Estates	4,295
	Number of Estates in Company	1
7	Total Area of Estates	702
	Number of Estates in Company	1
8	Total Area of Estates	4,190
	Number of Estates in Company	7
9	Total Area of Estates	1,882
	Number of Estates in Company	1
	Total Area of Tea Estates	43,828
	Number of Estates	41

Note: The number of estates given here differs from those reported as separate management units (33) since companies combine estates in different ways for recording purposes. Area excludes specific tobacco estates owned by tea companies, smallholder tea and TRF land.

1.4.2. Contribution to the economy

As an overview, the figures supplied in the Postal Survey indicate that the plantation industry-as represented by companies operating in Thyolo, Mulanje and Nkata Bay- has assets exceeding K 1,000 million and provides some 420,000 months of employment per annum with direct cash wage costs of K92 million. This equates to K 2,600 per labour year (i.e. one person working for 12 months) . Of this wage bill 54 percent goes to permanent field labour, 20 % to seasonal labour, and 15 % to casual labour. The remainder is used to pay artisans, drivers and skilled workers. In addition to their contribution to the local economy the plantations pay in around K57 million to government revenues in the form of taxes, levies, duties etc.

Table 1-2 Principle Domestic Crop Exports 1993-1996 (K million)

	1993	1994	1995	1996	% Change 1995 on 1994	% Change 1996 on 1995
Agricultural Crops						
Tobacco	938.01	2241.20	4051.00	4935.23	80.75	21.83
Tea	156.69	261.20	427.75	496.83	63.76	16.15
Sugar	68.78	228.68	481.66	498.16	110.63	3.43
Cotton	9.02	15.00	57.71	324.00	284.73	461.43
Groundnuts	0.00	0.00	3.96	9.96	-	151.52
Rice	0.00	8.00	25.31	25.00	216.37	-1.22
Coffee	34.90	127.30	261.53	288.62	105.44	10.36
Pulses	5.98	13.00	125.90	240.45	868.46	90.98
Maize	0.00	16.80	80.53	0.00	379.35	-100.00
Other Exports	142.96	273.60	856.20	899.01	212.94	5.00
Total Domestic Export	1356.35	31844.78	6371.55	7717.26	100.06	21.12
Re-export	40.24	68.90	187.63	191.38	172.32	2.00
Total	1396.58	3253.68	6559.18	7908.64	101.59	20.57

Source: Ministry of Economic Planing and Development, Treasury and Reserve bank of Malawi

Tea and sugar tend to exchange places as runners-up to tobacco as the most important export crop. In 1996 tea came third with about 6% of foreign earnings.

1.5. The Smallholder Tea Authority

Because of the investment required for factory processing, tea tends to be regarded as only suitable for estate production but it has been shown elsewhere-especially in Kenya-that smallholder production centred around an estate facility can bring benefits to poor rural communities. In 1966 the first 25 hectares of small holder tea were planted in Mulanje District. In 1967 the Smallholder Tea Authority came into being under expatriate management with finance from the Malawi Government, The British Government, and latterly an EEC funded five year programme which ended in 1995.

In 1974 the volume of leaf in Mulanje was sufficient to justify a factory and the MATECO facility came into being. This modern factory is still in production taking leaf from Thyolo smallholders as well as Mulanje. However, as Mulanje now has enough leaf to run the factory at full capacity and as transport costs are becoming prohibitive, the Smallholder Tea Authority is pushing for funds to establish a single-line factory at Thyolo.

In comparison with the plantation companies smallholder tea is not doing well. After a good start production per ha has dropped to an average 5,350 kg of green tea per hectare versus 12,000 kg on estates. The annual[7] report for 1996 cites lack of extension advice and low nitrogen application as being the main culprits. Of the total area only 12% is clonal tea. The report highlights the lack of interest amongst smallholders in taking part in the EU replanting programme, unlike the estates who are taking advantage of the generous grant of $2,400 per hectare. In Thyolo no small holder had registered for the scheme and very few in Mulanje at the time the annual report was written in July 1996.

The team did not have the time nor a clear remit to visit the Smallholder Tea Authority, so any information is second-hand. There does, however, seem to be an air of malaise about the project which manifests itself in low productivity figures, complaints in the annual report about a lack of understanding of market forces on the part of the growers, and apparent disinterest in new investment (even heavily subsidised). If this is actually the case it is difficult to suggest that smallholder tea be expanded and supported (as a means of protecting the environment while improving household incomes) without embarking on a rehabilitation programme for the Smallholder Tea Authority itself..

[7] The Smallholder Tea Authority. Annual Report 30th June 1996.

2. Land Use

2.1. Outline of the survey methodology

Questions on land use, land husbandry and forestry were included in the postal survey questionnaires. In addition, a separate detailed land use survey was carried out on the six estates selected for the tea estates detailed survey. In this survey, the methodology used was the same as that used for the tobacco estates, and the land use component of the Customary Land Utilisation Study (CLUS), in order to ensure comparability of information. The survey of each estate comprised three main parts:

1. A brief interview with questionnaire to obtain basic information on the estate, cropping, land use, encroachment, forestry, etc.
2. A field survey of the farm boundaries and mapping these onto the 1:25,000 scale air photos taken in 1995, and ground truthing for air photo interpretation and the land suitability assessment.
3. Stereoscopic air photo interpretation, measurement of areas, calculation of a wood balance and reporting.

It should be noted that this is almost the reverse of conventional air photo interpretation where ground truthing follows the first interpretation. This approach was necessary however since the farm boundaries had to be located accurately before air photo interpretation could be carried out. The approach also allowed a high degree of "ground truthing" and "calibration" of the surveyor to the terrain and farming practices. Some areas like recently planted woodlots which would otherwise not have been seen on the photos, were mapped directly onto the photo. It is felt that this more intensive approach allowed a higher level of accuracy than would normally be achieved.

The methodology for land suitability assessment, the classification system for land use and cover, and the methodology for the calculation of the wood balance are described in the relevant sections below.

2.2. Land suitability

Criteria for the classification of land suitability and land use / cover were developed in conjunction with the Customary Land Utilisation Study for all surveys so as to ensure comparability of results. Both were based on the work of the Land Resource Evaluation Project.

A simple two class system was used for land suitability to allow rapid and unambiguous assessment. Land was classified for its generalised suitability for the most important rainfed annual crops (usually including maize) being grown under "improved traditional management".

- "Suitable" or more correctly the good and moderate quality land corresponds to LREP generalised land appraisal classes 1 and 2. This generally included land with moderate to deep, well drained soils of slopes less than 13%.
- "Unsuitable" land comprised the marginal and unsuitable land with LREP generalised classes 3 and 4. Most of this land would have been downgraded because of wetness or being steeper than 13%.

In terms of this Land Utilisation Studies classification, some 65% of the land in the detailed tea estate survey (6 estates) was found to be "suitable" while 34% was found to be "unsuitable". This can be compared to the comparable figures found for the tobacco estates and customary land as shown in Table 2-1.

Table 2-1 Proportion of estate and customary land classed as suitable

	Tea estates	Tobacco estates	Customary Land
North		80%	55%
Centre		78%	75%
South		75%	68%
Malawi	65%	78%	67%

Clearly in this classification, the tea estates have a lower proportion of suitable land than the average land used by tobacco estate or the average for customary land. This is mainly because much of the tea estate land would be down graded because of slope steepness which is typical of much of the land in the Thyolo and Mulanje areas.

Similar, better and worse land would be found within the averaged figures for all tobacco estates and customary land.

This suitability classification of course refers to the generalised suitability for the most important rainfed annual crops being grown under "improved traditional management". This would include the use of improved seed and fertilisers and recommended soil and water conservation measures. This land is naturally suitable for perennial crops such as tea, coffee and macadamia, which are inherently more protective than annual row crops and can be grown on the steeper slopes. The suitability rating could also be improved through use of appropriate soil conservation measures.

In terms of the Land Resource Evaluation Programme (LREP) evaluation for tea, most of the tea estate land would be classified as moderately suitable (S2) or marginally suitable (S3). Discussions with the director of the Tea Research Foundation concluded that this would probably be upgraded to S1 and S2 through use of selected high yielding clonal tea, for which many estates have replanting programmes.

2.3. Overall land use

The survey made provision for identification of a total of 28 land use or cover classes as indicated in Table 2-2 below. These are based on the classes used for the tobacco estates survey which are the same as those used for the land use component of the Customary Land Utilisation Study (CLUS), but refined to allow a more accurate representation of performance at the individual estate level. Thus distinction was made between natural fallows, fallows planted for restoration and planted for feed or seed, and between improved pasture and rough grazing. In addition to these refinements, the land use and cover classes used for the detailed tea estates survey included "CP" for dambos planted with guatemala (e.g. for mulching) or other perennial crops (which would be different from the normal dimba garden), and split the perennial upland crops into:

- "PT" for all the tea land: mature, immature, in development and nurseries.
- "PC" for non-tea perennial crops such as coffee.
- "PM" for the tree crops such as macadamia.
- "PR" Upland under rehabilitation (Guatemala, etc.).

The 28 classes have been combined into more simple but broader classes for reporting purposes. The 28 classes have thus been reduced. The classes used for the postal tea estates survey followed a simplified version of this which was more in line with the way most tea estates seemed to keep their land use information. Using appropriate weighting factors derived from the detailed tea estates survey, the postal survey land use data was converted to the same land use and cover classes as used for the detailed tea estates survey. The areas found for the six estates surveyed in the detailed survey were compared with those provided by the estates in the postal survey and the agreement found to be generally very good, with no difference being greater than 3% of the total area.

Table 2-2 All 28 land use and cover classes in the survey and how combined

Code	Surveyed land use or cover (1994/95 season)	Combined 1	Combined 2
PT	Tea: mature, immature, in development, nurseries	• Upland perennial crops	• Upland crops and fallow
PC	Non-tea crops: Coffee, etc.		
PM	Tree crops: Macadamia, etc.		
PR	Upland under rehabilitation (Guatemala, etc.)		
A	Annually cropped rainfed or irrigated upland cultivation	• Upland annual crops	
AF	As for "A" but under natural fallow	• Upland fallows	
AFR	As for "A" but under planted fallow for soil restoration		
AFC	As for "A" but under planted fallow to be cropped for feed		
EP	Permanent improved upland grassland: for intensive use	• Improved grassland	
B	Wetland cultivation: rice grown under natural flooding	• Dambo and wetland cultivation	• Wetland
C	Dambo cultivation: any crop grown under dimba conditions		
CP	Dambo planted with other perennials e.g. with guatemala		
BF	As for "B" but under fallow	• Dambo and wetland fallow	
CF	As for "C" but under fallow (within crop/fallow system)		
ED	Seasonally wet grasslands associated with dambos	• Wet grassland	
EF	Seasonally wet grassland of floodplains and lake margins		
EG	Dry grassland scrub (usually from cultivated or woodland)	• Upland grassland	• Woodland and upland grass
EM	High or low montane grassland		
EB	Severely degraded grassland/scrub: Eroded, bare land		
GR	Recent regrowth of undifferentiated woody vegetation	• Woodland regrowth	
GW	Woodland / tree savannah and thickets.	• Natural woodland	
GE	Evergreen forest		
F	Plantation forest: (including coppiced areas)	• Plantation forest	
X	Encroached land: by smallholders, villages or other estates.	• Encroached land	• Encroached
Z	Built-up areas: buildings, villages, graveyards, roads, etc.	• Built up/service areas	• Built up and other
M	Marshes: Reed and sedge communities	• Other: rock, marsh, water, etc.	
R	Rock: Bare or sparsely vegetated rock outcrops		
W	Water: Open water: lakes, ponds, dams and rivers		

The detailed survey data was therefore combined with the postal survey data for the other estates and scaled up to allow for the one estate missing from the postal survey to derive more or less census information for all tea estates. Table 2-3 gives the area and percentage of the total area for all 28 land use and cover classes for all estates, as well as the area information from both the detailed and postal surveys for the six estates covered in the detailed survey. The total area of 45,479 hectares is therefore the sum of the reported areas for all tea estates in the Thyolo, Mulanje and Nkhata Bay areas. It excludes the Tea Research Foundation, smallholder tea and any non-tea or plantation estates (e.g. tobacco) which may belong to the tea estate companies.

Table 2-3 Area and % of land under all 28 land use and cover classes for detailed survey and all estates

Code	Surveyed land use or cover (1994/95 season)	Detailed survey (6) estates	Postal survey (6) estates	All estates Ha	Percent of total area: all estates
PT	Tea: mature, immature, in development, nurseries	5,385	5,103	16,764	37%
PC	Non-tea crops: Coffee, etc.	440	516	1,377	3%
PM	Tree crops: Macadamia, etc.	720	677	2,339	5%
PR	Upland under rehabilitation (Guatemala, etc.)	65	107	500	1%
A	Annually cropped rainfed or irrigated upland cultivation	66	131	778	2%
AF	As for "A" but under natural fallow	0	13	752	2%
AFR	As for "A" but under planted fallow for soil restoration	0	6	26	0%
AFC	As for "A" but under planted fallow to be cropped for feed	0	6	26	0%
EP	Permanent improved upland grassland: for intensive use	104	229	139	0.3%
B	Wetland cultivation: rice grown under natural flooding	0	0	0	0%
C	Dambo cultivation: any crop grown under dimba conditions	0	1	21	0%
CP	Dambo planted with other perennials e.g. with guatemala	69	107	359	0.8%
BF	As for "B" but under fallow	0	0	0	0%
CF	As for "C" but under fallow (within crop/fallow system)	0	1	21	0%
ED	Seasonally wet grasslands associated with dambos	86	255	530	1%
EF	Seasonally wet grassland of floodplains and lake margins	0	0	0	0%
EG	Dry grassland scrub (usually from cultivated or woodland)	37	4	132	0.3%
EM	High or low montane grassland	0	0	0	0%
EB	Severely degraded grassland/scrub: Eroded, bare land	10	0	10	0%
GR	Recent regrowth of undifferentiated woody vegetation	0	0	123	0.3%
GW	Woodland / tree savannah and thickets.	93	54	516	1%
GE	Evergreen forest	756	487	4,561	10%
F	Plantation forest: (including coppiced areas)	2,193	2,358	9,096	20%
X	Encroached land: by smallholders, villages or other estates.	716	716	846	2%
Z	Built-up areas: buildings, villages, graveyards, roads, etc.	1,013	666	3,435	8%
M	Marshes: Reed and sedge communities	0	0	0	0%
R	Rock: Bare or sparsely vegetated rock outcrops	1	218	2,571	6%
W	Water: Open water: lakes, ponds, dams and rivers	50	144	557	1%
	TOTAL:	**11,804**	**11,799**	**45,479**	**100%**

Table 2-4 shows the estimated total areas and percentage of the total tea estate area under combined (no 1) types of land use and cover with comparable figures for the tobacco estates.

Table 2-4 Area and % of land under 14 combined (no 1) land use and cover classes for all estates

Combined (no 1) land use classes	All tea estates Ha	Percent of total tea estate area	Percent of total tobacco estate area
Upland perennial crops	20,980	46%	0.4%
Upland annual crops	778	2%	32%
Upland fallows	804	2%	18%
Improved grassland	139	0.3%	0.1%
Dambo and wetland cultivation	380	0.8%	0.4%
Dambo and wetland fallow	21	0%	0.1%
Wet grassland	530	1%	7%
Upland grassland	142	0.3%	2%
Woodland regrowth	123	0.3%	15%
Natural woodland	5,077	11%	16%
Plantation forest	9,096	20%	3%
Encroached land	846	2%	3%
Built up/service areas	3,435	8%	2%
Other: rock, marsh, water, etc.	3,128	7%	0.7%
TOTAL	**45,479**	**100%**	**100%**

These land use and cover classes are further summarised into five main combined (no 2) classes in Table 2-5. This clearly shows the dominance and balance of the two main groupings of upland crops and woodland which together account for 82% of all the tea estate land.

The comparisons with the tobacco estates are interesting in that they reveal fundamental differences between the two as would be expected. While the dominance of the cropland and wooded land and their relative proportions are almost the same, there are big differences within these summarised land use and cover classes. On the tea estates the crop/fallow upland is 92% perennial crops 3.5% annual crops 3.5% annual fallow and 1% improved pasture, while the equivalent cover on the tobacco estates would be 1% perennial crops, 63% annual crops, 36% annual fallow and almost no improved pasture. The woodland and upland grass area on the tea estates was found to be 63% plantation forest, 35 % natural woodland, 1% regrowth and 1% grass, compared to 8% plantation forest, 44% natural woodland, 42% regrowth and 6% grass on the tobacco estates.

Table 2-5 Area and % of land under 5 combined (no 2) land use and cover classes for all estates

Combined (no 2) land use classes	All tea estates Ha	Percent of total tea estate area	Percent of total tobacco estate area
Upland crops and fallow	22,701	50%	50%
Wetland	931	2%	8%
Woodland and upland grass	14,438	32%	36%
Encroached	846	2%	3%
Built up and other	6,563	14%	3%
TOTAL	**45,479**	**100%**	**100%**

The main points of interest within each of these main summarised land use and cover classes are explored below in the sections on cropping and forestry. Encroachment is discussed in section 4.5.3

2.4. The cropped land

2.4.1. Perennial and annual cropping

As mentioned above, almost all (92%) of the cropped land is under perennial crops. In spite of a move into macadamia in recent years, most of this land (80%) is still under tea, followed by macadamia (11%) and then coffee (7%). A small area (2%) was found to be under mostly guatemala grass as a source of mulching material and for rehabilitation of the land prior to re-planting.

With only 8 of the 32 postal survey estates reporting that they grow annual crops, only a relatively small part of the cropped land (7%) was found to be under annual crops and fallow. Around half (49%) of this was under crop while the other half (51%) was fallow, being almost entirely natural rather than planted fallow. The main crops grown were found to be maize (mostly hybrid) and tobacco as discussed elsewhere. Only one of the six detailed survey estates grew annual crops and the intention there was eventually to put the land under macadamia. It must be said that annual cropping was considered unimportant in comparison to the perennial crops. The crop rotation system is discussed below.

2.4.2. Cultivation of suitable and unsuitable land

As was done for the tobacco estate and customary land surveys, land was classified during the detailed survey of six tea estates, for its generalised suitability for the most important rainfed annual crops. Suitability for perennial crops such as tea would of course be different, generally giving a better suitability rating or at least not being so heavily downgraded for slope steepness. The percentages of the different cropland classes found on suitable and unsuitable land on the six detailed survey estates is shown in Table 2-6. The land under perennial crops is included although the suitability criteria do not strictly apply.

It was found that around 80% of the perennially cropped land was on suitable while lower proportions of the annual crop/fallow land and guatemala/rehabilitation land were on suitable. As mentioned above, only one of the six estates visited had annual crops and these were regarded as a secondary to fill in while the land was being planted in most cases to macadamia. As would perhaps be expected, the guatemala and other mulching grasses are concentrated on the less suitable land.

Table 2-6 Percent of different cropland classes on suitable and unsuitable land (detailed survey estates)

	Annual crop / fallow *	Tea	Coffee	Macadamia	Guatemala / rehabilitation
On suitable land	64%	84%	82%	78%	68%
On unsuitable land	36%	16%	18%	22%	32%

* Only one estate had annual crops.

2.5. Woodland and forestry

2.5.1. Woodland and forest cover

As noted in the discussion of overall land use, the woodland and upland grass area was found to account for 32% of all the tea estate land. Most of this land is plantation forest (63%) and natural woodland (35%) with only very small areas of woody regrowth (1%) and upland grass (1%). This reflects the much greater intensity of use of the tea estate land compared to that on tobacco estates where only 8% of the woodland and upland grass category was found to be plantation forest with 44% natural woodland, 42% regrowth and 6% grass.

According to the postal survey results, most (83%) of the land under plantation forest is Eucalyptus (mostly E. grandis) species commonly known as blue gum, with 10% pine (mostly Pinus patula), 4% bamboo and 3% under various other timber trees. The detailed survey distinguished between evergreen woodland found along the streams and rivers which has a protective and amenity function, and the more open woodland found on the upland. Of this land, 89% was found to be evergreen forest and 11% upland woodland.

These total land area figures may hide much estate to estate variation as was found with the tobacco estates, where 48% of the estates visited had less than 5% of their land under forest.
While the proportion of the total tea estate area under natural woodland and plantation forest was found to be 0.31 (31%), the average proportion of individual estates under trees was 0.26 (26%).

Table 2-7 shows the percentage of the responding postal tea survey estates with different amounts of tree cover, together with comparable figures for the tobacco estates visited in that survey. Clearly the tea estates are more uniform in respect of their tree cover.

Table 2-7 Percent of postal tea survey estates and visited tobacco estates with different amounts of tree cover

Proportion of estate under trees	Tea estates	Tobacco estates
0 to 0.05	3% (1)	48%
0.05 to 0.1	0% (0)	9%
0.1 to 0.2	28% (9)	10%
0.2 to 0.5	66% (21)	22%
0.5 to 1	3% (1)	11%
Total	100%	100%

2.5.2. *Forestry self sufficiency*

A large quantity of fuelwood is needed for curing tea and for some estates, macadamia. Estates also need wood for construction of buildings, fabrication of tea palates, etc. A large quantity of wood is needed for domestic use being mainly for fuelwood and some wood for construction.

In the postal survey, estates were asked for their total annual requirement for fuelwood and poles, and whether they had to buy in or sold any in 1995. The mean annual wood requirement (for the 28 out of 33 which responded to this question) was 7,348 split and stacked cubic metres (ssm^3). Three estates reported buying in wood (mean of 6,588 ssm^3) and three different estates reported selling wood off the estate (mean 4,274 ssm^3). It is clear from discussions held during the detailed survey that the annual requirement would have been for the estate/factory use only and would not have included domestic use which to a large extent is in practice obtained from the trimmings of the estate wood, loppings and deadwood from the natural woodland on the estates, and from the tea downprunings.

In the detailed survey the wood balance was assessed for each estate in more detail through discussions on the wood required and an independent calculation from production and labour figures, and measured areas of plantation forest and natural woodland. The plantation forest area was split into Eucalyptus, pines, bamboo, etc. from reported areas. The pine and bamboo was said to be used mainly for construction or fabrication of tea palates and was taken out of the main wood balance except for the provision of fuelwood from the loppings and trimmings. The use of tea downprunings for fuelwood was taken into account when estimating actual demand. An allowance was made for reported theft in calculating net production. The tree growth rates used (mean annual increment) were assessed from reported estate yields and LREP suitability. The growth and use rates used in these calculations are provided in Table 2-8. "Split and stacked cubic metres" (ssm^3) are used for quantities of wood since these are the units used by the estates. These can be converted to "solid cubic metres" by multiplying by a conversion factor of 0.7. The farmers' own estimates for the quantity of wood bought or otherwise brought in from outside, or sold off the estate were cross checked with actual need to buy in or surplus production which could be sold.

Table 2-8 Growth and use rates for calculation of wood production and demand

Mean Annual Increment	
MAI for Eucalyptus plantation	from 32 to 48 ssm^3/ha/yr
Yield from pine/bamboo loppings and trimmings.	from 3 to 5 ssm^3/ha/yr
MAI for natural woodland and evergreen forest	from 3 to 5 ssm^3/ha/yr
MAI for woodland regrowth	0 ssm^3/ha/yr
Downpruned tea (wood equivalent)	3 ssm^3/ha of tea/yr
Wood use rates	
for tea	200 kg made tea/ssm^3 wood
for resident population	1 ssm^3/person/yr on average

In doing the calculations for the detailed survey, each estate was regarded as a separate entity, being separate from the factory or other estates in the group.

Thus the wood balance would be concerned with the demand from tea, etc. produced and people resident on the estate, and the wood produced on the estate. Thus if an estate had its own factory which cured tea from a different group estate using wood from the surveyed estate, the demand for curing tea from the different estate would not be included, and the wood produced on the surveyed estate for curing this tea would be regarded as sold out.

An overall wood balance was calculated in this way for the six detailed tea survey estates and the results summarised in Table 2-9 in terms of split and stacked cubic metres. The mean annual wood requirement was estimated at 13,867 ssm^3. This is much higher than the 7,348 split and stacked cubic metres of wood reported from the postal survey since the latter did not include domestic demand. The mean amount of wood bought in was estimated as 4,250 ssm^3 from the two estates which needed to buy in, while the mean amount of wood sold was 2,330 ssm^3 from the three estates which reported selling wood. These figures compare reasonably well with the reported means of 6,588 ssm^3 for wood bought in and 4,274 ssm^3 for wood sold from estates in the postal survey. The mean annual wood production was 14,283 ssm^3.

Table 2-9 Overall wood balance for detailed tea survey estates (split and stacked cubic metres)

	Wood produced	Wood required	Wood bought	Wood sold	Production surplus/deficit	Net surplus/deficit
Estate 1	2,500	1,700	0	800	800	0
Estate 2	3,000	4,500	1,500	0	-1,500	0
Estate 3	8,200	7,000	0	1,200	1,200	0
Estate 4	14,000	21,000	7,000	0	-7,000	0
Estate 5	26,000	17,000	0	5,000	9,000	4,000
Estate 6	32,000	32,000	0	0	0	0
Total for 6 estates	85,700	83,200	8,500	7,000	2,500	4,000
Mean	**14,283**	**13,867**	**1,417**	**1,167**	**417**	**667**

In the detailed survey, three estates produced more wood than they needed while two produced less and one produced about the right *amount*. In all cases the deficit was made good by obtaining extra wood from other estates within the group or purchasing from a nearby estate with a surplus. Two of the three estates with a surplus sold or used their surplus within the group while the third sold some but had some of the surplus unused. This was effectively wasted and therefore a form of underutilisation.

One of the two estates which bought in wood obtained this from another nearby estate in the same group, while the other estate bought from a different group's nearby estate. Two of the three estates which sold wood did so for curing tea from another estate in the same group. One of the estates surveyed sold wood to estates of a different group or to other purchasers.

The overall situation for the detailed survey estates was therefore that there were no net deficit estates, with five estates having a zero net surplus/deficit and one estate having a small net surplus. Therefore these estates were not found to contribute to deforestation in their surrounding areas. It seems likely that a similar situation would prevail for other estates and groups. While individual estates may produce more or less than they require, arrangements would generally be made by the group to buy in any deficit from a legitimate sustainable source or to sell or otherwise use the excess. In most cases these arrangements would be done within the group.

2.6. Land husbandry

2.6.1. Land use planning

Although not evaluated quantitatively, the impression gained from the air photo interpretation and field visits for the six estates in the detailed survey was that while some criticisms could be made of certain aspects of the planning of many estates, the land use planning was generally very good and outstanding in comparison with the majority of the tobacco estates in Malawi. The best land was used for cropping as a priority, and natural woodland left on the sensitive riverine and very steep areas. Due consideration had been given to the location and layout of plantation forest.

While all estates planted trees mainly in plantations, 26 of the 32 estates (81%) in the postal survey and 4 of the 6 in the detailed survey had some in windbreaks. The balance between cropland and forestry was generally satisfactory. All of the six estates in the detailed survey had at least some of their roads following the crest, but the tendency was to lay out the land in blocks. More use could perhaps have been made in the development stage of crests and contour aligned roads.

2.6.2. Establishment of perennial crops

All estates in the detailed survey reported that crops were established with the protection of a proper physical conservation measures layout and mulching. With tea, this is no longer maintained once the tea cover has established. The most common measures used were graded bunds and waterways. This was seen on one new block, and waterways and the remains of a graded or contour layout seen in many places. Half of the postal survey estates reported using guatemala grass to rehabilitate land before replanting of perennial crops. All six detailed survey estates said they may or may not use guatemala depending on the needs of the particular site. The practice is to plant guatemala for one or possibly two years.

2.6.3. Rotation of annual crops

With only eight of the 32 postal survey estates and one of the six detailed survey estates growing annual crops, annual cropping is not an important feature of most of the tea estates and little information was collected on crop rotation. Only two of the eight postal survey estates with annual crops reported on their crop rotations and these did not agree with the annual crops they reported as being grown. The one detailed survey estate with annual crops grew a maize monocrop without fallow, with the intention of eventually planting macadamia. This estate did not have any fallow because of the risk of encroachment.

Looking at the areas reported to be under the different crops and fallow can tell us something about the area or time relationships within the rotation. On this basis there would be something like the following rotations.

- maize monocrop without fallow x 4
- maize-maize-maize-maize-fallow x 1
- tobacco-fallow-fallow x 1
- maize-pigeon peas x 1
- approximately tobacco-maize-beans-fallow-fallow x 1

2.6.4. Soil and water conservation on cultivated land

Soil fertility is maintained largely through the widespread and fairly sophisticated use of chemical fertilisers. Aeroplanes are used on some estates for the application of fertilisers.

Almost all cultivation on both the perennially and annually cropped land was found in the detailed survey to be aligned in some way to the contour or a slight grade from it. Crop ridges were invariably aligned across the slope. Mulching of the tea, coffee and macadamia is widespread with all estates using mulching at some point or another.

The number and percent of the postal survey estates which reported using various other specific soil and water conservation (SWC) measures on perennially and annually cultivated land is given in Table 2-10. Similar results were obtained from the six detailed survey estates.

Table 2-10 Number and percent of postal survey estates reporting use of other main SWC measures

SWC measure	No of estates	% of estates
Contour marker ridges or bunds	28	88%
Grass (mainly vetiver) hedges	15	47%
Graded bunds	27	84%
Bench terraces	14	44%
Storm drains	19	59%
Vegetated waterways	25	78%
Raised footpaths	7	22%
Tied ridges	9	28%
Windbreaks and shelterbelts	26	81%
None of these measures	3	9%

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3. Production Systems

3.1. Crop and Livestock enterprises

Cropping systems on the plantations tend to be straight forward with a bias towards specialisation in what the company regards as its core business. Of the 32 estates reported on in detail in the postal survey, 31 grew tea. 18 grew tea and macadamia, and 12 grew tea and coffee. Only 8 grew all three crops.

Although often overlooked, the forestry side of the estates is of major importance as a source of fuel for the factories. In the past coal was tried, but the transportation costs make this no longer a viable option. As mentioned above in Section 2.5.2 the estates are self-sufficient for wood and consequently do not, unlike some tobacco estates, extract wood from the surrounding area. When viewed from the outside, however, this vital enterprise is often mis-interpreted as underutilised, and therefore spare, land.

The threat of encroachment has had an effect on cropping policy since companies are now anxious to plant up land that might otherwise be perceived as lying idle by surrounding villagers. In areas distant from the factory macadamia is a good alternative to plantation forestry (although vulnerable to theft). Areas being followed/ renovated in between tea crops are usually planted to Guatemala grass, hence its separate listing in Table 3-1

Table 3-1 Cropping on 32 Plantations 1995/6

	Percent of Total Area	No. Estates reporting
Area of mature tea in ha	34%	31
Eucalyptus Plantation	17%	31
Natural woodland	10%	17
Factories, houses and other buildings	7%	30
Rocky with little vegetation	6%	18
Macadamia	5%	19
Coffee	3%	12
Pine Plantation	2%	31
Encroached land (all of 1995)	2%	5
Natural Fallow in annual crop rotation	2%	4
Dambo area seasonally wet	2%	13
Area of Immature Tea	1%	15
Lakes, dams, rivers	1%	21
Rehabilitation-Guatemala Grass	1%	22
Other forestry	1%	12
Bamboo	1%	23
Tea in Development	1%	9
Hybrid Maize	1%	6
Permanent Improved pasture	1%	12
Tobacco	1%	2
Other rehabilitation	1%	6
Other annual crop 1	0%	5
Recent regrowth of woody vegetation-Scrub	0%	4
Other annual crop 2	0%	1
Planted fallow in annual crop rotation	0%	2
Tea Seed Bearers	0%	23
Other Permanent Crop	0%	3
Local Maize	0%	2
Dimba Cultivation	0%	3
Other forestry type 2	0%	3
Natural grassland/scrub	0%	2
Total area as described above	100%	32

what about land above the estate in the watershed?

Macadamia and coffee make up 3% and 5% of the total area. Although coffee was the main crop in the late nineteenth century, on about half the estates these crops are relatively new, financed by tea as diversification enterprises since the 1980s. Coffee, despite receiving good prices at present does not seem to be expanding in Mulanje or Thyolo perhaps due to disease problems, in particular Coffee Berry Disease. Macadamia, on the other hand is growing in popularity. One very large company intends uprooting 400 hectares of marginal tea and replanting with macadamia by the year 2000. Others, replanting with higher yielding clonal teas, intend using the areas thus released to also plant macadamia.

Apart from the plantation crops 6 estates grew maize on a large scale and 2 grew tobacco. Those growing maize use nearly all the grain on the estate either for mid-day meals or for sale to the resident workers.

Few estates allow their workers to grow more than garden areas of food crops.
40% of estates run dairy herds. This is quite a high proportion brought about by a combination of the suitability of the area for dairying, proximity to consumers, availability of grazing, and historical reasons. Some estates were actually started as dairy farms.

Seven estates own beef herds, often combined with the dairy enterprise. None reported poultry. The largest poultry unit at Thyolo is owned by a tea company, but reported separately as a poultry unit and thus not listed here. A few estates allow village goats and cattle to graze within their boundary and say that the tea is not damaged by this concession. Others strongly resist this practice and impound wandering animals.

Apart from domestic poultry flocks workers are not generally permitted to keep animals on the estate.

3.2. Crop Husbandry, tea management cycle

In view of the importance of seasonality in relation to employment, some notes on the tea cycle may be useful. Unlike sugar, which is totally dependant on irrigation in Malawi, the productive growth of tea is dependant on rainfall and tends to come in three flushes. These occur from late November to May in most years, and each flush occupies around 42 days giving rise to the "Fordham Cycle" of six generations of buds. (The ideal is a shoot with one bud and two leaves. Poor plucking will take out the stem lower down and reduce both the quality of the tea and the recovery time)

This cycle is important, since field management is geared to "making the rounds", that is coming back to the same bush at 7 or 10 day intervals after fresh buds have grown. If insufficient pluckers are available when required this cycle can decay with knock-on effects on present and future production. For the same reason pluckers can be allocated varying amounts of work depending on season, which obviously affects incomes. To help overcome this seasonality a three rate system of payment is used with the aim of enabling a minimum wage to be earned even during periods of low production.

Pruning is a vital part of tea husbandry being designed to achieve a proper plucking "table" and includes a periodic deep prune where the bushes are cut back to near ground-level. Pruning supplements the work of plucking and will keep a proportion of the labour force in work outside the main plucking season. One of the products of deep pruning is the trimmings themselves which are collected by villagers for firewood.(*Makuli*)

4. Estate Labour Management

This section largely presents data collected during the Detailed Tea Survey in April 1997 and reflects the views of four General Managers and three estate managers.

4.1. The estate population and their conditions of employment

4.1.1. Staff categories and Contracts

There are approximately four months of active tea plucking , from December to March during which a majority of workers are hired either on full time or as part-time basis. Basically the motivation to seek factory and field employment appears to be driven by food insecurity and lack of alternative employment opportunities. The tea harvesting season coincides with periods during which most households have exhausted their previous season's foods stocks and the maize crop has just been planted or is not yet ready for harvest. In some cases both the husband and wife as well as children seek estate employment to supplement family income. Some of the young persons become employed to support elderly parents who can not fend for themselves or orphaned siblings who have no other source of support for food, clothing or school fees. The majority of employees observed in this category appeared to be young girls usually below the age of 15yrs. Single female parents who were either divorced or widowed also appeared to seek employment to support the young or elderly members of the family. After the main tea harvest period is over the majority of workers are laid off.

Although the companies all follow guidelines laid down by the Tea Association of Malawi, the details of their labour structures can vary. However, as regards senior management and supervisory staff, the structure is quite conventional and tends towards an organisation based on estate managers, possibly supervised by regional managers, who report to a General Manager. On the estates themselves field managers reporting to the estate manager will oversee *capitaoes* or foremen who manage the field labour. Factories are organised in much the same way, except that there is a large contingent of fitters and other artisans who are more directly supervised by the factory manager.

In the field labour will be categorised by shift length. Men usually work 8 hours and women and young person 6 hour shifts. Some men may, however, work the shorter shift and vice versa. The differentiation between take home pay for men and women is based on shift length rather than gender. The term "young person" is used to describe youths between the ages of fourteen and eighteen years old. Some estates will employ young persons extensively at busy periods, others state that they have a policy of not employing teenagers at all.

Field labour may be permanent, seasonal or casual. Permanent and seasonal staff will tend to be offered accommodation on the estate depending on resources. The difference between seasonal and casual is that seasonal move onto the estate for a period while casual live off the estate and come in daily. There is no difference in wages paid. Although the labour regulations may be posted on notice boards, and some categories are given a letter setting out their terms, none of the visited estates have any co-signed agreement with the field labour.

4.1.2. Seasonal employment

Figure 1 Total Labour Numbers on 32 Tea Estates 1995/6

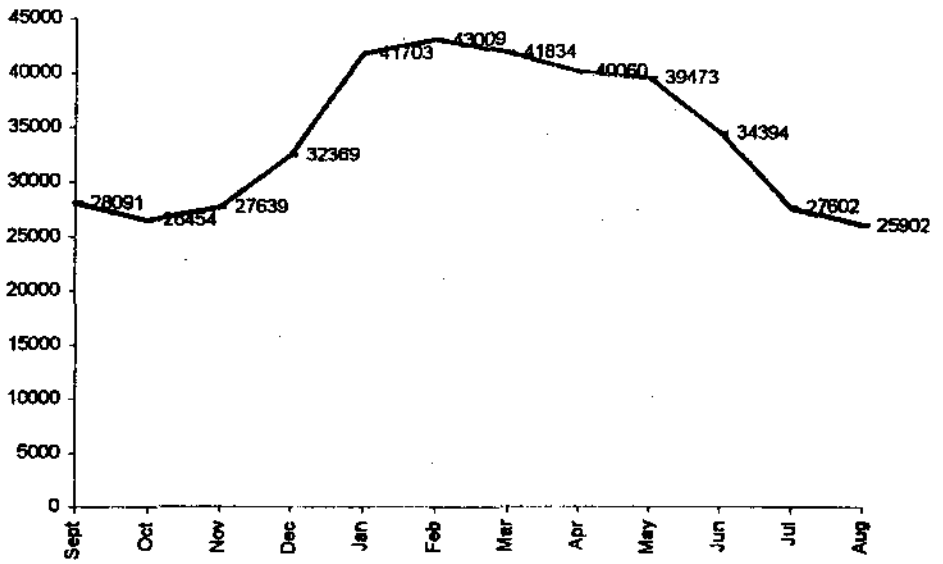
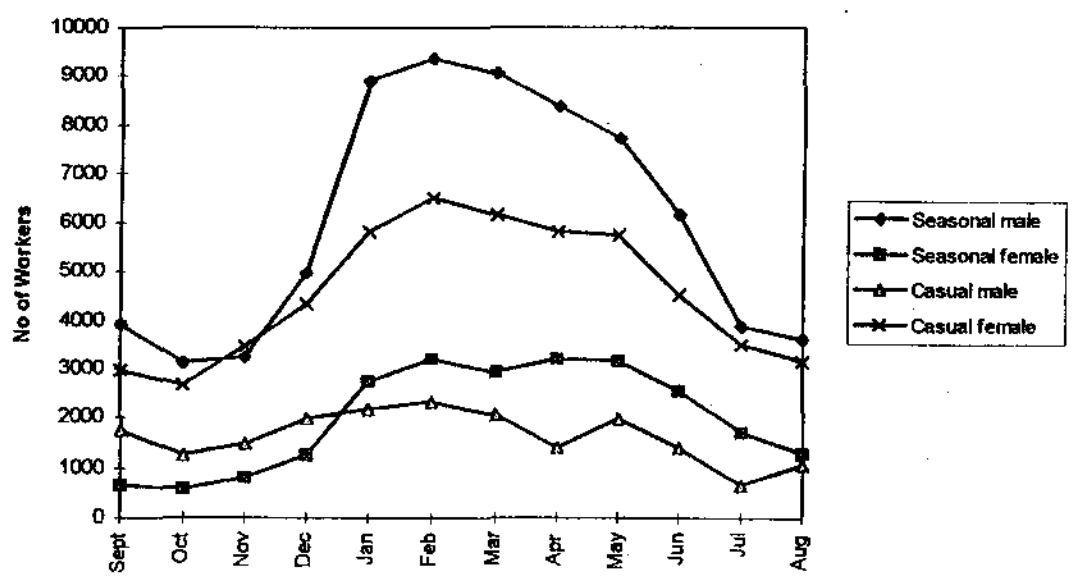


Figure 1 illustrates the seasonal nature of tea production coupled with the fact that that about 40 % of estates grow only tea and so have no means of offering employment in the off-season. The seasonality obviously affects permanent labour least and seasonal staff the most. Casual male labour living close to the estates will be employed in other tasks as required and tend to have a flatter profile than seasonal men whose profile is typical of an itinerant labour force (Figure 2)

Figure 2 Numbers of Seasonal and Casual Workers 1995/6



The postal survey collected data on off-season employment for factory staff. As might be expected on average 86 percent of seasonal staff were laid-off and nearly all the casual. Permanent workers were largely put onto other tasks on the estate, commonly cutting and stacking firewood. Clerks, artisans and drivers also remained on the estate, or exceptionally were allocated to work on another estate in the group. What's the difference between permanent & seasonal who aren't laid off?

4.1.3. Wage setting

Salaries for supervisory staff and management are set by the individual company, with some negotiation depending on rank. One manager, however, felt that the conditions were dictated by the company with little room for discussion. Others felt that qualifications were less important than experience.

Wage rates for field and factory unskilled staff are set without worker or union participation. An Industrial Relations Committee(IRC) within TGAM is responsible for reviewing wage rates and setting new levels, usually annually. This committee takes into account the rise in the cost of living (as reflected by prices for a basket of goods collected at Thyolo and Lichenza), Government labour rates, and the likely tea prices in the coming year. This year the committee awarded a wage rise in May of 22% in a year when rural inflation topped 40%.

4.1.4. Incomes

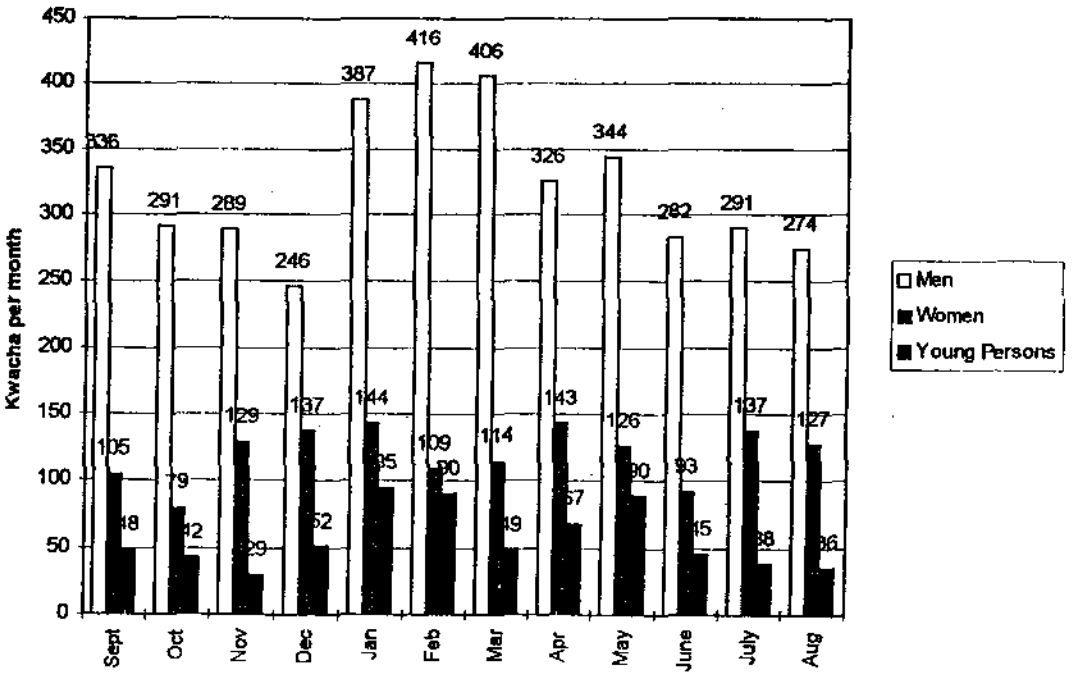
One of the major objectives of the Detailed Tea Survey was to verify wage rates, particularly with respect to actual take-home pay. During the discussion of preliminary results at the March 1997 ELUS seminar some participants suggested that the relatively high figures for wages derived from the Postal Survey were inaccurate in that they must include non-cash benefits and did not take account of deductions for loans or tax. To thoroughly check this point, the Detailed Tea Survey collected wage data from the six estates by inspecting their wages books and also asked the workers themselves what they had earned the previous month (March 1997).

In this section the overall annual wages for field labour collected from the estate are first reported, followed by an examination of a random sample of workers' individual earnings records.

4.1.5. Monthly Average Take-home pay for Fieldworkers

Of the five functional tea estates in the Detailed Tea Survey, three kept their labour records analysed into men, women and children. One used a ticket system which records simply the number of people working each day regardless of sex or age. The last had figures for permanent, seasonal and casual labour regardless of sex or age.

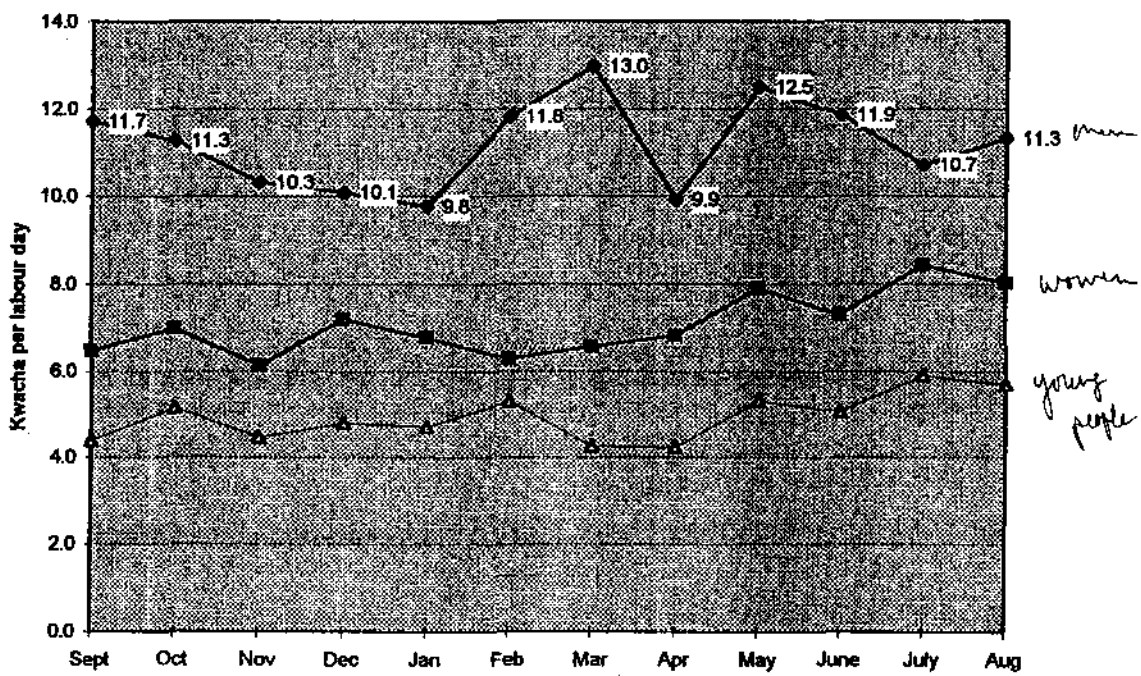
Figure 3 Average Take-home pay for Field Labour on Three Estates



The above graph takes no account of days actually worked by the individual in each month. It was common to find in the wages book that an individual would report for work only a few days a week and this obviously depressed the monthly earnings figure. All the estates visited were, however, able to provide labour data recorded and costed on a manday basis. This provides a more accurate picture of labour costs since it records payment for work actually completed.

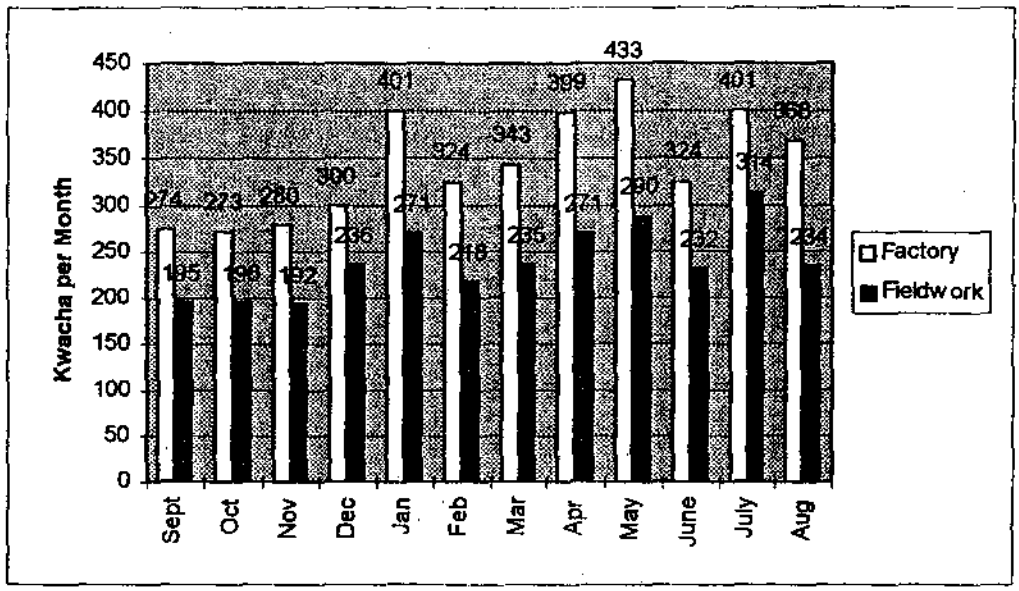
The figures used for Figure 4 include the data for all six estates since the reduced work available on the transitional estate does not affect the unit cost calculation. The cost per manday peaks in the plucking season and is generally more volatile than the cost per woman day. This is due to the practice of using women largely for weeding and pruning (year-round jobs) and men for plucking. Note that the cost per manday is in all cases above the daily shift rate of K9 for men. This is because this is the actual average amount paid per day and includes overtime and bonuses. In the case of women and young persons the opportunity for extra earnings is less and thus the average hovers around their standard rates of K6.75 and K5.06 repectively.

Figure 4 Wage earned per Day Worked on 6 Estates



Two estates were able to provide comparable data for factory manual workers and field labour. Even with the opportunity to earn extra cash at the height of the season fieldworkers were worse off in these two cases.

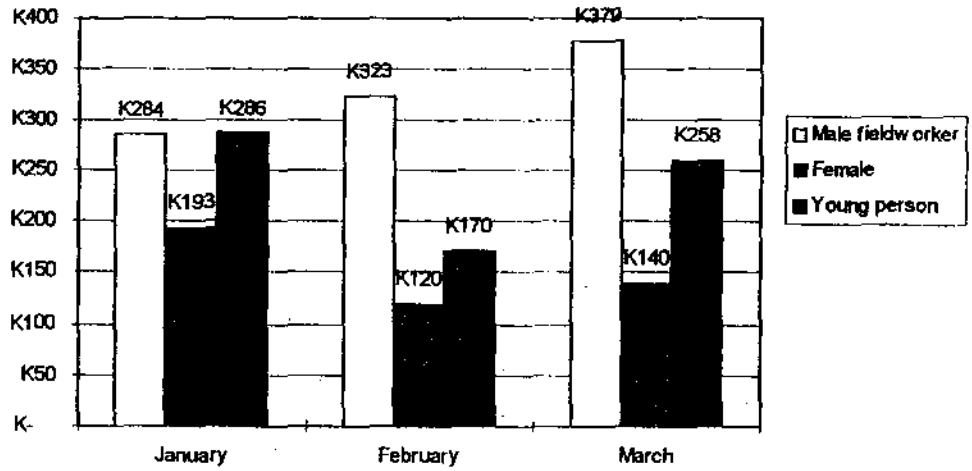
Figure 5 Comparison of Average Factory Manual Worker wage with Field Labour Wage



4.1.6. Individual Take-Home Pay January to March 1997

As explained at the start of this section, the team took the opportunity to extract take-home pay recorded for individuals in the months of Jan-March 1997 from the wages records. Theses rates are set out overleaf.

Figure 6 Average Take-Home Monthly wage for 47 Individual Workers



The relatively high income for the young persons group is biased by the inclusion of young persons from an estate which uses a high proportion of this type of labour in busy seasons. To provide a more detailed view, a set of figures for one week from one estate are given below in Table 4-1 Random Extract from Wages Record for Third Week in March 1997. This data set includes a deduction for tax against the driver who made nearly twice his basic rate that week from extras. There was no explanation for the clerk not paying tax. Owing to their low wage levels only one out of the 35 field labour cases had any tax deducted and this was in an exceptional week.

Table 4-1 Random Extract from Wages Record for Third Week in March 1997

Wage Basis	Category	Days Worked	Weekly Wage	Extras	Deductions	Weekly Take-home pay
Daily	Plucker	5d	K 45.00	K 41.28		K 86.28
Daily	Plucker	6d	K 54.00	K 12.00		K 66.00
Daily	Plucker	5d	K 45.00	K 41.76		K 86.76
Weekly	Plucker		K 58.80	K 27.96		K 86.76
Weekly	Plucker		K 57.60	K 24.17		K 81.77
Weekly	Plucker		K 47.95	K 9.65		K 57.60
Monthly	Capitao		K 470.00	K -		K 470.00
Monthly	Driver		K 364.00	K 638.77	K 80.46	K 922.31
Monthly	Clerk		K 400.00	K 522.31		K 922.31

The maximum weekly pay for a plucker encountered during this exercise was K191, but over the same period (one of the busiest in the year) only about 35% of pluckers made more than K100 per week. When discussing wage levels with senior staff it was common to hear that a good plucker could earn K40 per day, i.e. K240 per week. This might, perhaps, occur very occasionally but a careful examination of the latest payments for a prime tea plucking month could not find one case which came near this figure.

4.1.7. Benefits, Housing and Amenities

The responses to the Postal Survey indicate that leave pay and severance pay are provided for permanent staff on all estates. 97% of the replies also said that seasonal labour get severance pay and 41% get leave pay. This latter statistic is unclear since seasonal staff are actually leaving the job at the end of the season rather than going on leave. It is possible that the distinction was not made clearly by respondents to the survey.

During the Detailed Tea Survey fieldwork phase all the companies were preparing to pay out severance pay to their workers even though the staff were not being dismissed. This came about as the result of one estate company changing ownership with all the workers being laid-off, paid severance, and a proportion re-employed in the new organisation. When this became known to the rest of the local labour force the other companies were obliged to pay out severance in advance.

Owing to a similar situation in 1993 the major benefit of pension is no longer provided for estate staff below the rank of manager. Again payments were demanded in advance of retirement and after a period of unrest the non-contributory schemes were discontinued.

Housing is usually offered for permanent staff and occasionally seasonal workers as well. The number of families actually housed varies according to location and facilities available. Some estates will house all eligible staff, others only about 60 percent. It is claimed that some permanent workers prefer to live off the estate. Dormitories were once offered for seasonal male workers on some estates, but this practice is being discontinued in most cases.

The standard of housing observed during the Detailed Tea Survey was variable but generally above the village equivalent. Water was provided via standpipes in all cases.

All the estate workforce have access to a clinic either on the same estate or a neighbouring one. Six estates have what may be described as a cottage hospital while others may share a company facility which often includes an ambulance service. Access to medical facilities may be restricted to estate employees in some cases, or open to villagers as well. Most of the estates provide the service of the clinic free, others make a charge to control numbers.

In all cases companies have a primary school either on the estate or close by. Where the school is on the estate the usual arrangement is for the company to provide the buildings and housing while GOM provides the teachers. Only a few estates have social facilities for manual workers, but all have a football team!

The replies received from the villagers reported in Section 5.7 *Attitudes to the estates and future plans* contradict this view since most said they prefer to work long hours and earn more wages. If this is so, by making plucking more rewarding workers may be attracted to spend more time on the estates. Within the margins experienced by the tea industry any increase in wage rates would have to come from productivity gains. These gains are not likely to be achieved without some progressively attractive bonus scheme which might allow estates to operate at the same levels with fewer, but better paid, workers. As a caveat to this there is a danger that workers will pool their baskets to ensure that a few obtain the very top rate and then split the proceeds. From the estate's point-of-view this may not actually matter much, but if it did control systems could be devised.

4.4. Labour relations

4.4.1. Dispute settlement

The companies interviewed for the Detailed Tea Survey tended to give a reassuring answer to the question of labour disputes but the fact remains that strikes are common in the industry, particularly in the Mulanje area. Some strikes are confined to one estate, others involve workers elsewhere. The causes for strikes vary from a personal grudge against an individual manager accused of repression, to the demand for pension benefits to be paid in advance as described elsewhere. In most cases it seems that the Labour Officer and union officials will intervene to settle the dispute

4.4.2. Trade union and Joint Consultative Committees

The trade union concerned with estate workers is the Plantation and Allied Workers Union of Malawi (PAWUM). The trade union movement in Malawi is in its infancy and PAWUM apparently does not have the resources for representation at both Thyolo and Mulanje, so an office is maintained at Mulanje only. (The more militant labour force at Mulanje may be either a cause or effect).

The JCCs are older organisations established by the estates themselves. They are made up of three workers representatives and two from management. Their purpose is to present workers' grievances to management and to help settle disputes. Both the union and JCCs are supposed to meet once every two months, but this does not always happen.

4.5. Management's view of relationships with surrounding villages

It is unusual to have a village actually on the estate, but relations with surrounding villages are important since labour is provided by the villages and they compete for resources. Most of the estates seem to exist amicably with most of the villages, but when pressed will refer to one or two headmen who present problems.

More estates are taking the trouble to assist adjoining communities in order to foster good relations, perhaps motivated by a desire to patch over recent conflicts over encroachment.. These activities range from selling off surplus seed and fertiliser at advantageous prices to conducting full-scale crop husbandry improvement programmes.

4.5.1. Labour supply

Not surprisingly all the estates visited gave employment to at least some people from the neighbouring villages. In some cases bridges had been built over streams to improve access, ostensibly to assist the villagers but also to encourage labour to work on the estate. On average about 50 percent of the active adult population in the villages worked at some time on the estates.

4.5.2. Access to estate resources

The policy adopted by estates to allowing villagers access to resources will vary according to their relationships with the village and past disputes. Some estates permit no access at all. Perhaps as a result they suffer incursions and theft of firewood and poles. Others are quite liberal in their attitude. One large group of estates allows access to firewood and *makuli*[8] without restriction and permits goats and cattle to graze around the tea fields. Another allows people to collect firewood once a week under controlled conditions.

Other resources commonly used by villagers are thatching grass and water. Access to graveyards is permitted and one estate in the Detailed Tea Survey made its clinic available to its single adjoining village.

[8] Tea bush prunings

1-27 missing

5. Estate Labour Profile

This section draws on the results of a detailed survey of tea estate employees and their households, and information from the study on Estate Food Security and Nutrition in Malawi conducted by the Agricultural Policy Research Unit of Bunda College[9], in order to describe the demographic characteristics, incomes, and employment conditions, of the labour force within the plantation tea sector.

5.1. Methodology

In addition to the information obtained from the Postal survey of tea companies during 1996, a pre-survey familiarisation visit was made in April 1997 in which estate management, local district officials, labour leaders, and a number of tea estate employees and villagers were consulted. From discussions with management the basic wage structure on the estates was established, and it was determined to use this as a basis for stratification of the sample population.

5.1.1. Sampling scheme

A number of sampling schemes were initially proposed, basing sample strata on gender of employees, whether employees were employed on a permanent, seasonal, or casual basis, or on the basis of wage strata. Since incomes were of primary importance as a means of measuring the social effectiveness of use of tea plantation land, it was decided that strata based on wage differentials would be the most appropriate.

The basic wage strata used on the tea estates are set by the Tea Growers Association of Malawi, and are related to the length of shifts and types of work on the estates. These basic strata are: 6 hour shifts, 8 or 8½ hour shifts, and young persons (aged between 14 and 18 years). Each of these categories receives a different basic wage. Another category of employees are the factory workers, who, although in the same basic stratum as the 8 and 8½ hour shift employees, tend to work longer shifts in season and whose incomes were believed to be substantially different from those of other 8 and 8½ hour shift workers. Because the number of young persons employed is much lower than any of the other categories, and because the employment of young persons is, on the whole, highly subject to seasonal fluctuation, it could not be guaranteed that at the time of the survey sufficient young persons would be employed to justify their inclusion as a separate category. It was decided to treat these as key respondents on each estate where they were found. Thus the final sampling scheme included 3 basic strata: 8 or 8½ hour shift workers, 6 hour shift workers, and factory employees.

For practical reasons, and because it was known that the basic wage did not vary within each stratum, 10 workers were deemed sufficient to sample from each estate, divided among the strata as outlined below, according to the presence of all three or only two of the strata within each estate. The numbers of workers falling within each stratum on each of the estates was obtained through the estate level questionnaire administered by the Farming Systems Economist.

Table 5-1 Number of employees interviewed by shift category and estate

	8 or 8.5 hour shift	6 hour shift	Factory employee	Table Total
	Count	Count	Count	Count
Estate 1	6	4		10
Estate 2	8		2	10
Estate 3	4	4	2	10
Estate 4	6	2	2	10
Estate 5	4	4	2	10
Table Total	28	14	8	50

[9] Ng'ong'ola, D.H., C.B.L. Jambe and M. Shawa, Estate Food Security and Nutrition in Malawi: Case Studies of Kasungu, Mangochi and Mulanje, Agricultural Policy Research Unit/Estate Land Utilisation Study, Lilongwe, 1997.

5.1.2. Field investigation methods

The survey was carried out during a period of some tension in labour relations, and followed labour unrest experienced on some of the estates during March and April. The field interviews were therefore conducted in a very low-key manner, and the survey objectives explained clearly to the respondents, in order as far as possible not to raise expectations. On arrival at each estate, lists were obtained of those employed in each category for that week. Employees were selected at random, and selected employees were then located in the fields where they were working. Key respondents were identified at each estate, to provide information on estate labour relations, medical facilities, and other social facilities. Young persons were also interviewed where they were present.

5.1.3. Statistical analysis

Results for means of quantitative variables, and for proportions, have been scaled up, where appropriate, according to the numbers provided by the Farming Systems Economist of persons within each stratum, and following procedures advised by the consultant statistician, Dr. Savitri Abeyasekera. These figures can therefore be regarded as representative of the tea estate population as a whole. However, scaling was not possible for all variates, where there were insufficient numbers in each category, and where this is the case results are reported as a sample proportion and therefore not an unbiased representation of the total estate population.

5.2. Respondents, household size and structure

5.2.1. The meaning of stratification by shift

The 8 hour/6 hour shift division corresponds to differences in the type of work undertaken by employees. The 8 hour shift category includes the majority of field labour who are working on tea plucking, coffee picking, macadamia harvesting, crop spraying, tea pruning, and maintenance work, while the 6 hour shift workers are generally employed on tasks such as weeding or mulching.

Cutting through the basic shift category strata are other factors which may affect the conditions of employment of individual employees. The most evident of these are gender divisions, the division between permanent, seasonal and casual employees, that is between those who are employed all year round and those employed on either a temporary seasonal or temporary casual basis, and divisions between employees working on different crops. As the table below shows, although overall women are only 27% of the labour force, they are 100% of the employees on the 6 hour shift, while only 3% of the employees on the 8 hour shift are female. Thus, there remains a strong gender division between the 8 hour and 6 hour shift workers. Similarly, the 6 hour shift workers are far more likely to be casual or seasonal, and less likely to be permanent employees, than are either the 8 hour shift workers or the factory employees.

Table 5-2 Gender and Employment Status of labour force by shift category

		SHIFT CATEGORY			
		8 or 8½ hour shift	6 hour shift	Factory employee	Tea Estates Total
GENDER	Male	97%	0%	76%	73%
	Female	3%	100%	24%	27%
EMPLOYEE STATUS	Permanent	48%	16%	39%	40%
	Seasonal	10%	16%	17%	12%
	Casual	41%	68%	44%	48%

The implication of this is that while men are likely to be permanently employed by the estates, and to work for longer shifts, women are almost wholly restricted to 6 hour shifts, and are much less likely to be employed all year round. This has implications for annual incomes and can have implications for eligibility for certain other benefits provided to employees. Of the sampled respondents, 47% of men were employed on a permanent basis and only 44% on a casual basis, while only 11% of women were employed on a permanent basis and 67% on a casual basis. The impact of this on incomes for women will be discussed later in the report.

These results can be compared with the census data provided from the postal survey of tea companies. This gives a total of 43,737 persons who were employed on average throughout the year within the tea industry, although the number fluctuates up and down due to season. According to the tea company data, 21% of these employees were female, while 79% were male.

5.2.2. *Household size and Respondent characteristics*

The mean household size gives some idea of how many people are sharing the income from tea employment, and is used in the calculation of "livelihoods" used elsewhere in this report. Although the mean household size for all tea estate workers is 4.7 persons, mean household sizes among 6 hour shift workers and factory employees are smaller, at 3.3 persons. Employees in the 6 hour shift category are more likely to be divorced or widowed, a factor which might explain the difference in household sizes. The smaller household sizes among factory employees are more difficult to explain with reference to marital status or age/life cycle. The proportion of employees who are heads of households is approximately the same for all shift categories, despite the differences in marital status. However, 23% of 6 hour shift employees are still living in the household of a parent, while 17% of factory workers and 10% of 8 hour shift workers are. The presence of under 16 year olds in the 6 hour shift category (who should have been defined as young persons) probably reflects the practice of estates in not asking the ages of young people who seek employment.

Table 5-3 Selected characteristics of labour force and households

		SHIFT CATEGORY			
		8 or 8½hour shift	6 hour shift	Factory employees	Tea estates Total
Household size (mean)		4.8	3.3	3.3	4.7
Proportion household heads		0.78	0.75	0.83	0.78
MARITAL STATUS	Single	3%	17%	17%	8%
	Married/monogamous	83%	2%	38%	59%
	Divorced	13%	64%	24%	26%
	Widowed	0%	18%	0%	4%
AGE	<16 yrs	0%	16%	0%	4%
	16-19	8%	2%	0%	6%
	20-29	23%	33%	21%	25%
	30-39	30%	0%	39%	25%
	40-49	17%	18%	11%	17%
	50-59	12%	16%	17%	13%
	60 and over	9%	16%	12%	11%

[1] Percentages do not add to 100 due to rounding

The majority (46/50) of the respondents originated in either Mulanje or Thyolo district, suggesting there are not significant numbers of immigrants in the estate labour force. The remainder came from other districts in southern region, or from Mozambique. However, several of the estates do employ a number of Mozambicans, some of them ex-refugees who fled from the civil war and have not returned.

Table 5-4 Level of education of employees by shift category

	Job Category			Tea estates
	8 or 8.5 hour shift	6 hour shift	Factory employee	Total
No education	46%	66%	22%	48%
Adult literacy	0%	18%	0%	4%
Primary Std 1-5	42%	16%	50%	37%
Primary Std 6-8	11%	0%	28%	11%

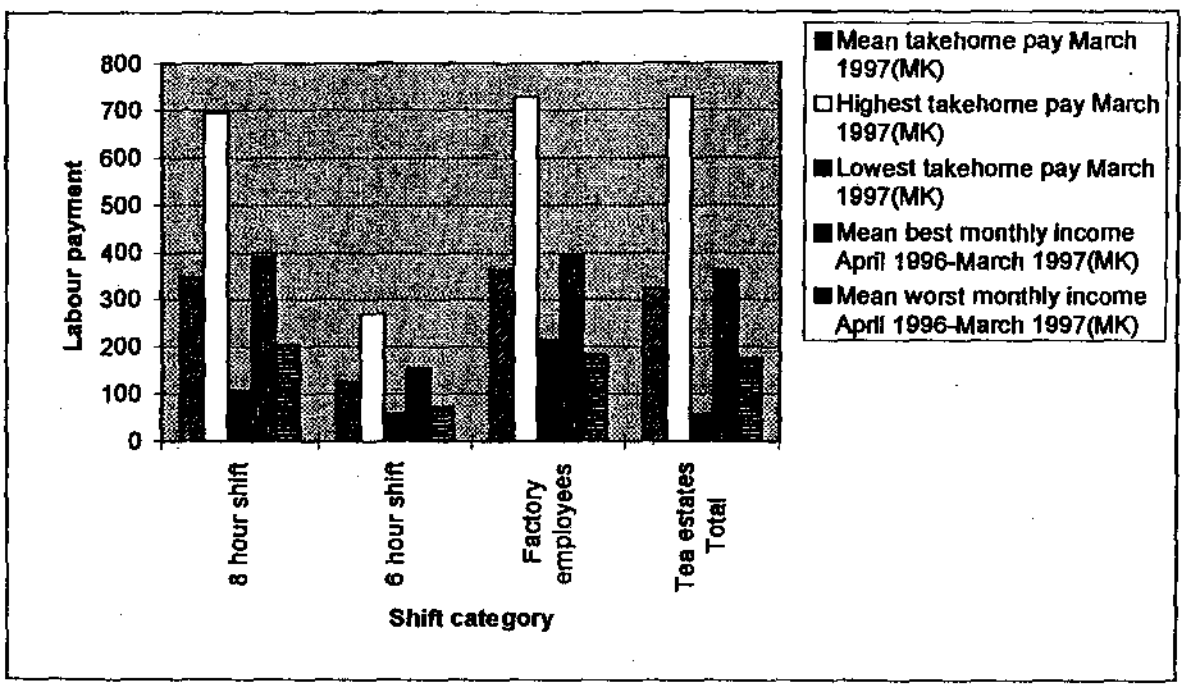
[1] Percentages do not add to 100 due to rounding

Education levels among tea estate employees are not high. Only 48% have received primary education, and the percentage with secondary school education is zero or close to zero. It should be noted that this analysis is limited to basic field and factory grade employees, and does not reflect the situation among white collar employees or skilled employees. The six hour shift contains the highest proportion of employees with no education (66%), while only 22% of factory employees are estimated to have no education. Only 16% of 6 hour shift workers had been to primary school, while the factory workers are the most highly educated, with 78% having attended primary school.

p. 31 missing

The worst months for 6 hour shift workers were December to April again, reflecting the seasonal nature of this employment, as few or none of these workers would be employed between May and November. According to scaled estimates, 60% of the 6 hour shift workers are laid off in the off season, while only 11% of 8 hour shift workers and 17% of factory workers are. 44% of the 8 hour shift workers and 29% of factory workers are employed on tea all year round, while the remainder are employed on other crops or in other tasks like chopping wood or road and infrastructure maintenance.

Figure 7 Labourer payments by Shift category



Very few employees were able to report any deductions from their incomes, although some were suspicious that the costs of benefits like meals and housing are deducted at some point. Only 4 respondents were aware of deductions from their pay, these being an amount for the purchase of seed maize from the estate, an amount for a contribution to an estate social facility, an amount for salt, and a penalty for an unfinished plot. The highest of these was for seed maize at K9. It therefore appears likely that the information provided by tea companies in the postal survey was a reflection of the take home wages of employees, and did not include substantial amounts for non-wage costs.

For 1995-96, the postal survey information gives an averaged income for male field workers of MK3,888, and for females working all year round of MK1,443. If figures are taken for December to May only (i.e.: a seasonally employed worker), average male wages were MK2,125, and those for females MK773.

5.3.2. Meals and rations

The Estate Food Security and Nutrition study[11] found that 99% of estate employees in Mulanje district received "rations" of varying descriptions, and that these formed an important part of the diet of tea estate workers, but not of their households. The reason for this is that the "rations" are given in the form of cooked food, consumed on the estate during working hours, rather than as foodstuffs to be taken away and prepared at home. Thus rations usually go to the employee, and this in part accounts for the poorer nutritional status of under 5 children in tea estate households compared with that of estate-dwelling under 5s in Kasungu and Mangochi districts.

The postal survey, and the detailed Tea Employee survey, tends to confirm these practices regarding rations and meals. Only two of the estates in the postal survey said they give rations, in the form of mgaiwa, while none of the respondents in the detailed Tea Employee survey receives rations of foodstuffs.

[11] Ng'ong'ola et. al. 1997, p.51

However, all respondents did receive one cooked meal per day, usually lunch in the form of nsima and beans or pigeon peas, and sometimes porridge or tea at other times, particularly when it is rainy. Some respondents expressed dissatisfaction with the meals and the amounts of food given, and other respondents claimed in order to receive a satisfactory amount it was necessary to give money to the cook. It might then be possible even to take cooked food home. Respondents were asked about the cost of the meal to themselves, and although none said they were directly charged for it, varying estimates, from K5 to K15 per day, of the invisible deductions made for the meals were given.

5.3.3. Housing and sanitary provision

In the postal survey of tea companies, managers supplied information on the categories of their employees who were eligible for housing, but not on the numbers of their employees provided with housing. Permanent male employees were eligible for housing on all responding tea estates, while 21 of the 32 said they would also provide permanent female employees with housing. On 17 of the estates, it was reported that seasonal male employees would be eligible for housing, but only 9 said they would do the same for female seasonal employees. However, some of these estates did not employ women as seasonal workers, and so the issue of eligibility for housing may not have arisen in some cases.

A scaled up estimate of housing provision, from the detailed Tea Employee data, is that 40% of all estate employees receive housing provided by the estates, while 60% do not. Housing provision is more common for 8 hour shift workers than other categories, 45% of these workers receiving estate housing compared with 32% of 6 hour shift workers and 22% of factory employees. 6 hour shift workers only received dormitory accommodation, while 8 hour shift workers and factory workers received either a house or a shared house, or dormitory accommodation. The sample numbers were too small to scale up housing characteristics with any meaning, so information on standards of accommodation is derived for sample respondents only.

Almost all of the housing provided had cement flooring, and the majority (74%) was of brick construction. Roofing was iron sheets in the main (79%). However, although construction materials were usually of the more durable variety, on observation much of the housing is in a poor state of repair, with cracked walls and holes in roofs. Many houses are one or at most two roomed. The condition of housing does appear to vary substantially from estate to estate. No respondent reported paying any rental charges for the housing.

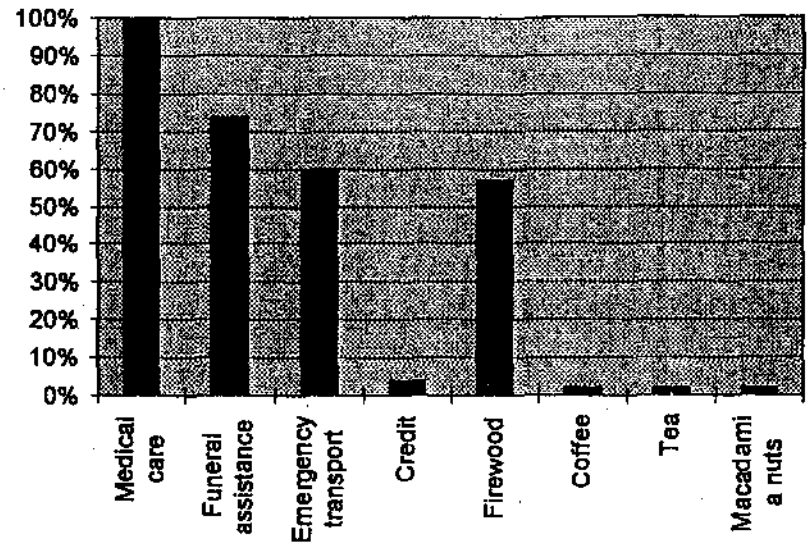
Housing on the estates is usually provided in compounds and sanitary provisions may be provided for individual dwellings or for the compound as a whole. Of those employees provided with on-estate housing in the sample, 26% received piped water in their home, a further 26% had access to a tap shared between households, and 39% had the use of a borehole on the estate. All respondents had access to a pit latrine.

5.3.4. Other benefits

During familiarisation visits, a range of other benefits for which employees may be eligible were mentioned by managers. Partly in an effort to improve the consistency and quality of their labour supply, estates have made efforts to provide a number of social services to their employees and sometimes to their families. All estates have clinic facilities on site, 5 of the 32 postal respondents providing maternity facilities, while 12 estates had primary schools situated within the boundary. Other facilities seen on some estates include a creche and social clubs, while additional benefits including assistance with funeral costs, or ambulance services, may also be available. Some managers also mentioned provisions for employees to purchase subsidised commodities including firewood, tea leaves, coffee or macadamia nuts or oil. It was noted that amounts available to individuals are restricted because of the possibility of large scale re-sale of commodities. This information was cross-checked during the survey by questioning respondents about the benefits they receive.

Medical facilities were available to all respondents in the sample, and in most cases to other members of their households. The facilities had been well used by respondents during the previous month, each respondent or family having made an average of 2 visits to the clinic. One respondent's household had made 8 visits to the clinic during that period. On only one occasion had the employee been charged anything (K5) for medical treatment. In many cases alternative medical facilities are some distance from the estates, and it is clear that medical care, if it is of reasonable quality, is a significant benefit for the tea plantation employees.

Figure 8 Percentage of sample eligible for various benefits



Key respondents were interviewed at medical facilities on selected estates. Facilities ranged from outpatient dispensaries staffed by Health Surveillance Assistants where only basic drugs and dressing of wounds was available, to medical centres with in-patient facilities and maternity wards where minor operations and suturing were available. Most ran under 5 clinics and administered immunisations. Medical staff were paid by the estates, and received housing and other benefits (like free firewood, or electricity). All medical facilities visited treated at least 800 cases per month, and the largest facility (actually a combined medical centre and a number of smaller dispensaries on the same estate) treated an average of 12,000 patients per month or 100,000 per year. In some cases, those treated were not only persons working on the estate, or their dependants, but also people from neighbouring villages, who would also receive treatment free of charge.

Conditions in the labour compounds were criticised by several of the respondents, who noted unacceptable sanitation levels and the dilapidated condition of some housing. They also commented on the incidence of employment-related injuries and illnesses, mostly cuts from tea bushes, and pesticide contamination, which occurs particularly when a lot of casual labour is employed and there is not adequate protective equipment. Most clinics have outreach programmes dealing with health issues like hygiene and sanitation, nutrition, malaria prevention, STDs and AIDS awareness, and family planning. Some clinics provide family planning services. Although many of the medical staff interviewed thought higher salaries would be an improvement for them, most were happy with conditions and facilities at their clinics, and thought they compared favourably with other places they had been employed. Medical service provision is clearly an area where many tea estates do make a substantial positive contribution to the local community in addition to health of their workforce.

Funeral assistance ranged from provision of a coffin (70% of eligible respondents), to providing transport (4%), with 15% being provided with planks for coffin construction and 11% saying they could receive financial assistance. According to management, mortality is rising in the area, and costs of funeral assistance are quite substantial.

Emergency transport, sometimes by ambulance, was available for 60% of employees, and all respondents thought this service would be provided free of charge. However, in discussions with staff at clinics and medical centres on the estates, some said they are forced to charge for fuel for such journeys, and in one case a charge is made for the hire of the vehicle.

All employees who were eligible for firewood received the wood free. The frequency of firewood provision varied, from those who regularly received a weekly load to those who were permitted to collect tea prunings towards the end of the plucking season.

One 8 hour shift employee had received a loan of K50, while the only employee eligible for subsidised tea, coffee and macadamia nuts was a factory employee. One employee also mentioned the provision of a raincoat at the start of the rainy season as another benefit for which no charge was made. On the evidence of the survey, then, many of the benefits cited by management are available only to limited categories of employees, usually more skilled employees.

Respondents were also asked whether they were eligible for the use of land on the estate. One respondent said he had a small plot on the estate, for which no charge is made. In the postal survey, this particular estate gave details of the cultivation of vegetables by employees on the estate, as dietary supplements. This is an issue on which there is some contradiction between different surveys. Only 3 of the estates in the postal survey said their resident employees were not able to grow crops, many of them detailing the crops grown by employees on the estates, including in 13 cases the cultivation of maize on the estate. The three who did not permit growing of food crops by employees gave reasons of shortage of land and risk of malaria or of theft. However, on a sample of 7 tea estates in Mulanje district, the Estate Food Security and Nutrition study[12] found that estates neither provided land for the cultivation of food crops, nor permitted the cultivation of food crops within estate boundaries. The one respondent in the Detailed Tea survey who had land to use on the estate was in Mulanje district. From observation, vegetables are grown in some labour compounds, and it seems likely that while it is true that tea estates do not demarcate plots for food crop cultivation by employees, the cultivation of small amounts of food crops is permitted on many of the estates.

5.3.5. Estate incomes of other household members

A substantial proportion, 25%, of tea estate employee households contain more than one income earner either from the same estate or neighbouring estates. Among 8 hour shift workers, 11% of spouses were also employed on the same tea estate, and 1 of the 3 married 6 hour shift workers also had a spouse working on the same tea estate. This relates to the policy pursued by some estates of employing the wives of their permanent male labourers as 6 hour shift workers. More common among 6 hour shift workers was the employment of adult sons or daughters on the tea estates. In some cases, where the respondent was not the head of a household, a parent was employed on the tea estates. The maximum number of members of one household employed on the tea estates was 3, and in most cases the number was 2. In the case of the household with three tea estate employees, this amounted to the entire family being employed on the estate. Employers prefer these kinds of arrangement as they may reduce associated housing costs for permanent labour and contribute to ensuring consistency of labour supply. Additional incomes from estate employment during March are given in the table below.

Table 5-5 Additional household incomes from estate employment

	SHIFT CATEGORY			
	8 hour shift	**6 hour shift**	**Factory employee**	**Tea estates total**
% with additional hh members employed on estate	29%	20%	12%	25%
				Sample total
% spouses employed	11%	33%	n/a	12%
% children employed	24%	42%	20%	31%
Mean additional estate income March 1997 (MK)	265	271	216	260

The detailed Tea Employees survey also attempted to examine the employment of additional labour on "plots" (see Section 3.2 *Scheme Plucking*, in this report). Under this system, where a plucker wishes to ensure the required plots are plucked, or wishes to finish the required plots in good time, he or she may bring in additional labour to assist with plucking. 12 of the 8hour shift employees in the survey were plucking tea under the scheme plucking system, and had been doing so for a number of years. Five said they use additional labour at some time, four of these saying the extra labour comes from co-workers who, having finished their own plots, continue plucking plots assigned to other workers and then sell the leaf as their own. However, one employee said he brings his wife to assist in the plucking, for which she is not paid, since he then sells the leaf as his own. It is generally accepted in the industry that the scheme plucking system can encourage the use of unpaid household labour, including that of children, although we did not encounter any unpaid household members working during the survey.

[12] Ng'ong'ola et. al. 1997, pp. 46-48

5.4. Employment history, labour practices and contract arrangements

5.4.1. Length of employment

Although the tea estates use large amounts of seasonal and casual employees, many workers have been employed on the same estate for lengthy periods, and many of the seasonal workers return to the same estates each year when recruitment starts. Scaled estimates suggest that 20-30% of employees have been employed on the same estate for over 10 years. In the 6 hour shift category, however, the bulk of employees have been employed for less than one year.

Table 5-6 Length of employment on present estate

	SHIFT CATEGORY			
	8 hour shift	**6 hour shift**	**Factory employee**	**Tea estates total**
<4 months	9%	64%	0%	20%
4 months - 1 year	4%	9%	34%	9%
1-2 years	15%	11%	22%	15%
3-4 years	35%	0%	11%	24%
5-10 years	10%	16%	0%	10%
10-20 years	11%	0%	23%	10%
20-30 years	17%	0%	11%	12%

Some respondents had changed jobs, however, for example from being a clerk or a watchman to tea plucking, or from a tea plucker or weeding to a factory employee.

5.4.2. Previous occupations

Over a quarter of the sampled respondents stated no previous occupation or employment, prior to starting work on the tea estates. Among 6 hour shift workers in the sample, the majority said they had previously been assisting parents at home, with only 1 saying she had been a labourer for another private concern, and one saying she had been a smallholder farmer in her own right. Among factory employees, the profile was similar, 2 people having been assisting parents, 1 having been a smallholder farmer, 1 at school, 1 a private labourer and 1 a labourer for government. Previous occupations among 8 hour shift workers were more varied, including a fisherman, a trader, 2 migrant labourers (external), 2 labourers for smallholder farmers, and 2 labourers for private companies. 3 had been smallholder farmers, 3 at school, and 3 assisting parents. The presence of people who used to migrate outside the country reflects the past history of the region, where labour migration to South Africa and Rhodesia was common during the 1960s and 1970s[13].

52% of those interviewed had worked on another estate prior to the one on which they were interviewed. The proportion was highest among 8 hour shift workers, of whom 57% had worked on previous estates, and lowest among 6 hour shift workers, among whom 43% had worked on previous estates. 71% of 8 hour shift workers had worked on other estates, compared with only 57% of 6 hour shift workers, and 50% of factory workers in the sample. The maximum number of previous estates worked on encountered in the sample was 3. The majority of previous estates were tea estates (72%), but 25% were tobacco estates, and 1 person had previously worked on the sugar estate at Nchalo. Respondents had worked on tobacco estates in Mzimba, Kasungu, Ntchisi, Mchinji, and Mangochi. Both men and women had worked on previous estates, one woman having worked on a tobacco estate. In most cases, respondents had stayed on tea estates for longer than on tobacco estates, staying on tobacco estates for only 1 or 2 seasons and sometimes on tea estates for more than 10 years. Various reasons were supplied for leaving estates, but a higher percentage left tea estates due to being laid off and due to poor pay and conditions, while those working on tobacco and sugar estates were more likely to have left due to family reasons rather than conditions at the estate.

[13] Paton, B, Labour Export Policy in the development of Southern Africa, 1985, University of Zimbabwe, Harare, pp44-61

Table 5-7 Reasons for leaving previous estate employment

	ESTATE TYPE			
	Tea n = 23	Tobacco n= 8	Sugar n = 1	Total n = 32
Laid off	35%	13%	0%	28%
Needed at home	17%	50%	100%	28%
Poor pay and conditions	35%	13%	0%	28%
Work too hard	9%	13%	0%	9%
Sickness/injury	4%	13%	0%	6%

85 % of sampled respondents had applied to work on their current estates themselves, 7% had been recruited through friends or relatives, and only 9% had been directly recruited by the estate from their villages.

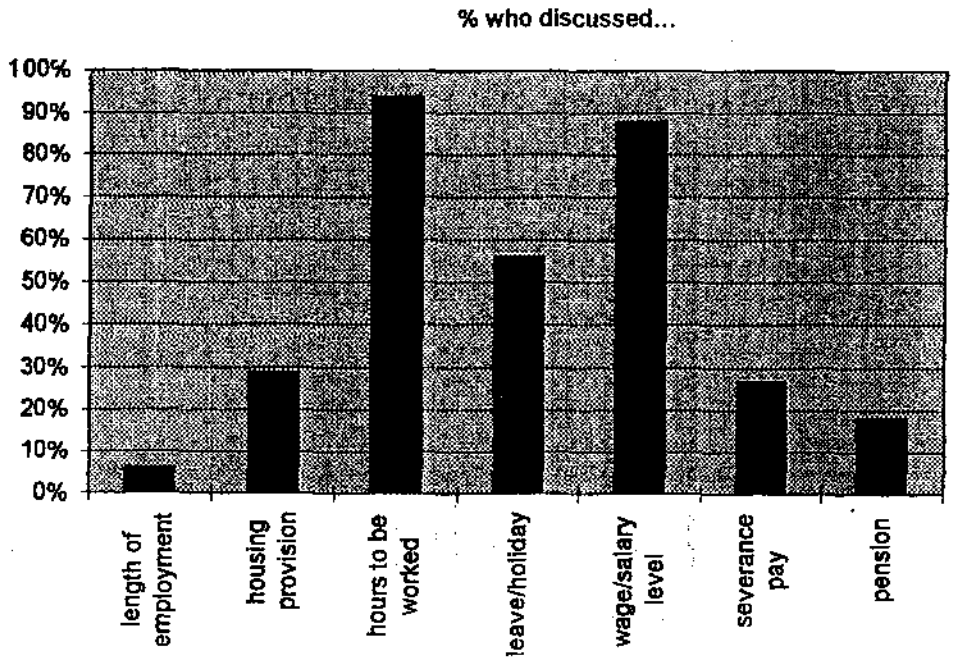
5.4.3. Labour Contracts and employment conditions

Most of the employees are engaged without a formal contract, and the majority have only verbal agreements of employment. These contracts tend to cover only the basic employment terms - working hours, wage and salary level, and entitlement to leave. Few cover the length of employment, underlining the insecurity of estate employment, particularly for seasonally or casually employed people.

Table 5-8 Type of employment agreement (scaled estimate)

	SHIFT CATEGORY		
	8 hour shift	6 hour shift	Factory employee
None	12%	22%	0%
Verbal	65%	78%	100%
Simple letter	3%	0%	0%
Signed register	13%	0%	0%
Other	7%	0%	0%

Figure 9 Conditions discussed with employer on commencing employment



In view of the absence of agreements on many issues between employer and employee, respondents were asked whether they could give up to 3 reasons they might be dismissed from the estate. Most people were able to give at least one reason, and the average was 2 reasons. The main reasons given were theft (57% of respondents), being absent (for various periods) without notice (48%), not working properly/laziness (39%), "misbehaviour" (33%) and fighting at work (22%). Other less common reasons cited included picking big firewood branches, eating macadamia nuts, lateness, and being inquisitive or complaining about pay. Most employees appeared reasonably aware of potential reasons for dismissal and should therefore be able to avoid it. There were reports, however, from some employees, of unfair dismissals on grounds like "staring at the manager".

5.4.4. Union membership and labour representation

PAWUM, who were consulted on one of the familiarisation visits to Mulanje district, have been active on tea estates since before independence. However, union organisation has been relatively weak and the industry workers are only partially unionised. The union's membership is concentrated in Mulanje district. Unions have been active in assisting in solving labour conflicts concerning pensions and severance pay recently, while in the past they have fought for improved meals and facilities. Although two of the estates visited in the detailed Tea Employee survey were in Mulanje district, only 3 of the respondents were members of the union. These were either factory or 8 hour shift workers. 6 hour shift workers, being seasonally employed, are less likely to belong to the union.

On other estates, JCCs operate to fulfil in a more limited and perhaps less confrontation manner the role of the union. Several JCC representatives were interviewed during the survey. JCC representatives are elected officials whose election is supervised by the District Labour Office. All JCC representatives encountered were male, and one confirmed that women do not even stand for JCC election.

5.5. Women and children in the estate labour force

5.5.1. History of women and children's participation

The use of women's labour on tea estates was limited throughout the colonial period, as married women were not liable to *thangata* labour obligations, and women from neighbouring villages were either concentrating on food production while their husbands worked on tea estates, or were not attracted by the low wage rates offered by the industry during this period. It was during this time that the gender division of labour was formulated - those women who were employed concentrated on hoeing and weeding, while men concentrated on tea plucking. Similarly, this was the origin of the practice of women reporting for ganyu/casual work rather than regular employment. "Young people" were also employed during the colonial period, more commonly on a permanent than a casual basis. Children were used for a variety of tasks, including collection of tea seed,, application of fertilisers, knotting of palm leaves for carrying sacks of leaf, covering pruned tea bushes, and light weeding.

By the 1970s, increasing numbers of women were seeking wage employment, and by the 1980s, it was estimated 22% of the tea estate workforce was female. By the 1980s, it was clear that tea estate employment had become an important component of the livelihood strategies of female headed households. In a survey conducted in 1988, 55% of women working on the tea estates were found to be heads of household (either unmarried, divorcees, widows, or wives of polygamous men). Most of the women also had dependent children.[14]

5.5.2. Women on the tea estates in 1997

In the detailed Tea Employee survey, 72% of the women interviewed were household heads, 67% being divorcees and 11% widowed. 78% were working on the 6 hour shift, which was wholly composed of female workers. Of factory workers interviewed, 25% were women, while of 8 hour shift workers interviewed, only 7% were women. Women continue to be employed mostly on a casual basis, 67% being casual employees, and only 11% permanent. This profile has implications for income, and for access to other benefits. Women's monthly incomes are much lower than those of men, the sample average being K194 during March 1997, compared with K382 for the men in the sample. Only 28% of the women had estate housing (mostly in dormitories), while 44% of the male interviewees received housing.

[14] This section is drawn from Vaughan, M and Graham Chipande, Women in the Estate Sector of Malawi: The Tea and Tobacco Industries, World Employment Programme Research Working Paper, ILO, 1988

While managers maintain the position that women are paid the same as men for doing the same job, and that women's incomes are only lower because they do not work as many hours, women do not have equal opportunities to increase their incomes. Women are less likely to have the opportunity to do overtime or earn bonuses from piece work. Their annual incomes are also likely to suffer because they are less likely to be employed all year round. At present, women are also more likely to have access to land off the estate, so that in practice many may be content with earnings from a 6 hour shift and working on their own fields after finishing at the tea estates. However, average land-holdings are already small, and for many women, this kind of "straddling" between formal sector employment and subsistence cultivation may become more difficult if the trend of declining access to land for women identified by Vaughan and Chipande (1985) continues. Of the women interviewed who worked the 6 hour weeding shift, 73% said they had had no choice about the work they were doing, some saying weeding is the only job available to women. Only 20% said they would be unable to manage other work.

Women are employed plucking tea in some cases, and certain estates have a policy of encouraging women to pluck. Women are also sometimes assigned plucking when there are labour shortages. Women are preferred to men by some managers because although they may not pluck the same weight of leaf as men, the quality of the tea they pluck is generally higher, containing less stem. A woman tea plucker interviewed as a key respondent had been plucking for two years, after requesting a change from weeding in order to have the opportunity to earn bonuses. She earned an average of between K60 and K80 a week, compared with K40 when she was weeding. However, she struggles to get by on this amount since she is unmarried with 10 children. She is a permanent employee of the estate, but has not been offered a house, only dormitory accommodation for herself and no children, so she lives in a village near to the estate boundary. Thus, although she is permanently employed, she had not been able to obtain access to one of the key benefits associated with permanent employment, estate housing.

There are other ways in which women do not have equal opportunities to more lucrative employment. On one estate where pluckers use shears, which enable them to pluck more tea and make higher earnings, we were told that although women do hand plucking, they have not been taught to use the shears. Women are also very rarely employed in supervisory jobs. This runs right through the tea industry, up to senior management. At field level, almost all capitaos are male. We interviewed one female Capitao who said she had applied for the job after a company decision to try to rectify gender inequalities. She was educated to Standard 8 and was in charge of a weeding gang of 30 women. She was receiving K9 per day as she had just started work, but expected after some time to get a rise to K11 per day.

One of the difficulties for women in working on the estates is childcare. 54% of the female household heads had dependent children under 16, some with children under 5. The majority of these said they left their children with relatives while they came to work, some said they left the young children in the care of older children, and one left her child with her parents. On one of the estates visited, difficulties over childcare has been recognised and a creche had been provided. The creche charges K7.50 per month for people employed on the estate, and K15 for other people. 64 children aged 2 to 5 are looked after from 7 am until 4 pm. The other estates visited have no provisions for care of young dependent children.

Thus, on the whole, the finding of the 1985 survey that women tend to be assigned "the least secure, least well-remunerated tasks"[15] remains true in 1997.

5.5.3. Children/Young Persons on the tea estates

As the postal survey showed, over 2,000 "young persons"(YPs) are employed annually on tea estates. However, most are casually employed, and few were actually employed at the time of the survey. Tea companies have been criticised in the past for the employment of children, and more recently have adopted a policy of not employing children under 14 years of age. Nevertheless, there is evidence this is not rigorously enforced. Villagers, for example, frequently said children as young as 10 years (particularly from resource poor households and those of unmarried women), work in the estates. One of the young persons interviewed during the study was 16 at the time but had been working since she was 13. She explained that since she looked "big", i.e.: grown up, she had no problem in being employed when she was less than 14 years old. Of the households included in the survey, none of the children under 14 years of age was employed, but 7% of those between 14 and 16 years of age were.

[15] Vaughan and Chipande, p.49

When asked about the issue of employment of children, or YPs, managers tend to argue that although they do not want to employ them, they are often put in a position where they do so out of social concern, and that without employing the children, families would be worse off. Certainly, in some of the cases we encountered, the income of a child is important to the family, and parents may in fact be dependent on their children. However, there are negative effects of employment of young person, particularly in the neglect of education that this causes.

Four young persons were interviewed on four different estates. They were 2 boys and 2 girls, and their ages were 14, 15, 16 and 17. They were engaged in various jobs: preparing sacks for putting in plucked tea, weeding tea, drawing water for workers, and plucking and weeding. The two older YPs were earning K60 per week, but the younger ones were earning only K30 per week. All of the young persons were contributing part of all of their earnings to household finances, and in one case the 14 year old girl was also taking care of her 6 brothers and sisters after their mother deserted them. Except for one, the young persons had started work on the estates because of social problems in their families, for example one whose father was an alcoholic. One of those interviewed was attending school, but all the others had given up at various levels (Standards 3 to 6). Two who were not going to school said they still wanted to continue education, but were unable to because of financial problems and lack of clothes or shoes.

Headmasters of schools on some of the estates were interviewed and mentioned the problem of children dropping out of school in order to work on the estates. One noted the difficulty is parents who encourage their children to work, complaining they cannot afford to continue feeding and clothing children. Another difficulty, even where children attend school and only work on the estates during school holidays, is that they do not do schoolwork in the holidays and may fall behind. One headmaster recommended that estates should not continue employing children at all because of the detrimental effect on their education.

5.6. Off-estate resources

Although for some employees tea estate incomes and housing are the basis of their livelihoods, for others, tea estate employment, being seasonal or casual, is only one of the means by which households survive. For both groups, it is important to know about their access to resources off the estate in order to recommend appropriate policy change. The resources looked at were land, alternative sources of income, and livestock.

5.6.1. Access to land off the estate

The Estate Food Security and Nutrition study found that 42% of estate-dwelling households in Mulanje were landless, with no access to land for cultivation either on or off the estate. It did not report whether these households actually had land for construction off the estate. A further 44% of Mulanje's estate households have <0.5ha of land available off the estate, while only 14% have more than 0.5 ha[16]. Shortage of land was found to be a significant determinant of poor nutritional status among estate under 5 children, of whom 30% were found to be underweight, 12% severely so. 63% of estate children were found to be stunted, and 5% of children wasted.

Due to its objectives, the Food Security and Nutrition study included only those households who were resident on estates, and as such it might be expected that a higher proportion of these would be landless than among the tea estate population as a whole. This was not found to be the case in the Detailed Tea Employees survey, where 49% of all estate employees were found to be living in landless households. Data on average holding sizes was collected but its reliability is debatable, since employees were not able to estimate the sizes of their landholdings. Efforts were made to standardise measures by using the local term 'milambala' (based on contour marker ridges). However, various 'milambala' were paced and their size was not standard, ranging from 200 square metres to 600 square metres. An 'average' of 400 square metres was taken, so that 3 milambalas were taken to be 0.12 ha. Nevertheless, area data is inconsistent with information given about landholding sizes by villagers in group discussions around the estates, where it was reported that very few people possessed land amounting to 1 acre, and that 3 or 4 milambalas was a reasonable holding.

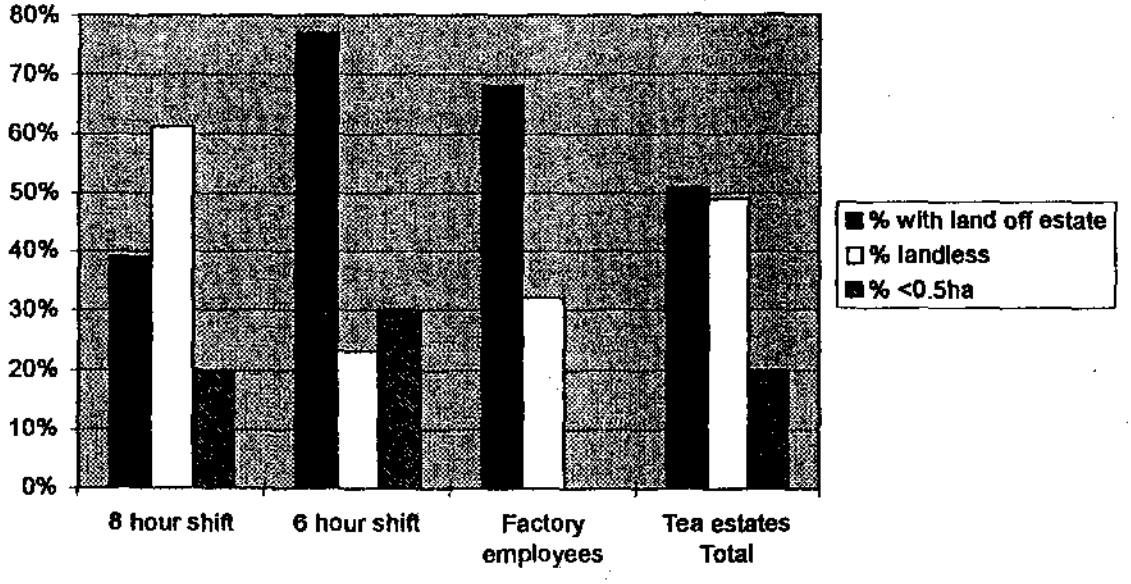
8 hour shift employees, those most likely to be resident on the estate and to be provided with housing, were also the most likely to have no access to land off the estate. 60% of employees in this category on the estates are estimated to be living in landless households. Landlessness is less prevalent among 6 hour shift workers and factory workers, who are more likely to reside off the estate, and more likely to be seasonal or casual employees. All seasonal employees in the sample had access to land off the estate, but only 50% of casual employees in the sample did.

[16] Ng'ong'ola et. al. *op cit*, pp.46-47

Of those respondents who were landless, five gave the reason of a general shortage of land in the area, while another five explicitly blamed the tea companies for creating land shortage in the area. Two said they had lost their own land directly to a tea estate. Others attributed land shortage to population growth, the refusal of people in the area to lend land, and their own status as an immigrant to the area.

Most respondents in the sample who had land had only one piece of land for their household. However, six people had two pieces, and one person had three pieces. More of the land was owned by women than by men. Almost all of the land was cultivated, most of it by the spouse of the employee or another household member, but some by neighbours. Some of the female employees also said they cultivate the land themselves after finishing work at noon, while 14% of plots were cultivated by other people. Some employees are able to pay ganyu labour to work on their plots. Only one person was not cultivating the land, and this was due to poor soil fertility. 71% of the plots were planted with maize and other food crops, 17% with maize only, and 9% with other food crops only. None of the respondents was growing any cash crop.

Figure 10 Landlessness and landholding sizes



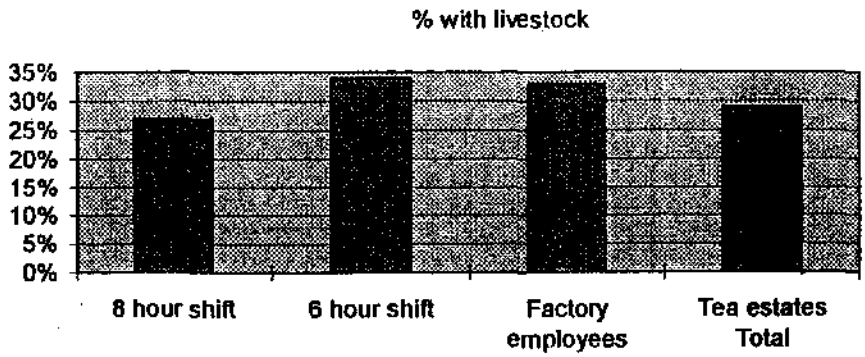
5.6.2. *Alternative incomes*

Data on alternative income sources and amounts over the previous year were collected for all households. Overall, 36% of households have some form of income in addition to their earnings from the tea estates. The percentage is highest among factory workers (61% of households having alternative incomes), followed by 8 hour shift employees (34%) and lastly 6 hour shift workers (28%). The latter is puzzling, since the 6 hour shift workers are the most likely to be seasonally employed. However, they are also more likely to have land on which they might have cultivated food crops, giving them some source of food during the off season. Anecdotal evidence suggested that in fact, some of the 6 hour shift women may be forced to turn to prostitution during the off season in order to make a living, an income source they may have been unwilling to report.

The most common source of alternative income was cash gifts (14% of households), followed by sales of foodcrops other than maize (12%), sales of animal produce (10%), and ganyu labour on smallholder plots (10%). Other less common sources of income include remittances from migrants (6%), sale of cash crops (but not tea or tobacco) (4%), and sale of firewood (4%). The highest alternative incomes, however, came from cash crop sales (MK4,160), sales of food crops (MK2,500) and sales of fish (MK1,500). The highest amount received as a remittance was MK1,200, while the highest cash gift was MK600.

5.6.3. Livestock assets

Figure 11 Households with livestock assets



6 hour shift workers and factory employees are more likely to own livestock than are 8 hour shift employees, perhaps because they are more likely to have access to land than the 8 hour shift workers. The most common animals kept were chickens (68%), followed by goats (16%), rabbits (11%) and pigs (5%). No large stock was kept by any of the respondents. Only one respondent kept animals on the estate (chickens). Livestock was most commonly kept for both food and sale purposes, and was mostly kept near the dwelling or in the compound. Some respondents said they had access to grazing land within their villages for grazing animals.

5.7. Attitudes to the estates and future plans

Estates were not generally seen very positively by their employees. However, there were positive comments on many aspects of estate employment, and some suggestions for improvements which would be popular among employees.

Respondents were asked to name positive things about the estates. The most popular response was "nothing" (36%), followed by money/income (31%). Other responses were less popular, e.g.: food provision (10%), regular payments, and alleviating poverty (each 7%), medical provision, good supervisors, "everything" (5% each) good hours, and not having to work in the rain (2% each).

They were then asked to name negative things about the estates. The most common complaint was about low salaries (28%), followed by complaints that the work is too arduous (23%). Harsh treatment was named by 21% of respondents, and poor housing by 19%. 15% did not like the long or erratic working hours. Other less common complaints included having to work when sick, having too large or too many plots to pluck, and not being paid for some kgs of tea plucked (9% each), lack of job security, and complaints about the quality and quantity of food (6% each), working in the rain (4%), and having to buy own tools and "the company doesn't care about us" (2% each). Nevertheless, most respondents hoped to keep their job, or to return to work the following season if laid off.

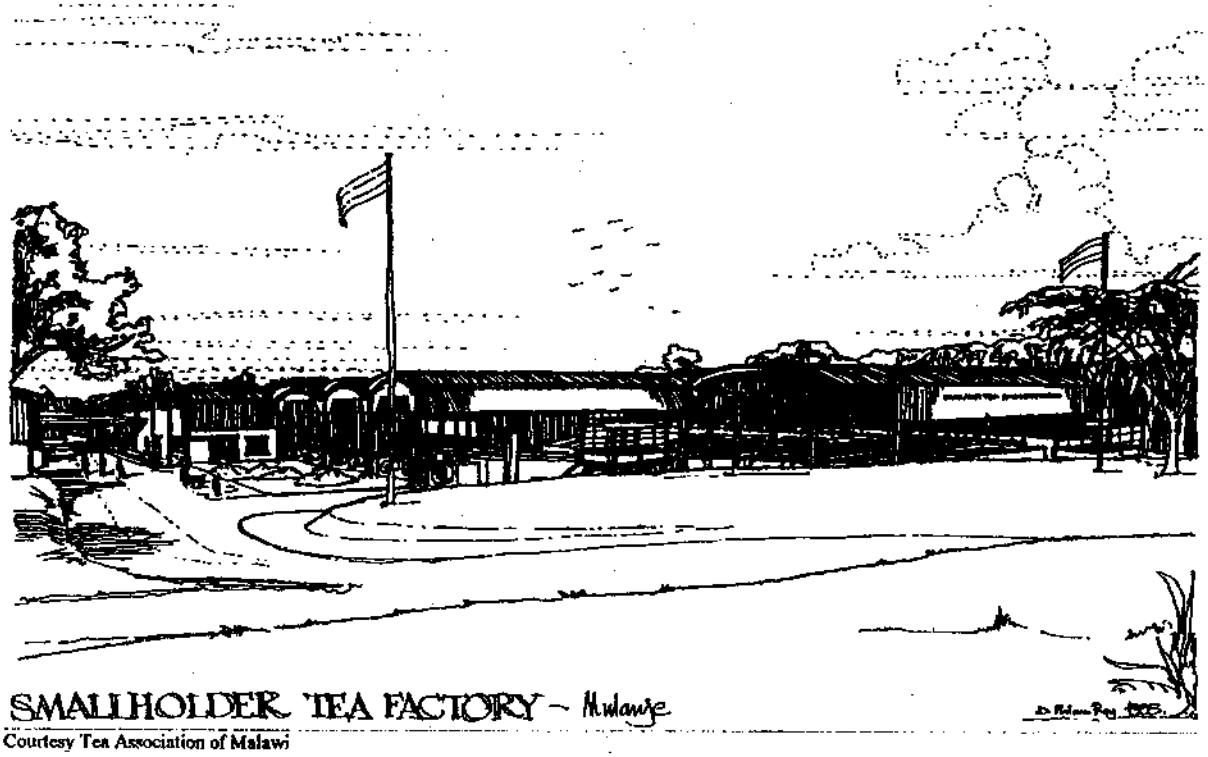
A number of improvements were suggested, directed to owners, managers and to government. For owners, 20% of people thought an increase in salary would improve things, followed by 13% who thought there was nothing owners could do. Less common answers included paying better overtime rates, letting people choose the jobs they wanted to do, giving food allowances instead of cooked food, improving physical conditions and the working environment, and that owners and employees should be involved in decision-making together.

For managers, increasing salaries again was the most common recommendation (32%), followed by a number of less common recommendations including setting specific working hours, setting lighter tasks, being honest, "whatever they can", taking decisions together, retiring long serving employees, improving physical conditions and the working environment, and paying sick pay.

Again, for government, the most common response was to increase salaries (12%), followed by redistributing land (10%), and then by imposition of a higher minimum wage, and closer monitoring of labour conditions (8% each). Others thought government should provide ADMARCs near to the estates, or get estates to allow employees to cultivate on the estates, and that government should do more to ensure housing is habitable.

Employees were asked about their own long term plans. While most intended staying on the estates for the next season, 52% of respondents hoped somehow to make enough money to go into a small business and leave estate employment. In some cases this was evidently a serious plan, for example that of a carpenter who wanted to establish a small workshop. 12% said they wanted to return to their family and cultivate. 6% had no plans. Other plans included finding other employment, building property for rental, selling crops, and moving to another estate.

In relation to the discussion of labour shortages and employee motivation mentioned in Section 4.3.3 of this report, employees were asked questions related to their preferences in terms of working hours and payments. Most of the respondents said they prefer working long hours if it means earning more money, contradicting the views of some estate managers that employees are only motivated to work a certain number of hours per week and then absent themselves in order to do other things. As data presented earlier shows, only a small percentage of 8 hour shift workers have access to land on which to cultivate their own crops, and only 34% have alternative sources of income in their households. It seems unlikely therefore that seeking alternative income, or own account cultivation, could account for the high rates of absenteeism reported. It would appear more likely, in view of the persistent complaints about low salaries[17], that the current poor remuneration rates and the punitive overtime bonus system act as disincentives to the consistency of labour supply.



Courtesy Tea Association of Malawi

[17] The continual recurrence of this complaint contrasts with the views obtained from tobacco tenants and direct employees, of whom only 11% complained of low salaries or payments, and of whom 58% reported the high rates of pay to be the most positive aspect of work on their estates. See the report of the sub-sample survey of tobacco tenants and employees, ELUS, 1997

6. Tea estates and the local community

It is important in evaluating the performance of the tea estates to examine the historical, economic and social context in which they operate. At issue is not only whether tea estates can compete with tobacco or sugar estates in land use, economic and social costs and benefits, but what this use of land, production and labour system, means in the very particular local context in which the tea estates are (mostly) situated i.e.: Thyolo and Mulanje districts. It is this particular local and historical context which gives the issue of plantation tea production such a disproportionate significance in political and policy debates (disproportionate to their number or hectarage - see section 1.4) Particular relevant factors include the high population densities in these districts, the high proportion of female headed households (43% in Mulanje RDP[18]), the poor levels of food security and nutritional status (Mulanje is categorised in the highest 20% for malnutrition, and one of the areas most vulnerable to food insecurity, in the country; Thyolo is slightly better off in terms of malnutrition, but is also one of the most vulnerable to food insecurity[19]), the low literacy levels , environmental degradation, and the dominance of foreign investment and control of land resources. It is important in this context to know what the presence of plantation tea estates means for the communities there in terms of beliefs about land ownership at present and in the past, divisions of land and resource access, and livelihood strategies. As a more policy-focused aspect, it was determined that it would also be useful to obtain information on current resource access and markets for resources.

6.1. Methodology

In order to coincide with other survey activities, a rapid method was devised to permit consultation of villagers on these important issues. One village was selected at random from lists of those villages situated on the boundaries of each of the five main selected estates and the case study estate. Each village was visited by the same team of enumerators, who conducted two semi-structured group interviews, one with men and one with women. The group numbers ranged from 12 to 23 persons, higher than would normally be regarded as desirable for this type of exercise, but the response of villagers was so enthusiastic it was not practically possible to limit participation. During these group interviews, participants were asked to identify key respondents falling into a number of pre-determined categories. These people were later interviewed individually.

It was explained carefully to all participants in these exercises that the aim was not to identify land for redistribution or to recommend any other material benefit to them, rather it was a way of consulting with them and documenting their situation. Immense care was taken in not suggesting any policy or "solution" to land problems in the area through the questions asked. All participants expressed great pleasure in the exercise.

6.2. Local perceptions of estate history and village movements

Interviews drew on the individual and collective historical memory of villagers to try to uncover local perceptions of the processes of village origins and estate establishment, and of subsequent population movements. Evidently the history of land acquisition and village origins is controversial and if it was felt that historical perceptions had significant relevance to current land policy discussions, further more detailed investigations would be necessary. However, detailed study is likely to be most relevant in specific locations, rather than at the broad, general level of this study.

The estates visited were officially established (i.e.: a land title acquired from the Protectorate government) during the period between 1900 and 1950, the earliest being in Mulanje district and the more recent ones in Thyolo district. It is difficult to generalise about whether these estates were established on "unoccupied land", or whether the land was under settlement or other uses. However, it is known that although land titles were acquired, large portions of the land claimed remained unused by European settlers for a lengthy period. It is also known that during the latter part of the nineteenth century and the early twentieth century there were significant population movements into or across the region from Mozambique and within Malawi[20].

It is apparent that villagers' perceptions of the ownership of the land under tea estates during the 1900s to 1950s diverge strongly from official accounts. In every case, villagers gave dates for the establishment of estates much later than the official dates, suggesting either that they were not in the area at the time of estate establishment, or

[18] Malawi Government, National Sample Survey of Agriculture 1992/93: Smallholder Household Composition Survey, p. 223

[19] WFP, GOM, FEWS, A Quest for Causality: Vulnerability Assessment and Mapping, Malawi Baseline 1996

[20] White, Landeg, Magomero: Story of an African Village, 1987 (Cambridge)

that they did not recognise the officially surveyed boundaries. Some villages did know the early history of the estates, making reference to crops grown there prior to tea (tobacco, coffee, pepper), and dates of the earliest tea plantings. They were also aware of other former uses of the tea land, including natural woodland areas and uncleared bushland. This suggests those villages may have been in the area when the estates were established, or very soon after. There is no doubt that substantial settlement was present inside the tea estates during the first half of this century. Grave sites and former grave sites can be found inside the estates, and on one estate villagers report the existence of old metal and clay pots in the forest inside the estate. The history of policies towards village settlement on European settler land helps to explain these differences in perception. In the early days, much of the estate land was unused. Some estates were extremely large, well in excess of the amount of land which could be developed and farmed profitably. In addition, estates were dependent on local and immigrant communities for labour. Villagers had therefore been permitted to settle within estate boundaries. Only later, when estates wished to cultivate more land, or were not able to force villagers to work through thangata labour obligations, did they begin a process of eviction of villagers from inside the estates, usually to sites close to the estate boundaries.

All but one of the villages visited was inhabited primarily by Mang'anja people. The other is mostly composed of Lomwe people. Villagers were not specific about the dates in which their village sites were settled, dates varying from "before 1900" to "before 1942". However, since all but one of the villages had been moved from their original sites, these dates usually referred to the time at the present location, and not the time of settlement in the area of the tea estates. In one case it was known that the estate was named after the head of the village which used to be on the estate site. Every one of the villages visited claimed to have experienced either eviction from within the estate, or to have been forced to incorporate members of other villages displaced from the estate, at one time. The earliest of these village moves recounted was in 1936, the latest in 1963. In most cases, a village lying inside an estate was forcibly moved to the estate boundary. None of the villagers noted receiving any compensation, but those who had been moved later were variously assisted with transport, land allocations in resettlement areas, construction materials or ready-constructed housing. In some cases these removals were described as brutal, with the destruction of crops and houses if people resisted.

Many of the tea plantations have relinquished some of their land area to villagers at various times. However, none of the villages visited mentioned this, and one claimed the neighbouring estate had even acquired additional land which should have belonged to the villagers.

6.3. Village land access, land tenure, and encroachment onto estates

6.3.1. Land access, poverty and food security

Land is undeniably a scarce resource in both Thyolo and Mulanje districts. The effects of high population densities in these districts (246 people per km^2 in Mulanje and 335 per Km^2 in Thyolo) are exacerbated by the large proportions of land which are rendered unavailable for cultivation by villagers through the presence of the tea estates. 24% of the land area of Thyolo district was reported to be under tea estate ownership[21]. Access to land constitutes a major determinant of poverty in Malawi. A study by the World Bank demonstrates that there is a close relationship between the area of land under cultivation and the poverty status of households[22]. 70% of all households in Blantyre ADD, in which both Thyolo and Mulanje are located, cultivate less than 0.5 ha[23]. Although it is not possible to equate land-holding size to poverty, estimates by the World Bank indicate that households with smaller land-holdings are located in the lower-income deciles, whereas households with large areas of land are almost exclusively in upper-income groups. These findings have far reaching implications on access and ownership of land vis a vis poverty alleviation and food security at both household and national levels. An examination of 1992/93 NSSA statistics on shares of household maize requirements met by own food production, as analysed by the World Bank, suggests that household demand for food exceeds subsistence production in Blantyre ADD. In Blantyre ADD, poorer households (below 40th percentile cut-off) produce on average about 64% of their maize requirement, while the poorest households (below 20th percentile) produce less than 40% of their requirements. The impact of poverty and food insecurity is manifested in many different ways including morbidity and mortality. The 1987 Population Census estimated infant mortality in Mulanje and Thyolo Districts to be 152 and 144 per 1000 births, respectively, whereas that of Blantyre district was estimated at

[21] Interview, DC Thyolo; no comparable figure has been obtained for Mulanje

[22] World Bank, Malawi Human Resources and Poverty: Profile and Priorities for Action, November 1995

[23] Malawi Government, National Sample Survey of Agriculture 1992/93: Smallholder Household Composition Survey Report, p.223

121 per 1000 births[24]. Malnutrition is also a strong feature of smallholder populations in both districts. 43% of under 5 children in Thyolo, and 49% in Mulanje were estimated to be stunted due to long term chronic malnutrition in 1995. Thyolo and Mulanje populations exhibited the highest incidence of wasting in the country, at 14% and 12% respectively, while 30% of under5s in Thyolo and 36% in Mulanje were found to be underweight[25].

The extent of land shortage appears to be serious in many of the villages visited, particularly those in Mulanje district. Villagers reported diminishing land-holding sizes since the 1960s. In one village we were told the largest holding is ½ acre, in another that there was nobody with a holding of 1 acre. There were reports of widespread landlessness, which was generally defined as lacking land on which to cultivate food crops. Younger members of some villages were said to receive only a plot for building a house when they marry and no land for cultivation. In one village elderly people were said to be the most at risk of becoming landless because they have to give away their land to daughters and sons-in-law.

Dambo land was reported to be particularly short in many of the villages, so that harvesting of crops during the dry season is no longer possible for most villagers. This was a particular source of grievance against the tea estates since dambo areas on estates are usually not cultivated and many villagers claimed to have been able to use those dambos in the past.

Villagers in Mulanje particularly commented on food insecurity as a result of land shortage. In one village they said they have relatives in Mozambique who may supplement household food stocks, and that some of them are able to cultivate on the land of relatives in Mozambique. In another, they purchase food from Mozambique, but if this is not possible, they live on cooked bananas and madeya (maize husks, pounded).

In almost all of the villages, it was reported that there is no land which is not allocated to a household, so that the village head has no additional land which can be allocated to those who do not receive land to cultivate through their parents. In one case, it was reported that no land is left uncultivated. In contrast, all of the villagers perceived that unused land is available inside the tea estates, in particular citing areas planted to guatemala grass and to blue gums, and dambo areas. Villagers are aware of the potential use of guatemala grass for mulching on the estates, but tended to claim that most of the grass was not used for this, and was planted merely in order to prevent villagers from planting crops. In one case, it was judged that the estate is only using around ½ its land, while in another the estate is actually renting part of its land to another company for maize production, whereas villagers thought they should have been able to rent the land.

It does not appear there is a well-developed land market in the area, but some rental activity does take place. In Thyolo, land renting was reported in all of the villages. In one case it was reported that people who have migrated from the village for work may rent out their land in their absence, in another it was reported that "lazy people" may rent out their land, while in another people were able to rent land at a location some distance away, but not in their own village. Land rent of K400/acre per season was quoted in one village (K960 per hectare), while in another K120/acre (K288 per hectare) was quoted, but this was for very steep and not very productive land. It was reported that renting can be the cause of land disputes, and that these disputes are difficult to solve because the practice is illegal, and therefore the village head is never informed. The village head therefore refuses to intervene in disputes between people renting land. Sale of land was not reported in any of the villages.

6.3.2. Land management in the villages

In view of the fact of land shortage in villages near to tea estates, and of the villagers' perceptions of the existence of substantial areas of unused land on the estates, the likely consequences of redistribution of land from estates to villagers were investigated. The issue of appropriate use of tea estate land must be examined in context, and not only through standard assessments of land suitability, since even if it can be accepted that tea planting (or guatemala grass, or forestry) constitutes an acceptable technical use of the land, it is evident that politically and socially, this use is controversial. It was therefore necessary to investigate the likely alternative uses to which this land would be put if it were to be redistributed to villagers. Rather than suggesting this outcome and asking for villagers responses, the issue was examined by observation and discussion of land use and land management in the villages, probing on the subject of how people might use additional land, and questioning them on the current use and knowledge of a number of land husbandry measures.

[24] National Statistical Office, 1987
[25] Chilowa et. al, UNICEF Multiple Indicator Cluster Study

Land in the villages is almost without exception used for the cultivation of staple crops, mainly maize and cassava, and sometimes potatoes. The most common relish food is nandolo (pigeon peas). However, many villagers also cited fruit trees (bananas, avocado pears) as an important component of diet and an income source, and those who had access to dimba gardens were also said to make a good income from vegetable cultivation. In two villages, land had also been planted to trees. In three cases there were smallholder tea growers in the village, but no smallholder tobacco was reported. While villagers evidently wanted additional land to increase their maize harvests, many said that additional land would be used for cash-generating crops, in particular vegetables and fruit in dambo areas. A subjective assessment by the Land Husbandry Specialist concluded that much of the tea estate land could be used for annual cropping provided that adequate conservation measures were used. However, these measures would have to be more intensive than those generally used at present by smallholders in the area.

The use of conservation measures in the villages was discussed. Maize yields have been estimated at between 900kg and 2000kg per hectare (World Bank), and this was explained by low fertiliser application and limited adoption of new varieties. Poor soil quality may also play a role. In all the villages extensive soil erosion was reported, in some cases severe, and in some cases all topsoil was reported to have been washed away. Deforestation was seen as a contributory factor. In one village in Mulanje this was said to have led villagers to cease cultivation on some steeper slopes. Fallowing was not a common practice.

The main method of erosion control known was contour marker ridges (milambala). These had frequently been aligned before independence, and have not always been well-maintained. Villagers noted some objections to the bunds (apart from the labour involved in construction and maintenance). In several groups, people said that too much land is lost, and that they would now rather plant crops on the ridges. In some cases, villagers mentioned planting of perennial crops like cassava or bananas on the bunds as a solution. Another complaint was that since so many of the ridges are broken, there is no incentive for an individual to maintain their ridges as they simply lose topsoil through their neighbours fields. Although they were asked about a number of other land husbandry measures, including storm drains, graded bunds, vetiver grass and alley cropping, these were rarely employed and in some villages were unknown. However, in one village an effort had been made to construct bench terraces using stones, and in another the use of local manure as fertiliser was reported. One village had planted blue gums but were unhappy with the resulting loss of soil fertility.

This evidence demonstrates that land husbandry measures are far from adequate in the villages visited, and that if, following a land redistribution, similar practices were to be followed, any gain in poverty alleviation and food security would be likely to be short-lived. A substantial programme of extension advice and probably credit provision would be necessary in order to make any redistribution worthwhile.

6.3.3. Encroachment

Several tea estates have experienced periodic encroachment by villagers for the cultivation of crops. These episodes have sometimes resulted in estates giving up land to villagers, but in other cases they have been met with forced expulsions. People from 3 of the 5 villages visited had been involved in encroachment on neighbouring estates since 1994. In each case, the villagers encroached because the land in question was not being used. The largest area of encroachment reported by the villagers was about 10 ha. Encroachments had occurred over periods of a few weeks to 3 seasons, but in only one case had villagers harvested any crops. One of the encroachments had been ended by the village head under pressure from the tea estate concerned, but the other two had ended violently, encroachers being evicted by security personnel with fierce dogs, and some encroachers suffering injury.

In all of the affected villages, people noted that they would not attempt to encroach again for fear of more violent reprisals, and the tea estates in question have all planted affected areas either with new tea bushes or blue gum in order to discourage further incidents.

There have been other cases, in villages not visited during the study, where villages have been permitted to stay on estates until recently. Evictions in these circumstances are difficult because villages may have been in a location for several generations. This brings problems for law enforcement agencies, who may be unsure whether prescriptive rights (of settlement over a lengthy period) can be applied, or whether freehold estates are exempted from this legal provision[26]. In these circumstances, law enforcement agencies have on occasion been reluctant to play an active role in evicting encroachers.

[26] DC Thyolo, interview

The encroachment issue has clearly soured relations between some tea estates and some of their neighbouring villages, and has contributed to substantially increased costs for those estates who now employ large private security forces. Nevertheless, the extent and incidence of encroachment should not be exaggerated. Not all tea estates experience encroachment, and at the time of the study it was not a serious problem on any of the estates visited.

6.4. Village resource access and access to estate resources

6.4.1. Conditions of access to non-estate resources

Population pressure and the shortage of land for cultivation has also had consequences for access to other natural resources in the villages. Natural resource supplies reported to have been most seriously affected were woodlands and thatch grass. Natural woodlands in all villages visited have been cleared. Other resources no longer available include wild fruits, clay, and wild medicines. Fish was also reported to be unavailable after local water courses suffered pollution from insecticides used on tea estates.

Villagers are adopting a number of coping strategies to deal with resulting shortages of natural resources:

1. Substitution with other natural or synthetic products

Various villages reported using bamboo for poles in construction, using unburnt bricks in construction to save on firewood, using mango branches to burn bricks, substituting plastic sheeting and banana leaves for thatch, cutting avocado trees for firewood, and using madeya (maize husks) for cooking fuel.

2. Planting areas of woodland or grass

In three villages blue gum trees had been planted, sometimes by the village collectively, sometimes by individuals, so that the villagers could have their own supply of poles for construction. One village had planted its own area of grass for use in thatching dwellings.

3. Seeking alternative sources of resources, particularly through purchase

In Thyolo, the government plantation was an important source of some resources for villagers. Both firewood (30t per headload) and poles were purchased from the government forest. Thatch grass was obtained from itinerant traders from further afield, for prices between K10 and K23 per bundle. In Mulanje, many resources are obtained from Mozambique. Grass is obtained for K5 a bundle, firewood is obtained for K6 a headload, and villagers hunt and collect medicines over the border. Mulanje mountain reserve is also a source of some resources, in particular it is a site for hunting.

The other main way in which villagers cope with resource shortages is by obtaining them from tea estate land.

6.4.2. Access to on-estate resources

While villagers' access on to tea estates for the collection of resources is restricted, villagers do obtain a variety of resources from estates. In some instances this is officially sanctioned by the estates, but it is also acknowledged, and was discussed with villagers, that resources are acquired without permission. The latter practice is regarded by some estates as theft, to the extent that trespassers may be arrested and delivered to the police.

The main resource which estates make available to villagers is firewood. In some cases collection of makuli is permitted regularly (for example once a week), in others less frequently. In particular, villagers are usually allowed to collect dried tea prunings during April and May. The amounts to be collected are usually restricted to one headload per person.

All of the villages visited revealed that they do enter the estates without permission in order to obtain resources. Resources collected included poles, firewood, reeds for mat-making, thatching material, medicinal products and clay. In most cases villagers enter the estates at night, frequently with the compliance of security guards who can be paid either to allow villagers access in the first instance, or, if caught, to allow them to leave the estate with resources rather than detaining them. There were also cases of people for whom estate resources provide their primary source of income. One man who lives very close to an estate forest had been making a living from sale of firewood and thatching grass collected on the estate. He entered the estate 2-4 times a month, cutting 1-3 trees each time. The trees were then cut into 4 pieces, sold at K5 each. He also sold grass at K6 a bundle. His monthly income from sale of estate resources ranged from K80 to K250. However, he now has a job on the estate which provides a more reliable income.

All villages acknowledged the risks involved in the unofficial collection of resources. If caught, in some cases, villagers can be fined or detained overnight by estate security guards. Women in one village reported the risk of sexual assault by security guards if they are caught on the estate.

Another, less visible, aspect of estates' contribution to the local economy is through a variety of practices whereby groups of workers and villagers may collude in petty theft and minor fraud, or sometimes theft on a large scale. Estates appear to be vulnerable to a wide range of "subversive" practices from those working on or living around them. These practices range from the inaccurate recording of green leaf weights in order to secure higher incomes, or the sale of maize flour siphoned off by estate cooks, to large scale thefts of materials and equipment (for example chopped wood or vehicle spares). It is difficult in this situation to quantify with any accuracy what benefits actually do filter into local communities.

6.5. Estate labour regimes and changing livelihood strategies for villagers

6.5.1. The role of estate labour in villagers' livelihood strategies

As described in Section 0, in the early days many inhabitants of villages located on estates were incorporated into the estate labour force through the institution of thangata labour. Some of the older men interviewed during field research recalled the time of thangata, and its unpopularity among villagers. In particular one recalled the burning of huts of those who had failed to provide the required labour on the estates.

Although forced labour is no longer practised, the extent of labour participation by villagers on estates in the 1990s is high. In the villages visited, up to ¾ of households were said to be dependent to a greater or lesser extent on estate employment. Men are more likely to seek estate employment than women, and in one village it was explained that married men are considered to be mainly responsible for providing income, while women are considered responsible for subsistence cultivation and domestic tasks. Women without husbands were cited as a particular group who are more likely to work on estates, and younger people, those with little or no access to land for cultivation, are also more likely to work on estates. Some villagers noted the increasing tendency for older people to depend on their children's labour on estates, and in 3 villages they noted that many children from the age of about 10 years work periodically on estates. The high level of dependence on estates is confirmed through data from Vulnerability Assessment and Mapping monitoring[27].

In view of this high level of dependence on estates, the low incomes available to some employees (in particular women), and the seasonality of estate employment, are particularly worrying. The difficulties experienced by some households when employment is not available was reflected in reports of thefts in the village during the low season for tea employment. However, in each village there were people who had never worked on tea estates, and people who were pursuing alternative income and food security strategies. Alternatives to estate employment were discussed with villagers.

6.5.2. Subsistence cultivation

The role of subsistence cultivation in household livelihood strategies is inevitably declining in accordance with diminishing land holdings. All villages reported that in the past it had been possible to survive on subsistence crops and bartered food crops, but in all villages it was reported that most households are now likely to purchase food, either from ADMARC or local markets in Thyolo district, or from Mozambique in Mulanje district. It was reported also that meals on estates are very important in the local diet, particularly during the months from September to February, when many households eat only one meal per day. One village reported that own crops are likely to last a maximum of 2 or 3 months. Pure subsistence was not considered an option by any of the village groups.

6.5.3. Cash crops and income generation

Cash crops were not reported to be widely cultivated in the villages visited. Tobacco was not grown, and only three smallholder tea growers were found. Two of these claimed to have made no profit over the tea season, but one claimed to have made K13,000 from around one acre of tea. Thus, tea growing is not apparently a significant feature of alternative livelihood strategies in these villages. Vegetable growing appeared more common as a source of cash generation. This was reported in three villages, and as an example, K2,920 was earned by one man from sale of dimba produce during the previous season.

[27] WFP, GOM and FEWS, A Quest for Causality: Vulnerability Assessment and Mapping, Malawi Baseline 1996

The prevalence of numerous small businesses was reported. These including baking, brewing, hawking, trading in fruit (pears, bananas, pineapples, grapefruits), and sale of sugarcane and larger businesses like transport or maize mills. Small businesses were reported to be important in 2 of the villages in Thyolo and in one of the Mulanje villages.

6.5.4. Employment off the estates

One of the more important sources of income for villagers appears to be off-estate employment. In Mulanje it was reported that employment by smallholder tea growers was more lucrative than that of estates, since they earn 20t for a kg of green leaf. It is difficult to judge whether this is actually more than they would receive on the tea estates, since the system of overtime bonuses on the estates is complicated (see section 4) but it is higher than the peak season overtime rate of 16t per kg on the estates. The most common other type of employment was "ganyu"[28] labour, for other villagers either in the same village or neighbouring villages. It was reported that some of those working on tea estates earn sufficient money to pay ganyu labourers to work on their own fields off the estates. Ganyu rates were generally thought superior to incomes from tea estates, but high variation was reported in the rates paid for different tasks. For example, while in Mulanje it was reported that preparing one milambala would be paid at K60, a similar task was reported to be worth K200 in Thyolo. A difficult field might even be worth K400.

One other form of survival strategy which is common in the villages is labour migration. The southern region has a long history of involvement in labour migration, emerging early in the Protectorate years, partly as a response to the high taxes imposed inside the Protectorate and the alienation of African land. While efforts were made between 1909 and the mid-1930s to halt labour migration through recruitment bans, these were largely unsuccessful, and many Africans preferred to risk death in difficult journeys through Zambezia to the Transvaal, or to Rhodesia, than face the economic stringencies in Nyasaland at that time. After the restoration of labour recruiting, the participation of Nyasalanders in regional labour migration rose to 4.8% in 1950. During the 1960s and 1970s this rose to an all time high of 8.3% of the economically active population, again, many from southern Malawi. Since a 1974-1976 boycott of regional labour migration, the numbers involved in external labour migration have declined, but in Mulanje and Thyolo this has been replaced with a new form of internal migration, partly to urban centres elsewhere and partly to tobacco estates to the north[29]. This was confirmed by villagers. In many cases, entire households leave for tobacco estates, collected by recruiting lorries, sometimes only for one season, sometimes for longer. These households may return between June and September, and have to live on purchased food. However, other cases of migration by male household heads on "contracts" were reported, and in these cases remittances may be sent back to the households in Mulanje and Thyolo. The extent of migration in one village was reported to be high, so that almost all of the younger adult men are engaged in labour migration, and some of the women.

It is apparent from this discussion that survival for many villagers involves balancing a number of different sources of food and income, and that although many are partially dependent on tea estate income, the seasonality of tea estate labour forces many to seek alternatives. Some of these alternatives are also superior in providing higher incomes than tea estate work.

6.6. Extension and assistance initiatives

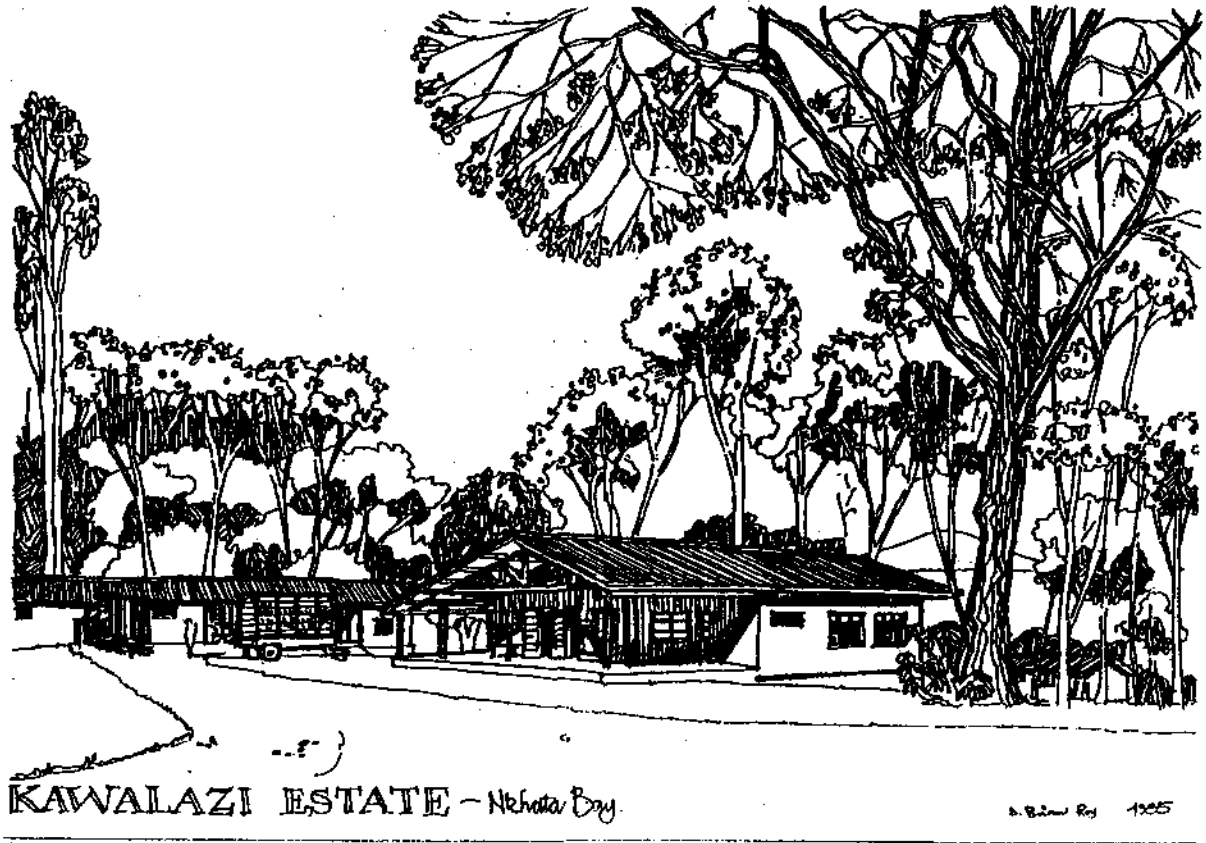
Tea estates have been involved in providing various types of direct assistance to villagers for some time. The types of assistance vary from estate to estate. Current activities range from medical assistance, to assistance in constructing schools and footbridges, the construction of shallow wells and boreholes, and assistance on education for girls. Estates sometimes sell off maize and fertiliser stocks to surrounding villages, and some are beginning to take an interest in offering agricultural extension assistance to villages.

In an effort both to improve relations with surrounding villages, and to reduce effective land pressure around their boundaries, some estates have recently commenced credit and extension schemes in selected villages. Two of the estates visited, and at least one other, have experimented with such schemes. Generally these involve the selection of a small number of "demonstration" farmers, and the provision of inputs and advice to those farmers. Maize yields under one scheme were reported to have risen to over 5000 kg/ hectare. It is intended to increase the

[28] See Peters, P, Conceptual Quagmires, Old Problems and New Questions: Rethinking Policy Assumptions About Malawi's Rural Economy, (1996) for a critique of the concept of "ganyu labour"

[29] This information is drawn from Paton, Bill, Labour Export Policy in the Development of Southern Africa, (1995), University of Zimbabwe, Harare

number of farmers assisted, although whether this approach can have any long term benefits once the estate ceases to provide inputs is doubtful. Such a scheme is also likely to experience difficulties, as in one of the villages visited where 10 people had been provided with loans by an estate, people commented on jealousies, and also on the failure of some participants to repay loans. Despite problems, however, these initiatives do demonstrate the willingness of some estates to assist villagers in a meaningful manner.



Courtesy Tea Association of Malawi

7. Financial Performance

7.1. Company results for 1995/6

When this survey took place in June-October 1996 there were nine plantation companies operating 32 estates. Financial figures for eight of these companies were provided by the company CEOs themselves in responding to the Postal Survey. One company owning one estate did not respond. The data were based on the latest figures available at that time, that is 1995/6 sales and 1995 inputs.

As an overview the figures supplied in the Postal Survey indicate that the plantation industry-as represented by companies operating in Thyolo, Mulanje and Nkata Bay- has assets exceeding K 1,000 million and provides some 420,000 months of employment per annum with direct cash wage costs of K92 million. This equates to K 2,600 per labour year (i.e. one person working for 12 months) . Of this wage bill 54 percent goes to permanent field labour, 20 % to seasonal labour, and 15 % to casual labour. the remainder is used to pay artisans, drivers and skilled workers. In addition to their contribution to the local economy the plantations pay in around K57 million to government revenues in the form of taxes, levies, duties etc.

7.1.1. Production

Latest published figures from the National Statistical Office (Aug 96) report that in 1995 Malawi as a whole produced 34,182 tonnes of tea. Total sales for 1996 as recorded by the eight companies co-operating in this survey add up to over 27,000 tonnes. If this amount is added to that reported by the Smallholder Tea Authority [30] , as indicated in Table 7-1, then in 1996 about 40.5 thousand tonnes in total was produced. This figure equals the 1991 crop and implies a good production year or the sale of stocks. Of the 1996 crop 67% was produced by the plantations. These companies also produced about one-third of the national coffee crop in the same year.

In 1996 the export of tea from Malawi was valued at K 496.83 million, or 6 % of the value of the principal domestic export commodities[31]. In that year tea was the third major export crop after sugar.

Table 7-1 Tea, Macadamia and Coffee Weights Sold by 8 Companies 1995/6

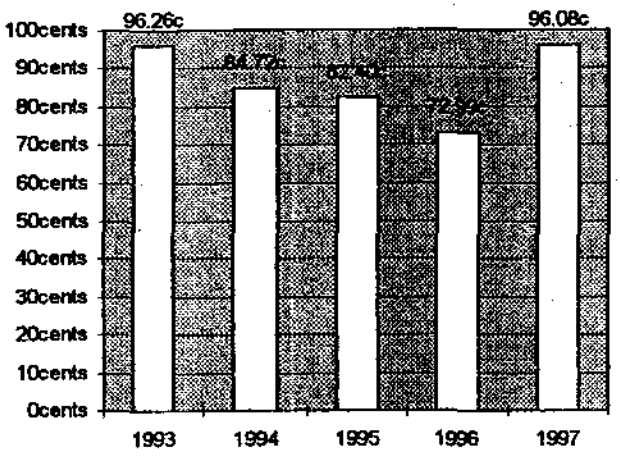
	Total Weight Sold by 8 Companies (Kg)	Average per Company (Kg)	Smallholder Tea Authority (Kg)
Total tea quantity	27,112,602	3,389,075	13,335,067
Total macadamia quantity	1,379,089	172,386	na
Total coffee quantity	1,854,482	231,810	na

[30] The Smallholder Tea Authority Annual Report. Year Ended June 1996
[31] Monthly Statistical Bulletin. Aug 1996. NSO, Zomba

7.1.2. *Price History and Revenue*

World-wide tea consumption has failed to keep pace with increases in production over recent years which has the effect of depressing prices for non-specialist teas. Malawi tea is produced in a low-altitude, fast-growing environment which results in teas better suited to blended tea products which do not command a premium. (Note, however, that one company has taken action by investing in equipment to produce decaffeinated tea). The vulnerability of the Malawi industry as a price-taker is reflected in the slump in prices encountered in 1994-96 and the diversification moves by some companies into alternative crops. The recent improvement in prices (for some grades a doubling of the 1996 price) is due mainly to drought conditions in Kenya this year and thus is not likely to be long-lasting.

Figure 12 Average Annual Tea Price Limbe Auction (US cents/kg)



7.1.3. *Revenues, Costs, and margins*

The revenue figures collected in the Postal Survey refer to 1995/6 year, when prices were particularly low. Although tea remains the main source of revenue for the plantation companies, the 8% contributed by macadamia may be expected to increase as more land is converted from tea.

Table 7-2 Plantation Company revenues and margins as Reported in Postal Survey 1996

	Total for all Companies	Average per Company	Maximum Reported	Minimum Reported	No. of Companies
Total Revenue from Tea Sales for Group	K350,052,203	K43,756,525	K141,541,108	K2,978,900	8
Macademia Revenue	K40,863,597	K8,172,719	K21,215,173	K160,582	5
Coffee Revenue	K85,576,659	K17,115,332	K34,336,913	K921,788	5
Total other revenue	K21,525,960	K5,381,490	K10,774,297	K292,607	4
Total revenue for all crops all estates	K498,018,419	K62,252,302	K179,767,101	K4,500,688	8
Total costs for all estates in group	K310,772,748	K38,846,594	K142,826,074	K2,545,899	8
Margin revenue over total costs	K152,908,758	K19,113,595	K47,617,974	K1,954,789	8
Costs as a Percentage of Revenue		57%	88%	33%	8
Net margin per tot. ha		K6,160	K10,550	K2,428	8

As with tea, coffee revenue is sensitive to world supply and demand, but in the relatively good year reported here coffee provided 17% of revenue from only 3% of the total area occupied by plantations-a ratio of 4.6:1. Tea in contrast provided 70% from 34% of the land- a ratio of 2:1. The subject of relative profitability is touched on later in section 7.3.3

The term "*Net Margin*" is used in this report to describe the margin over production costs reported by the companies. These costs are described below and do not cover all the costs-such as depreciation and capital charges-which would be taken into account when deriving a *profit* figure for the company. Thus it would be inaccurate to describe the bottom line here as profit and the term net margin is used instead.

7.1.4. Production costs

The plantation companies, not surprisingly, have different cost-accounting systems which can make comparisons difficult. All, however, were able to provide a course break-down of total costs into field operations, transport from field to factory, maintenance, and employment.

Table 7-3 Breakdown of Total Company Costs as Reported for 8 Companies in the Postal Survey

	Average per Company	Percentage of Total Costs
Total Field cost	K13,444,743	35%
Total transport	K4,593,896	11%
Total maintenance	K2,654,597	7%
Total employment Cost	K8,704,119	22%
Total other costs (Admin etc.)	K9,516,586	25%
Total costs for all estates in group	K38,846,594	100%

The categories used above require explanation. As may be seen in Table 7-4 field costs cover all the field operations and thus include the wages of field labour. The establishment costs included under employment refer to management and administration salaries. However, a portion of employment costs also affect field labour by way of expenditure on leave, food and welfare. As a result the full cost of field labour has to be extracted from several sources.

Table 7-4 Breakdown of Field Costs

	Percentage of Total Field Costs
Plucking	25%
Tipping	1%
Weeding	7%
Pruning	3%
Tools/baskets	2%
Pests and disease control	8%
Infilling	1%
Fertiliser	43%
Other Field costs (irrigation)	12%
Total	100%

Table 7-5 Breakdown of Employment Costs

	Percentage of Total Employment Costs
Establishment	72%
Pensions	3%
Leave	5%
Food	14%
Welfare	6%
Total	100%

Unfortunately a detailed analysis of labour costs was not requested under the postal survey, but an estimate based on the figures to hand suggests that about 35% of field costs are made up by wages. About 50% of transport and maintenance cots, and 20% of employment costs may also be set against field labour. Taking these together gives an average daily wage cost per company of K11.5 million per annum or 28% of total costs.

Simply adding the labour element of field costs to all employment costs results in a figure for all salary and wage costs equal to 41% of total costs.

7.1.5. Capital Investment and returns

Estimation of the capital investment in the plantation industry (as represented by the eight companies reporting) is full of pitfalls. Some companies will have reported assets at their current market value, some at their historic depreciated cost. To take the tea factory as one example, should this be valued at its replacement cost or at its depreciated value? In the case of old factories the depreciated value (which could be zero) is far below its real value to the company which, were the factory to burn down, would have to replace it with a new one to remain in tea production.

Taking working capital as another problem area, the total for cash, debtors and stocks is given in Table 7-6 for the year end. This figure is likely to be low since year end dates are often chosen for simplicity in taking inventories; that is when stocks are at a minimum. This will have the effect of inflating the figure for return to capital.

Table 7-6 Capital Investment and Returns 1996 as Reported in Postal Survey

	Average per Company	Maximum Reported	Minimum reported	Total for 8 Companies
Total cash, debtors and stocks at end of year for group	K26,423,621	K55,618,000	K755;677	
Total Machinery and Equipment Value in Group	K33,609,099	K191,101,000	K750,083	
Total Permanent Improvement Value in Group	K48,632,659	K205,014,000	K339,519	
Total capital at Year End for Group	K99,283,344	K423,256,000	K1,505,760	K794,266,749
Net Margin as Percent of Working Capital (inc equipment) for Group	134%	226%	64%	
Net Margin as Percent of Total Capital at Year End	68%	130%	4%	

Owing to the various approaches to capital valuation used by different companies the figures above should be treated with caution. When questioned in the Detailed Tea Survey, all the company heads were surprised at the high returns to capital calculated here and thought that their returns were much lower, in the 30-40% region. In their case they would have been using a profit figure to calculate returns which would be smaller than the net margin used by ELUS. It should also be appreciated that the balance sheet for a business is only a "snapshot" of the year's dealings and, further, this survey presents only the results for one year.

In summary the overall total capital figure of nearly 800 million Kwacha in Table 7-6 excludes the assets of one company, so it is reasonable to suppose that the industry as a whole has some 1,000 million invested in Malawi. The estimated return on this capital shown above is not excessive in a year when national inflation topped 80 %.

7.1.6. Contribution to Government Revenue

As corporations the plantation companies contribute directly to government revenues in the form of company taxes, levies, custom duties, surtax, and personal income tax. All the companies which took part in the postal survey were able to provide figures for their contribution to government revenue.

Table 7-7 Government Revenue Payments 1994/5 Reported by 8 Companies in Postal Survey

	Average per Company	Maximum Reported	Minimum reported	Total for 8 Companies
Total Taxes and Duty Paid by Group	K7,076,716	K31,029,414	K196,364	K56,613,731
Taxes and duties per Kg Made Tea	K2.18	K5.81	K0.61	
Taxation as a percentage of Net Margin	18	35	4	

The wide range in taxation reported in this survey may be due to several factors such as poor profits and low taxes in 1994/5 for some; large investments and thus duties awaiting reclaims on imported materials for others. On average, of the K11.50 received per Kg of tea some 18 percent is taken off in taxation.

7.2. Value-added by Plantation Companies

In a supplementary questionnaire the eight co-operating companies were asked for more detailed information on revenues and purchased inputs for both the estates and factories. This enabled a calculation of *value-added* to be made. The concept of value added is used elsewhere in the land use studies[32] to describe the margin over purchased inputs achieved by the estate using its own resources of land, labour and capital.

Value added (gross)
Crop and livestock output in Kwacha minus bought in goods such as:
Fertilisers,
Chemicals,
Packing materials,
Fuel and electricity
No deductions for labour or capital

In Table 7-8 value-added is calculated for the companies with and without taking the factories into account. If factory costs are included, then purchased input costs are higher, but so is revenue due to the higher price received for the finished product. If factory costs are excluded the estate revenue is reduced by the necessity to charge a figure for processing wet leaf. In making general comparisons the "with factory" figure is used to reflect the actual situation for a group of estates.

Table 7-8 Average Value-added per estate achieved by 8 Companies 1996

At factory gate	Inc. Factory Costs	Exc. factory	
Tea Revenue	K 21,895,447	K 17,279,524	← At estate gate
Other Crop revenue	K 13,203,839	K 13,203,839	
Total Revenue	K 35,099,286	K 30,483,363	
Purchased Inputs	K 9,234,616	K 6,044,151	
Value-added per Estate	K 25,864,670	K 24,439,212	
Total ha	K 8,013	K 7,213	
Cropped ha	K 16,661	K 14,946	
Labour month	K 1,020	K 729	
Livelihood	K 2,884	K2,109	

[32] See Farm Management Survey Report. ELUS Feb 1997

The return to land may be looked at from the point of view of the area which is under crop and also the total area occupied by the estate. Compared with other estates in Malawi[33] the return to cropped area given above was only exceeded by large tobacco estates over 500ha in size (K25,921) and sugar. Otherwise in terms of return per total area tea and tobacco estates were much the same.

The value-added per labour month is a useful measure since a gross margin may be quickly derived from it by deducting the average daily paid monthly wage. At the time these figures were collected the average monthly wage was about K350 (see section 4.1.4) leaving the estates with a gross margin per labour month in the region of K650 to cover overheads, capital charges and returns to shareholders.

Gross margin:
Output minus variable costs such as purchased inputs, hired equipment and daily labour

The question of land use in terms of economic efficiency turns not only on the returns to land and labour, but also on the number of people supported by the land. This study makes use of the *livelihoods* measure used in the other ELUS surveys. The number of people supported by one labour day in the fields was taken as 4.7 for the Thyolo/Mulanje area [34]. Thus the number of labour years multiplied by 4.7 gives an approximation of total livelihoods provided by the estates. The average value-added per livelihood for the eight companies was K2,407. As a basis for comparison the tobacco estates' value-added per livelihood ranged between K2,000 and K6,000.

7.3. Detailed Tea Survey Results

During the detailed , follow-up, survey conducted in April 1997 the opportunity arose for a more thorough look at the production and costs of six estates owned by five companies. One of these was an estate in transition, that is, changing over from tea to macadamia. This process of change, involving as it does a period of low income and high expenditure while establishing the new crop, makes the estate atypical and suitable only as a case study. For this reason the main body of data is presented for 5 active tea-dominated estates with the transitional estate reported separately. In order to make the survey less of a "snapshot" view of the visited estates, data was collected for both the 1995 and 1996 crop years.

7.3.1. Comparison between value added results for postal and Detailed Tea Surveys

One of the purposes of the detailed survey was to verify the figures provided by the companies in the postal survey. The means for the two sets of value-added calculations are set out in Table 7-9.

Table 7-9 Comparison of Postal Survey Results with Those of Detailed Survey

		Postal Survey		Detailed Survey	Standard Error
Number of Estates		32		5	of the Mean
Total Revenue	K	29,560,178	K	30,920,860	9,076,789
Purchased Inputs	K	6,044,151	K	7,526,127	2,379,890
Total value-added	K	23,516,027	K	23,394,733	
Value-added per Total ha	K	8,013	K	9,127	1,288
Cropped ha	K	16,661	K	18,717	2,291
Labour month	K	1,020	K	732	158
Livelihood	K	2,884	K	2,083	590

As can be seen the results of the detailed survey tend to confirm the reliability of the data contributed by the company heads completing the postal questionnaire. As the more comprehensive postal survey was practically a census the data from this survey is used for the main analysis supplemented by the detailed yield, pricing, and crop returns data from the second survey as set out below.

[33] Estate Land Utilisation Study, Farm Management Report Feb 1997 R J G Steele, Lilongwe

[34] Derived from household size data collected by NSSA and adjusted with data collected during Detailed Tea Survey interviews.

Table 7-10 Yields and Prices for Tea, Coffee and Macadamia on 6 estates in the Detailed Tea Survey April 1997

	Average per Estate		Maximum	Minimum	No. of Estates
Mainly Tea estates	1995	1996			
Total Area	2,563 ha	2,563 ha	4,524 ha	436 ha	5
Tea Area	958 ha	974 ha	1,686 ha	233 ha	5
Macadamia Area	237 ha	308 ha	378 ha	235 ha	2
Coffee Area	320 ha	310 ha	468 ha	172 ha	2
Tea Yield (Per ha)	2,107Kg	2,217Kg	2,674Kg	1,248Kg	
Macadamia Yield	341Kg	246Kg	600Kg	83Kg	
Coffee Yield	624Kg	1,380Kg	919Kg	328Kg	
Tea Price at POS	K 13.65	K 13.62	K 15.24	K 11.61	
Tea price at estate gate	K 10.47	K 10.18	K 12.63	K 8.56	
Macadamia price at POS	K 104.78	K 110.19	K 129.78	K 79.77	
Macadamia price at Estate	K 99.49	K 87.06	K 109.71	K 89.27	
Coffee Price at POS	K 38.35	K 38.89	K 38.70	K 38.00	
Coffee Price at Estate	K 35.73	K 34.71	K 36.00	K 35.45	
Estate in Transition	(changing from tea to macadamia)				
Total Area	631 ha	631 ha	Only 1 estate in this group		
Tea Area	227 ha	168 ha			
Macadamia Area	179 ha	217 ha			
Tea Yield (Per ha)	804Kg	1,772Kg			
Macadamia Yield	109Kg	44Kg			
Tea Price at POS	K 15.10	K 15.57			
Tea price at estate gate	K 10.93	K 10.75			
Macadamia price at POS	K 61.24	K 74.33			
Macadamia price at Estate	K 56.66	K 65.81			

POS= Point of Sale (e.g. Limbe auction, or processor in case of some macadamia)

7.3.2. Crop Yields and Prices on 6 estates visited during the Detailed Tea Survey.

Yields for tea and coffee were better in 1996 than in 1995, although macadamia fell back on the two estates growing it. The very low macadamia yield calculated for the transition estate is due to a large area of young trees being counted in. The produce prices quoted at "estate gate" are net of transport, levies and processing. Tea processing costs varied, but ranged between K2-4 per kg of made tea. All estates produce about 20kg of made tea from 100kg of fresh leaf.

7.3.3. Comparison of tea, coffee and macadamia margins

The Detailed Tea Survey collected data for individual crops on six estates. Taking the results for the five functional estates, value-added results for two years may be calculated as in Table 7-11

Table 7-11 Value-added per Hectare for Three Major Cash Crops on Five Estates

	Tea		Coffee		Macadamia	
Average Cost per ha	**1995**	**1996**	**1995**	**1996**	**1995**	**1996**
Number of Estates	5	5	2	2	2	2
Area Grown by Sample	4,792 ha	4,869 ha	621 ha	640 ha	473 ha	616 ha
Crop Revenue	K 23,275	K 23,295	K 39,998	K 44,705	K 36,784	K 17,366
Purchased Inputs						
Plant Material/seed	K 18	K 10	K 4	K 4	K 0.44	K 41
Fertilisers	K 2,399	K 3,004	K 5,424	K 4,450	K 78	K 425
Chemicals	K 203	K 288	K 4,052	K 6,376	K 427	K 614
Packing materials	K 70	K 71	K 22	K 57	K 36	K 230
Fuels, Oils and Spares	K 1,204	K 1,490	K 1,015	K 578	K 160	K 195
Electricity	K 324	K 553	K 639	K 960	K 5	K 2
Protective Clothing	K 335	K 505	K 130	K 73	K 19	K 24
Loose tools	K 86	K 145	K 251	K 112	K 12	K 141
Repairs/ Maintenance Stores	K 150	K 67	K 27	K 40	K 22	K 29
Total Purchased inputs	K 4,789	K 6,134	K 11,566	K 12,651	K 759	K 1,701
Value-added per hectare	K 18,486	K 17,161	K 28,433	K 32,054	K 36,024	K 15,665
Two Year Mean	K 17,824		K 30,244		K 25,845	

Although the sample sizes are very small in terms of estates, the figures above come from quite large areas of crop and are calculated by dividing the total cost for the whole sample by the total area (weighted mean). It should be borne in mind that the value-added figure does not take account of labour or capital charges. Labour costs were not available on a crop by crop basis, but the direct labour cost over the whole estate comes out at approximately K4,600 per ha. Subtracting this from the above figures gives a rough gross margin figure of K13,000 for tea, K26,000 for coffee and K21,000 for macadamia.

All three crops have similar overheads in terms of use of estate resources, except that tea requires much higher investment in factory facilities. These costs can be reduced by several estates sharing a factory, but this tactic is limited by haulage costs making long trips to a central factory prohibitively expensive.

Although these results suggest that the estates should be rapidly increasing their areas of Arabica coffee[35] (which was the main crop when plantations were first established at Mulanje) and macadamia, these crops do not lend themselves to short-term policy changes:

- Coffee takes 2 to 3 years to come into bearing. Macadamia 7 to 8 years,
- a typical payback period for these crops is in the region of 9 years,
- both have disease problems (Rust, CBD, loopers, leaf miner, antestia etc. in coffee, flower blights, thrips etc. etc. in Macadamia).

[35] Currently (June 1997) Arabica coffee is trading at twice its 1996 price, Robusta is less buoyant but following the trend as roasters increase the proportion of robustas in blends to cut costs.

8. Comparison of tea plantations with other estate typologies

This section attempts to bring together the main estates typologies encountered during the Estate Land Utilisation Study and to draw broad comparisons on their relative effectiveness of land use. For simplicity only a few major measures are considered here, readers who wish to look further into the matter are referred to the detailed reports available in the ELUS series.

8.1. Land use

In terms of the physical utilisation of the land, the tea estates present a fairly uniform and different picture in comparison with most of the tobacco based estates and the sugar estates.

At the time of the survey, there were 33 tea estates with an average size of around 1,400 hectares. In comparison, there were estimated to be a total of around 30,000 tobacco estates with an overall average size of 34 hectares but ranging from 10 to 10,000 hectares. Around 88% of these are less than 40 hectares and 67% less than 20 hectares. There are two sugar estates of something like 13,000 and 17,000 hectares total area.

8.1.1. Overall land use

Table 8-1 ?

The overall land use is summarised in **Error! Reference source not found.** into five main combined land use and cover classes, for all the land under the tobacco, tea and sugar estates. The tea and tobacco estate land use at this level was found to be broadly similar with crop/fallow and woodland/grass as the main land use categories accounting for around 50% and 34% of the total land area respectively in each of the estate types. The tea estates overall have more of the remaining land under buildings and roads (14%) while on the tobacco estates there is more wetland (8%). The sugar estates are quite different in having a higher percent of the total area under crop/ fallow (61%) and relatively little under woodland (5%).

Table 8-1 Area and percent of land on tobacco, tea and sugar estates under main combined land use and cover classes

	Tobacco estates		Tea estates		Sugar estates	
	Total area Hectares	Percent of total area	Total area Hectares	Percent of total area	Total area Hectares	Percent of total area
Upland crops and fallow	501,764	50%	22,701	50%	17,931	61%
Wetland	77,330	8%	931	2%	6,000 *	20%
Woodland and upland grass	356,477	36%	14,438	32%	1,487 *	5%
Encroached	32,405	3%	846	2%	1,000 *	3%
Built up and other	28,151	3%	6,563	14%	2,913 *	10%
TOTAL	**996,127**	**100%**	**45,479**	**100%**	**29,330 ***	**100%**

Note *: Not surveyed: approximate information only.

Splitting these summarised land use classes into their component parts reveals fundamental differences between the three major estate types. Table 8-2 shows the breakdown of the crop/fallow land while Table 8-3 show the breakdown of the woodland/grass in terms of the percent of the total estate area.

Table 8-2 clearly shows the emphasis on annual crops on the tobacco estates and perennial crops on the tea and sugar estates as would be expected. The tobacco estates have overall about 64% to 36% crop to fallow land while the tea and sugar estates have almost no fallow since they have very little annual crop.

Table 8-2 Percent of crop/fallow area on tobacco, tea and sugar estates under component classes

	Tobacco estates % of total area	Tea estates % of total area	Sugar estates % of total area *
Upland perennial crops	0.4%	46%	61%
Upland annual crops	32%	2%	0.0%
Upland fallow	18%	2%	0.2%

Note *: Not surveyed: approximate information only.

While both the tobacco and sugar estates rely heavily on trees for curing their crop and have something over 30% of their total area under trees, the tea estates have two thirds of this land under plantation forest whereas the tobacco estates have much less (8%). Just less than half the wooded land on tobacco estates is natural woodland with a similar amount of woodland regrowth.

The tea estates have almost no woodland regrowth, and neither the tobacco nor the tea estates overall have much land under upland grass.

Table 8-3 Percent of woodland/grass area on tobacco, tea and sugar estates under component classes

	Tobacco estates % of crop/fallow	Tea estates % of crop/fallow	Sugar estates % of crop/fallow *
Plantation forest	3%	20%	4%
Natural woodland	16%	11%	0.3% *
Woodland regrowth	15%	0.3%	0.3% *
Upland grass	2%	0.3%	0.3% *

Note *: Not surveyed: approximate information only.

8.1.2. Self sufficiency in wood requirements

Looking beyond the cover of trees to the self sufficiency in wood requirements, it was found that while the tea estates and reportedly the sugar estates are self sufficient at least on a company basis, in net wood requirements (including domestic use), over half of the tobacco estates surveyed were found to produce less than three quarters of what they required for curing tobacco and domestic use. The total net wood deficit was estimated for all tobacco estates at around 770,000 stacked cubic metres per year which was estimated as being equivalent to nearly 10,000 hectares of natural woodland. On the other side of the coin, 34% of tobacco estates visited were found to produce more than 25% more than they needed, with some estates producing up to 50 times their wood requirement. This was because a high proportion of the estate would be under woodland which in most cases is a form of underutilisation. This situation was not found to occur with the tea estates which, within the companies would consume most of the wood produced.

8.1.3. Land suitability

In terms of land suitability (for the most important rainfed annual crops being grown under "improved traditional management"), approximately 78% of the tobacco estate land was found to be suitable overall, compared to around 65% of the tea estate land (detailed survey only). The lower proportion of suitable land on the tea estates is a result of the steepness of much of that land. Most of this otherwise unsuitable land is still suitable for tea and other perennial crops which have a permanent cover and so protect the soil better than annual crops against erosion. With all the wetland included in the sugar estate boundaries, something like 80% of the sugar estates would be expected to be suitable.

8.1.4. Land husbandry

Land husbandry on the tea and sugar estates was found to be good, and even outstanding in comparison to the majority of tobacco estates in Malawi. On the sugar estates the land is flat and so it is more a question of land use planning and layout. On the tea estates, perennial crops were all said to have been established under the protection of mainly graded physical conservation layouts which are no longer needed once the cover has established. Fertility is maintained by the widespread use of chemical fertilisers, and mulching is also widespread.

The tobacco estates however, present a very mixed picture when it comes to land use planning and soil and water conservation. Although a majority of estates were found to use some of the principles of land use planning in developing their layout, only a very small number had made and followed a comprehensive overall layout plan. On the cropped land, around half (51%) of estates visited were judged to have the rather weak irregular rotation with natural or weedy fallow, and only 20% with the much better systematic rotation with natural or weedy fallow. While around 11% were still opening up the land and had not yet established a crop rotation, a total of 14% had no fallow and most of these had irregular rotations. One of the main problems with those estates with "irregular" rotations is that they have too much land under maize or tobacco for them to be able to make a satisfactory rotation. Only 23% of estates visited which needed physical conservation measures actually had any, with more of the larger estates having such measures than the smaller estates. In addition, the overall coverage of physical conservation layouts was generally poor ranging from around 10% of the land on small estates to 50% of the land on the greater than 500 hectares estates.

8.1.5. Underutilisation

Comparable estimates were made of overall underutilisation of the "suitable" land on the tobacco and tea estates. The tea estates were almost certainly the best in this respect with only around 1% of the suitable land on estates in the detailed survey assessed as being underutilised. While, as with most indicators on the tobacco estates there was much variability, the overall percent of suitable land found to be underutilised was 29%. Underutilisation on the sugar estates was not assessed.

8.2. Supported population

As a general comparison between Tea and Tobacco estates, key variables including the numbers of people supported level of income provided, rations, and housing have been compared.

Tea estates employ around 43,000 employees, compared with 110,000 direct employees plus 282,000 tenants on the tobacco estates. Not accounting for the 11,000 Sugar estate employees, the tea estates therefore provide 11% of jobs in the estate sector. The supported population was defined as the number of persons who gain all or most of their income from estate sources. The number of persons supported by tobacco estates was calculated at 1,116,078, providing a measure of persons supported per hectare of tobacco estate land of 1.15 nationally. A similar exercise was carried out for tea estates, which revealed a total of 177,225 people are supported by tea estates[36]. This translates into an average of 3.73 persons supported per hectare of tea estate land, including those supported by factory employees involved in processing. On this measure, tea estates out-perform tobacco estates considerably.

However, this measure of supported population does not provide any indication of the comparative level of support, or the quality of the livelihood, provided by estate employment. In order to assess this, incomes, rations and housing were compared across the two sub-sectors.

A direct comparison of cash incomes reveals that a male tea estate employee employed all year round (at field level), would have earned on average K3,888 during 1995-96, while an employee on a tobacco estate would have earned K2,086. A tobacco tenant would have earned K2,802. A female employee on a tobacco estate would have earned K1,425, whereas if she was employed on a tea estate, she would have earned K1,443. On this measure then, tea estates are also able to out-perform tobacco estates.

However, there are a number of difficulties with accepting this general comparison. First, the average tea estate employee is not employed all year round, only 40% being permanent employees and the remainder being employed seasonally or casually. If the figure for male annual incomes on tea estates is adjusted to take account of this (according to the proportions of men and women in permanent and seasonal/casual employment), the average annual male income would have been MK2,971, while the comparable figure for women would be MK880. Male tea estate incomes therefore still out-perform those provided by tobacco estates, but women employed on tobacco estates appear to have improved income prospects over those on the tea estates. However, access to employment and tenancies on tobacco estates for women is more restricted than on tea estates.

A second difficulty with accepting direct comparisons between cash incomes is the effect of the provision of rations on tobacco estates, whereas on tea estates only one meal per day is provided to the employee. A tea estate employee receives 200 grams of cooked maize per day, so that if he or she worked six days a week all year round, they would receive approximately 60kg of maize, for which no charge is made. On tobacco estates, both tenants and direct employees usually receive rations, of on average 407kg and 306kg per annum respectively. While tenants are charged for these rations, the cash payments compared above are net of these charges. In order for a tea estate worker to purchase the additional maize (347kg, or 246kg respectively), he or she would have to spend approximately MK760 or MK540 (assuming an average maize price of MK2.2 per kilogram).
If this is taken into account, the average male tea estate worker appears to be worse off than the average tobacco tenant, but slightly better off than a direct employee on a tobacco estate (see Table 8-4) In addition to rations, it should also be remembered that the majority of tobacco estate households are provided with access to land in order to cultivate food crops, whereas few tea estate households have a similar provision.

Finally, provision of housing can be compared between tea and tobacco estates. 40% of tea estate employees are estimated to receive housing from estates, while only 33% of tobacco estate employees and tenants receive this benefit. In particular, tenants are far less likely to receive housing (only 18%). The variation in housing provision makes this difficult to compare, but in general, housing provided by tea estates tends to be of more durable materials, with mostly brick construction and iron sheet roofing, while that on tobacco estates tends to use more traditional materials. Access

[36] Calculated by averaging monthly field employment into "labour years", and multiplying ¾ by 4.7 (the average household size of tea estate employees), and ¼ by 4.7/2, because ¼ of households have more than one income from the tea estates. The population supported by employment in factories was calculated by averaging monthly factory employment into "labour years", and multiplying by 3.3 (the average household size of factory employees). An adjustment was made for the inclusion of one estate for which a non-response was recorded during the Postal survey of Tea Companies.

But the households have other sources of income as well.

to safe water appears to be better on tea estates than on tobacco estates, with most estate dwelling households having access to piped or borehole water, compared with only 20% of those households visited on sampled tobacco estates.

In general, then, standards of living for the permanent tea estate labour force appear to be broadly comparable with those on the tobacco estates, with better cash incomes and perhaps better housing provision, but poorer food provision. Notwithstanding this, the seasonality of employment means that certain categories of tea estate employees are considerably worse off, in particular women whose access to higher income employment is restricted, as is their access to estate housing.

Table 8-4Comparative indicators - Tea and Tobacco estates

	Tea	Tobacco
Supported population per hectare	3.73	1.15
Average male annual income (field employees)	2,971	2,086
Average female annual income	880	1,443
Average tenant income	n/a	2,802
Average annual food provision (value/MK)	132	674
% with access to estate housing	40	33

8.3. Return to resources

The financial return to resources is based on the concept of *value-added* explained in Section 7.2. To recap it is a measure of how much the estate, using its resources of land, labour, and capital, adds to the value of purchased inputs such as fertiliser or fuel. It does not take account of the cost of the resources, but it makes a convenient basis for comparison when returns to these resources are calculated.

Figures were collected by the Estate Land Utilisation Study for three major types of estate-tobacco (annual crop, irrigated, farms), tea (plantation, rain-fed, estates) and sugar (plantation, irrigated, estates). Within the main tobacco group the estates have been segregated into five size categories to allow for the large differences in farming system exhibited across the tobacco sector. Tea estates are treated as one group, but value-added results have been prepared for the with and without factory situation since not all estates have their own factory.

The average figure for the two sugar estates is used here, but it must be pointed out that these estates were not surveyed in detail as were the other two groups. Since sugar production is specialised in its requirements for physical resources and capital, the results presented here are perhaps only of passing interest and comment is generally reserved for the more common tobacco and tea estate comparisons.

8.3.1. Return to land

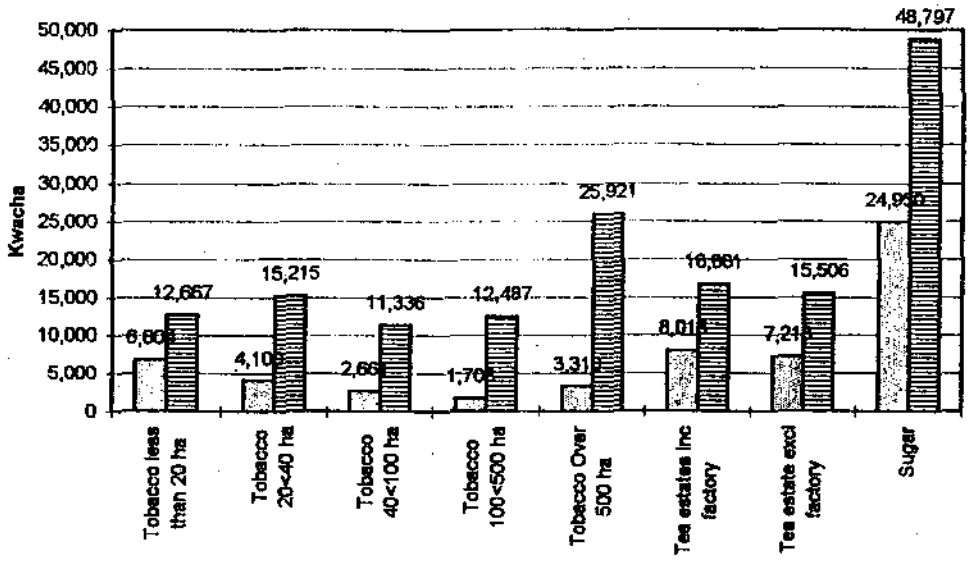
The return to land is calculated at two levels. The first is for the total area of the estate, which obviously includes non-productive land such as swamp, rock outcrops, and buildings. It does, however, also include land in productive use, but not under crops, such as forest land. In the case of tea estates, for example, the factory could not run without the forestry enterprise providing firewood. The second measure of value added per cropped hectare as the name suggests only takes into account the area actually under crops in the current year.

The tobacco series of reports also uses a measure called suitable land. This is land that is suitable for cropping, but may not be actually cropped. In the case of tobacco estates about three-quarters of the suitable land is used in productive activities such as cropping, fallow, plantations, improved pastures etc.

In the case of plantations a more narrow view is taken of suitable land since it is argued that land which cannot be used for planting the "core" crop is not suitable. Thus a sugar estate may be thought fully utilised in the sense that no more land is suitable for irrigation even though a portion of the holding might actually be left unused. The debate on suitability or otherwise of land makes comparison of returns to suitable land between very different farming systems impractical.

To return to Figure 13 Value-added as a Return to Total Estate Area and Cropped Area, the tea plantations are only moderately more productive than the tobacco estates with respect to cropped land. As mentioned above sugar estates occupy a place of their own in these rankings which might only be challenged by a well-run horticultural estate producing for export.

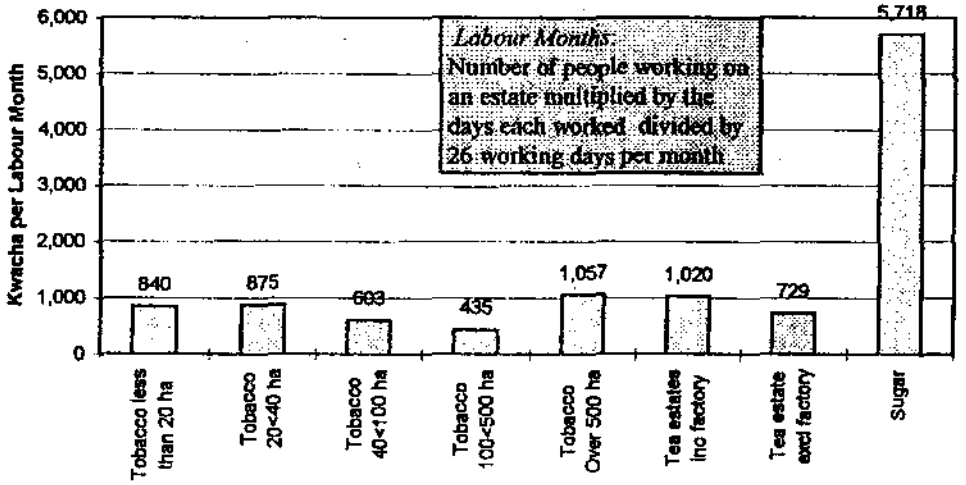
Figure 13 Value-added as a Return to Total Estate Area and Cropped Area



8.3.2. Returns to Labour

The return to labour is calculated against labour months invested in the estate in one year. Tea estates provided a better return on this basis than all except the largest tobacco estates, despite using more labour in total to produce their main crops of tea, macadamia and coffee.

Figure 14 Value added as a Return to Labour

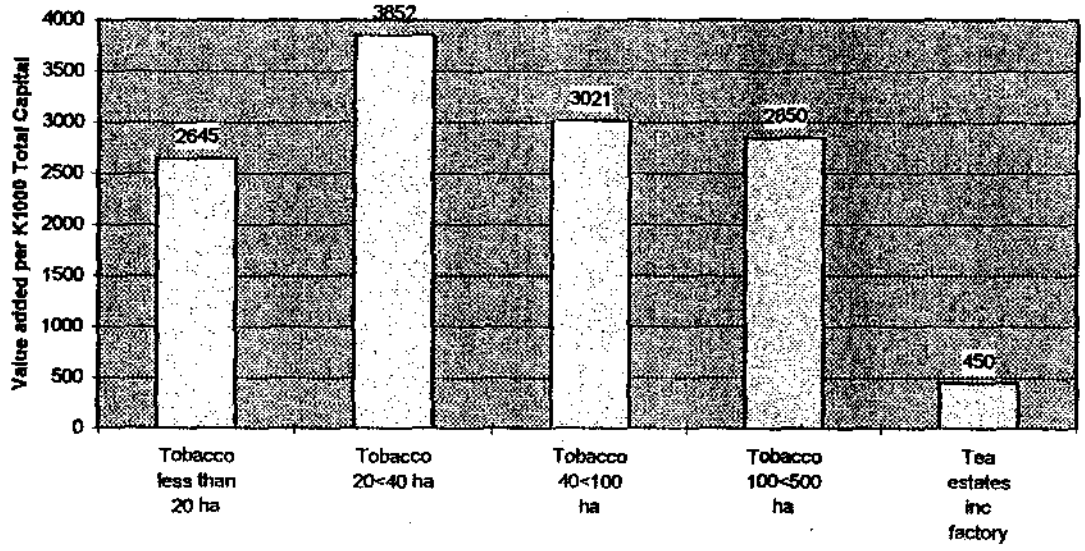


8.3.3. Return to Capital

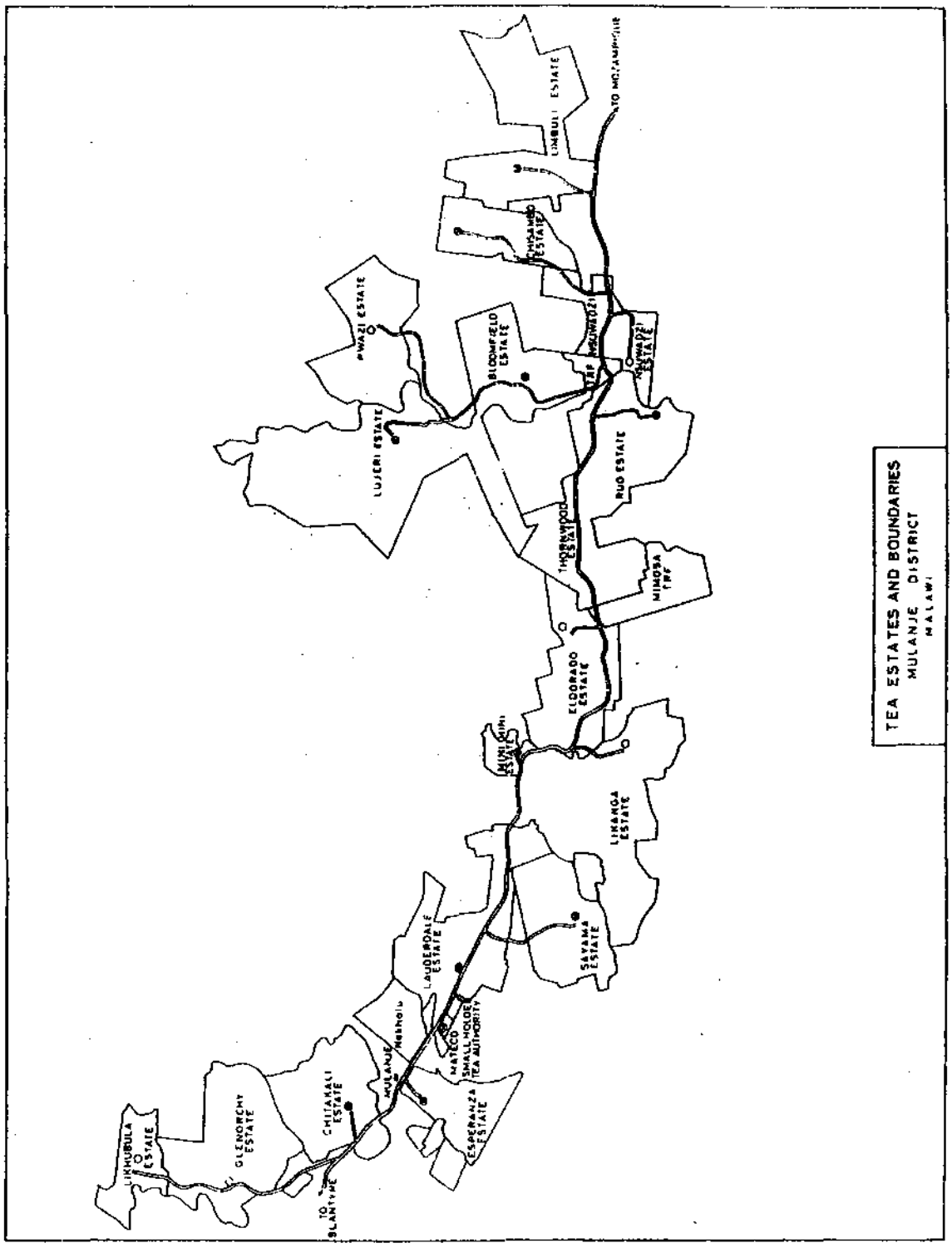
Although it is difficult to collect definitive information on capital investment, some data is available for the tobacco estates in the Farm Management Survey Sample and the tea estates visited during the Detailed Tea Survey. Large tobacco estates were not surveyed for capital formation and the sugar estates, because of their investment in plant, were unable to provide a single valuation which would provide a figure meaningful to the layman.

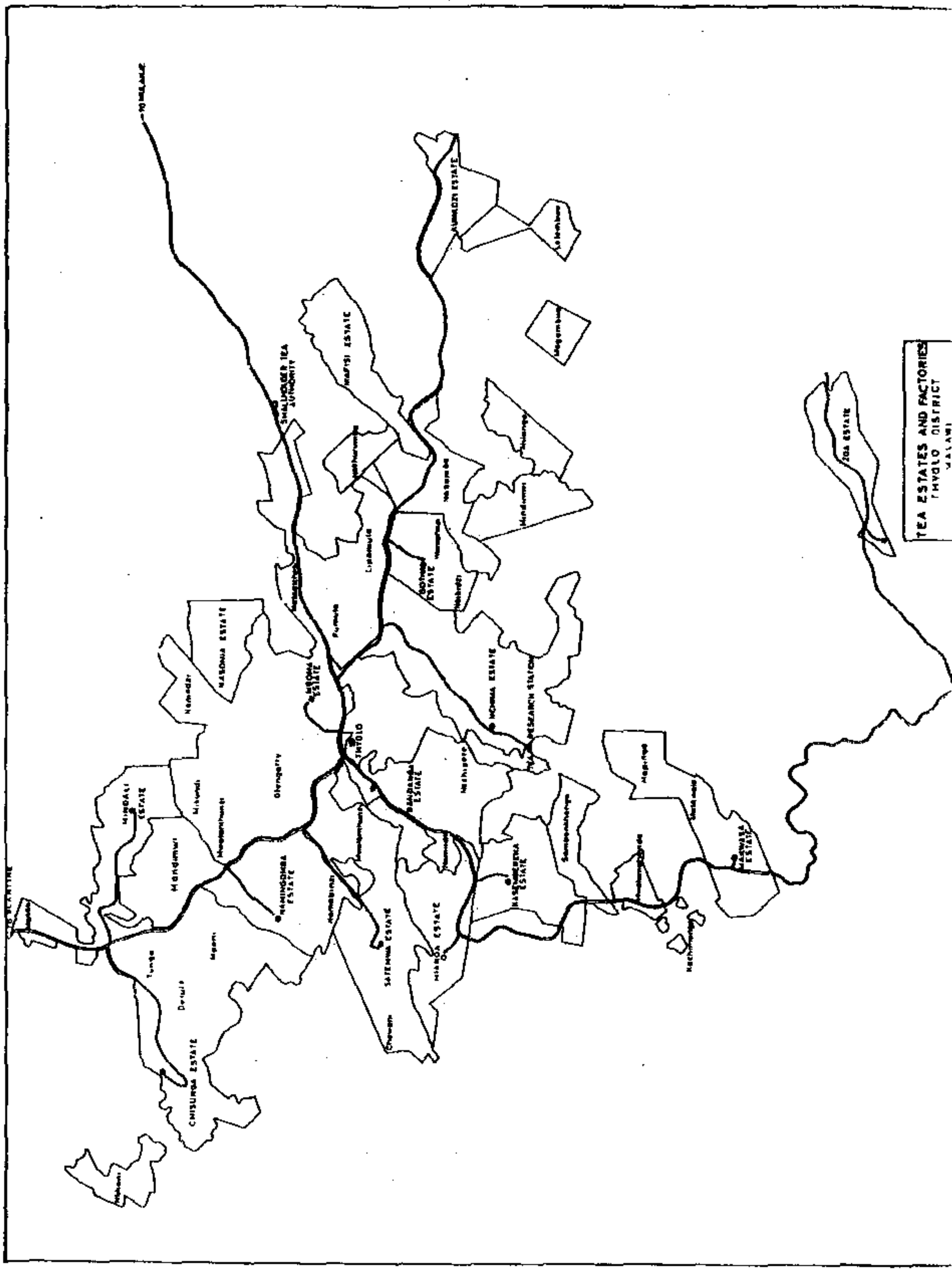
The apparently very low relative return on capital shown for tea estates in Figure 15 reflects the moderate profitability of the plantations versus the high capital investment required for necessary for production and processing. In contrast the tobacco estates, especially the smaller ones, have few long-term assets and hence show a very high return to capital.

Figure 15 Total Value added per K1000 capital



9. Estate Location Maps

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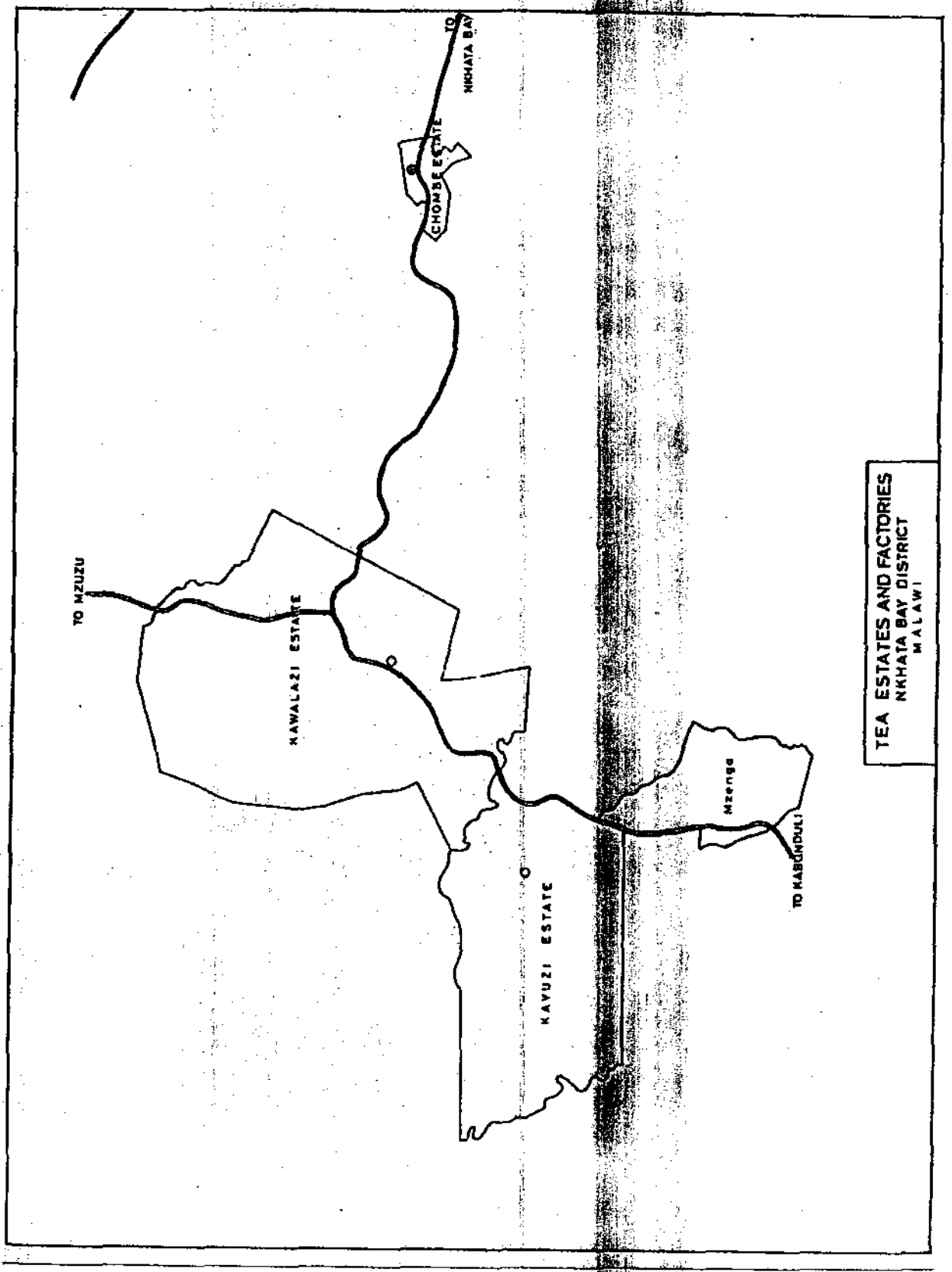
THYOLO DISTRICT
MALAWI
THYOLO
RESEARCH STATION
SMALLHOLDER TEA AUTHORITY
SATEMWA ESTATE
CHISUNGA ESTATE
NASONIA ESTATE
ESTATE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TEA ESTATES AND FACTORIES
NKHATA BAY DISTRICT
MALAWI