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(a) UNIVERSITY OF NAIROBI
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Working papers

IDS/WP 196

INTRODUCTION TO PROBLEMS OF LOAN REPAYMENT
ON SETTLEMENT SCHEMES IN KENYA

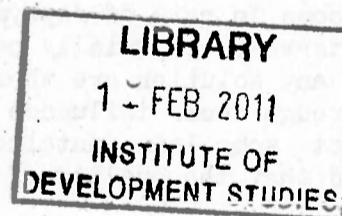
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WORKING PAPER NO. 196

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P.O. Box 30197
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NOVEMBER, 1974



RN 322539

IDS



095433

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Josephine Wanja Harmsworth

ABSTRACT

In 1961 Kenya embarked on a program of agricultural reform called the Million Acre Settlement Scheme providing for the transfer of ownership of land in the Rift Valley from outgoing white settlers to local farmers. These new settlers were given loans by the Kenya Government to cover the cost of the purchase of their plots and of certain development inputs. Over course of time most of these farmers have fallen heavily into arrears with repayment of their loans and this problem provides the focus for this study of problems of farmers on the settlement schemes, which has the ultimate objective of making recommendations for improving the present poor rate of repayment.

Not unexpectedly overall income was found to be the crucial factor affecting rates of repayment, however the relationship of size of income to rate of repayment is not straightforward as other factors intervene, especially patterns of expenditure, and more importantly perhaps to any solution are those which indirectly affect rates of repayment through their influence on income levels. It was furthermore discovered that some loan instalments are never credited due to poor administration and that the quality of administration permeates many other variables.

This is a purely introductory paper since most data is still being analysed and few figures are adduced in support of the main arguments, which should be taken as provisional in nature. For the same reason no suggestions are made herein for action to improve the situation.

INTRODUCTION TO PROBLEMS OF LOAN REPAYMENT ON SETTLEMENT SCHEMES IN
KENYA

Historical Background

In 1961, just prior to Independence, Kenya embarked on an ambitious program of agricultural reform called the Million Acre Settlement Scheme. This scheme, which developed out of an earlier more modest program for the transfer of land ownership from European settlers to native Kenyans, provided for the purchase of lands previously reserved for and occupied by white settlers and their redistribution to landless wanainchi. Plots were allocated to individual farmers in line with the policy of individualising land tenure in Kenya which had been promulgated in the Swynnerton Plan in 1954. More recently in a second phase of the Million Acre Settlement program farms purchased from departing aliens are being resettled on a cooperative basis, and termed Shirika Settlements.

The Million Acre Settlement Scheme is set in a context of what has amounted to an agricultural revolution in Kenya, partly officially promoted, and partly due to individual initiatives. On the one hand, also following the Swynnerton Plan, there has been action to consolidate and register land titles in the areas now designated Trust Lands which in colonial times were the African Reserves (i.e. land reserved for the sole occupation of the various indigenous people of Kenya). On the other small groups of people have purchased farms from outgoing Europeans and established their own cooperative or company enterprises. In addition there has been the spontaneous development of Hareka Schemes where squatters have moved on to vacated farms or other unoccupied land and their right to remain has been formally recognised by Government.

There have also been initiated from time to time some special schemes such as Ol Kalou Salient, the Twea Rice scheme, and others which are now formally under the official umbrella of the Ministry of Lands and Settlement. However the focus of this study is phase I of the Million Acre Scheme and more particularly problems of loan repayment on settlements established under this scheme. It is not intended therefore to go into the broader aspects of these other developments and their legal, agricultural and social implications.

The major impetus for the Million Acre Scheme was political. Anyone who has read any literature on the colonial period in Kenya is aware of the conflict over land between the white, mainly British colonisers, and the indigenous African, and black populations. A large part of the best agricultural land, mostly in the Rift Valley,

was reserved exclusively for the occupation of whites and was thus termed the White Highlands, the African peoples being confined to so-called Reserves in which there was increasing pressure of population on the available land acreage. There were from time to time also various other measures which served to squeeze indigenous people from their homes in order to provide a suitable labour force for the invaders. Conflicts were not only confined to these spheres however, and the control exercised by the white colonisers over the indigenous people in the interest of the former was frequently brutal. The eventual eruption of Mau Mau only exacerbated the bedrock of earlier bitterness and made the hand over of political power to black Africans a matter to make the white farmers tremble for their future.

For many it was impossible to accept the reality of a black African controlled Government, some even left before Independence abandoning their farms, others progressively ran down their stock or took other measures to more gradually withdraw. As a result production dropped, unemployment increased as labour was laid off, the pressures from the dispossessed became more immediately one of potential violence, and it became rapidly apparent that urgent action must be taken to ensure the orderly transfer of ownership from the outgoing whites to the incoming indigenes. The Million Acre Scheme was the answer to these problems, and in view of the speed, not only in which it had to be planned and prepared but also implemented it has been astonishingly successful. On the other hand the same pressure to act quickly is also a probable major factor in the inadequacies in original planning which are still having their effects especially on loan repayment today.

The first phase of the Million Acre Scheme broadly comprises two types of settlement: High Density and Low Density schemes, though there are a number of exceptions including ranching schemes which are cooperatively managed and the Muhoroni Settlement Sugar Organisation. The High Density schemes, with an average Grade I acreage of 10 acres per farmer, were designed for the landless, and jobless, and the Low Density Schemes with an average Grade I acreage of 30 acres per farmer, were planned for those who were able to raise some money for the development of their plots and who were capable of demonstrating some farming ability. The Settlement Sugar Organisation, although having a special structure of its own, contains both High and Low Density settlements. In the main individuals allocated plots on these schemes have satisfied the qualifying criteria, although over time a few others with independent

resources have purchased plots from the original allottees, and such changes in ownership are continuing.

The Million Acre Scheme was financed from a number of sources both local and foreign, including grants from Britain and loans from Britain, West Germany and the IBRD. The financing of the Million Acre Scheme is not however central to our discussion here. Our concern is with the loans granted to individual farmers to purchase their plots and for certain development inputs. The new settlers were provided with 30 year loans at $6\frac{1}{2}\%$ interest to cover the value of the land, and a further 10 year loan also at $6\frac{1}{2}\%$ interest to pay for various development inputs such as cattle and fencing. Both loans were repayable in 6-monthly instalments, the first instalment falling due within 6 months of a settler arriving on a scheme. However later the President in 1967 declared a 2 year moratorium which required rescheduling the loans. A different system applied to the Settlement Sugar Organisation where initially farmers rented their plots for 5 years before being confirmed in occupancy, after which the payments originally made as rent were converted to loan repayments. The loans were granted by the Kenya Government and repayable through cooperative societies which were established on each settlement to deal with marketing of products and latterly with other joint or communal endeavours such as dips, farm supplies, tractor hire and so on. It was assumed that 50% of net income from produce sold through the cooperative after deductions for commission, dip fees and so on, would go towards loan repayment. The new settlers could also make payments directly to the Settlement Department, or if in employment arrange for deductions to be made from their salaries on a monthly basis. On the sugar schemes the Settlement Sugar Organization made deductions from receipts for cane sold. Slight modifications have been made from time to time in procedures for repayment, especially in transmission of loan repayments from the cooperatives to the Settlement Department headquarters, but no basic changes have been made.

The Problem

Whilst from many points of view the Million Acre Scheme has been extremely successful, especially when compared with efforts of a similar kind in other countries, a continuing major problem has been one of default on these loans. The overall rate of repayment for all schemes is about 50% at present, for the High Density Schemes only rather less

than this and some individual High Density Schemes have a rate of repayment as low as 18%. Over the years also since the schemes were first established nearly all farmers have fallen into arrears with their loan repayments to the extent that interest on arrears has in many cases now equalled loan instalments, and at the present rate of repayment the majority will never complete repayment of their loans. It was with this problem in mind that research was initiated to find the causes of this situation, and to make recommendations to improve the rate of repayment.

A subsidiary objective was to attempt to establish objective criteria for indicating, in case of future loans schemes, the type of farmer who represents the best loan risk.

Research Methods

Field Research has now been completed in three areas with contrasting farm systems: Muhoroni in the sugar belt; Turbo a major maize as well as milk producing area; and Dundori, where a combination of pyrethrum, potatoes and milk provide the basis of the farm economy.

Interviews and informal talks were firstly held with Settlement Department personnel, followed by interviews and discussions with officials of 27 cooperative primary societies and 1 cooperative union. At the same time pilot investigative interviews were carried out with about 35 selected farmers and data extracted from the files of a random sample of a further 56 farmers on the Muhoroni schemes. Following this two High Density settlements were randomly selected in the Dundori and Turbo areas and random samples of farmers on these two settlements were interviewed. Ninety farmers were included in the random samples of which 87 were actually seen.

Follow up observations in the form of farm diaries were maintained for 10 months on 50 farmers of the 87 originally interviewed in Dundori and Turbo, covering income and expenditure, farm management practices, and yields of cash crops and milk. General observations of problems within these settlements has also been continued over the year. Lastly these 50 farmers were reinterviewed as a check on the diary data, and also for purposes of comparison with the first interviews since inaccurate information appeared to have been given in both, especially in respect to farm expenditure, cultivation and matters concerning live-stock. Certain data on income and expenditure were additionally extracted from cooperative records.

It had been intended to include both further work at Muhoroni, and to have included one Low Density and one mainly Kalenjin settled High Density scheme in the more intensive field research, however the research budget was too small for this.

Discussions with Settlement Department personnel have provided basic information on problems of administration, as well as giving some historical as well as current insights into the roots of present difficulties, whilst those with Cooperative officials and members yielded data necessary to an assessment of their efficiency, and of their management and marketing problems. The interviews with farmers focused on their personal histories, farm management practices, income and expenditure, and both their initial and present problems. Subsequent observations have given both a broader view and greater depth of insight to data obtained from direct interview and have served sometimes to confirm, in others to give the lie to statements made in them.

Acknowledgement and thanks are due to the staff of the Settlement Department for their practical assistance which was much beyond what could reasonably be expected, and for the very frank way in which they responded to questions. Acknowledgement and thanks are also due to the farmers for their courteous reception of the researcher and their cooperation in what was for them a highly suspicious enterprise. It is to be hoped that the findings of this project may be of practical value to all concerned.

Findings

The original research proposal postulated a number of variables which it was considered might influence levels of loan repayment. They covered most feasible reasons for low rates of repayment between different schemes and between individual farmers on the same scheme. They concluded: physical characteristics of areas, nature of crops, tribal origin of settlers, administration and organisation, farm management and agricultural innovation, perception, attitudes and motivation, knowledge and skills, social institutions, social obligations, economic status, and leadership and communication.

All were found to have some bearing on loan repayment but are of varying importance. However before going on to consider each of these factors in more detail the main point must be made that the basic reason the majority of farmers are not repaying their loans is because they do not have enough money. The most crucial variable therefore is that of economic status and the remainder of the variables are

of importance chiefly in so far as they affect levels of income or patterns of expenditure.

On the other hand whilst it is true that most of those farmers in default cannot repay their loans, it is also a fact that there are some who could be repaying more but avoid doing so. Those farmers who fail to pay due to reluctance rather than lack of resources can be divided into two categories: those who use available funds to invest in other enterprises, and those who squander whatever money they get on drinking, moving about the country visiting and other social activities.

In addition it must also be stated that an unknown volume of loan instalments have never been credited, probably more in the early years but it is still happening. The reason for this is mainly administrative, poor record keeping, lack of supervision and lack of coordination between those involved in loan repayments being among the most common causes of the apparent disappearance of loan instalments.

Economic Status

The immediately obvious reason for poor rates of loan repayment as has been said is that farmers do not have enough money. They do not have enough money because their incomes are insufficient to meet necessary farm and domestic expenditure.

Contrary to earlier reports it would seem that most farmers are in fact achieving budgeted income (that is money income since no attempt has been made to calculate real income). Although completely accurate statistics on income were impossible to collect due to most farmers' reluctance to reveal all income from all sources it would appear that average farm income after loan deductions have been made by the cooperatives is about 1000/- a year in Turbo and 2000/- a year in Dundori High Density Schemes. The data collected has however to be fully analysed and some explanatory remarks are necessary on this point. For instance few farmers in Turbo are achieving more than 10/- a month loan repayment through the cooperative, whereas Dundori farmers pay at least double this amount. There is also a wide variation between the poorer and richest farmers and as far as loan repayment is concerned important differences between those with only farm earnings and those with subsidiary or even other primary sources of income. The average net income however does relate fairly closely to difference in rate of repayment on the two schemes for which more detailed information was

obtained i.e. 21% for the former and 62% for the latter.

Such incomes have to cover cultivation costs as well as other domestic expenses. This compares with budgeted annual incomes of 500/- to 800/- plus costs of cultivation running at about 450/- per year. However the budgeted net income was probably even in 1961 less than enough to meet the average family's basic needs, and given the present rate of inflation has become somewhat irrelevant as a measure of success. It was found during the survey period that the average family spends between 5/- and 10/- a week on consumer items such as soap and sugar (i.e. 240/- to 480/- a year). In addition the farmer needs to buy clothes, household utensils, and farm implements and will also be paying school fees and medical expenses. It may be noted that the cost of keeping even one child in a secondary school (the minimum recorded was 700/-) exceeds the original budgeted income by nearly one half.

The original budgets also probably underestimated costs of cultivation of cash crops and at the same time made no provision for costs of cultivation of subsistence crops. Again today costs of labour, fertilisers, and hire of machinery have risen steeply, especially in the last year, whilst prices of produce have not kept pace.

Since overall incomes are the major determinant of rate of loan repayment it may be expected that those schemes with higher income potential have better rates of repayment than those with a lower one, and individual farmers who have higher farm incomes will also generally be better loan repayers. Low Density Schemes should therefore have better rates of repayment than High Density Schemes, and High Density Schemes with a broader range and more remunerative cash crops should have better rates of repayment than those with a narrow range of potential cash earners with a smaller margin of profit. In the final report it is intended to go into this point in detail showing costs and returns to different crops and the nature of production problems facing farmers which may affect output and yields, and more particularly contrasting the situation in Turbo and Dundori. Here it is sufficient to note that the average rate of repayment from inception of the various schemes to Jan. 1973 for all Low Density Schemes is 65% as compared with that for all High Density Schemes of 46%. And the average rate for the same period for High Density Schemes in Turbo (an area which it is contended is of poorer potential) was 26% as compared with 55% for the Dundori High Density Schemes. The Low Density Schemes in the same areas may also be contrasted - 83% in Dundori and 40% in Turbo.

At individual farmer level, although farmers with bigger incomes are in general repaying at a better rate, the relationship is not straightforward. Other factors will be shown to modify it. Firstly it is not just the size of overall income which is important but the relationship of income to expenditure. In respect to the latter two relevant variables are family size and stage of growth (i.e. ages of children) as well as individual spending patterns, of which more will be said under the heading of perception, attitudes and motivation. Secondly as a result sometimes of luck, good management, or access to more capital at the beginning some farmers have built up over the years a small amount of arrears, whilst others show a downward spiral, so that present rate of repayment may not always be in line with the total arrears accumulated. In other words a farmer may today be repaying at a rate to cover present instalments but have an intractable volume of arrears, whilst another now repaying at a rate less than sufficient to cover loan instalments may have a small amount of arrears. Nevertheless it would appear that for most lack of money in the early days has not been succeeded by a better financial position in the present.

The picture is further complicated at individual farmer level by differential performance of higher overall income earners depending on source of income. Higher income farmers may be divided into a number of different categories whose loan repayment performance may be contrasted. Firstly there is the more efficient farmer whose income comes solely from his farm. Secondly the farmer whose income is augmented by some off-farm but on or near scheme business enterprise. Thirdly the farmer who gets a regular income from some nearby employment which allows him to live on the scheme. Fourthly those farmers who are absentee owners with jobs in town or elsewhere. This last category may again be subdivided into high and low wage earners.

Farmers falling into the first category are uniformly better loan repayers, sometimes leaving all income earned from produce sold through the cooperatives to go towards loan repayment, while they subsist on earnings from sales of other crops. Farmers falling into the second category are also almost invariably good loan repayers and frequently are also among the better farmer category as well. It would appear that the individual who can manage his farm well tends to branch out and use his managerial ability in other directions. They also appear to manage their money better, although this is less easy to substantiate. In the final report it is intended to analyse in greater depth and fully document these statements.

By contrast the farmers who are also wage earners but not absentees, were observed to more frequently be poor repayers. In the samples farmers falling into this category appeared to use such income for consumption only and since they also have a tendency to neglect their farms, necessarily rate of repayment is low as payments are made only from farm produce. The same is true of low wage earning absentee farmers who seem unable to cope with the cost of living in town and maintenance of the farm at the same time. In fact in many instances the farm hardly provides subsistence for the wife and children usually left there. In the case of high wage earning absentee owners more usually their rates of repayment are good whatever their standard of farming (an exception however must be made for the Muhoroni schemes which are so different in organisation that they will be dealt with in a separate section of this paper). Some absentee owners hardly bother to develop their plots while others utilise off-farm earnings for major improvements. In the sample these individuals were among those who had recently purchased plots from the original allottees and in course of the transaction paid off all loan arrears. It may also be said that whilst such individuals make major investments they do not always do so with regard to the returns they are likely to get and thus they are effectively subsidising their farms from their earned income.

It must also be stated at this point that for some categories, notably the last, the size of the sample surveyed was too small for generalisations to be made with any accuracy and these postulates need to be tested over a larger number of persons. The only farmer in the samples who had completed paying his loan falls firmly at the top of category 1, whilst the next best group of repayers, those with nil or under 600/- of arrears may be group as follows:

Fulltime High paid job 3, Fulltime good farmer 2, Farmer with extra source of income 1.

The position in respect to those with excessive arrears is more complicated other factors coming into play such as larger than average family commitments, poor location of plot, recent purchase of plot and neglect of cultivation for other activities.

As has been shown income is not low in any absolute terms but in the equation of income and expenditure the former is not sufficient to cover both what settlers conceive to be their basic needs and also the prescribed loan repayment, nor have many any prospect of being able to eradicate accumulated arrears from insufficient payments in the past. Even on the schemes with a better repayment record arrears are a problem for the majority and with the

present rate of inflation the situation is likely to worsen.

Economic status is dependent on other factors ... primarily that of farm profitability. Again this has been shown to be affected by a number of things, including location, land resources, management and innovativeness, extension services, accessibility of markets and the marketing organisation. On the expenditure side of the equation family structure, attitudes and motivation, and well as social obligations influence spending patterns. It is both true to state that farmers are making in general much less than they might do if optimal yields were realised and alternative crops exploited, and that their present standard of living is also sub-optimal.

As has also been noted however some loan instalments never reach their destination and if administration could be improved this by itself might result in a better rate of repayment.

Administration

Administration was originally thought to refer only to procedures for loan repayment, however in the course of fieldwork it was realised that it has broader implications and more widely ramifying effects. These include scheme administration in general and also administration of extension programmes, cooperatives and in fact the internal structure and relationships of the different sections and staff of the Settlement Department. It also covers the planning process of schemes, as well as farm budgets, physical layout of the settlements and various early policy decisions.

The administration of settlement schemes is in process of change. Initially each settlement had its own hierarchy of officers headed by an S.O., today S.O.s are in charge of groups of settlements and the objective is the contraction in numbers of administrative personnel in the field. Originally it was envisaged that once schemes became viable about 2 years or so after the initial phase of physical resettlement had been completed, responsibility for extension services would be handed over to the Ministries normally responsible for them. Although this is still a stated policy objective the actual handover appears to be being more and more delayed for a number of reasons, not least being the emergence of vested interests in maintaining the status quo. A natural tendency of any organisation is towards self-perpetuation if not aggrandisement to provide promotion outlets and so on, and the Settlement Department seems to be to some extent a victim of this tendency. Be that as it may uncertainties about the future and a

degree of current stagnation which seems to stem from vacillation over the ultimate position of the extension services, together with problems arising from dual authority over some extension staff and isolation from the mainstream of national agricultural extension programmes has resulted in loss of morale among many extension staff. This appears worst on the schemes most remote from Ministry headquarters. On the schemes surveyed it appeared that quality of administration including extension services was better for those schemes with a better loan repayment record although the intervention of other factors, as will also be discussed, does not make the relationship a clear one.

Administration has two main features - procedures and personnel - good procedures being to some extent a protection from poor personnel, but ultimately the quality of the latter is more crucial. In case of the settlement schemes the procedures for repayment are not stringent enough. Deductions for loan repayments are made essentially only from a portion of farm income; in Turbo schemes from milk sales and in Dundari schemes from milk and pyrethrum, whereas the original farm budgets included income in the former case from maize and in the latter from vegetables as well. In fact it would appear that a major portion of farm income for many farmers comes from produce sold privately. In Turbo, maize and beans and to a lesser extent millet and sunflower are important sources of income and more recently it has been possible also to sell sisal. In Dundori farmers sell potatoes, peas, maize and to a small extent cabbages. This year a number of farmers are also experimenting with sunflower. Furthermore it would appear (although data is not yet analysed) that additional major sums of money are obtained from sales of livestock, mainly cows in Turbo and cattle and sheep in Dundori. Little is done consistently to encourage farmers to make direct payments to the Settlement Officer from income earned in this way, the only initiative whilst fieldwork was in progress being the issue of threatening letters in respect of arrears which at best resulted in once-and-for-all payments of small lump sums.

Poor procedures in conjunction with unreliable personnel have also led to the 'disappearance' of some loan instalments deducted from income earned through the cooperatives. In the early days record keeping appears to have been almost non-existent and it is impossible to trace what happened to such money or even find out what was deducted. However this has now been radically improved and it is easier to locate at least the point at which such instalments vanish, though since

farmers are not issued with receipts for such deductions by the Cooperatives it is extremely difficult from them to check from their bills when a particular instalment has gone astray. This is particularly so since the amounts of the deductions tend to be regular: i.e. there may be four monthly instalments of 30/-, and receipts issued from headquarters frequently never reach the farmers.

This situation is not unknown to Settlement Department personnel at all levels, however little seems to be being done to ensure that monies deducted from farmers for loan repayment are in fact credited to them. This seems to arise from lack of coordination in the Department with the result that no one feels himself responsible unless an individual farmer makes a complaint and this can take a very considerable time to process. Headquarters Finance Department only record what they receive, whilst the cooperative section appear to resent their enforced participation in loan instalment collections as being outside their normal work. In fact it is difficult to understand what the cooperative wing in the field believes its work to be - the provision of services to the farmer does not at any rate seem to number among them, and given the inadequate control which is maintained in many instances on other managerial and financial functions of the cooperatives it is difficult to show that these are either.

To some extent present administrative problems appear to derive from the past. As has already been described the schemes were initiated by a predominantly white administration at a time when the interests of black and white in Kenya were diametrically opposed, and employment of many of the very farmers being bought out as S.Os. led to many abuses. These will be catalogued in the final report and their effects fully described. Here it may be noted that many farmers did not receive the development inputs they are now paying for, or received them in short measure, late, or at inflated prices.

The lack of confidence then existing between farmers and settlement staff has also to some extent been projected into the present, so that many farmers fear to approach settlement personnel with problems or grievances. In fact they are often very uncertain of their rights in particular situations due to the fact that they were never at any time advised fully about the loans. Most now remember at least only such statements as "you will pay from produce sold through the cooperatives", and for 10 years or 30 years. They received development inputs without knowing their entitlement and their bills with similar incomprehension. The general tenor of

settlement staff/settler relations is still to some extent overshadowed by the authoritarianism of colonial times so that settlers continue to be treated with something less than respect. An example of this was last year's road improvement program in the Turbo area. Farmers were given no advance warning of the arrival of teams to work on the roads and many had boundary fences torn up by bulldozers, or reinstallation of culverts resulted in rainwater being diverted to flood their fields.

The quality of administration also more indirectly influences levels of loan repayment via the operation of various extension programs and their effects on income levels. For instance poor control over cooperatives on the Turbo schemes is resulting in a contraction of services provided by the cooperatives which is assuming critical dimensions. In particular lack of acaricides for dips and of veterinary drugs is likely to lead to severe losses of cattle in the immediate future. Shortages of these essential supplies over the past year was constantly witnessed, many farmers hopefully dipping cattle when no acaricides had been added for some weeks. Poor dip management is everywhere also exacerbated by delays in reception of reports on dip samples from Kabete and in fact little attention is ever given to them when and if they finally arrive.

A similar lack of control is also a factor in the continuing crisis over non-repayment by the cooperatives of the MFR loans of 1967-1968 which is one of the factors preventing cooperatives from trading in maize today. The cooperatives borrowed money from the AFC for maize cultivation in these years and re-lent it to groups of 3 farmers. The farmers did not all or altogether pay off what was lent them, furthermore it is possible that neither the full amount lent by the AFC was passed on to the farmers, nor that receipts from all maize they delivered were used for paying off the debt. As it was some farmers who never received any loan contributed through their produce to paying it off, and others claim that they paid in maize but this has never been credited to their accounts. Since that time consignments of maize have been impounded by the AFC regardless which farmers it belonged to, and in spite of the fact that they maintained records of the individual farmers who still owed them money. Most cooperatives therefore avoid dealing in maize and the debt for want of a negotiated just way of settling it may forever remain unpaid.

Of slightly less importance is the quality of agricultural and veterinary extension programs. Extension programs are not so vital

to farm productivity on the settlement schemes since the farmers appear relatively sophisticated and progressive. They experiment readily with innovations without official prompting, as is evidenced by the switch to sunflower in the Turbo area this year. However agricultural and veterinary staff could assist more in selecting the most profitable enterprises for particular farms and in ensuring supplies of planting materials and providing advice on methods of cultivation. It was observed that farmers on the Dundori schemes, where rates of repayment are better, also had access to what appeared to be a better extension service than those on the Turbo schemes. In Dundori all farmers had seen demonstrations and field days, many more had participated more recently in agricultural training courses, and others had obtained seeds for new crops or improved strains of existing ones from agricultural staff. Nevertheless as will be demonstrated by case studies in the final report, there is much scope for improvement of extension programs even on the better administered schemes.

Another possible contributory administrative factor is the early decision not to provide for social welfare or economic facilities on the schemes. The farmers have thus as a harambee effort or by private or group enterprise built up schools, dispensaries, and trading centres with money which might otherwise have gone towards loan repayment. There are also some other gaps in the extension services, notably in respect of water supplies on High Density Schemes which if improved might assist in improving productivity.

To summarise, administrative factors affect rates of repayment directly in so far as poor procedures and staff result in loss of loan instalments and indirectly in so far as poor extension services contribute to less than optimum incomes. Lastly the administration can create a climate of confidence encouraging efforts to repay loans or alternatively may discourage such efforts where farmers interests are ignored.

Farm Management and Agricultural Innovation

Both the standard of farm management and the capacity to initiate and more importantly to sustain agricultural innovation are important factors affecting income levels and therefore capacity to repay the loans. When the new settlers first came on to the schemes they were forced to accept a number of agricultural innovations with farm management implications. They were introduced to these innovations

through short one-week courses at Farm Training Centres, and thereafter were followed up by extension staff seconded to the Settlement Department from the Agriculture and Veterinary Department. The ratio of staff to farmers was, and is, much higher than is normal in rural areas: on one of the schemes surveyed, for instance, with 500 settlers there are today 3 Technical Assistants (Agriculture), 3 Veterinary Scouts, and 1 Cooperative Assistant. It is therefore potentially possible to reach all farmers on an individual basis with some degree of regularity and consequently it is reasonable to expect a higher standard of husbandry than would be found in average non-settlement farm areas.

There is evidence that in the early days extension workers were in fact regularly visiting each farmer and advising him how to deal with any problems as well as on farming generally. As far as can be ascertained however nothing was ever done about more major problems such as waterlogging, and gradually such visits petered into nothingness until today only a select few have any contact with agricultural extension staff. The veterinary staff are more active, probably because they have the more definite task of treating sick animals. However even so some farmers complain they are not to be found when needed although they cover only very small locations. Probably as a result of familiarity, since many extension staff have been in the same place for many years, advice has become stale and the staff themselves apathetic. It is also suggested that the apparent stagnation in extension work may be due to an unvarying agricultural program, lacking focus or perspective, concentrating solely on increased acreages of all crops and leys, and the continuation of routines without reevaluation of objectives. Often today farmers are ahead of the Department with innovations, and a few seek veterinary care for their animals from private practitioners in nearby towns.

Many of the new settlers, especially those in the Dundori High Density schemes, had never been farmers before, though most had worked in varying capacities on European farms which may have provided useful models to follow. However farming experience does not apparently seem to have been of any advantage as will be further discussed in what follows. The innovations to which they were introduced were many. Firstly plots were fenced and farmers encouraged where possible to fence their individual fields. Secondly farmers acquired grade dairy cows which need to be dipped regularly. They were also taught to bucket-feed calves and to use AI and were prevented from owning bulls on the schemes (though this is now in abeyance in some places

following the amputation of the hand of a veterinary scout who forcibly castrated the bull of one settler), or in the first instance from bringing any local livestock onto their plots. Again theoretically the rule still applies but it has proved impossible to enforce in many places. Proper care of high-grade cows also means planting pastures, and fodder ceops, and buying supplementary foods and salt. Thirdly farmers were required to cultivate for cash some novel crops involving purchases of seeds and fertilisers, use of mechanical means of land preparation, and new methods of cultivation.

While farmers have continued to some extent with most of these innovations they are failing to achieve optimum production. The data has still to be fully analysed but farmers in Turbo for instance are estimated to get an average of 5 bags an acre of maize. Pyrethrum yields in Dundori for which also figures are available were very poor. As far as could be assessed reasons for this failure fall into three categories: lack of resources for purchase of necessary inputs, ignorance, and determined persistence in substandard cultivation techniques. This last although sometimes having some rational foundation is more often rationalised unwillingness to try something new. Ignorance was due largely to the inadequacy of the extension program.

For instance on the Turbo schemes, while farmers continue to plant hybrid maize by preference, they sometimes use their own seed instead of buying new seed and use insufficient fertiliser because of lack of money. For the same reason they skimp on land preparation, planting straight after first ploughing. On the other hand they are not aware of what are the most important procedures to follow to get maximum yields. They do not appreciate the degree to which planting their own seed may reduce yield (or eliminate it entirely) nor do they appreciate that it is better to plant early without fertiliser than late with it (according to research studies). As another example farmers in Dundori did not appreciate that poor pyrethrum yields were often due to low plant populations and that the application of fertiliser, frequent weeding and so on would not avail when only 2/3rd of a field was effectively planted. The farmer also often has to select from a number of alternative combinations of crops and livestock, or alternative uses for available financial resources, and the extension services were not seen to be of any assistance in making the most profitable decisions.

On the other hand many farmers obstinately persisted in planting maize and sunflower at the wrong spacings down the slope instead of

across the contour and justified this by saying that they got better yields this way, when in fact they had never tried, nor were they prepared to try, anything else.

In the case of grade cattle differential practices were noted between the Turbo and Dundori schemes. On the former farmers were anxious to dip their cattle weekly, but reluctant to use AI. On the latter schemes farmers were firm adherents of AI but irregular in dipping their cattle. Differences in dipping may possibly reflect only the fact that disease problems are more acute in the Western schemes, whilst AI more accessible and bulls an extreme rarity in Dundori in contrast to their more common presence on the Turbo schemes. In Dundori also farmers were observed to feed cows chopped maize, chopped potatoes, a type of weed, a few fodder beets or kales and even bran daily as a supplement, and all gave their livestock salt regularly, Maclic (a better grade of salt with mineral additives) by preference when available. In contrast on the Turbo schemes farmers give a little cut maize only when it is available, and cows are often without salt. It was difficult to compare other aspects of animal husbandry such as frequency and times of calving and so on, in view of the fact that the latter farmers have few AI records from which to check this information and their memories proved unreliable.

Whilst most innovations were enforced it has been necessary for farmers to adopt other changes voluntarily in more recent times. In common with other studies it was found that those innovations are most rapidly accepted which require least modification of existing practices and which promise most rewards with least inputs of money and labour. For instance sunflowers have been taken up this year on a large scale as a cash crop, but standard of cultivation is universally very poor. No fertilisers were used and spacings were much bigger than recommended. The extension staff in Turbo made no effort however to stimulate this innovation and seeds could only be obtained from some private entrepreneurs. In Dundori by contrast seeds and advice were obtainable if farmers went to the Settlement Office. A few farmers are also trying out other things to make more money, such as vegetables, pigs, spices and poultry. Often such undertakings are directly discouraged by extension staff particularly in case of livestock.

Current theories of innovation usually utilise a scale of innovativeness related to adoption of a specified range of new ideas over a certain time scale. All imply directed change of ideas coming from outside the society and the innovator being the person

who passively accepts these introductions. They neglect the real innovator, the individual who culls from among his experiences to synthesize something new for himself. Several farmers on the settlement schemes are true innovators in this sense although the innovator was not always the best loan repayer and sometimes such innovations do not represent the most profitable choice for a farmer.

In planning their farms many farmers do not appear to utilise their resources as well as they could. For instance it can be calculated theoretically that if a farmer concentrates his resources on a smaller acreage and thereby maximises yields, he will get not only a higher return per acre but a larger income overall than if he tries to spread what he has over a much bigger area. It is quite common for a bag of maize seed suitable for planting 1 acre to be used for $1\frac{1}{2}$ or more and similarly fertiliser may be stretched beyond its usefulness. Again the extension services because of their stress on expanding acreage rather than intensifying farming on existing acreage has no advice to offer farmers, yet already some land shows signs of exhaustion and the need not only for more pastureland but also to rest some crop land becomes more acute.

There are other problems of farm management which need also to be mentioned, though they refer to only a minority of farmers. A major problem, frequently referred to by settlement staff, and sometimes by settlers themselves, is the absentee owner. At Muhoroni (which is to be discussed in a separate section) estimations of the number who are absent range from 25 to over 50 per cent of plottolders and they are termed jocosely 'telephone Farmers' from their habit of telling settlement staff over the phone what to do next on their land. In the sample surveyed in Turbo absentee owners amounted to 20% of the sample. At Dundori the absentee is nearly always someone in high office or otherwise lowly personnel of the Settlement Department itself. In the scheme surveyed there were only 5 out of 50 who were absent and one who was living in Nakuru and who had more recently acquired the plot was putting much time and money into the development of it.

The main problem of absentees is that decisions have to await their coming, or their instructions or their money. Often also they may, unlike the Gentleman Farmer from Nakuru, take out rather more than they put in to their farms. Again the manager, whether employee or wife, often lacks much incentive to put energy and effort into the work. The employee is the worst of the two alternatives, but the wife

jealous of female company kept in town, may equally drag her feet, although she is unlikely to go to the extent of slaughtering cattle and saying they died which sometimes happens with labourers.

On the other hand with the committed and conscientious plot holder the fact that he has a regular income from an outside source can be an asset in developing his farm, and the most prosperous farmers and often those who farm most profitably are those who supplement farm income locally by trading or some other business. Some people have an innate ability to be better managers than others. This is not a measurable trait, but the person who can initiate and manage another enterprise is usually the better farm manager too.

While research data has still to be fully analysed it would appear that there is scope for greatly increased incomes if farmers improve their standard of husbandry, and that the Settlement Department is not utilising its comparative manpower advantage in its extension programs.

There are however other factors which affect the differential profit potential of different schemes and of different farmers on the same scheme. These include environment and farm system.

Environment and Farm System

Environment does not directly affect rates of loan repayment but operates indirectly at two levels by creating variable conditions for agriculture between settlement areas and between farms on the same settlement. It sets limits to what can profitably be grown over what period of time, subject to what pests and diseases. It both determines the limits of yields within a given technology and provides for natural fluctuations in yields. It may also influence the health of farmers and affect their working capacity.

The Europeans who were farming in the Highlands did not cultivate even a major part of their land, consequently when the settlements were first established farmers were allocated plots of very variable quality and a few were not really cultivable at all. Although land was graded in accordance with certain characteristics such as afforestation and gradient and farmers compensated for poor land by getting a larger acreage, this has not entirely solved the problem. A bigger acreage of poor land does not produce per unit the same returns as good land, yet costs of inputs are the same.

More specifically in relation to the two schemes surveyed, it would seem that farmers in Dundori have a number of natural advantages, furthermore some individual farmers were much more advantageously placed than others. This has yet to be correlated with the factor of rate of loan repayment, but superficial observation would tend to confirm that the possession of such natural advantages is reflected in the level of loan repayment.

A few examples may be cited here. In Dundori a wider range of crops may be grown and good natural pastures of Kikuyu grass establish themselves once the land has been ploughed. The area is more isolated from traditional breeding grounds of ECF and other tick borne diseases and it is possible also that the altitude discourages the spread of ticks. Certainly even without dipping animals suffered much less from disease. The area also has access to bigger market centres which make production of some crops viable. In addition to the crops already mentioned farmers were found growing fruit of different types, and the prices they obtain for almost every item of produce was higher than in Turbo.

Within the schemes plots are very variable in their characteristics, and this is the case in both areas. Farmers were seen whose plots were solely a steep hillside on which it was difficult to get a foothold. Others had stony or marshy plots, one having difficulty in finding an unwaterlogged site even for his house. On the other hand some have very good soils with a good water supply on their plots. Some farmers necessarily were allocated plots of well established pasture land, or land which had been cultivated before, which gave them an initial advantage over those who were given plots which were under forest. However this position has tended to reverse itself once the initial problems of settlement were overcome, since land under forest not only yielded income from the sale of timber, but also has temporarily better soils as well.

It was found on the basis of statistical records that there is a demonstrable relationship between the nature of crops which were planned to be grown and the level of loan repayment. 83% of Low Density Maize Schemes have a rate of repayment under 60% whereas 69% of Low Density Pyrethrum Schemes have a rate of repayment over 60%. 58% of High Density Maize Schemes have a rate of repayment under 40% whereas 89% of High Density Pyrethrum Schemes have a rate of repayment over 40%. As can be seen those schemes with maize as the only budgeted cash crop do universally more badly than those which combine pyrethrum with other crops. However the realities behind the surface statistics are more complicated.

Firstly whereas pyrethrum is marketed through the cooperatives maize is not, so that income from pyrethrum is liable for loan deductions but not that from maize. Secondly, as has been mentioned above it is not only the ability to cultivate a particular crop, but access to markets which may make production a viable proposition. On the Dundori schemes the marketing of potatoes and cabbages as well as peas for instance is well organised: the buyers come round to collect from the farms. In ^murbo the farmer who grows any of these crops will have to take it to market himself, and some types of vegetables are not readily sellable in the local market.

Nevertheless maize is a much less profitable crop to grow than pyrethrum. As an annual crop it has higher costs of inputs, especially land preparation and planting, and is more vulnerable to weather conditions as will be further demonstrated in the final report.

Tribal Origin of Settlers

It was originally considered that the tribe of origin of a settler might have some relevance to rate of loan repayment due to differences in traditional husbandry practices, or other ways of doing things and attitudes. It has proved a most difficult factor to evaluate since in the sample it is combined with differences in ecological area, and it is not possible to extract tribal origin with any degree of certainty from Departmental records for any other schemes. However on the basis of information collected in the survey samples it would appear that in general Kikuyu are better husbandmen, and Kalenjin possibly better ranchers. The only farmer who completed paying his development loan in the specified time in the Turbo sample is a Kikuyu in a mainly Luhya scheme and the only farmer in the whole of both samples who has completely paid off his loan is also a Kikuyu in the Dundori schemes. Whilst the former had certain additional advantages in that he had some initial capital to start with, the latter did not, on the other hand the latter is in the more advantageous ecological zone. Of the Kalenjin interviewed, they are so few as to be statistically insignificant, however all concentrated on large herds of local cattle to the exclusion of other concerns e.g. milking quality or crop production.

Knowledge and Skills

Education so far as can be seen is totally unrelated to level of loan repayment. The only farmer to have completed his loan repayment is completely illiterate and others with a better records of repayment differ in no marked way in educational background from others who are in greater degree of default.

Experience also is too varied to be adequately measurable and the individuals with specialist skills too few to make generalisations. It would appear however that those whose jobs were far removed from farming, such as clerks and cooks, are poorer farmers and thus have lower incomes, than those who were dairymen or in some other semi-skilled occupation in farming. Conversely those with non-agricultural specialised skills, such as mechanics, butchers and carpenters seem to seek to continue in these occupations on the settlements. They thus augment farm income from other enterprises and usually fall in the above average loan repaying category.

Social Obligations

It was stated at the beginning that size of income per se was not the only factor of importance in economic status but the relationship of income to expenditure. Social obligations determine to a great extent the way in which income is used, and the most important feature of social obligations on settlement schemes is that nearly all farmers have large young families. Most entered the schemes at a stage in life when family commitments are highest, as no plot was allocated to an unmarried person without dependents, and naturally the first and major obligation of all farmers is the maintenance and care of their families.

The settlement scheme family has ^{on} average about 10 members. Most Baluhya families are nuclear families only a few having married sons on the plot, although a larger number have adult unmarried sons living in their houses in the same compound as the plot owner. By contrast the typical Kikuyu farm family is of parents and married sons and daughters, or several married brothers and their mother. This has

some significance in land use as each married person has to be allotted his own subsistence plot, and also for income and expenditure since each house usually operates as an independent economic unit. Such adult married dependents nearly all get their own income even if only from casual labour. Nonetheless the homestead head may take responsibility for the purchase of some items for all and frequently there may be more than one house dependent on him, such as old mother, or sister and her children. There were also a few farm families with women farm owners. They were all Kikuyu and mostly have adult sons who are married living with them. Sometimes farmers complained that adult unmarried sons expect to be fed but contribute nothing to the farm. However once married a son becomes responsible for feeding himself and his wife. Nevertheless his physical presence still constitutes a burden on farm production as he is using land for subsistence or even sometimes for growing a cash crop. The reason sons do not like working for their fathers is because they get no payment, thus they prefer to get employment as casual labour on other people's farms, and such unmarried adults, or sometimes married but landless couples are a pool of hired labour on the settlement.

While on-scheme family do not constitute the only relatives a farmer may have obligations towards, few farmers appear to make major contributions to relatives off the scheme, even when these are other wives and children. More often they were found instead to be in receipt of financial assistance especially from affines (wives brothers being prominent sources of aid) and from adult children

in jobs elsewhere. Here the family whose children are grown up is often at a considerable advantage over those whose children are still in school or babies. Mostly income flowing from a scheme is in the form of farm produce or perhaps funeral contributions and does not represent large sums of money.

As has been said help is most often sought from affines. This is because marriage is a contractual relationship involving payment of dowry from bridegroom (or his father) to the bride's male relatives, usually also her father. For both Baluhya and Kikuyu dowry is not paid all at one time but lays the basis for continuing flows^{of} cash or other help over a period of time. Theoretically one hardly ever finishes paying dowry, the marriage therefore constitutes the beginning of obligations to one's affines. Although dowry is not paid all at once the first instalment may be considerable and in addition there may be other expenses incurred for entertaining guests or equipping the young couple in their new home. In one recorded instance 5 cattle were sold or changed hands at the time of the wedding, in addition to money from other sources.

Social obligations are not however solely a matter of to whom you have obligations but also of the extent of such obligations and the manner in which they are met. This is dependent on the one hand on social norms and on the other individual perceptions, attitudes and motivation. Necessarily the limits of one's income set the manner in which the family is provided for but there are certain basic needs which have to be satisfied and different individuals may have widely differing ideas as to what constitutes satisfaction.

The basic needs of any family are for food, clothing and shelter. Settlement farmers also accord firstly education and secondly health care high priority. Loan repayments as a means of providing security of tenure of the land for the family are generally given a low priority. However some of the Kikuyu farmers were more prepared to put income towards loan instalments at a sacrifice of more substantially satisfying other needs.

So far as the first need is concerned the staple foods are in the main provided from the farm, although Kikuyu in Dundori were purchasing beans and maize occasionally as neither grows well in the area. However there are many consumption items which need to be purchased. Post Independence the aspirations, at least of these new settlers, have risen. Independence was for most of them the occasion to rise from their former position at the bottom of the social heap, and they expect to live life at a higher economic level.

It is perhaps an important measure of the success of the settlement schemes that they are in fact doing so, and that the acquisition of a plot has been for most the opportunity for advancement. At many rate this has had the effect that certain foods, hitherto unfamiliar items in the diet, are more generally consumed. Tea and sugar are two primary items of novel importance, but many farmers were recorded as purchasing a much wider range of consumerables, including coffee, Milo, and cocoa (for the sick and nursing mothers) proprietary medicines, meat by Kikuyu who eat it at least once a fortnight, baby foods, cake flour, fat, Omo as well as washing and bathing soaps, occasionally bread, curry powder, and kerosine. The range of items regularly purchased is attested by the stock carried at shops in the trading centres on the schemes. And those in Dundori have more varied goods than those in the Turbo area, especially such things as dried foods like rice and beans, corned beef and margarine, and clothes.

Clothes purchased were for most of a minimal nature. School-children often make do with only their one uniform in a year, dresses are replaced only when they wear out and some small children on the Turbo schemes habitually wear rags. Only when a measure of affluence is reached or for the young and unmarried with their own source of income, are clothes purchased for pleasure of adornment rather than merely for covering. The same may be said of houses. In the main Baluhya and Kikuyu do not seem to set much store by good housing. Whilst there were certain practical difficulties in the way of building a better house even within these limitations little initiative is taken by many to maintain dwellings in even a modest state of repair, and few have attempted a semi-permanent home. On the other hand many Kikuyu women in Dundori are members of Maendeleo groups who contribute together to a fund so that each may get a lump sum in turn for the purchase of mbati sheets for a house.

Education has today ^{become} / for most the primary obligation, without regard to quality or eventual utility. During course of research fees for standard 1 - 4 (primary school) were abolished but this does not appear to have benefitted those in the Baluhya group very much as other school contributions have been increased. The building fund is the major item which is payable annually and there are other items for desks, development and so on. In Dundori a set amount is paid for particular projects at irregular intervals there are no annual cesses. It is however on reaching secondary school that the burden of fees falls most heavily and some farmers make every sacrifice, even selling livestock, to keep a child in secondary school. With present fees running up to 1000/- a year plus other expenses this represents more than

double budgeted net income on the minimum income schemes. It is also in the payment of secondary school fees that assistance from relatives is most commonly activated.

Health care represents another but irregular obligation. Sickness appeared much more common among inhabitants on the Turbo schemes with a number of deaths being ^{recorded} over the survey period including one of sample. In case of minor illness either the dispensary is attended or proprietary medicines are purchased, such as aspro ^{malariquin} and cofta. If however such treatments do not result in a cure then private doctors are consulted or the hospital is resorted to, which both involve costs of transport and in the former case fees as well. In cases of severe and/or continuous sickness the drain on financial resources can be considerable, and in the terminal stage may even result in the family falling into debt. One farmer in the sample in an attempt to find a cure for his son sold off all his livestock and let his farm run down to such extent that he was forced to borrow maize from neighbours. It appeared that greater efforts and resources were put into the care of adults than small children but that children were more frequently ill. Women have the next biggest rate of sickness, often related to child-bearing. The latter may also involve particular expenses, such as the purchase of special foods and items for ^{the} new baby often amounting to as much as 100/-.

As has been said social obligations of the type outlined above determine to a great extent how money is used and thus what proportion of income may be set aside for loan repayment. It may be said and this will be fully documented in the final report, that income is not sufficient to cover satisfactorily these basic needs and few farmers put any money towards loan repayments other than that forcibly deducted by the cooperatives. Even when pressured as they were by threatening letters, the amounts most frequently elicited were very small 40/- or 50/-, perhaps 100/-. In fact in some cases of hardship farmers even sell milk privately so that no income is available for loan deductions. This appeared to happen exclusively on the Turbo schemes with some farmers sending only token amounts of milk to cover dip and veterinary fees. In Dundori when they were hard up they would merely instruct the cooperative secretary/manager not to deduct anything that month. However in Dundori a few farmers were well enough off to leave all income earned from the cooperatives to loan repayment. On comparison with Baluhya families in similar situations it appears that they more frequently put additional income to loan repayment instead of buying more of their other needs. However the data has yet to be fully analysed.

Perception, Attitude and Motivation

It was suggested by some officials of the Settlement Department that the reason some farmers were not repaying their loans was because they had been confused by some politicians who had promised they should get the land free of charge, and who up to now had not retracted their statements. It has already been shown that in case of most farmers the primary reason for the poor rate of loan repayments is low income. Nevertheless understanding and ideas about their loans can be important in persuading those who do have more money to use it for paying them off.

Few farmers were found who understood their loan billings. Furthermore even the more erudite had not calculated what their monthly instalment should be (whereas loan billings are made 6-monthly income is received monthly). Also although most farmers wanted to know how much they still owed, the amount outstanding is not shown on the bills. One enterprising man in Ol Kalou was found to be charging 40/- for working out for each farmer the total amount he owed. Receipts from the Settlement Department Headquarters are also not received systematically and since farmers are not given intermediate receipts for loan deductions by the Cooperatives, and it can take 12 months before the amount deducted actually appears as a credit on a loan billing, it is often difficult to be certain what amounts are actually credited. This is made even more difficult since deductions are in round sums of similar amounts.

As a result most farmers believe many instalments deducted from their income get misused by the cooperatives. In particular instances farmers are uncertain if they have a genuine grievance, or where they do take the matter up may not get a sympathetic hearing or prompt action. It may also be noted here that field staff of the settlement Department are no better off in getting a quick or even any reply in respect to personal matters they may raise with Headquarters.

When the schemes were first established farmers were kept in ignorance of their actual entitlement in goods and services against their development loans. They took what they were given and complaints were not entertained by settlement staff. Since then other ambiguities about their rights have crept in. No decision was taken until very recently on the issue of titles when loan repayments were completed, and although with great ceremony a few titles have been publicly handed over it now appears this can only be done on some schemes. The others it is said have still to be aerially surveyed, but there is no information on this and the farmer finds out only when a title

is not forthcoming after he has tied what money he has in the land. Without such a title he cannot use his land as a security for a further loan.

Inevitably this creates a climate of mistrust and uncertainty in which farmers may opt to put more resources and effort into other income earning endeavours, according loan repayments second place. Whilst one farmer in the Dundori sample completed payment of his loan during the survey period, 3 others chose instead to invest in vehicles for business purposes.

The attitude of most farmers towards loan repayment is rather one of resignation. They realise they have to continue paying, but arrears amount to so much, by comparison with earnings, that they feel a sense of hopelessness about ever completing repayment, especially as arrears increase. In this connection it is both easy and common for farmers to confuse arrears with the total still owed, which is not however shown on the billings. Loan repayments are a painful necessity and in times of shortage are sometimes actively avoided, by for instance selling milk privately instead of through the cooperative. And very few farmers make any effort to make cash payments to the Settlement Office from income earned from other crops or sources.

The attitude of farmers is still further evidenced by their stated reluctance to have further loans should they be given in the same way as they have got their present ones. Nearly all farmers expressed a desire for more loans, those in the Turbo area appearing to want loans of the GMR type to finance cultivation as few can afford the necessary inputs, especially of fertiliser, and those in Dundori interested in more permanent improvements and projects concerning livestock. They were however specific in their preferences as to how loans should be given in order to avoid the most obvious abuses and problems they have already experienced. Their experience of loans, not only of the SFT but also MFR and GMR have given them a more sophisticated perspective of loans schemes in general. Certainly they are able to discuss the pros and cons of different procedures reasonably, and they are somewhat wary of further indebtedness unless it is for something they are fairly certain to be able to repay immediately.

Lastly it must be pointed out that for the older farmers they are likely to die before they complete repayment even within the 30 years scheduled and there is thus no pressing reason to make undue effort now. They are after all enjoying occupancy of the land for the present, they have already had whatever inputs that may have been forthcoming, and they are in no immediate danger of eviction. There was some disturbance when threatening letters were sent recently but then since paying off arrears is so impossible beyond their resources and all their neighbours are more or less in the same position, all they can do is sit tight, after perhaps making some

propitiatory gesture such as paying 50/-.

The only effective motivation is a positive one, that of gaining a title to ones land. The alternative negative motivation, fear of eviction, is so palpably out of the question for the majority that it is not seriously thought about by anyone. A few of the worst defaulters could feasibly be sent away but these tend to eventually sell their plots anyway. The more average settler simply assumes a permanency of occupation.

This paper has so far concentrated on only two survey areas. Whilst the Settlement Sugar Organisation has from time to time been referred to it was not possible to make direct comparison with the other two areas since organisation of the sugar schemes is different in many essentials. However it is necessary to make some introduction to the problems being experienced at Muhoroni, which will also be more fully explored in the final report

Muhoroni Settlement Sugar Organisation

The sugar schemes in the Muhoroni complex were established over a period of years from 1965 to 1969. Most of the schemes are Low Density in that they required a deposit of 1000/- which the settler received back in the form of farm inputs and subsistence. There was also no requirement that a plotholder be landless or jobless. Two of the schemes - Oduwo and Songhor - are however High Density with no condition of entry. All of the schemes with the exception of Songhor have an economy based on sugar as the main cash crop, with the further exception of certain special plots where cattle were budgeted for. In the case of Songhor all of the settlers have been left to decide what to cultivate for themselves and many have in fact chosen sugar. On the Sugar schemes proper each settler has 4 plots, 3 for sugar and 1 for subsistence. These plots vary in size somewhat but on average each farmer has 3 x 2½ acre plot for sugar and 1 x 2½ acre plot for subsistence.

The subsistence plots are situated usually at some distance from the sugar plots which are grouped in blocks with those of neighbouring farmers and the phasing of their cultivation theoretically carried out in conjunction with that of others in the same block. It was originally planned to plant each plot at specified intervals to ensure phased production. The procedure for planting sugar is as follows: the land is prepared, and planted with prepared seedcane, it is then weeded and fertiliser added. If necessary it is gapped. It must be weeded a further two or three times and will be ready for harvesting in 20 - 24 months. It is then cut, loaded on vehicles and taken to the factory. Where weed growth is especially heavy herbicides are used, and it

has recently become a practice before harvesting to fire the crop on the field to reduce trash and make cutting easier.

Cane establishment requires the following procedures to be carried out: clearing, ripping of old cane (where fields have already been under sugar), 1st plough, 2nd plough, 1st and 2nd harrowing, ditching, shaping and furrowing. After the first crop comes the 1st ratoon which requires only weeding and fertilising, and then the second ratoon, after which the cane is uprooted. After the second ratoon yields usually drop beyond the point at which it is economic to maintain. Expected yields are: plant crop 45 tons per acre, 1st ratoon 35 tons and 2nd ratoon 20 tons.

The schemes have been beset by a number of difficulties some from the outset. Firstly the construction of the factory was not started until after cane was established and as a result early crops remained unharvested for as long as 40 months resulting in loss of yield and loss of income. The accounts department were thus unable to make full deductions from farmers for all that they owed, including cultivation procedures, annual levy of 750/- and loan deductions. In some cases these deductions have never been brought up to date, and in some their appeared a degree of arbitrariness about the exact amount deducted. Mainly in view of the fact that the annual levy is a large amount, those earning less could get higher net incomes since proportionate deductions were not made and the whole of the annual levy omitted when income after deductions for cultivation was less than the amount of the levy. Loan deductions are only made after all other expenses have been deducted. The farmers had to wait in many instances nearly 4 years for their first income, and though this was sometimes not very small in others it amounted to a couple of hundred shillings, and with the application of more stringent deduction procedures it has generally been getting less in recent years. Naturally many have lost interest and hold the view that they are merely working as unpaid labour to produce sugar for the benefit of government. More and more are as a result leaving procedures which they should carry out themselves, such as weeding, to be forcibly undertaken by the SSO, at a greater expense and therefore at a further reduction of any profit they might make. Standards of cultivation thus appear at present to be at a very low ebb.

As has already been said the main reason for poor rates of loan repayment in all areas is low income, and there are theoretically three possible reasons for low income: yields are below optimum, costs of production are too high or the price to the producer is too low in relation to the first two.

At Muhoroni yields are in fact often much lower than could be realised and frequently income does not cover costs of production. Costs of cultivation are also extremely high and it is suggested more than necessary. Lastly rising costs of production have not been adequately reflected in the price paid for cane. In 1973 the Executive Controller calculated that even at optimal yields the farmer would operate at a loss, any margin of profit being absorbed by the annual levy and loan repayment.

Out of the 56 farmers for whom information on yields was obtained 17 were achieving optimum yields on their plant crop out of 52 observations made i.e. ^{Poor yields are a} 1/3 result of poor husbandry. Specifically it was noted that gapping is not always well done, planting is also not properly carried out, fertilisers are not always used, weeding is delayed and badly done, and harvesting is frequently delayed. In fact it was not clear what was the optimum time for harvesting since neighbouring Chemelil carried it out successfully much earlier after planting and at shorter intervals thereafter. A further problem since burning of cane before harvesting was instituted is the number of fields which are accidentally burnt before they are mature.

Many farmers are absentees, the precise proportion being difficult to determine, but probably between 25 and 50 per cent. They leave others to manage their farms who are not often responsible persons. Such managers try to put as little effort as possible into the farms, often delaying weeding to the point that enforced weeding has to be undertaken by the SSO and then offering themselves as paid labour to do it (thus being effectively paid twice for the same work). They may also sell fertilisers instead of using them although the farmer has already paid for them, or skimp on their use. Whilst some resident farmers may also show the same shortcomings managers are more prone to neglect field operations. Where labour is employed to do weeding they more usually do a patchy job weeding in the rows but not between the plants. Although theoretically such work is supervised not only by the cooperative employees but also by SSO staff fields were seen where little real attempt had been made to uproot weeds yet they had been passed as approved. As far as harvesting is concerned this is the entire responsibility of the SSO. Great delays have been experienced in harvesting, so that a few farmers are suspected to have secretly fired their fields in order to get prompt attention (fired cane has to be harvested within 24 hours if loss of sugar content is to be avoided). Many fields are being totally abandoned in fact, partly due to the new regulation that work can only be carried out where deductions for enforced procedures have been carried out in advance and where the farmer himself has not bothered further with his sugar. These abandoned fields have however already cost the SSO money for cane ^{establishment} which is deducted in arrears.

Another reason for allowing fields of cane to over-mature is the fact that transport is not available to harvest it. It is unfortunate that the SSO did not equip itself with adequate vehicles and tractors since sugar is a crop which requires most procedures to be done with heavy machinery. In August 1973 on two of the schemes no sugar was being harvested as there was a dispute with the transporters over transport costs. Although it was then thought that a decision to allow the new Cooperative Union to have vehicles was in the pipeline, by the time these could have actually been in service many months would have been lost and much sugar spoilt through no fault of the farmer, but it is he who will be penalised. More recently a newspaper carried an article reporting that the request of the Cooperatives Union for a loan for these vehicles had been turned down.

While these various factors are responsible for lower yields than could be realised, costs of cultivation are very high and even the achievement of optimum yields at present prices are not sufficient to realise more than a very small profit (before annual levy and loan repayments have been taken into account). The Settlement Sugar Organisation employs a contractor for cane establishment and there appears to be very poor control over the machines used. Many are often seen lying idle or making unnecessary journeys which probably puts up costs for the contractor and inevitably also increases the charges, which must of course include his profit margin. In 1973 it cost 3300/- to establish 2½ acres of cane using this contractor, whereas individual farmers reported costs of approximately 600/- an acre when they did it on their subsistence plots on their own. As has already been indicated a number of other procedures are needlessly expensive such as weeding, and the application of herbicides, and in August 1973 the cost of transporting the cane from the field alone was almost 25% of the gross price of cane per ton. It has already been remarked that if the SSO had owned its own vehicles this would be likely at least to make some saving in such costs.

Since the information for this paper was obtained the price of sugar has been increased. However costs of production have again gone up. Whereas calculations were made at 1973 level it is suggested therefore that no real improvement has been achieved by this increase.

Another problem being experienced at Muhoroni is that none of the field staff have any special qualification in sugar cultivation or estate management. Only two have in fact any agricultural training at all, yet they are responsible for the supervision of and sometimes the actual

cultivation of some 12,000 acres of sugar. Not only has this a probable deleterious effect on standard of cultivation of sugar but the farmer has no one to advise him on the more profitable management of his subsistence plot. Where the margin of profit on the sugar plots is likely to remain very small it is essential that farmers make the most from their subsistence plots and both Kisumu and Kericho are markets near enough to sell food produce, especially if the cooperatives could be involved in marketing.

Conclusion

An attempt has been made to show the manner in which different variable factors affect rates of repayment and also how these factors are interdependent. The data is still in process of analysis so it has not been possible to support many statements with figures. However in the final report the major variables will be dealt with in separate papers and fully documented. As has been indicated the major factor is that of economic status. The farmers who are in default are not getting enough money to repay their loans. The main reason for this is poor farm incomes. Few farmers who are not in arrears are in fact solely dependent on income from their farms. There is however much scope for improvement of standards of cultivation and thus of increasing profits from farming. This can best be brought about through a radical reconstructing of the extension programmes of the Settlement Department and of some services being carried out by the Department which are now the responsibility of the cooperatives, such as dip management. A similar administrative improvement could also increase the rate of loan repayment to some extent by ensuring that all loan instalments are credited.