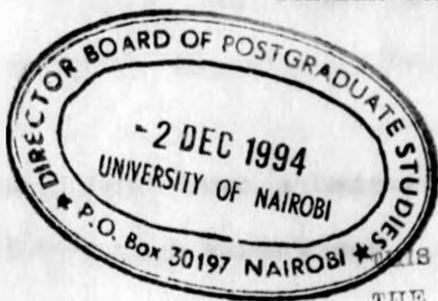


THE EFFECTS OF OUTGROWER AGRICULTURE ON THE SOCIO-ECONOMIC DEVELOPMENT OF A SMALLHOLDER COMMUNITY; THE CASE OF NZOIA SUGAR COMPANY //

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A thesis submitted to the Department of Sociology, University of Nairobi in partial fulfilment of the requirement for the Degree of Masters of Arts in Sociology.

1992



DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

This thesis is dedicated to my son Ronny and daughter Ivy my parents Nelson and Jeridah Ndombi.

To my little Ronny and Ivy, *never despair in life.* Always strive hard to achieve the height of academic excellence.

ABSTRACT

This study is an investigation of the impact of sugarcane contract farming on the socio-economic development of the rural community. This is one area that has been studied considerably, but up to now the exact contribution made by sugarcane contract farming, to the general welfare of the producers has not been established.

An understanding of the effect of contract farming on rural communities is paramount, if these communities are to benefit absolutely from this venture, and if they have to improve their living standard and at the same time contribute effectively to rural development. This study tried to shed some light on this subject by focusing on sugarcane contract farming, in the framework of the operational policies of agribusiness corporations in agriculture vis-a-vis the agricultural and rural development policies, objectives and strategies in Kenya.

Major policies priorities and objectives guiding the operations of agribusiness corporations in the field of agriculture in the Third World were historically traced and examined. Kenya governments policies, objectives and strategies in liason with multinational corporations in the field of agriculture and rural development were partially examined. Contract farming was then analysed with reference to these policies and objectives. Data used in the empirical analysis

were obtained from a survey carried out among the sugarcane contract farmers of the Nzoia sugar company.

The sample survey method was applied in the process of data collection. Under this method, both the questionnaire survey and the interview survey were used to afford complementarity. The sampling frame was obtained from a list of outgrower contract farmer of the Nzoia Sugar Company. The sample was obtained using stratified sampling method. Systematic sampling was applied in drawing respondents from each stratum. A total of two hundred respondents were drawn to make the sample for this study. In the process of collecting data questionnaires were administered to 193 respondents. Five respondents were not traced, while two questionnaires were spoilt. Under the interview survey method, twenty respondents were selected and interviewed in more detail. The raw data collected from the field was coded and fed in the computer. The Computer package SPSS (the Statistical Package of Social Sciences) program was utilised for the purpose of data analysis. Two statistical methods namely, descriptive and inferential statistics were used in analysing and presenting the findings. The main descriptive tools used include, the mean, range and percentages. Under inferential statistics, non-parametric statistics were used in the entire analysis. Cross-tabulations were tabulated and statistical measures of association applied to establish the relationship between variables. Measures of association used include, statistical tests of significance such

as the Chi-square and measures of strength of association such as the contingency-coefficient among others. The study found out that, sugarcane contract farming has for many farmers shattered their initial dreams of economic advancement. Relatively a larger number of the contracted farmers have come out worse than they went in. That is, they have lost more than they gained from it. Indeed, the contracted farmers have marginally benefited from sugarcane farming. Perhaps the actual beneficiaries have been the agribusiness firm, the Kenya government and other intermediate parties who continue to reap massive economic benefits at the expense of the contracted farmers whose social and economic state has continued to degenerate.

In terms of socio-economic development sugarcane contract farming has not significantly altered the class situation of the outgrower community. The small farmers have slowly been marginalized by this form of agricultural production. The study observed that sugarcane contract farming in this rural community has not significantly contributed to the intended objectives such as, achieving Kenya's objective of self sufficiency in sugar, improvement of the living standards of the outgrowers, general improvement in agricultural production and productivity, rural infrastructure, transfer of appropriate capital intensive technology to the food crop sector, creation of more employment opportunities, etc. In general the broad concept of rural development.

The study further observes that, contract farming as a mode of production and a strategy for rural development as it stands now, has to be radically overhauled and more realistic and broad objectives set, if it has to bring about any meaningful social change of a long term nature for the rural populace.

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CHAPTER ONE

1.1 Introduction

Most Third World countries attach greater importance to agricultural production which is the backbone of their economies. However, today, many countries in Africa are facing problems of decreasing or at best stagnating agricultural production. In general per capita growth of agricultural production including food production has declined almost everywhere since the 1970s. This development has been accompanied by a stagnation in agricultural exports and a substantial increase in commercial imports of grain and food aid. (World Bank, 1981).

The decisive factor in their development has been a stagnation or even decline in productivity, in terms of where output increased, it has been mainly due to an expansion of the areas under cultivation. To solve the food crisis, some countries have opted for materialized investments in large-scale, government operated schemes which in most cases have failed (World Bank 1981: 47-51). Example of such a scheme launched for improving food production is in the Sahel region. This gigantic area covers several ecological zones in eight countries and involves national and international donor organizations. Although the projects in this scheme have only been in progress for a few years, it is already foreseen that they will probably lead to dependency on the technological advanced Western nations

and may increase rather than decrease drought and famine vulnerability. (Dinham & Hines 1983). Kenya is one of the few countries that is able to show a significant rate of agricultural growth, but even so, food production cannot keep pace with the rate of population growth which is regarded as reaching alarming heights (World Bank, 1981).

In Kenya, agriculture accounts for approximately 40 percent of the Gross Domestic product and in general agricultural exports account for nearly 70 percent of the total agricultural exports in the country. (Ongeri - 1987). A look at Kenya's Development Plans since independence, (especially 1989-1993 plan) indicate that agriculture is the mainstay of Kenyas' economy providing as it does the basis for the development of other sectors of the economy. Priority ranking in the sector centres on food production, generation of raw materials for local industries, and graduated processing of production for exports. Thus, the overall thrust of Kenyas' agricultural policy is to achieve internal self-sufficiency, to maintain adequate levels of strategic reserves, and to generate additional supplies for export. The policy thus also contributes towards the attainment of Kenyas' objectives of employment, income generation, foreign exchange earnings, rural balance, food security and overall growth.

In the past, the government gave more incentives for the development of the industrial and commercial sectors. The

results has been a deterioration of the terms of trade against agriculture, thus making investments in this sector less profitable than in other sectors of the economy. This trend changed and from the 1960s the Kenyan Government has been promoting smallholder agriculture by making funds available on credit to the farming community for investment in fixed capital and for purchase of other inputs to promote increased production. The institutions established to provide credit facilities to small scale farmers include, the commercial Banks, accounting for 48 per cent total lending, the Agricultural Finance corporation, non-banking financial institutions 18 percent and the combined AFC and Commercial Bank of Kenya operations under the New Seasonal Credit scheme an additional 14 percent.

Today, most Third World countries are venturing into the small sector as an alternative to large scale schemes in an effort to increase agricultural production. Kenya is not an exception. The smallholder sector has become the focus of Kenya governments strategies to increase agricultural production and productivity. Furthermore, new emphasis has been put on the production of export crops due to a severe foreign exchange crisis. In this context outgrower schemes for smallholder are generally seen as a new important form of production organization for the development of export crops and other commercial crops for local and national consumption.

This study lays more emphasis on contract farming within the smallholder sector as a form of agribusiness involvement.

Contract farming has become a major form of agricultural production in Kenya. This means that the welfare of the national economy and that of contract farmers is significantly dependent upon this type of farming. The current and future performance of contract farming in Kenya is therefore not only important to the contract farmers, the multinational corporations and the Kenya government, but it is also of great concern to anybody interested in the prosperity of rural agrarian systems. Sociologists, especially rural sociologists, political economists and all those interested in rural development, would be interested to know how contract farming is or is not benefiting all the parties involved in it, and particularly the producers. This is the core of the matter. Indeed, it is the focus of this study.

Contract farming in Kenya is best studied as a component of both agricultural and rural development. There are two reasons for this contextual approach. Firstly, it is viewed and treated by the government as one of the strategies for bringing about agricultural and rural development. Secondly, just as the term "agriculture" evokes the image of the rural community (Winson, 1988) so does contract farming. The term "rural community" for a development-minded person, conjures, visions of rural development. Since the 1950's the Kenya government has been liaising with the multinational corporations in the production and marketing of small scale cashcrops. (Kaplinsky 1978). Coffee and tea remain both the most important market crops in Kenyan agriculture. In tea particularly, the

agribusiness firms are the largest producers and marketing agents. Among the multinationals involved in tea production are Brooke Bond, African Highlands Produce Limited, Finlay Group, Mitchell Cotts, Inchape, Lonhro and James Warren. Tea is currently produced on outgrower schemes within the framework of K.T.D.A.

Considering the fact that contract farming is viewed as a strategy for rural development, it is the intention of this study to explore the economic potential in our case of the Nzoia Sugar Company (NSC) and the socio-economic differentiation which is found to result from the introduction of the outgrower scheme. Most importantly, more emphasis will be laid on the implication of this monetised economy on the contracted families, as well as the outgrower community as a whole.

The existing literature on outgrower schemes in Africa perceive outgrowers simply as male household heads with control over their land and the labour of the household. Little attention has been given to other members of the household, particularly women and children. In the African context, in most cases women are the main producers of subsistence crops while taking care of children. During the past phases of agricultural development, women's potential as producers has been largely neglected. The situation has had a negative effect on the family welfare in general and also on food production at the national level. (Bukh 1979, Monsted 1977).

Thus, the question we need to ask therefore is can

smallholder schemes change this situation and increase not only cash crop production but also the living conditions of the contract farmers and their families or will this new form of production organization reinforce women's marginalization in subsistence production and further aggravate the problem of food shortage in Africa, and Kenya in particular. Hence this study focuses on the outgrower family as a social unit in the phase of agrarian change, with particular emphasis on the role of women and children in production and reproduction. The researcher does not perceive the male household head as the sole owner of the cash crop (sugarcane) because women could perhaps be contributing even more to the production of the crop.

The household in this case is not perceived simply as a homogeneous unit, made up of communal interests, but also as comprising conflicting interests, firstly, between husband and wife, and secondly, between father and children especially sons.

Lastly, the agribusiness firm is evaluated at a community level, in terms of whether it has succeeded in providing the necessary social amenities, improved the rural infrastructure, transferred the modern agricultural technology to the rural community, improved food production, improved the standards of living of the contracted families as well as overall community other than the stereo type potential expressed in production rates and income.

By using this framework we wish to throw a new and more differentiated light on the existing literature on the

agribusiness managed outgrower schemes in Kenya.

1.2 The problem statement

There have been major changes in agricultural production in both the developed and the developing countries, in the last two decades since the end of the Second World War. Unlike in the past where production was largely in the hands of peasant or small farmers, agricultural production is now largely dominated by big multinational corporations or what is now termed as agribusiness companies. (Dinham and Hines 1983). The multinational corporations involve themselves in agriculture as producers, processors, or traders of commodities or as sellers of inputs or machinery.

Today most Third World Countries, liaise with agribusiness companies in agricultural production. Contract farming requires direct producers to sign a contract committing them to deliver a specified product on a specific date at a fixed price. Control over the product is maintained with very little capital invested on the part of the multinational corporation" (Buch-Hansen and Marcussen, 1986, 16). Normally, an outgrower is attached to a central estate or a regional factory on a contract basis. Seeds and inputs are provided by the factory or the estate on credit. He/She follows the advice of the extension officers on harvesting, how to apply technological inputs and how to deliver to schedule. In return, the grower is paid on the basis of the harvested produce, with deductions for loan interests, input

costs etc. The agribusiness companies prefer contract farming because it guarantees maximum profitability. The agribusiness companies prefer to join the investment as minority shareholders, under some kind of management contract. In this way the multinational can control the more profitable elements in the production process.

Secondly, contract farming is less risky than direct ownership of estates or plantations. The fear that plantations might be nationalised in the event of a change in government or policy is reduced or eliminated. Economically, capital investment is reduced considerably. The production costs and risks are completely shouldered by the contract farmer. Thus, investment in land and labour costs are tremendously lowered.

On the other hand, contracting is acceptable to national governments in developing countries since it does not, on the surface threaten the status quo with regard to the sensitive land issue. It assures peasants their rights to land ownership and therefore, contains within reasonable limits, their political restlessness.

Furthermore, contract farming has been promoted in Kenya as part of smallholder agriculture whose development was geared towards "provision of subsistence and a cash income of (pounds) 100 annually for each farm! development of the potential productivity of the Non-scheduled areas in order to obtain more marketed production and all the benefits which would accrue for

this; the expectations that smallholder development would productively absorb surplus population and thus reduce the pressure of unemployment in towns; the hope that there would result a speed-up in social change. In particular, the cash incentive connected with cash crop production was considered a powerful means of adapting the way of life to the demands of a modern exchange economy; a prosperous middle-class society of farmers; firmly established on the land, was expected to exercise a stabilising influence on politics in Kenya; it was hoped that the development of the vast potential of the non-scheduled areas would lessen the desire for land in the scheduled areas and would thus give long-term stability to the large farm economy" (Ruthenberg, 1966, 14).

The Nzoia Sugar company which is the concern of this study was established in line with this expectation. This study examines in greater details to what extent these broad objectives have been achieved. Studies carried out on the performance of the Nzoia Sugar Company to date indicate a grim picture for the progress of the company and the contracted farmers. The company has been hit with several closures as a result of machine break downs, transportation, delivery of farm inputs and harvesting have been problematic areas hindering the efficiency of the company. Farmers hit hard by delayed harvest, it has been alluded have felt desperate and some have quit their contracts prematurely. With this indications it seems that contract farming is not as beneficial as it may appear on the surface.

Also, contract farming might have met the objectives of its proponents but these (objectives) may be too narrow for the kind of rural development envisaged by the government and desired by rural communities.

Other studies on contract farming in Kenya and in the Third World in general, however, point out major limitations in contract farming as we shall see in the next chapter. The questions that come into mind are, will the agribusiness companies through their outgrower schemes help to change this situation and increase as they claim not only cash crop production but also food production at the sametime uplifting the standard of living of the contracted families? Is this new form of production going to improve or accelerate the impoverishment of the smallholders and further aggravate the problem of food shortage in the Third world?

It is the intention of this study to examine in detail the success/failures of the agribusiness involvement at the Nzoia Sugar Company in the form of contract farming as a mode and strategy of production aimed at enhancing rural development. The questions we need to ask therefore, are, what has been the case at the Nzoia Sugar Company? To what extent has sugarcane farming benefited the outgrowers? Who have been the actual beneficiaries of the sugarcane contract farming? What kind of rural development has been brought about by contract farming? What impact has the monetised economy had on the family as an institution particularly the women and children? What has

happened to the living conditions of the smallholder community?

An agribusiness project in actual sense is only helpful if it can succeed in transferring appropriate technology to the rural people and if this technology is affordable by the people in question. Secondly, if it can raise the Gross National product of the host country, through the export of the crops produced. Thirdly, if the agribusiness firm succeeds in benefiting the contracted community involved, in terms of improving the rural infrastructure, provision of social amenities, equitable distribution of incomes, as well as improving the living standards of the peasantry.

This study examines in broad terms how much of this expected progress has been achieved.

1.3 Specific objectives of the study

The study examined in detail whether the introduction of smallholder outgrower sugarcane production in the community has enhanced rural development as well as succeeded in improving the living standards of the smallholder households in the local community.

To evaluate this broad objective we looked at the following variables among others.

1. Rural Incomes; we evaluated the increase in real income of the smallholder farmers before and after the introduction of the scheme; whether the smallholders have been able to expand their

sugarcane production acreage, as well as invest in viable economic projects from the money obtained from sugarcane sales after meeting the necessary basic domestic needs.

2. Role of Company (i.e. their relationship with outgrowers).

The terms of contract/agreement between the outgrowers and the NSC were analysed. The company's delivery of services to farmers in accordance with the mutually agreed upon contract terms (i.e. ploughing, fertilizers, pesticides, seedlings, harvesting, extension services). Most importantly, the kind of relationship (i.e. communication process) that exists between the outgrowers and the management; does the NSC management feel indebted or obliged to explain to contractual farmers in case of failure on their part to deliver a certain service or is the farmer regarded as only being there for the purpose of leasing land to the company for its use other than a partner in production.

3. Household/Family; the family as an institution/ unit engaged in outgrower production was evaluated.

The role of women in production and reproduction in the phase of this agrarian change and development was looked into, in terms of, how is the women's social status and role valued and explained in this sugarcane production? Is the woman's role marginalised as always has been, the case in the agricultural sector in Africa with the cash crop being looked at as a male cash crop controlled by the male

household-head who commands the wife and children labour? Who has a say (decision-making) on how the money from the cash crop is spend? Who contributes more, labour wise and who ends up benefiting from the incomes earned from the crop? How have children benefited from the monetisation as family members and as providers of labour?

On the whole has the sugar scheme helped the family as a whole, economically, by uplifting their living standards and socially has it led to the furtherance of family cohesion or destabilisation?

4. **Rural infrastructure;** The study looked at whether there has been an improvement in the rural infrastructure of the community involved (i.e. roads, housing, schools, market for necessities, hospitals etc), an objective set to be achieved by the sugar scheme or whether the community was left the way it was or even worse off.

5. **Technology;** The extent to which the capital-intensive technology is accessible to the local farmers was assessed. The key issue was, are the contract farmers able to apply this new technology to other sectors of agricultural production such as food crops, and how many are able to do that? Are the contract farmers in a financial position to purchase this technology on their own? Lastly, is the technology appropriate for the local situation?

1.4 Justification of the study

This study being an investigative attempt will add on the existing knowledge on agribusiness operations in the agricultural sector in Kenya. Other than that, the research will hopefully enable the policy-makers in the field of agricultural and Finance to evaluate a rural development project before it is implemented in a given community.

First of all, it should be assessed whether the project will be of use to the Kenyan people in becoming self-sufficient in the particular crop as well as earning foreign exchange with the sale of a surplus.

Secondly, whether the rural people are able to benefit from the technology and the new system of production and marketing introduced to them, whether it will generate enough capital to meet the basic needs of the rural families as well as leave a surplus for investment in other income generating activities.

Lastly, it should be important to evaluate whether, the project is able to generate more employment opportunities, whilst improving access to rural infrastructure for the local community.

Based on these considerations, planners should draw up and select projects that are supportive not only to the local community but also to Kenyan rural economy as a whole.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW:

2.1 Theoretical Framework

The impact of contract farming on the lives of rural communities in the so-called Third world has been studied within the framework of multinational or transnational corporations.

Most studies carried out in this field are a continuation of the agrarian debate articulated by Karl Marx, Frederick Engles and Lenin among others. Later-day contributions to this long standing debate especially those of the present century have either tended to support, elaborate, modify or out rightly contradict the earlier views expressed by Marx, Engles and Lenin.

These writers examined the process of social change and came to certain conclusions. Karl Marx in his study of the functions of capital and labour in a capitalist society, observed that private property divided society increasingly towards two major conflicting classes, possessors and dispossessed, or bourgeoisie and proletariat (Sweezy, 1942). He also concluded that in their type of system, labour is increasingly exploited by capital - the wage worker is increasingly exploited by capitalists. There is a constant struggle, said Marx, between these two as they try to get a firmer grip on the means of production. And as they struggle, change occurs between and among them.

In capitalism, both the means of production and labour power

are commodity with exchange value. They can be exchanged or sold on the market (Sweezy 1942, Brewer, 1984). In this exchange situation, the employers, the capitalists, "will buy labour as cheaply as they can, labour will sell for as high a wage as possible; but the wage worker is in a poor position to bargain, as he must work or starve. This gives an enormous advantage to the owner of the means of production for the control of almost all of life". (Eddy, 1942:19).

Engles reached similar conclusions. Lenin carried on the debate later on similar lines as Marx and Engles. In his analysis of social relations in agriculture in Russia and elsewhere; he concluded that,

"On the one hand, capitalism is the factor giving rise to and extending the use of machines in agriculture; on the other, the application of machinery to agriculture is of a capitalist character, i.e. it leads to the establishment of capitalist relations and their future development" (Lenin, 1964, 228)

Lenin observed that, the introduction of machines in agriculture leads to a change from labour-service to "hired labour and to the creation of peasant farms employing labourers" (Lenin, 1964, 232). Capitalism creates a demand for wage-workers, argued Lenin. With this increased demand for wage labour, female and child labour are turned to increasingly (Lenin, 1964). This labour is preferred by capitalists since it is cheaper than that of male adults. Thus hired labour, according to Lenin is "the principal manifestation of agricultural capitalism.

However, in his analysis of commercial agriculture in Russia Lenin observed that agricultural production increased as well as the productivity of agricultural labour. But there was, however, a worsening of the conditions of the working class (Lenin, 1964). The significance of this observation is that an increase in agricultural labour productivity does not necessarily lead to better conditions for workers and producers.

Lenin, went further to assess the contradictions of capitalism. He said that in a capitalist system, there can be progress side by side with retrogress. He stated that

"On the one hand, reference is made to progress in farming, the enlargement of incomes, the improvement of agriculture technique and the acquisition of improved implements; on the other hand, we have statements about the deterioration of food, the creation of new types of bondage and the ruin of peasants. After what was stated in chapter 2, we should not be surprised at these contradictions! We know that these opposite opinions relate to opposite groups of the peasantry" (Lenin, 1964, 275)

The important point we must note from Lenin's remarks is that prosperity may be realised through increased agricultural productivity, but this prosperity may not be felt by some sections of a population. The degree of benefit may vary disproportionately across classes with some classes benefiting more than others and some not benefiting at all. In the end, therefore, it may be progress only for the well-to-do minority.

Thus, one of the greatest contributions of Lenin with regard to capitalist agriculture, was to sensitise us to the contradictions inherent in this system of production. One can

only conclude that a capitalist venture, such as contract framing, is successful or not after carefully looking at some of the aspects referred to by Lenin. If there is progress, we need to know who is actually benefiting from such progress, and how they are really benefiting.

Those are just but a few of the nineteenth and early twentieth century thoughts on capitalist development. Let us now turn our attention to contributions to the debate made in the second half of the twentieth century. The two theories we shall confine ourselves to are what have been referred to as the modernization paradigm and the dependency theory. The ideologies underlying these theories will be partially discussed in relation to the operation of multinational corporations or what are presently known as agribusiness companies in the Third World.

The technocratic paradigm, also called the modernization paradigm by some theorists, views the economic objective as being "to increase agricultural output, either by incorporating more conventional inputs such as land, as in Brazil or by encouraging farmers to adopt an improved technology, as in the Philippines. The economic system has been justified essentially in terms of a liberal capitalist ideology, emphasis is placed on competition, free markets and widely dispersed private property as sufficient conditions for achieving the objective. (Griffin, 1974:200). This type of development strategy tends to concentrate private property in few hands and channels the benefits of technical change to a minority. Griffin goes on to say that with this

strategy, inequality of income is not deplored but welcomed since the assumption is that the rich will save their extra income and hence contribute to faster accumulation and growth. "In other words, the concentration of income and wealth is one of the ways whereby the output objective is expected to be achieved". (Griffin, 1974:201). The multinational corporations tend to fall within this paradigm.

The modernization theory has been criticised by the dependency theorists who feel that it has not achieved much development in the developing countries.

The developing countries have come up with several types of rural development strategies, which are somehow in line with the above theories. These strategies continue to be implemented as a means of minimising and/or eliminating income inequality and general features of underdevelopment in Third World Countries. Migot-Adhola in his article "Rural Development policy and Equality" which appears in Barkan (1984) categorises these strategies into two. He argues that the factors contributing to this inequality and underdevelopment are broad and complex, but the approaches to solving these problems usually fall within one of the two categories.

On the one hand is the approach followed by most Third World governments and supported by the major agencies that dispense international aid. Most of these agencies concentrate in improving the agricultural productivity of individual farmers and involve the diffusion of better agronomic technology, extension

of credit and community self help, projects. Migot-Adholla observes that this approach has generally had only marginal and very limited success in terms of improving the overall conditions of the rural poor. This is because they take the structural and institutional status quo for granted, thus allowing those in strategic positions to divert resources to their own interests perhaps more significantly such programmes have often been so heavily capitalised that once external aid is stopped, local inertia soon sets in because of the lack of local resources to maintain the project.

On the other hand the 'centralized approach' is generally identified with extensive central planning, collectivization and co-operative farming experiments. This approach adopts a frontal attack on rural poverty and inequality through the transformation of rural social structures and institutions such as the redistribution of land resources. The approach also aims at enhancing the direct participation of the rural population in the economic and political processes of development. Migot-Adholla contends that directives from the centre tend to be so broad and far-reaching that they have sometimes led to the stifling of local enthusiasm as the scope of local initiative has narrowed and eventually disappeared. The phenomenon leads to a feeling of alienation among local farmers. Thus, the centralised approach to rural development usually fails to achieve per capita productivity rates similar to those obtaining in capitalist agriculture. This is because capitalist agriculture has the

logic of expanded and not simple re-production of the existing basis/unit of product.

Kenya, like many Third World countries falls within the first approach. Tanzania could be categorised as falling under the second approach, following the rural development strategies they adopt in agricultural production and rural development.

The multinational corporations which the Third World Countries incorporate in agricultural and rural development ventures tend to fall within Migot-Adhollas, first approach. This is because in contrast to traditional methods such as shifting cultivation and crop rotation, agribusiness methods are capital intensive and place extensive emphasis on the application of new technologies to increase yields, which require; expensive inputs in the form of fertilizers, irrigation, pesticides and herbicides.

Onimode (1988) traces the multinational phenomena in Africa as having started with activities of colonial mercantile houses, such as the Royal Niger Company, United African Company and Chandaria in Kenya among others. With the growth of monopoly capitalism from the 1880s, and the emergence of multilateral imperialism especially after 1945 these mercantile houses gradually diverted to agriculture, mining and manufacturing.

Today, contract farming has become the popular mode of production adopted by both multinational corporations and Third World Countries, as a strategy for increased agricultural production and rural development. The focus/subject of this

paper is contract farming. Therefore the definition of it is mandatory. Nicolas W. Minot defines contract farming as "agricultural production carried out according to an agreement between farmers and a buyer which places conditions on the production and marketing of the commodity" (Minot, 1986:2). Kate Currie and Larry Ray (1986) look at contract farming from an interesting perspective. They emphasize the position of and the relationship between the producers and capitalist enterprises which deal with contract farmers. For them "contract farming is an increasingly widespread form of subsumption of previously self sufficient small farmers to capital, in which the most highly organized and international form of capital (the transnational corporations) exchange with individual smallholder". (Currie and Ray, 1986, 449). This definition brings to mind the analysis of capitalist development done by Marx, Engles and Lenin. It is reminiscent of what Karl Marx referred to as the formal and oral subsumption of labour into capital. These are processes by which labour comes to be dominated by capital.

From these definitions we note that contract farming is a system of agricultural production which, by means of a definite contract brings farmers, usually small-scale farmers into specific relationships with large capitalist enterprises. The nature of these contracts, the obligations they make on farmers and the mere fact of participation in this usually new venture, certainly brings tremendous changes in the lives of individuals and communities. Such changes as all changes in human history,

can positively or negatively impact upon individuals and communities involved.

We have discussed the theoretical assumptions surrounding capitalist agriculture, under which agribusiness companies fall. Contract farming a mode of production, adopted by agribusiness companies has been defined. Let us now look at how different theorists evaluate the role of multinational corporations in agriculture in the Third World.

The role of MNC's in agriculture as a strategy for development in Third world countries continues to be an area of debate. On the one hand, the modernisation theorists view the role of the MNC's as a solution to Third World's development, while on the other hand the dependency theorists blame the MNC's as some form of imperialists capitalism responsible for the backwardness inherent in the underdeveloped world.

The MNC's continue to view their role in development as indispensable. This idea is well elaborated in the following quote by Susan George (1986:p.159) "Agribusinesses view their own activities in two words, they see themselves as the worlds salvation. They alone will be capable of solving the problem of World hunger, for the 'profit-oriented approach to increasing food production in the less developed countries provides the only mechanism for real progress and decisive action. This homily comes from a 1967 speech by Louis Lundborg, then chairman of the Bank of America, titled 'The Agribusiness Approach'. He says his motive for this approach are (1) humanitarian (which he disposes

off rather quickly) (2) political, because increasing poverty could lead to a global confrontation between the rich and poor nations and finally getting down to business, (3) self-interest and profit'. "There is money to be made in agribusiness around the world - profits for both the US and the host country's agribusiness enterprises and for indigenous farmers and entrepreneurs".

The bourgeois economists hold the above view in high esteem. They believe that multinational corporations are partners in development because they convey foreign capital to poor countries, transfer technology, create jobs, pay good wages and taxes and promote industrialization in the Third World. (Onimode (1988).

Dependency theorists completely disagree with this line of thought. They associate the underdevelopment inherent in the Third World to capitalist penetration, through forms such as multinational operations in agriculture. The original version of dependency and underdevelopment theory as outlined by first Paul Baran, and next more popularly and grandly by Andre Gunder Frank, concentrate on locating the cause of backwardness of Third World countries, more especially of Latin America, with the dynamic growth of the World capitalist system. (Hoogvelt, 1982;165). According to the dependistas, the advanced capitalist countries had become developed by expropriating economic surplus from those overseas countries with which they first traded and which they later colonised, while the overseas countries became

underdeveloped by aiding the ascendancy of the West.

On a similar line of argument, Hoogvelt holds the view that industrialised capitalist states in their economic interaction with developing countries, left them with a narrowly specialised, export-oriented primary production structure which found its hand maiden in a frozen internal class structure dominated by a small landed and mercantile 'comprador' elite whose economic interest became increasingly intertwined with those of the advanced capitalist states.

This phenomena as stated by Hoogvelt and others is actually reflected in most of the African countries's where nearly all of them depend (for their major source of foreign exchange) on the export of agricultural products which are consumed in industrialized countries. For example Gambia is an extreme case where 90 per cent of export revenue is earned from selling groundnuts.

Generally scholars, in the field of development have continuously disputed the role of MNC's in development in the Third World. Development theorists have come forward to condemn the MNCs as being the root cause of Africa's or Third World's famine and underdevelopment in general. The MNCs started looking for outlets for their commodities in the Third World as a result of the shrinking home market. The need for profit drove them to invest in the Third World, where 'cheap' labour is available.* Dinham & Hines (1983) analysed the agribusiness phenomenon at length and they observed that agribusiness' main concern has

always been that of finding a profitable means of involvement in food and agricultural production and not with the transformation of peasant agriculture. The central focus of the companies remains in the industrialised countries and Africa is seen primarily as a source of cheap labour and a market for manufactured inputs and technical expertise.

Similarly, Susan George (1986) observes that agribusiness firms normally use a 'host' country's land and labour for producing food and cash crop rarely to satisfy local needs, but almost always for export to the developed countries markets that will pay the most for their products. This profit maximization policy of the MNCs is summarized clearly by Susan George's in the following quote;

"The kind of penetration of the underdeveloped countries agriculture could make the Green Revolution seem a very pale Olive colour by comparison. If the Green Revolution has been a social disaster, the effects we can legitimately expect from direct Western agribusiness intrusion into traditional rural societies may be nothing short of catastrophic. There is already plenty of evidence to suggest that agribusiness is capable of destroying everything it touches; local employment patterns, local food-crop production, consumer tastes, even village and traditional family structures" (Susan George & 1986:159).

Studies done on the operation of MNC's in Africa have shown that despite those countries willingness to allow free MNCs

operations as a development strategy, not much has been achieved developmental wise. By 1983 there was increased integration of African countries into the 'imperialist orbit' (with the expansion of capitalism from the developed to the developing world during the mercantile trade period and the colonial upto the post colonial era) through greater multinational investment in oil and manufacturing (in for example Nigeria, Kenya, Ivory Coast, Gabon and Cameroon). As a result of this integration there has been increased food importation and even economic collapse of countries like Zaire, Sudan, Ghana and others. Infact, their dependence on the developed world has exacerbated.

Today, many countries in Africa are facing problems of decreasing or at best stagnating agricultural production. In general, per capita growth of agricultural production including food production has declined almost everywhere since the 1970s. This development has been accompanied by a stagnation in agricultural exports and a substantial increase in commercial imports of grain and food aid (World Bank 1981).

More significantly, MNCs have decapitalised African economies. They have stripped them not only of the actual surplus but also potential surplus. According to Ronald Muller in his article "The Multinational corporation and the underdevelopment of the Third World" which appears in Wilber (1979), the technology being used by MNCs in the developing world is very expensive, Wilber explains clearly the decapitalization of African economies in the following quote; "in almost all LDCs x

there is a scarcity of local savings available to be channelled into financial capital for productive investment. This scarcity of savings is due not only to the LDC's low level of income, but also to the fact that a certain portion of savings leaves the country. That is, foreign firms repatriate a significant part of their profits, and indigenous wealth-holders also channel a part of their savings out to MNCs (the so-called phenomenon of "capital-flight") ... Taken together, the magnitude of these outflows has led to a number of writers to comment that in aggregate terms the poor countries of the world are now ironically helping to finance the rich countries, that is, the financial out flows from LDC's far exceed the inflows" (Wilber 1979':155)

Other than decapitalisation, management services and technical fees drain surpluses away from the host country and often prolong dependency on foreign inputs, expertise and foreign markets. They have also displaced local entrepreneurs. Dinham and Hines (1983) quote an example of the soap Industry in Kenya which once a thriving concern was replaced by transnational soap factories. Together, this capital drain and local displacement constitute two basic ways in which the MNCs generate and sustain the underdevelopment of the region.

As a matter of fact, agribusinesses take advantage of the land and 'cheap' labour available in the Third World countries to maximise their profits:- as mentioned earlier. This cheap labour comes about as a result of the assumption the developed

world has always had about the Third World workers. These firms as Walter Rodney (1989) puts it pay the workers bachelors wages because according to them, the workers in these industries have peasant families at home which cultivate the land and produce food crops for the family's own reproduction sustenance. The wages paid to such male workers is meant to only provide for themselves alone. Thus, the production cost in the MNCs subsidiaries in the Third World are very low as compared to their parent MNCs that operate in the developed world.

Multinational corporations have justified their operations by claiming to make a fundamentally important technological contribution to the development of the Third World countries. Studies done on this particular aspect have proved to the negative Muller in his article quoted earlier argues that the type of technology that is transferred by MNCs to Third World countries has been inappropriate for the Third World situation. That, the technology transferred to the Third World by the MNCs has been designed for the resource conditions of the advanced industrialized nations where there is a relative abundance of capital and a relative scarcity of labour. In other words, this technology is incapable of absorbing labour because it has been designed to do just the opposite, i.e. to be "labour saving and capital using". There is, of course an obvious contradiction to have such technology entrenched in the industrialisation processes of Third World countries where the resource conditions are an abundance of labour and an acute scarcity of capital.

In most African countries today, and Kenya for instance, smallholder farmers in the agricultural sector lack the capital to purchase the capital intensive technology used by MNCs on their farms. The much they can do is to use this type of technology on credit as outgrower farmers. They have not been able to transform their agricultural farming methods, for example in food production because they lack the capital to purchase the capital intensive technology. Thus, even with their involvement as smallholders, the farmers still practice their subsistence farming and are even unable to expand their contracted cash crop acreage, because of lack of capital to invest.

With the above characteristics of MNCs we realise that the smallholder farmer has been at a disadvantage. Studies carried out in Kenya and on sugarcane production in particular show that earnings derived from such produce is not sufficient to sustain a decent standard of living for the smallholder farmer as a result of the levies charged by the company for transportation, tonnage and administration services. The deductions leave farmers with barely any profit or surplus to invest in viable economic projects.

On the whole agribusiness is all for the profit and is less enthusiastic about taking commercial and especially production risks in the most underdeveloped countries. The commercial risks involved are shouldered by the peasant smallholder farmers and the 'host' government, in cases where the government is a major share-holder in an agribusiness firm, while

the agribusiness firms, very often offers only management and consultancy services. As Susan George observes agribusinesses "zero in on land where "potential productivity is relatively high" (which means the best land the poor country has) and invest in areas where immediate results will be conspicuous so that farmers will be prepared to enter into productive enterprise with them (the agribusinesses) for mutual and adequate profit. Despite the fact that agribusiness clothe their projects with a rhetoric of development and 'social' uplifting, agribusiness is not the most thrifty and wholesome way that could be found to feed the people, nor the best way to protect the interests of the majority of small farmers who have to vie against the interest of huge corporate processors. The market dominance of multinationals in some countries makes it less and less possible for alternative high nutrient foods to be produced and sold at accessible prices.

2.2 Literature Review

This section presents the literature related to the core subject of this study. It is therefore, intended here to address the issue, that could be called the 'heart of the matter' i.e. the operations of agribusiness firms in the realm of smallholder production in the Third World, in general and Kenya in particular. More specifically, the chapter examines the socio-economic effects that have arisen as a result of the introduction of

agribusiness operations in the agricultural economy of Third World countries. Special attention is drawn on the impact this monetised economy has had on the smallholder farming community particularly the smallholder household, which was previously dominated by subsistence farming.

The colonisation process, gave way to the operations of

2.2.1 General Literature.

Before the colonial and therefore the imperialistic invasion of Africa the popular traditional agricultural practices were shifting cultivation and crop rotation. African economies before colonialism were mainly 'subsistence' economies. Often, small villages farmed, hunted, fished e.t.c and looked after themselves independently with little reference to the rest of the continent. Trade went on between the different communities in the continent. Various communities were producing surpluses of given commodities which could be exchanged for items which they lacked. In that way, the salt industry of one locality would be stimulated while the iron industry would be encouraged in another. In a coastal lake or riverine area, dried, fish could become profitable, while yams and millet would be grown in abundance else where to provide a basis for exchange. On a whole Africa relied on the labour intensive methods of farming. Rodney (1989). These methods have been increasingly undermined since the colonization of the African continent which occurred mainly in the last three decades of the 19th century. The decolonization of Africa by the West came about as a result of the shrinking

market for manufactured commodities in the West. Thus, Europe colonised Africa so as to expand their capitalism to other foreign lands for the sake of finding markets for their produce as well as the extraction of raw materials from the host countries to aid in their industrialisation process.

The colonization process, gave way to the operations of agribusiness companies in the agricultural sector of Third World countries, and this phenomenon has increasingly replaced or undermined the subsistence farming methods which existed before.

Thus, unlike in the past when production was largely in the hands of the peasants or small farmers, agricultural production is now largely dominated by big multinational corporations or what is now termed agribusiness companies.

Before we indulge further in the type of activities the agribusiness companies involve themselves in, in the Third World, it is worth defining the term 'agribusiness'. Susan Gerge (1986)

advances the Harvard Business School Professor Roy A. Golbergs, definition of the word "agribusiness". He defines it as "all

production and distribution of farm supplies, production, operations on farms and the storage, processing, and

distribution of farm commodities and processed food". Generally, agribusiness companies deal with agricultural inputs sector, the

farm (i.e. in ploughing, harrowing and harvesting processes), the food processing industry and the transport and distribution of

food. Since the end of the Second World War agribusiness operation

in Third World agriculture has been mainly on plantation basis. However, of late plantation agriculture is being replaced by more agribusiness firms investing in contract farming with smallholders. The agribusiness companies have been planting cash crops such as tea, coffee, cotton, tobacco, groundnuts, etc on plantations using capital intensive methods, that place extensive emphasis on the application of new technologies, to increase yields, requiring expensive inputs in the form of 'fertilisers, irrigation, pesticides and herbicides.

This expansion in the demand for primary produce has made most African countries dependent on it as their main source of foreign exchange even when this demand has not been consistent. Africa's trade with the Industrialised countries is mainly in agricultural produce. Africa's major export crops are coffee, tea, cocoa, cotton, palm products, groundnuts, rubber, tobacco, sisal timber and sugar. Of these, palm oil, groundnuts, tobacco and timber are consumed partly, locally but the majority are grown for export. Sugar is grown mainly to achieve self sufficiency but most sugar growing countries hope to export a surplus.

Africa, became inherently a primary producer, in line with the theory of comparative advantage advocated by the modernization theorists. According to Todaro (1982) the principle of 'comparative advantage' asserts that a country will specialise in the export of those products which it can produce at the lowest relative cost'. The capital - abundant countries

were expected to specialise in such products as motor cars, aircraft, sophisticated electronic goods, computers etc. which utilize capital intensively in their technology of production. Then some of these capital-intensive products would be exported in exchange for those labour or land intensive products like food, raw materials and minerals which can best be produced by those countries that are relatively well endowed with labour and/or land.

This theory encouraged Third World countries to incorporate MNCs in agricultural production thus focusing on their labour and land intensive primary product exports. It was argued that by trading these primary commodities for the manufactured goods that developed countries were 'best suited' to produce Third World nations could best realise the enormous benefits from free trade with the richer nations of the world. In practice, the theory of comparative advantage did not succeed to benefit the African continent, because the products of industrialised countries have not become cheaper as a result of their specialisation in the West.

Dinham & Hines (1983) observe that the purchasing power provided by the sale of crops which Africa exports to the Industrial World is not sufficient to pay for the goods which Africa imports. Consequently, the Third World exports more and more quantities of their produce to import less and less products from the West. This has created a trade deficit and therefore a debt problem. Despite the fact that African Governments have

continued to exert control over their traditional export industries through smallholder development or joint ventures in plantation agriculture, the marketing and distribution of these products have remained basically in the hands of the agribusiness companies. Most of the profit made by agribusiness companies are not from producing commodities but from the processing, trading, transport, marketing and distribution activities related to these commodities. For example, five European firms i.e. Brooke Bond, Uniliver, Cadbury, Schweppes, Nestles and the allied Breweries subsidiary J-Lyons and three US - based processors Standard Brands, Kellogs, and cocacola, are jointly responsible for about 90 percent of tea marketed in Western Europe and North America. (Dinham and Hines 1983).

Apart from the trade deficit, Africa has also suffered adverse environmental effects as a result of the operations of MNCs. Dinham and Hines clearly point out the fact that environmentally, large scale schemes have not enjoyed a good record in Africa given the climate and soils that are not favourable to intensive agricultural production. There are many examples of inappropriate crops and technology being imported and applied with predictably dire consequences.

On a similar line of argument Walter Rodney discusses in more detail the environmental and soil degradation that has resulted from agribusiness operations in Africa with elaborate examples. According to him capitalism brought about technological backwardness in agriculture. On the reserves of

Southern Africa, far too many Africans were crowded on the inadequate land, and were forced to engage in intensive farming using techniques that were suitable only to shifting cultivation. In practice that was a form of technical retrogression because the land yielded less and less and became destroyed in the process. Wherever Africans were hampered in their use of their ancestral lands on a wide-ranging shifting basis the same negative effect was to be found. Besides, some of the new cash-crops like groundnuts and cotton were very demanding on the soil. In countries like Senegal, Niger and Chad, which were already on the edge of the desert, the steady cultivation led to soil impoverishment and encroachment of the desert.

Agribusiness companies have been largely blamed for the food problem that exists in the Third World today. Rather than improving Africa's economy the emphasis on cash-crop plantation by multinational corporations has led to Africa's current food crisis. Africa that was once a net producer and exporter of food crops has now become a net importer of food stuff.

According to Onimode (1988) the growing food deficits have been forcing increased number of African countries to resort to food aid and food imports. The initial food imports started in the 1960s, when food prices were low as a result of food aid availability from the huge accumulation of surplus grain in North America. This food aid encouraged reliance on an external food supply and the relative neglect of agriculture, until food imports became a regular feature of Africa's food economy by the

1970s'. This involves planting on large scale, picking up
The multinational corporations have responded to this
claim by launching large scale plantations to improve food
production in the Third World. Zambia for instance has adopted
this system and it has been trying to improve food production
through agribusiness managed food crop plantations. The most
ambitious scheme for improving food production to date has been
launched recently in the Sahel region as mentioned earlier, but
although these projects have been in operation for a few years it
is already foreseen that they will probably lead to an increased
dependence on the technologically advanced Western nations and
may increase rather than decrease drought and famine
vulnerability (Dinham and Hines 1983). Susan George in her
analysis of agribusiness and the food crisis in the Third World
states most grandly that Transnational corporations are not
likely to solve Africa's food deficiency. They are often
inappropriate and expensive and they tend to divert attention and
cash away from the underlying problems of rural poverty and
inadequate infrastructure to more secondary issues.
Apart from food production the agribusiness companies have
been planting cash crops mainly on plantation basis. This trend
is shifting to the smallholder sector but still some few
agribusiness companies are still raising their crops on
plantation basis. Initially, plantations were generally started
in Africa as a means of securing regular and reliable supply of
raw materials for the company factories in the Industrialised

centres. This involved planting on large scale, picking crops at harvest, carrying out processing, paying personnel and hired labour force. The costs of production were rather high and this has discouraged most firms who are now venturing into the smallholder sector which is cost saving and also minimises the risks of production.

For example tea became a major plantation crop in Africa when in the early 1920's Brooke Bond Liebig limited set up the first such plantation in Kenya. It has also set up plantations in India, Pakistan and Sri Lanka. Brooke Bond Liebig is also planting coffee on plantation basis in Kenya. Another agribusiness company operating on plantation basis in Kenya and elsewhere is the US Company Del Monte (now owned by R. J. Reynolds) which produces pineapples.

Today, contract farming in the smallholder sector has become the centre of focus for the MNCs as well as the governments of the developing countries. The operations of MNCs in the less developed countries has been on the increase because these countries have no option but to rely on the technology and expertise most readily available through these agribusiness companies. The less developed countries cannot easily reduce their dependence on cash crop production and build self-reliant economies, given the debt re-payments they have to meet and the need for foreign exchange to finance heavily capitalized development projects. The source or origins of Foreign Direct investment to these

Third World countries comes from USA, West Germany, Britain, France, Italy, Japan, Canada and Netherlands. Kenya has an inflow of Foreign Direct investment from Britain, U.S.A. West Germany among others. Multinational corporations account for 50 per cent of all foreign investment in Gambia, Swaziland, Chad, Somalia and Burundi. Though the proportion of multinational investment in manufacturing in these and other African countries has been rising with import substitution industrialization, according to Onimode, the processing level of these goods (i.e. refinery) and the value added to these goods are still very low. Thus, most multinational manufacturing in Africa consists of light industries and assembly plants for brewery, sugar and flour mills, textiles, cars (assembly type) and others with very high import - content of over 90 per cent.

The MNC's have found raising their cash crops on contract farming basis more profitable than on plantation basis. This is because contract farming minimizes their risks of production (which are normally carried on the shoulders of the smallholder farmers who meet production costs and stand to lose with fluctuations on the world market) and also possible loss of capital in case of political instability or nationalisation.

The Third World countries on the other hand encourage the smallholder alternative in order to curb the expansion of foreign - owned plantations so that the influx of foreign capital and expertise can be controlled while the government can concentrate on supporting smallholder schemes for growing cash crops that can

be exported to earn the country foreign exchange. In turn this foreign exchange is used to service debts at the same time for purchase of expensive technology for development purposes. Kenya views smallholder agriculture as a rural development strategy. Where development efforts have to be intensified to raise productivity, create employment opportunities and generally uplift the rural masses standard of living. The assumption here is that with the development of rural enterprises and infrastructure the trend, towards migration to urban areas will be curbed. *Zambia, Nigeria and Ghana.*

In this context, outgrower schemes for smallholder are generally seen as a new important form of production organization for the development of export - crops and other commercial crops for local and national consumption. *has been unstable often* Sugar in Africa among other crops is being 'developed' using Transnational consultancies and management contracts. The companies engaged in this enterprise include, Tate and Lyle, Booker McConnell and Lonhro. In Kenya Booker McConnell offers management and consultancy services to the Mumias Sugar Company which was established in the early 1970's. Under this system agribusiness companies influence the development of an estate and are in a strong position to use (for examples, factory or irrigation equipment) from their own home-based subsidiaries. *ing* This study focuses on one sugar industry in Kenya therefore a review of general literature surrounding the sugar industry in the Third World is necessary. *in* Sugar consumption is already

significant and is rising rapidly in the Third World, but ironically the harmful effects of sugar consumption are being felt in the West where it is definitely on the decline. Many African countries are now investing in sugar production to ease their imports with the intention of exporting the surplus. Countries producing mainly for export in sub-saharan Africa are Mauritius, Swaziland, Mozambique and of late Zimbabwe and Congo. Those trying to build up their own industries and become less dependent on imports are Kenya, Ivory Coast, Sudan, Tanzania, Malawi, Zambia, Nigeria and Ghana.

The African sugar industry is facing competition on the world market where it competes with beet sugar from Europe and Sugar processed from maize sweeteners from the United States. Traditionally, the price of sugar has been unstable often fluctuating wildly. This has been partly so because Europe produces beet sugar in excess and its production has consistently exceeded the community's needs in Europe. The surplus is thus sold on the world market at subsidized prices, making the European Economic Community, one of the Worlds major sugar exporters, second only to Cuba.

As a result, the sugar-producing countries are threatened with the European Economic Community emergence as major exporter of subsidised sugar and this exacerbates the problem of finding alternative outlets. Yet despite the apparently poor prospects for exporters, many developing countries are either establishing new sugar industries or are building up existing ones.

In some years sugar has been the single largest food import in Chad and Uganda and in the late 1970s, it was the second largest food item imported by Ghana, Nigeria, Senegal, Sierra Leon, Somalia and Sudan. This increased demand has created pressure to establish local sugar industries, both to save foreign exchange and to cut dependence on imports. The manner in which Third World countries have established sugar industries technology wise has varied. India and Taiwan for instance, have concentrated on developing relatively small, widely dispersed and labour intensive factories. This has limited these countries dependence on foreign know-how, machinery and management.

In contrast most Third World countries have chosen to seek advice from large transnational sugar corporations who offer capital intensive technology through a wide range of services. They include, feasibility studies of existing sugar industries, advice on expansion and finally the supply of any equipment required for irrigation or for the factory. The companies can oversee the building stage and supply management for the first years of a factory's operation. One contributing factor as to why these Africa countries seek advice from transnationals is because some of them get financial assistance from the World Bank which prefers advice from transnational consultancies.

Despite the fact that Africa has agribusiness companies in the sugar industry as a way of achieving self-sufficiency, Africa continues to import sugar. Most of these agribusiness-assisted industries have been littered with disasters including

technical and managerial problems, with vast under estimates of the costs involved. Dinham and Hines give an example of the Sudan Sugar Industry which had relied heavily on agribusiness firms to develop the sugar schemes at Geneid, New Halfa and Kenana sugar complex for the sake of achieving self-sufficiency and also to export some sugar to the Arab World. This objective was not achieved. In fact the sugar industry ended up benefiting the foreign contractors, consultants and managers who had not invested and therefore had no equity to lose.

After analysing the general literature surrounding agribusiness companies in the Third World, the question we need to ask ourselves therefore, is what has been the experience in Kenya? In order to answer this question, the performance of specific consultancy managed, contract farming schemes with either overt or covert agribusiness involvement need to be studied at all levels of interaction i.e. production marketing distribution, management etc. Furthermore, in order to judge their value to local producers and the economy as a whole, we need to analyse the impact of these firms in relation to the social welfare of the families and the communities involved as well as their economic contribution to the host country.

2.2.2 Literature Specific to the Kenya Sugar Industry

Contract farming and therefore sugarcane contract farming has become a popular mode of production in Kenya. It is implemented as a strategy for rural development. The central

aims of rural development can be summed up as follows.

1. To increase per capita output and market orientation among the rural population.
2. To increase food production commensurate with the rapid population growth.
3. To ensure equitable redistribution of aggregate income.
4. To reduce regional inequalities in per capita income.
5. To reduce the rate of rural urban migration and
6. To gain a precise and scientific understanding of the social and ecological environment in which rural change is to occur.

Sugarcane production in Kenya is therefore aimed at achieving these objectives. The study examines to what extent the sugar industry has fulfilled these expectations.

In a paper presented to the Executive Seminar on "Kenya Sugar Industry Manpower Development and Utilization" (May 1986) L.M. Awiti described the world sugar industry as having "a long and shameful history coated with bitter memories of poverty and squalor on the one hand, and trade and prosperity on the other". With this in mind, one gets curious to study the sugar industry in a developing country such as Kenya. Is it leading to poverty

and squalor or trade and prosperity? Who has benefited from it and who has not?

To unravel some of these questions of great concern, particularly to students of rural systems, the current study focuses on one sugar industry in Kenya, namely the Nzoia Sugar Company (NSC). Before we embark on the actual performance of the NSC, an examination of other relevant literature on studies carried out on the sugar industry in Kenya is worthwhile. Much has been written about the Kenya Sugar Industry, however, we have examined a few studies we found more relevant to our area of interest. Kenya's basic production objectives have been and still remain self-sufficiency in sugar and some surplus for export. The "Sessional paper No.1 of 1986 on Economic Management for Renewed Growth" clearly states the Government's concern about the high cost of producing sugar in Kenya. "Very low and even negative returns are a serious barrier to the expansion of this basic food crop which is a major employer in Western Kenya. Despite this shortcoming it remains important to maintain self-sufficiency in sugar because import prices fluctuate considerably and future dependence on imports would destabilize Kenya's foreign exchange balance".

Kenya has been a net importer of sugar for several decades, although two private sugar factories have been operating in the country since the 1920's at Ramisi in the coast province and at Miwani in Nyanza province. Until the early 1970's virtually all imported sugar came from Uganda and reciprocal trading

arrangement among the East African countries allowed Kenya to purchase it at a favourable price. In order to increase self-reliance in sugar, Kenya has introduced other factories such as Muhoroni, Chemelil, Mumias and lately the Nzoia sugar company.

In the development of the sugar industry the government liaises with multinational corporations (i.e. agribusiness companies) who offer management, technical expertise and consultancy services. The government normally holds the largest share in these agribusiness managed industries. As opposed to subsistence farming where smallholder farmers raised food crops and partly cash crops for subsistence purposes, with a little surplus for the market, the agribusiness companies engage smallholder farmers as outgrowers on contract basis. The farmer enters a contract with the sugar factory, gets his farm registered, and grows sugarcane using the factory's machinery, seeds, fertilizers and extension services on credit. When the crop is ready the factory harvests and markets it and deducts from the farmers cross-income the services rendered on credit.

This contractual phenomenon the smallholder gets into with the company, and the impact this monetisation has on the socio-economic standing of the smallholder household as a unit, and the overall welfare of the smallholder outgrower community as a whole is our area of concern. The study in essence endeavours to examine how the changes brought in by the introduction of the agribusiness factories have affected the smallholder farming community, the smallholder household as a social unit, (with the

household head, the wife/wives and children evaluated as a family) as well as individuals within the household hierarchy.

Studies that have been carried out on the sugar industry have not placed adequate emphasis on the smallholder farmers who enter into contract with the agribusiness firms to raise the crop. Secondly, the smallholder community under which this cash crop production is carried out has been accorded little examination in terms of how the establishment of the sugar industry has altered or is altering existing social and economic functions vis-a-viz the integration of socio-economic roles in family life, the development of social amenities, the motivation of the outgrower farmers to participate significantly in production expansion as well as examining the extent to which the capital-intensive technology applied by the sugar industry has assisted the smallholder to transform their methods of farming not only on their sugarcane plots, but also in respect of food and livestock production. Ongeri (1987) carrying out a study of the Nzoia Sugar company, similarly, observed that earlier studies have given little or no emphasis on the contract farming system of sugar production. According to him most studies done relate to contract-farming only indirectly. Ongeri's study had an economic dimension. Among his objectives he set out to analyse smallholder contract farming decisions in Kenya's sugar industry. Ongeri did an empirical research at the farm level to get information on the role of sugarcane returns on the farmer's

decision to participate or even quit contract farming. He identified factors determining the current pattern of Kenya's sugarcane contract farming as a means of getting an explanation of the declining cane supply.

From his findings, Ongeri concluded that the government is not likely to achieve its objectives of self-sufficiency through contract farming credit system, unless the sugar companies improve their services to farmers. The smallholder are reluctant to participate in contract farming because of the inefficiency with which the company services are provided. There was an outcry by farmers against harvesting delays by the NSC. The survey also showed that the scheme is not currently operating below capacity because of lack of cane but rather because of the technical bottlenecks in the factory. Thus, the farmers were losing confidence in cane production. In fact, the smallholder engaged in sugar production are mainly those who use it as the only source of income because they have no other alternative ways. However, despite the above findings since the study was carried out, the company has not made any improvements to date, concerning the delivery of farm inputs to farmers as well as the harvesting of cane on time.

Ongeri's findings were helpful to this study, however this study went further to establish how the sugar scheme has affected the socio-economic behaviour of the smallholder community. Among the issues analysed at length were to find out whether the introduction of the sugar scheme has negated or

enhanced the economic growth/development of the outgrower families as well as the outgrower farming community in general.

Secondly, whether the sugarcane production costs, shouldered by the contracted farmers tend to cut into the smallholder domestic budget/earnings, thus reducing the outgrowers chances and capability to invest their cane incomes into other income generating projects.

Thirdly, the study set out to find out if the inefficiencies inherent in the delivery of services by the MNC to the farmers as claimed by Ongeru, tends to dampen the outgrowers enthusiasm to expand their acreages and even to quit the contract - hence resulting in deterioration of the smallholder socio-economic development.

Fourthly, we looked at whether the introduction of the cash crop may have negated the process of increased food production in the outgrower smallholder households thus, exposing the families to food shortages and therefore hunger.

Fifthly, the study looked at the changes that may have been brought about in the family as an institution, with the introduction of the sugar scheme. The role of women, children and household heads in production was evaluated with the household head seen as being in control of the household/family labour and domestic expenditure. The issue of who receives the income and who authorises how it is spend was analysed in relation to the aspect of gender relations within the community, the power hierarchy (decision making process) within the

household and consequently how these issues affect the family relationships between husband and wife/wives, father and children as well as the general stability (cohesion) of the family.

Sixthly, the study analysed the extent to which the NSC has fulfilled its prior objective of creating employment for the local community. Lastly, the objective of improving the rural infrastructure (i.e. roads, water, schools hospitals etc) within the outgrower community was evaluated in terms of the extent to which it has been achieved.

On the whole, Ongeris presented an economic analysis of contract farming, to establish as to whether it could help achieve Kenya's objective of self-sufficiency in sugar. This survey examines contract farming from more socially oriented dimension. This does not mean that the economic dimension was ignored. In fact it was equally assessed in relation to the general welfare of the outgrower families - what we would term social development of the outgrower community. In summary, the survey analysed among other things, whether this contract farming which has been adopted as a strategy for rural development i.e. aimed at increasing the farmers' agricultural output, bringing in cash incomes, improving the rural infrastructure and acting as a farmers source of income and investment, creating employment for people from the neighbouring communities and generally improving the rural peoples standard of living has been able to achieve this broad objective.

Other than Ongeris' study, other studies carried out on

other sugar factories in Kenya have been equally economic-oriented. The studies have been confined to the determination of the degrees of return to scale and factor substitution in sugarcane production and capacity utilization in the sugar factories. These studies seem to have been done on the assumption that the contract farming system has worked well, that the local community engaged in contract farming has had a fair contract deal with the agribusiness firms and on the whole the incomes derived from the cane has enabled the outgrower families to invest in other economically viable projects and therefore their socio-economic living standards have been improved. More attention has been given to self-sufficiency and foreign exchange-saving criteria concerning sugar production without looking at the conditions within the smallholder sector which produces the cash crop, receives the money and how it is spent.

The only studies which focused on the community have been on the food problem, which has been analysed in relation to sugarcane production taking up much of the well-drained land, thus leaving the food crops to soils too poor to sustain high production. Mandihi (1985) in his study of the Mumias Sugar industry among other issues analysed whether the objective of rural development was being achieved through the establishment of large scale sugar factories, whether the cash incomes generated from the sugarcane crop activity were sufficient to bridge the food gap that arose as a result of the establishment of the sugar scheme, and lastly, whether there was any cash surplus created

over and above the farmers immediate subsistence requirement and how such surplus were reinvested.

Mwandihi found out that the scarcity of food in the area as well as the minimal number of livestock being reared had come as a result of sugarcane claiming proportionately larger shares of the total land holding. He also found out that cash returns given in lumpsum tended to be misused by husbands buying unnecessary items. Thus cases of malnutrition and malnourishment were common among children in Mumias region.

The above study was strictly limited on food availability. This present survey besides looking at the food issue, will go further to analyse how money given in lumpsum after harvests has affected the family as an institution i.e. whether it has led to family stability or destabilisation in terms of who works on the sugar plantations, who receives the money and how it is spend. Provision of the basic needs for the family and children in particular will be evaluated in the course of answering these questions.

Observers of gender inequalities find that women are everywhere excluded from certain crucial political or economic activities, and that they are associated with fewer powers and prerogatives than men. Rosaldo argues that "although the degrees and expressions of female subordination vary greatly, sexual asymmetry is presently a universal fact of human social life" In all societies ranging from the relatively egalitarian to those marked sexual stratification "men are the locus of cultural

value" and the corollary to this observation is that "everywhere men have some authority over women, that they have a culturally legitimated right to her subordination and compliance". (Rosaldo and Lamphere 1974).

In agricultural economy it has been observed time and again that, African women do the bulk of subsistence labour in agriculture, yet do not control much of the surplus generated from this labour. (Hay and Sticher, 1984). Women are economic and social dependents of males; yet they are expected somehow to provide all the food for their family's daily consumption. The traditional African household in this sense is depicted as a patriarchal economic unit. The question that arises in this circumstances is, who controls productive and reproductive labour and who benefits from it? This is a real situation of the women involved in production of sugarcane at the NSC. The study seeks to establish the position of the women in the sugarcane production vis-a-viz the cohesion of the family: Is the woman/wife regarded as a decision maker on the expenditure process or is she seen just as one only needed to provide labour? Is the money earned spend in such a way as to improve the family standards of living? On the whole has this monetised economy gone along with cementing/strengthening relationships within the family or has the welfare of the family been neglected in the process thus facilitating family destabilisation.

In a study on the role of the sugar industry in the economy of the Lake Victoria Basin, (Odada, 1986) examined the extent to

which sugarcane production contributed to income generation and the industry's potential as a source of employment. Other aspects examined include sugar manufacturing technology, elasticity of substitution between capital and labour and return to scale. Odada adopted the production - function approach to come up with some interesting findings and policy recommendations. Among other findings, the study showed that small-scale farms are characterised by economies of scale. He recommended that such farms should be expanded. Such an expansion can only be facilitated by a strong price incentive which in turn would encourage increased sugarcane production which would help to meet the government's objective of attaining self-sufficiency in sugar. With such recommendations Odada assumes that what is making farmers not expand their acreage is low prices. He overlooks the fact that the contract system used in the sugarcane production in itself discourages the farmers from investing more (i.e. expanding their sugarcane acreage). The inefficiency of services offered by the agribusiness firms to contracted farmers (for instance delayed harvests and payments) and the fact that the production costs (for raising the cane) are shouldered by the smallholder are important factors to consider. Because the firms have failed to fulfil the agreed on contractual services to farmers and they have also not established a viable system of compensating the farmers in regard to weeding costs and other farm expenses, the small-scale farmers seem to have lost the enthusiasm for investing in agricultural production which is not

in reality financially attractive to them. The cane production which is meant to increase the farmers income eventually cuts into the farmers personal savings which must be spent in raising the crop to maturity. Makwata (1979) carried out a study on the Mumias sugar company examining among other things, the degree of returns to scale on outgrower cane farms. Similarly, like Mwandishi he associates food shortages in Mumias area to farmers committing more land to sugarcane production. He similarly makes his conclusions based on economic assumptions that Mwandishi holds.

Barclay (1977) carried out a study on Mumias sugar company. He undertook a study of both the collective and individual fate of the population (in Mumias) that was forcefully evicted from their original homes to make way for the establishment of the "nucleus" estate (i.e. sugarcane plantation estate owned by the Mumias sugar company for supply to the factory). The outgrower sector is meant to supplement the nucleus estate in the cane supply. The study analysed the impact of a major economic intervention on the social organisation of a predominantly subsistence farming community in the Mumias region. The author sees Mumias as representing a case of intervention planned, designed and financed at the centre and implemented at the periphery in a poor and neglected area. Barclay observes that the sponsors of Mumias sugar project regarded industrial and financial viability as the pre-eminent concern. By securing this viability they seem to have believed

sincerely that they would stimulate economic growth and diversification in Mumias. Furthermore, the sugar project was planned with reference to an objective defined at the national rather than at the local level, namely the attainment of self-sufficiency in sugar production. He further argues that the large span between planting and harvesting and therefore payment to the farmers, the money earned is used to meet the families basic needs (food, clothing, shelter, school fees etc) and repaying debts incurred before harvesting. Thus, the probable long term outcome of planned economic intervention this project suggests, is enhanced differentiation within the peasantry rather than equitable development. *this question, the performance of the*

Barclay concludes that in the absence of a critical perspective regarding the structure of the society into which the project is to be introduced, projections such as cost benefit ratios and the internal rate of return, among others hold little analytic value for students of social change. Barclays findings are very important for this survey, which analyses a rural development strategy that is adopted by the government with the aim of achieving self-sufficiency in sugar production, increasing the farmers production capacity, improving the rural infrastructure, creating employment opportunities for the rural populace as well as contributing to social development of the community. The study further looks into the disadvantages of an agribusiness project that is introduced to a local community without prior detailed and careful assessment of the development

prospects or potential the project may have for the smallholder community in question. The study lays much emphasis on the role the agribusiness project (introduced in a formerly subsistence community) has played in either enhancing or hindering agricultural production, increased incomes, as well as the general socio-economic development of the smallholder families and the outgrower community as a whole.

In summary, after assessing the theories surrounding agribusinesses, and the actual agribusiness operations in the Third World and Kenya in particular the moot question is therefore to ask what the experience at the Nzoia sugar company has been. In order to answer this question, the performance of the consultancy and management firm that runs this sugar scheme was evaluated at all levels of interaction, i.e. production, distribution, marketing, management, technical expertise etc. Further more, in order to judge the firms value to local producers and the economy as a whole, we analysed the impact the company's presence has had on their social and economic lives, in an effort to evaluate the usefulness of agribusiness contracting as a strategy for rural development. This is in sum, the intent of this study.

2.3 Hypotheses, variable specification and variable indicators

This study, as mentioned earlier, is an attempt to examine the socio-economic implications of the introduction of a monetised economy in a previously largely subsistence-oriented

farming community. It therefore addresses itself to issues such as, the social and economic changes that have been brought about as a result of the operations of an agribusiness enterprise in conjunction with the Kenyan government which is a major shareholder with 95% shares; in the case of the Nzoia sugar Company.

Most importantly, the research focuses on particular changes that have occurred in the agrarian economy, as well as in the general family, and therefore, social life of the contracted farming community. Among the aspects examined are; the growth in family incomes, changes in production techniques, expansion of rural infrastructure and social amenities, farmers motivation in production, the role of women and children in the cash crop economy, family cohesion and advancement in terms of provision of basic needs of the family as well as the opening up of investment opportunities as a result of agribusiness production. The aim is to assess whether the latter's involvement has enhanced rural incomes and quality of life of the farmers as proposed by the multinational company and the local planners. In other words whether any expansionary effects are felt as a result of commercialization of a smallholder economy by a multinational corporation.

The independent variable in H2 is the non-fulfillment of the agreed contracted services by the management. This has been reviewed. The hypotheses are stated and their relevant independent and dependent variable isolated. In turn, the following areas; ploughing and harrowing, provision of seedlings, fertilizers, pesticides, agricultural extension

services which comprises of survey of farms, eradication of diseases in the cane crop, harvesting, transportation, payments, communication to farmers in case of non-delivery of a specific service and appropriate deductions of the credit advanced to farmers, hospitals, water, schools, electricity etc.

Dependent Variable
The dependent variable in H2 is the dampening of farmers

initiative in improving and expanding their cane acreage. The

Independent Variable
indicators are; the general attitude of farmers towards the NSC,

The independent variable in H4 is the introduction of the willingness to continue planting cane under contract, the

maintenance of the cane crop, particularly weeding and the

Dependent Variable
farmers own conception of the benefits realised from the cane

The dependent variable in H4 is food production. The

H3. The operations of an agribusiness firm in a contract farming community can enhance the transfer of technology to the local community, as well as the improvement of the rural infrastructure

availability within contracted

Independent Variable
and prevailing local market prices for

The independent variable in H3 is the operations of the

agribusiness firm in production and marketing of sugarcane under

contract farming system.

There tends to be a correlation between the introduction of the smallholder rural economy and the

Dependent Variable
The dependent variables in H3 are the transfer of technology

The independent variable in H4 is the monetisation of the

and the improvement of rural infrastructure to/ within the

smallholder rural economy with the onset of sugar cane growing.

contracted community. These are indicated by use of capital intensive technology, utilization of modern agricultural technology, loan system availability to farmers in food production, development and improvement of social amenities such as roads, hospitals, waters, schools, electricity etc.

H4: The introduction of the sugar scheme in the smallholder community tends to have a negative effect on food production.

Independent Variable

The independent variable in H4 is the introduction of the sugar scheme in the smallholder community.

Dependent Variable

The dependent variable in H4 is food production. The indicators are; the number of acreage committed to food crop production before the establishment of the sugar scheme, acreage committed to food crops after the establishment of the sugar scheme, adequate foodstuffs availability within contracted households (i.e hunger) and prevailing local market prices for the food crops.

H5: There Tends to be a Correlation Between the Introduction of Monetisation in the Smallholder Rural Economy and the Destabilisation of the Traditional Family Life.

Independent Variable

The independent variable in H5 is the monetisation of the smallholder rural economy with the onset of sugar cane growing.

Dependent Variable.

The dependent variable in H_0 is family welfare and cohesion. This is indicated by the household decision making on the expenditure of cane money i.e. who decides on how the money is spent? family, disputes arising from the expenditure, implications of income misuse as defined by either wife, husband or children and its general impact on family relations, labour inputs in sugarcane production who puts in more labour? provision of basic needs to the family members, and general living standards of the family.

2.4 Operationalization of Concepts

1. Multinational corporations/Agribusiness Companies

Multinational corporations also referred to as transnational corporations is what is now termed as agribusiness companies. The Harvard Business school Professor Ray. A. Goldberg who coined the word 'agribusiness' defines agribusiness as the undertaking of "all production and distribution of farm supplies, production operations on farms, and storage, processing and distribution of farm commodities and processed foods" (Susan George; 1986).

The study focuses on the agribusiness firm in the form of a French company, Five Coil Babcock, which provides the Nzoia sugar company with the technical consultancy services. The management is done by the Kenyan personnel while, the machinery, and technical expertise is provided by the French based company. The agribusiness firm, thus involves itself in sugarcane production

on a contract basis. This study attempts to analyse to what extent the agribusiness firm has accomplished the popular claim and conception by the MNC crusaders that; Multinationals are partners in development because they convey foreign capital and technology to poor countries, create jobs, raise incomes and government revenue while promoting industrialization. That the outflow of rural prosperity becomes manifest in contract farmers growing investment in other venues of production or rural enterprises.

2. Profit Oriented Approach.

By their very nature, agribusiness firms operate on what is known as the 'total market concept' (George; 1986). A market is typically an institution that brings all sellers and buyers into communication with one another for the purpose of exchanging economic goods and money for current or future. Thus the market operates on the basis of demand and supply. It caters only for those consumers who have the purchasing power. In line with this argument therefore, the consumer of agribusiness products come from the developed mostly Western World, while the poor (who actually produce) and are in need from the developing world are left out. The latter also happen to be the majority of the poor and marginalised rural populace in the developing world. Susan George further argues that agribusiness main concern has always been that of finding a profitable means of involvement in food and agricultural production, and not with the transformation

of peasant agriculture or the welfare of the peasant smallholder. With this in mind, the study examines the extent to which the concept of 'profitability' affects the smallholder farmers in the production and marketing processes. The main issue therefore, is to analyse whether this approach facilitates or hinders the farmers capacity to accumulate and therefore improve their living conditions. Given the fact that the socio-economic development of the farmers is not an overriding concern of the agribusiness contact, we need to examine the specific benefits imparted to the small farmer by such ventures specific economic situations, such as the one in the present study.

3. Standard of living

The term standard of living is a general concept encompassing the social welfare of people. The term is used here specifically in reference to smallholders' families ability to comfortably meet their daily basic needs. Social is used in the following: Is the smallholder family (given the earnings derived from cane able to afford adequate housing, food, clothing, school fees, medical care and recreation necessary to reproduce social labour i.e the familys' collective ability. Economically are the earnings from the cane able to meet the above basic needs of the family, leaving a surplus for investment in viable projects? This is important considering the well-known fact that farmers tend to devote more land to sugarcane planting than the growing of food crops. The assumption has been that sugarcane brings in

more cash income necessary in an increasingly monetised economy.

4. Technology

Lemmens (1987) defines technology as the formalized, standardized and systemized theory of the principles of the techniques in a given society. Technology is an integral part of the technological institution of a society. This institution can be described as the collective, standardized and stabilized behaviour of the social system in relation to the ways and means by which the social needs can be fulfilled. The ways and means include, the entire complex of tools, raw materials, technologies, organisations etc.

Each society has its own ways and means by which the society needs can be fulfilled and this makes the transfer of technology from one society to another not without problems. Our study deals with this type of transfer.

It is generally believed that agribusiness firms use capital-intensive technology. Their claim has always been that they are capable of transferring this kind of technology to rural subsistence economies dominated by labour-intensive technology. The assumption behind this belief has been that capital intensive techniques when applied, will increase production and therefore, create more employment opportunities, increase income earnings thus uplifting the living standards of the rural populace at the same time earning foreign exchange for the 'host' country. This study examines to what extent such technology has been transferred

(i.e being actively self-managed and used) to the smallholders. Given the fact that most technological services are provided on credit by the firm which delivers the services (i.e machinery, farm inputs, extension services and transportation crew).

This study analyses whether the agricultural sector has been transformed in any upwardly mobile way. That is not only in the sugarcane plots but also in the production of food crops. Thus we need to assess to what extent this kind of technology is accessible to the farmers, in terms of purchasing or hiring of machinery and application of scientific agricultural methods. It is important for the contracted farmers to be able to own the technology even on a co-operative basis and to be able to deploy it on the basis of their own mutual needs, independently and not just as something 'loaned' to them, if the transfer of technology has to be meaningful and worthwhile for the rural situation.

5. Family Life

Family life has to do with the family as a social institution. Family life here encompasses the social relationships as well as the general quality of life of the family members. By the term 'Quality of Life' we mean the standard of living of the family in terms of provision of basic needs (i.e food, clothing, shelter etc). In other words, how well is the family catered for physically, socially, economically and even psychologically?

The husband traditionally has been the sole provider for the

family. This may not be the case today, given the changes that have occurred in the fields of technology, agriculture, industry and so on. However, despite all these changes the husband is still viewed as the head of the family and therefore, the main provider of the family's basic requirements.

In this study, we attempt to analyse family cohesion in relation to the kind of social relationships that exist between husband and wife and parents and children, since the onset of the cash economy. The issue of who receives the earnings from sugarcane may be determinant. It is generally believed that in cash crop production it is the women and children who do the donkey work while the husbands reap the fruits of their sweat. It is the intention of this study to examine this issue in detail. How is the money earned from cane distributed for family use? Does the presence of the money cause any conflicts between the wife and husband, father and children especially sons in relation to expenditure or it has gone along way in cementing their relationships. How are the children catered for, in terms of provision of basic needs such as food, clothing, school fees medical care etc? Is the concept of private property being reinforced by the increased monetization of the economy and does this consciousness militate against family cohesion? or is there more individualization and monopolization of both property and income by the so-called head of the household in the smallholder community?

6. Smallholder.

Like most Third World countries small-scale farming has been the most prominent form of subsistence agriculture in Kenya. The peasants produce largely for the sake of survival but not for export/accumulation. This position of the peasant or smallholder has changed with the introduction of contract farming where the smallholder grows cash crops for sale. Thus the smallholder is incorporated almost involuntarily in the state and empires, within which he usually occupies a subordinate position and his resources in land and labour, have to one degree or another been affected by and linked in a number of ways to the money economy of the modern state and world market.

In this development of capitalist agriculture in the form of contract farming therefore, this study does not view the peasantry/smallholder as hungers on the old social order or as a transitional category but as part of the producer class whose role is historically determined and whose role changes according to the dominant trends prevailing in the economy as a whole and not just in the rural economy alone.

The term smallholder in this study is not used to refer to an amorphous mass of farmers without a distinct structure. By implication we are suggesting that a certain social differentiation or stratification exists within the peasantry rather than a homogeneity. This differentiation is manifested in the structure of ownership of access to land as well as labour and therefore the social product or wealth accruing as result of

their production. Thus we have also included the concept of the small farmers and the big farmers. The economic survey (1989) classifies the small farmer in Kenya as owning less than two acres of land. For the purpose of this study, small farmers have been classified as owning less than eight acres of land and committing less than four acres of land on cane planting. The small farmers own less than eight acres of land and commit less than four acres of land on cane planting. Therefore, they earn less income from the cane crop. The big farmers own over ten acres of land, some as many as 30 acres of land. Some commit 15 and above acres of land on cane growing, thus earning a substantial amount of income from cane. On average a number of them commit between eight and fifteen acres of land to cane growing. In the light of this differentiation, it follows that though the small and big farmers may be involved in the same contract the magnitude of problems affecting them whether social or economic differs.

Therefore, the smallholders are divided into social strata according to their social status, the position they occupy in the social organization of production and therefore, labour as well as in terms of the structure of property. Hence, ultimately we are talking about social relations of production which constitute the basis on how rural society is constructed and leads at the necessity to look at the index of social stratification based on ownership of land, based on tools and amount of labour hired in the production cycle.

However, these smallholders are involved in growing sugarcane on a contract basis. The facilities/inputs needed in the production process are obtained on credit from the company. The smallholder raises the crop to maturity, while the company harvests and markets the crop.

7. Rural Infrastructure

It is a general claim by the agribusiness firm that their involvement in agricultural production helps to improve the infrastructure of the rural community. By the term rural infrastructure we mean (roads, schools, recreational facilities, hospitals, water, electricity, trading centres etc). This study assesses to what extent the rural infrastructure of the NSC out-grower community has been improved since the introduction of the sugarcane.

8. Monetised Economy

The term 'monetised economy' in this study is used to refer to the onset of the cash economy, brought about with the introduction of sugarcane in a previously subsistence economy. The growing of sugarcane as a cash crop integrates individual farmers as producers in an economy which caters for interests wider than those of the immediate traditional localised economy. The peasant today is a producer of commodities for a wide ranging market economy whose borders extend to the national economy which commands both his production as well his production capacities.

This is the case in many of the Third World countries which are largely commercialized economies based on a vast peasant population. I.e. economies with a historically in built import export nexus. With monetisation the farmers incomes are expected to increase, and this effect is expected to trickle down to other spheres, of social life, and reflected in improvement of rural infrastructure, transfer of technology and upliftment of living standards of the rural populace.

CHAPTER THREE

3.1 METHODS OF DATA COLLECTION AND DATA ANALYSIS

3.1.1 Time Frame

The data for this thesis was collected between the months of January and March 1991. It took this long because the data was collected within a large rural area with rather frequent transportation problems, and hence, it was difficult for the researcher and the research assistants to interview a sufficient number of smallholder farmers in one day. Secondly, the data was collected at a time when the farmers were planting food crops. Thus, getting a farmer for interviewing during the morning hours was almost impossible. Lastly, the smallholder households are not located close to each other and therefore, it took some time for the researcher to move from one household to another.

3.2 Site Description

Nzoia Sugar Company is situated in Bungoma District, Western province of the Republic of Kenya. The sugar scheme's outgrower sector however, extends to several locations on the Western part of the Kakamega District. Both Bungoma and Kakamega Districts have almost similar ecological climatic conditions as well as agricultural practices. This is one factor that has made it possible for the Nzoia sugar company which is located on the Western part of the District (almost near the administrative boundary dividing Bungoma from Kakamega District) to extend its

outgrower zone to Bunyala and Samitsi locations of the Kakamega District.

Both Bungoma and Kakamega districts lie within the Lake Victoria Basin. Bungoma District has an area of 3,074 km² rising some 1,200 metres above sea level, in the west and over 4,000 metres above the sea level in the south-west. The relief and landform affect the climate and the general development potential of the District. The gently sloping terrain in most parts of the District accompanied by a fair rainfall and generally good soils provide a very productive and arable area (Bungoma, Kakamega District Development Plans, 1989-1993).

According to the Bungoma District Development plan of 1989 - 1993, the District is regarded as a region with a high agricultural potential. It experiences two rainy seasons. The long rain season normally starts in March and continues into June or July, while the short rains start in August and continue into October. Most of the planting, weeding and top dressing is done during the long rainy season. Rainfall normally ranges between 1,250mm to over 1,800 mm per annum.

Most of the land in the District is privately owned and many people practice small-scale mixed farming. The smallholders keep animals in addition to growing cash and food crops. Food crops are grown mainly for subsistence, with a little or no surplus for sale. The food crops grown include, maize, millet, sorghum, cassava, beans. The cash crops grown include, sugarcane, coffee, sunflower, tea, cotton, wheat and pyrethrum.

These agricultural activities are well illustrated by the attached Bungoma District simplified Agro-Ecological Zones map.

The ministry of Agriculture's most recent information put the number of holdings at 89,392 with an average of 4.8 ha. per holding. The largest holdings are estimated to be over 80.ha. while the smallest are estimated at 2. ha. The larger holdings are quite few and are found in the settlement scheme of Tongaren.

The District has an estimated total of 2.5 million ha. of arable land. Within the Nzoia sugar scheme outgrower sector the average smallholder has 0.8ha. Hence they constitute the "poorest"/small owners within the sugar scheme. One constraint to development in the district is the lack of infrastructure, which wherever it does exist, is either in a form that is inadequate or inappropriate. In some productive areas feeder roads have been impassable or lacking altogether for a considerable time.

Similarly, the Kakamega District where part of the sugarcane outgrower zone extends to, has a favourable climate, with a rainfall varying from 1,250mm to 2,000m per year. The rainfall is very reliable and adequately distributed with the highest averages found in the central part of the District. According to the Kakamega District development Plan of 1989-1993, 88 percent of the total land area is under cultivation and livestock holding. The remaining 12 percent is either hilly, mountainous or under forests. The good soils and rainfall in the District allow families to subsist on smaller parcels of land. The same

apply's to Bungoma District. The District just like Bungoma is mainly composed of small-scale farmers growing food crops for household consumption and the local market.

The food crops grown are maize, beans, sorghum, cassava and millet which are the staple foods; other crops grown are bananas, vegetables papaw and some fruits. Livestock such as cattle, poultry, sheep, goats and pigs are also kept. About 30 percent of the area under cultivation is covered by cash crops. The main cash crops grown are, coffee, beans, sugarcane and tea. Coffee and tea are grown in the southern, central and Eastern parts whereas sugarcane is dominant in the western part of the District which has the best arable land. Sunflower is grown in the northern part. Generally both the Districts under which the Nzoia sugarcane outgrower sectors extends have similar mixed farming practices. The maps attached of Bungoma and Kakamega District help to illustrate the entire administrative boundaries, of the Districts as well as the Agro-Ecological zones. (they are extracted from the District Development plans of 1989-1993 of the two Districts).

The Nzoia Sugar Company as noted above is located in Bungoma District. This company was incorporated as a limited liability company in August 1975 with the Kenya Government holding 95 percent of the shares. The other shareholders were a French based company, Five Coil Babcock (F.C.B) and the Industrial Development Bank (I.D.B) owning the remaining 5 percent shares. The scheme incorporates a factory with a planned capacity of 2,000 tonnes of

MAP 2 - LOCATION OF KAKAMEGA AND BUNGOMA DISTRICTS

cane per day or 50,000 tonnes of sugar per year. The company owns a nucleus estate of 3,6000 ha. which is cultivated by casual labourers employed by the company. However, the company mostly relies on the cane from the surrounding outgrowers' zones which comprise of approximately 13,000 ha., constituting a total of approximately 16,000 outgrower farmers. The average smallholder within the sugar scheme has 0.8. ha. The whole population of Nzoia outgrowers is divided into four management 'Division' or Zones. These zones are grouped on the basis of distance from the factory. Three of these Divisions lie within Bungoma District while one of them, lies within the Kakamega District. These zones are further sub-divided into sub-locations with each zone comprising an average of six sub-locations. All the cane in the nucleus Estate falls in zone A. While the (13611.21 ha.) cane surface in the out grower sector is distributed all over the rest of the three zones.

The table below illustrates the cane distribution.

Table 1: Cane distribution by zone

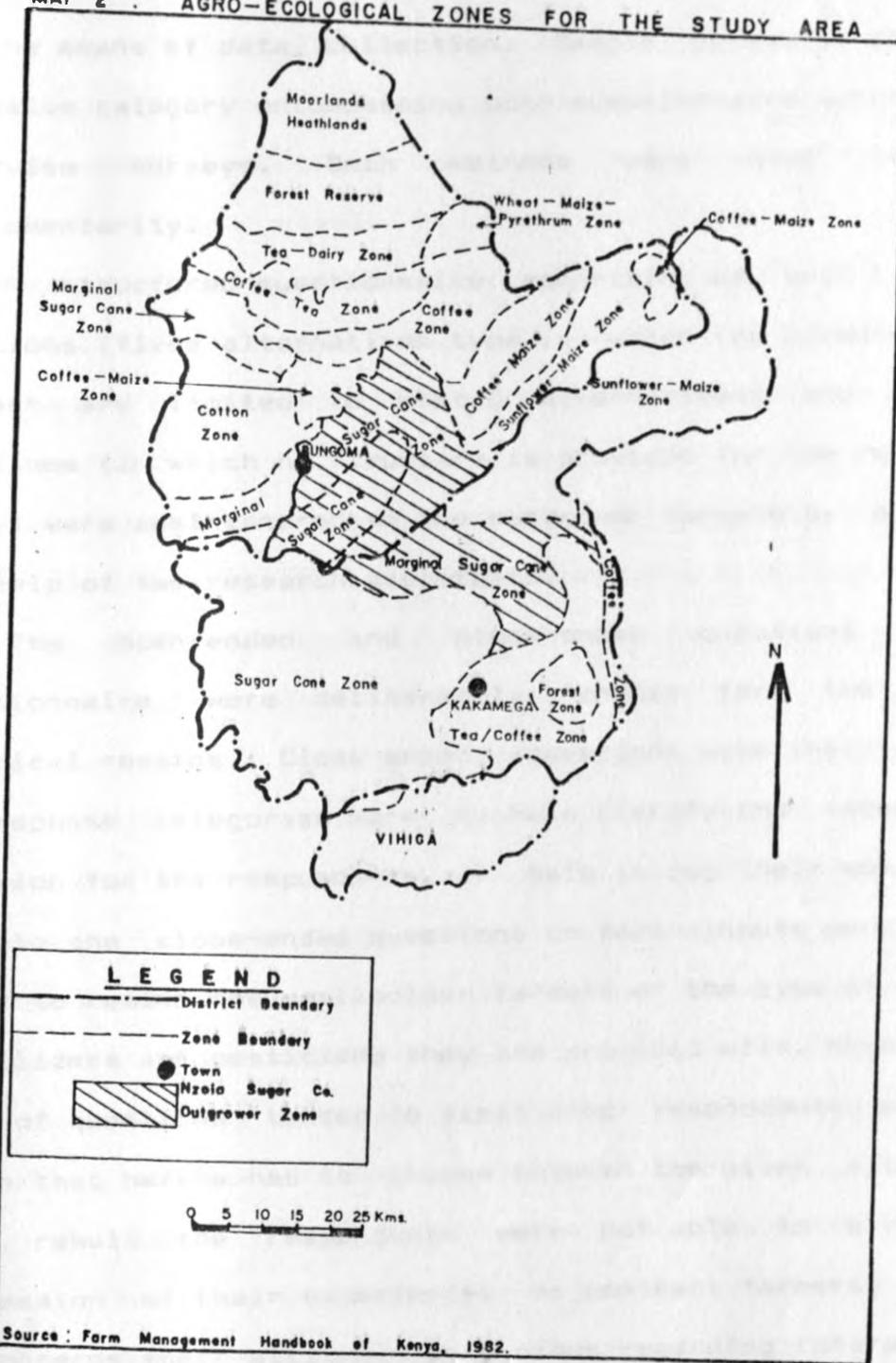
ZONES	DISTANCE FROM FACTORY (KM)
A	0 - 10
B	11 - 16
C	17 - 24
D	25 - 32

Source: NZUCO magazine 1986, Published by the Nzoia Sugar Company

MAP I : LOCATION OF KAKAMEGA AND BUNGOMA DISTRICTS



MAP 2 : AGRO-ECOLOGICAL ZONES FOR THE STUDY AREA



3.3 Methods of Data Collection

This research relied heavily on the sample survey technique, as the means of data collection. Sample survey is actually an inclusive category encompassing both questionnaire survey and the interview surveys. Both methods were used to afford complementarity.

A structured questionnaire comprising of both close-ended questions (fixed alternatives type in which the responses of the subject are limited to stated alternatives) and open-ended questions (in which no structure is provided for the respondent's reply) were administered to the outgrower farmers by myself with the help of two research assistants.

The open-ended and close-ended questions in the questionnaire were deliberately chosen for the following practical reasons. Close-ended, questions with their provisions of response categories were to help clarify the intent of the question for the respondents, or help to jog their memory. For example the close-ended questions on farm inputs were purposely meant to remind the smallholder farmers of the type of machinery, fertilizers and pesticides they are provided with. However, these type of questions tended to limit the respondents' expression, given that he/she had to choose between the given alternatives. As a result the respondents were not able to give a full expression of their experiences as contract farmers, especially as concerns their attitudes and views regarding contract farming

in general.

This shortcoming was taken care of by the open ended questions. The open-ended questions allowed respondents to answer in a relatively unconstrained way, by way of detailed explanation to myself or the research assistants as we recorded the responses verbatim. In this way respondents were able to convey the fine shades of their attitude to their own satisfaction instead of being forced to choose one of the several statements that may all seem more or less unsatisfactory. For this reason, open-ended questions proved to be more motivating to respondents.

The open-ended questions also helped the researcher to gather information on certain issues she did not have any knowledge of in advance. For example, how many acres of land smallholders have, their income from sugarcane, and any other food or cash crops, services delivered to them by the company etc. This is because close-ended questions require such knowledge in advance.

However, the open-ended questions had their own disadvantages. It was difficult to adequately code these responses. This is because some of the responses were self-contradictory incomprehensible or irrelevant, and some proportion of them tended to defy all efforts at meaningful categorization. This is one area the close-ended questions helped in minimising the errors. The main objective of mixing both the open and close-ended questions was to create a situation

where random errors could cancel themselves out.

For practical purposes therefore, the use of a questionnaire facilitated an accurate recording of answers for the particular variables of the study (for example incomes, family status, technology, rural infrastructure etc), which we were interested in. This was a sure way of testing the hypothesis that were advanced for this research.

Another technique that was used in this study is the interview survey. In the interviews carried out, a detailed examination of selected outgrower households was done in which a large number of processes, events and states were documented. Unstructured questions were asked during in depth interviews with key informants and twenty selected contracted families.

This technique had an advantage over the questionnaire survey in that the researcher was able to conduct more in depth interviews with key informants and family members directly in an effort to ascertain some crucial issues that were necessary for the study. For example, the researcher was able to get a clearer and more intimate grasp of the historical background of individual families, as well as the general agricultural activities of the smallholder community before the scheme, and the prevailing state of affairs from the randomly selected middle and old aged men and women.

In an effort to gather as much information as possible, in depth interviews were conducted among the selected families, who comprised of poor, middle and high class families.

A historical approach was adopted in establishing how the family has reproduced itself in the past (before the scheme) and after. Among the issues examined were who laboured on the farm, the nature of the labour performed, how incomes or surplus were distributed within the family, how children were catered for, and how stable the husband's relationship with the wife and children were (i.e how many disputes and the nature of the disputes before the scheme).

The findings were compared to how the family is fairing now, with the increasing monetization of family production. That is, whether the children are catered for better than before in terms of feeding, health, education, who works for long hours on the sugarcane farm, how money derived from the sell of cane is spent, who decides on how it is spent, and which priorities are chosen etc and lastly whether the above leads to family cohesion/solidarity or strained relationship between wives and husbands, parents and children, especially fathers and sons. On the whole, the social impact of the greater proximity of the market economy (in the form of the outgrower scheme) in the realm of the family was assessed.

Interviews with farmers and key informants helped to shed light on the past and the present agricultural practices of the outgrower community, the transfer of technology in the food crop sector, development of the rural infrastructure, provision of social amenities to the outgrower population as well as the state of growth in incomes of the contract farmers.

Some key respondents such as members of the NSC management and some rural elite elements were able to brief the researcher on the internal problems facing the sugar scheme, such as transportation, financial and technical bottlenecks among others. More of such information was obtained from the NSC field instructors, who were also contract farmers, chiefs, Assistant Chiefs, and a large section of the working rural elite.

In all cases the interviews were not conducted by way of pre-scheduled questionnaires, this is because the researcher felt such a method would create fear, or anxiety in the respondents about being followed on the basis of the information they give thus affect their responses. I actually endeavoured to create "rapport" with these informants and thereafter encouraged free and lively discussions on the research issues related to this study. In most if not all cases, confidentiality was observed. The wife, husband and children were interviewed differently when it came to sensitize topics touching on family cohesion. Secondly, the wife, husband and children would not open up and say the truth in the presence of each other for fear of being reprimanded later, especially wives by their husbands, children by their fathers.

This technique enabled the researcher to notice and correct the respondents misunderstandings or 'varied' understanding of specific questions/situations, to probe inadequate or vague responses, to answer questions and allay concerns which is particularly important if a complete and meaningful data is to be

obtained. Another advantage with individual or sometimes group interviews (where I found a number of farmers in one household coincidentally) was that I was able to remind the respondents to focus in a more detailed way on their incomes, labour inputs, delivery of services by the company, effects of monetisation on family relations as well as cross-check and verify on the spot, certain pieces of information, since the company's inception. This gave me a chance to get a detailed account of this history. The face to face interaction with the informants went a long way in improving the quality of the data.

On the whole, the interview survey technique allowed the informants to brief me on the previous socio-economic and agricultural situation of the area, in terms of how farmers have fared agriculturally over the years, the crops that were grown, and the changes that have come about as a result of the cash economy on contract basis. In other words, the development of the productive forces, the kinds of labour forms or strategies, and the kinds of production choices and relations adopted over the years by different households as well as the outgrower community as a whole. Such kind of information generated insights into the nature of the social and economic developments (or non-development) that have emerged in the community as well as the tenor of the changes within the changing nature of primary relations such as the family etc.

One disadvantage with this technique was that after a certain period of good rapport, some respondents were giving

invalid but socially acceptable answers to hopefully suit the researchers expectations or desire. For some of the respondents who worked with the NSC as field instructors and who were contract-farmers at the same time, the inclination seemed to be to say 'everything' positive about the scheme for fear that if they said something to the contrary the researcher would compromise them vis-a-vis the Nzoia administration which possibly would then result in the loss of employment.

3.3.1 Other Sources of Information

In the process of collecting data using the above mentioned techniques the researcher talked to village informants (i.e. neighbours, relatives, headmen, assistant chiefs) so as to try and get as 'objective' a view of family life in each selected household. The close social bonds that exist between households in the rural villages facilitated the process of obtaining detailed information about the selected household in that the families know each other well and thus could give information concerning the neighbours. For example where income from sugarcane brought family disputes the neighbours knew of it. They could quote the households where husbands misused the money and the nature of disputes that broke up.

More information was collected by merely observing, seeing, listening, and talking to the farmers casually, in an effort to understand their activities and their interpersonal relationships. All this was done in an effort to seek what the

respondents were not willing to disclose to me; such as family disputes emanating from expenditure of sugarcane income, incomes, from salaries and other food and cash crops etc.

Secondary data was incorporated from the following sources.

1. The Nzoia Sugar Company records (i.e. the list of farmers that was the sampling frame, Agronomy, accounts and annual reports compiled and written by the NSC Management on the running of the company

2. Government documents, in particular The Economic survey and the Statistical Abstracts.

3. Ministry of Agriculture records (on sugarcane production in Kenya and especially the overall performance of the Nzoia Sugar Company).

3.4: Sampling frame and sampling design

3.4.1 Sampling Frame

According to De Vaus (1986) a sampling frame involves listing all members of the population and thereafter pulling out the names of those, one needs to make a sample. The sampling frame used in our case was a list of names of all outgrower farmers which was obtained from Nzoia Sugar Company. This list consisted of 16,000 contract farmers. Thus to collect information from all these farmers was going to be prohibitively expensive and impractical. What we did was to collect information

from only some people in the group in such a way that their responses and characteristics had to reflect those of the group from which they were drawn. A sample of 200 smallholder farmers was drawn initially. I was able to collect information from 195 respondents. The other five questionnaires were either spoilt or the farmer was not available to give the information. This procedure was much cheaper, faster and easier than surveying all the contract outgrowers of Nzoia sugar company.

3.4.2 Sampling Design

According to Miller (1983) a sample is a smaller representation of a larger whole. The use of sampling allows for more adequate scientific work by making the time of the scientific worker count. Instead of spending much of his time analysing a large mass of material from one point of view he can use that time to make a more intensive analysis from many points of view.

In the social sciences, sampling considerations and complications are thrust upon the researcher by the very nature of his data gathering conditions (Blalock & Blalock 1968). A proper sample must give a precise picture of the population from which it is drawn. Secondly, the sample must be obtained by a probability process. This permits the use of statistical procedures to describe and analyse the data of the sample and to relate it to the population from which it came. In short, then a

proper sample should be a small piece of population obtained by a probability process that mirrors, with known precision, the various patterns and subclasses of the population.

The sample for this study was drawn from the contract farmers of Nzoia sugar company. The Nzoia Sugar Company has administratively divided its outgrower farmers into four Divisions. Each division is further sub-divided into sub-locations. The divisions have an average of 7 sub-locations under them. On the whole all the outgrower farmers cover an area of 1,3000 ha.

In order to ensure an effective representation of such a large number of smallholder farmers no other method would have been as viable as stratified sampling. This method has an advantage of increasing the chances of selecting a representative sample by selecting sub-samples proportionate in size to the significant characteristics of the total population (Miller 1983). Thus it makes it possible to select a sample that is mathematically absolutely representative with regard to some significant characteristics. To be representative the method involves dividing the population into separate, more homogeneous strata and then selecting simple random samples from each strata. To achieve this homogeneity, we needed to select the relevant stratifying variable. In our case the stratifying variables were the sub-locations (under the four divisions) where the outgrower farmers belong.

The sampling frame (that is, a list of outgrower contract

farmers from the four divisions) was obtained from the company. The physical area to be covered in this study was quite large. The break down is as follows.

Division one - 9 sub-locations

Division two - 12 sub-locations

Division three - 13 sub-locations

Division four - 8 sub-locations

TOTAL 42 sub-locations

Considering the time and money available for this study only three divisions were randomly selected for the study. I put out four rolled pieces of paper containing the names of the divisions. The three divisions which were picked fell in our sample (i.e. division two, three and four).

The divisions are further divided into various sub-locations as indicated above and thus, it was going to be very expensive and time consuming to collect data from all the smallholder farmers from these many sub-locations. Therefore, three sub-locations were selected from each of the already selected divisions using a method similar to the one above. The sub-locations sampled included; Kharanda, Nambacha, Namirama, Sitikho, Milo, Matisi, Kitale, Nantolia and Maji Meru.

After forming these homogeneous strata, systematic sampling method was incorporated to come up with the exact names of the farmers from the sample frame, who then constituted the sample. A sampling fraction of 1/10 was applied. Every 10th person was selected after a random start. A total of 200 respondents were

selected to whom the structured questionnaires were administered mainly by myself with some help of the research assistants.

The researcher and the research assistants collected the data by walking from one household to another. This rural area had a lot of transportation problems especially in the areas away from the main road. The only way to reach the respondents was either to walk on foot or to use a bicycle. The homesteads are geographically located between $\frac{1}{2}$ to 1km apart. In some cases the distance is up to 2km. The researcher would go to the homestead and interview either the wife or the husband depending on who was available. This is because we could not interview the farmer directly registered under the contract for various reasons. Firstly, we were treating both couples as contract farmers since they were both equally involved in raising the crop regardless of the one whose name was officially registered with the company. Secondly, some husbands are officially registered but they worked outside their homes (i.e. urban towns) so it was their wives who took care of the crop. Thirdly, we intended to get a fair view from both sexes since we realised that the men were not willing to disclose how the income was spent and whether this caused any friction in the family. Thus, for practical purposes we read out the questions to the respondents in their vernacular language and we recorded the responses verbatim.

The key informants were selected on the basis of social status. I picked the people in authority (for example, management of the Nzoia Scheme, chiefs, elders, rural elite elements (i.e.

the relatively learned people such as teachers, clerks, nurses etc), progressive farmers and so on) who could furnish me with the kind of information I wanted. The key informants among the smallholder community were picked at least from all the sub-locations that fell in the sample. In order to get more information (for example about a particular family), I would pick somebody who had more accurate information about that particular household. A total of 20 key informants were selected. The researcher had an in depth verbal interview on issues relating to agricultural practices in the area, the performance of Nzoia Sugar scheme in terms of delivery of services to farmers, the general bottlenecks in the scheme's performance both on the local and national level as well as other issues.

As concerns the interview surveys a number of 10 households were selected. The researcher had to mix up families with different economic and social status so as to have a fair view of how all kinds of families were fairing in the cash economy. The researcher, was therefore, able to collect views on all variables that had to be measured.

Stratified random sampling method was selected for the purpose of this study for a special reason. The advantage this method has over simple random sampling is best expressed by the word 'homogeneity'. It assures representativeness with respect to property which forms the basis of classifying units. Therefore, it yields less variability than simple random or systematic sampling. Secondly, it decreases the chance of

failing to include certain members of the population because of the classification process itself. Thirdly, characteristics of each stratum can be estimated and hence comparisons can be made.

One reason why simple random sampling could not have been used for this study is that the population under study came from a large geographical area, and since the data was being collected by questionnaire survey and personal interviews the cost of simple random sampling would have been prohibitive. This is because, data collection would have involved the researcher travelling long distances just for one interview. The population in the area is not geographically concentrated in one place. The homesteads are located about $\frac{1}{2}$ to 1 km apart from each other and in some cases even further. Thus, simple random technique could not be used since it is used better in an area where the population is geographically concentrated and not much travelling is involved.

3.5 Problems encountered

Several problems were encountered by the researcher during the process of data collection. First and foremost, the rural area under study had communication problems as I have mentioned before. Most of the feeder roads were inaccessible. We could only find transport means on the government maintained main roads. To interview our respondents we had to walk long distances on foot between $\frac{1}{2}$ to 1 km on average from one household to another. In some cases we walked up to 2 km to locate the

next respondent. It was tiring physically, and time consuming too. Hence, one reason why the period of data collection was rather long.

Secondly, it took quite some time to convince a respondent to sit down with you for an interview. This is because Nzoia Sugar Company has been delivering very poor services to the farmers. Cane has dried in the farms and infact some farmers have never harvested for the last six years. As a result the farmers are so hostile to anybody who wants to discuss matters related to the sugar scheme. Thus, the negative attitude the smallholders have about the sugar scheme made the process of data collection difficult and very slow, for it took about an hour to convince a respondent that we were not from the sugar scheme and that is how we were able to derive the information in most instances.

Thirdly, some of the variables I intended to measure were problematic in terms of extracting the exact information from the respondents. This was particularly so in relation to income. Some respondents could hardly remember much about their past earnings. Others were deliberately not willing to disclose the figures for their own personal reasons. To cope with this problem, we were privileged to have some literate and cooperative farmers who could remember well their past earnings, in terms of quantity marketed and the prevailing price at that time. Some even had documentary evidence in form of receipts of the sale of those items showing the market prices. Thus, we had to use this

particular pricing to apply to those farmers who were not ready to disclose the figures.

3.6 Methods of data analysis

3.6.1 Introduction.

In the Social Sciences Researchers try to answer two fundamental questions about society. What is going on (descriptive research) and why it is going on (explanatory research). The central role of social research is to try to answer both the 'why' and the 'what' questions. The aim is both to describe and understand society. (De Vaus 1986).

Observations require explanation but equally explanations need to be tested against the facts. It is not enough simply to collect facts, nor is it sufficient simply to develop explanations without testing them against facts. Fundamentally sociological research involves a constant interplay between observations and explanation, collection of further facts to test the explanation, a refinement of the explanation and so on.

There are three factors which affect how the data are analysed. (1) The number of variables being examined (2) the level of measurement of the variables (3) whether we want to use our data for descriptive or inferential purposes. Thus, the choice between methods is determined in part by the level of measurements of the variables involved. For instance, some methods of analysis are appropriate only for variables measured at certain levels. Even after having chosen an appropriate

method of analysis, the choice of statistics to be used with that particular method is affected both by the method of analysis itself and the level of measurements of those particular variables. This study strictly adhered to this guiding statistical principles.

For the purpose of data analysis this study utilized a computer package (the statistical package of the social sciences (S.P.S.S) program. Raw data from the field in form of questionnaires was coded and entered into the computer for analysis. This package is a fairly recent development which has been refined several times such that the study used the SPSS/PC+ version of the program. The program can perform all sorts of analysis ranging from univariate analysis to multivariate analysis among others. However, not all of these methods available in the SPSS were used.

3.6.2 Methods Used

In this study, descriptive and inferential methods of data analysis were used.

1. Descriptive

These are simple statistical methods which do not necessarily support or refute a hypothesis or relationships between variables. They actually summarise patterns in the responses of people in a sample. However, these statistics require the most imagination and skill and is the most productive

in terms of understanding any phenomenon. Once data has been analysed using these techniques, we may wish to use inferential statistics (tests of significance) to see whether the patterns and processes we have detected in the sample hold in the population. But the first and key task is to discover these patterns and processes.

The main descriptive tools used in this study include: Mean, range and percentages. The mean is a measure of central tendency. It tells the researcher the central characteristics of the data. The range is the difference between the maximum and minimum score in the data.

2 Inferential Statistics

These are statistical methods used to test hypotheses. They help extrapolate from the patterns in a sample to likely patterns in the population from which the sample is drawn. In other words they provide an idea about whether the patterns described in the sample are likely to apply in the population from which the sample is drawn. (De Vaus 1986). Thus a researcher may select a subset or sample, make inferences about the population. These statistics therefore provide a means for making inferences about a total group, based on observations from part of the total. (Groebner, 1985).

In inferential statistics, there are two categories; parametric and non-parametric. This study used non-parametric statistics in the entire analysis for reasons that will be

outlined here. Miller (1986:207) indicated that in the development of modern statistical methods, the first techniques of inference that appeared are those that made many assumptions about the nature of the population from which the scores are drawn. Since population values are 'parameters' these statistical techniques are called parametric.

However, more recently, a large number of techniques of inference have been developed, that do not make stringent assumptions about parameters. These newer non parametric techniques are 'distribution free; so that regardless of the shape of the population we conclude according to our results. (Miller:1986:207).

Moreover, in the computation of parametric tests, we add, divide and multiply the score from the samples. When this arithmetic processes are used on scores that are not truly numerical, they naturally introduce distortion in those data, and thus throw doubt on conclusions from the test. Thus it is permissible to use the parametric techniques only with scores that are truly numerical (Miller; 1986:208).

Parametric statistics are used when variables being measured are interval or ratio in nature. Non-parametric statistics are applied at both Nominal or Ordinal levels of measurements. For bivariate analysis, therefore, this study utilized three major statistical methods.

a) cross-tabulations

b) The measure of association (chi-square)

c) Measures of degree of association: (contingency co-efficient).

a) **Cross-Tabulations**

These are joint frequency distributions of cases according to two or more classificatory variables (see Nie et al 1975). Cross-tabulations are a way of displaying data so that we can fairly readily detect association between two variables. Such contingency tables tabulate the sample on two or more separate dimensions in a way that the reader can see the interrelationship between a respondents score on a second (and/or their) variable(s). (Prewitt 1975).

Statistics which provide concise summaries of the association in a cross-tabulation are called correlation coefficients or measures of association. They include; statistical tests of significance such as the chi-square and measures of strength of association such as the contingency coefficient, among others.

b) **Chi-Square Test**

This is a non-parametric statistical method of testing relationships between variables. The chi-square is a test of statistical significance. It is a very general test that can be used whenever we wish to evaluate whether or not frequencies which have been empirically obtained differ significantly from those which would be expected under a certain set of theoretical

assumptions. The test has many applications, the most common of which in the social sciences are "contingency" problems in which two nominal-scale variables have been cross-classified (Blalock H.H. Jr 1988:279)

Although a χ^2 test can be applied to nominal, Ordinal or interval scale data, use of the test requires that the data be arranged in the form of a contingency table. This shows the frequency of occurrence of individual measurements or observations within categories or classes.

Chi-Square Formula

Chi-square is defined as follows $\chi^2 = \sum (f_0 - f_e) / f_e$ where f_0 and f_e refer respectively to the observed and expected frequencies for each cell in the contingency table. The chi-square is obtained by first taking the square of the difference between the observed and expected frequencies in each cell. We divide this figure by the expected number of cases in each cell in order to standardize it so that the biggest contributions do not always come from the largest cells. The sum of these non-negative quantities for all cells is the value of chi-square (Blalock H.M. Jr 1988: 281). The larger the differences between observed and expected frequencies the larger the value of chi-square. Chi-square will be zero only when all observed and expected frequencies are identical. The calculated value of χ^2 is compared with the table value of χ^2 for given degrees of freedom at a certain specified level of significance.

If at the stated level (generally 5% level is selected) the calculated value of χ^2 is more than the table value of χ^2 , the difference between theory and observation is considered to be significant, that is to say, it could not have arisen due to fluctuations of simple sampling. If on the other hand, the calculated value of χ^2 is less than the table value, the difference between theory and observations is not considered as significant that is to say; it is regarded as due to fluctuations of simple sampling and hence ignored.

In order to use the chi-square test, expected frequencies in any cell of a contingency table should not be less than 5. Although it is permissible for 20 percent of the cells to have expected frequencies of less than 5. When contingency tables are larger than 2×2 No cell is allowed to have an expected frequency of zero.

By itself chi-square test only helps to decide whether variables are independent or related (i.e. measure of association). It does not tell us how strong they are related. To measure strength of association, several measures have been developed. This study used the contingency coefficient as a measure of the strength of association.

c) Measure of Degree of Association.

These are measures of strength of relationships. They show how strongly two variables are related. That is, they indicate to what extent the characteristics of one variable and the

characteristics of another occur together.

d) Contingency Coefficient.

The contingency coefficient 'C' is directly connected with χ^2 test and measures the degree of association between the sets of attributes. It is the same as the coefficient of correlation, but may be applied to classifactory or Ordinal scale measurements and is calculated directly from the value of χ^2 as follows:

$$C = \sqrt{\chi^2 / \chi^2 + N}$$

Where N = grand total of observations

χ^2 = Chi-Square

Like the other measures, C becomes 0 when the variables are independent. The upper limit of C, however, depends on the number of rows and columns. In the 2 x 2 case the upper limit of C^2 becomes $N/(N + N)$ since χ^2 can reach a maximum value of N. Therefore, the upper limit of C is .707. Although the upper limit increases as the number of rows and columns increase. This upper limit is always less than one (Blalock H. M. Jr 1988:305).

In this study 0.2 is considered as rather weak, 0.3 as moderately strong, 0.4 as strong and 0.5 and above as substantially strong.

3.7 Possible errors of the study

An error occurs whenever there is a difference between the true values of a quality and the values of it obtained in the survey. (Jolliffe; 1986:25). Although the main task of the

survey is to obtain accurate respondent attributes, errors may not be avoided completely. For this reason, argues Grooves (1987) it is wise to be aware of possible errors in our observations and measurement of respondent attributes. More importantly, whenever we suspect errors, we have to find the best methods of countering them as far as possible. Errors in surveys include;

- a) Errors due to non observation and
- b) Measurement errors.

a) Errors Due to Non Observation

These errors include coverage, sampling, non-response errors and errors due to refusals, errors on sensitive topics and errors of memory. (See Grooves; 1987, Jollife; 1986). Perhaps the more challenging errors encountered in this study were those due to refusal, errors on sensitive topics and errors of memory. Some of the respondents in our sample refused to participate in the survey for their own reasons. This was a disturbing phenomenon in the initial stages of the survey. However, after establishing rapport in the first two weeks with the farmers and with the help of the local administration, we always went back to them later on in their respective homes.

We gathered that one of the major reasons why our respondents refused to participate, was the fact that they were absolutely disappointed by the inefficiency of the services offered by the NSC and the lack of accountability to the farmers and therefore did not want to hear anything to do with

the factory. Unfortunately the period of this study coincided with the time most of the farmers cane were dry and rotting on the farms after a period of three years of non harvest. The farmers thought the researcher was an employee of the NSC and thus were very bitter and showed outright disgust towards the researcher. What they wanted to be told is why their sugarcane cannot be harvested while the company and the Government keeps quiet as they languish in total poverty.

The researcher after sometime managed to convince the contracted farmers that she was not an employee of the NSC; that she was a researcher interested in knowing their problems after which their grievances would be made known to the Government. The local chief, Assistant chiefs and Headmen, addressed the farmers in a local baraza and assured them that their cooperation was necessary. They assured the farmers I was a researcher, who had their interests at heart and who could air their grievances to the Government. The farmers thereafter were very willing to participate.

Some farmers gave the reason of being busy on their farms as the reason. The time for holding interviews was reviewed to afternoon when the farmers had finished working on their farms.

Errors on sensitive topics were another problematic area. Most respondents expressed some discomfort when asked about their interpersonal social relationships, incomes received, and their expenditures. However, much effort was done by the researcher to avoid this expected problem. Sensitive questions were mixed

haphazardly with other insensitive questions. The remaining task was for the interviewer to ask them in a manner that aroused no feelings.

Errors of memory was another point to reckon with. Some of the questions asked required the respondent to recall things that happened long time ago. Moreover, we were dealing with some old respondents some aged over 60 years whose memory was poor.

Questions particularly on incomes obtained from sale of food crops, businesses, and even sugarcane were answered with much uncertainty. The researcher had to counter this shortcoming on incomes, by relying on a price quoted by a majority of the respondents. In the case of cane incomes the farmers were asked to avail their receipts of accounts from the company given to them on payment.

Non response errors are actually related to the errors just discussed. For example, failure to contact some sample members, amounts to non-response error, although it may be a result of refusal by the respondents to participate.

(b) Measurement Errors

The most active field of research on survey quality concerns measurement error; the discrepancy between respondents attributes and their survey responses. For our purposes, measurement errors will be viewed as arising from the influence of the interviewer (interviewer effects), the weakness of the survey questions and mode of data collection. (Grooves 1987)

Interviewer effects were more distinct in the initial stages of the research. As time went on more rapport was built and the researcher was more able to communicate with the respondents more effectively. The respondents changed their attitude from that of hostility to that of mutual trust and understanding.

The weakness of survey questions is said to give rise to social desirability effects (Grooves 1987; 159). In these respect the study for example sought to know whether the respondents were satisfied with the services offered. Most of the respondents responded to the negative and even said they had suffered a complete loss due to non and/or delayed harvests. However, to reduce social desirability we asked some questions relating to what the farmers thought they had benefited from the scheme. A number of them agreed that they had improved their housing and their children were educated with the help of cane incomes. Some had started petty businesses which were earning them a little income for daily use.

In some cases, it was observed that respondents failed to give appropriate answers to the questions due to the effect of question order, structure or wording. To minimise this error, the researcher controlled the direction of the interview, by persistently clarifying each problematic question for the respondents. This effect was also cancelled out in that for each concept or variable there were multiple questions measuring it. However, there were many other questions which were clear and to the point as was evidenced by their facial validity.

According to Grooves, errors emanating from the effects of the mode of data collection, are related to non response and coverage errors. These have been discussed in errors due to non-observation in the previous section.

Concerning measurement errors, Grooves further explains that although the most active field of research or survey quality concerns them, there appears to be at least two reasons for the disproportionate attention to these errors (1) Statistical techniques have improved the capability of analysts to acknowledge some kind of measurement errors, for example, the development of confirmatory factor analytic techniques, (2) in contrast to errors of non-observation, many measurement errors can be investigated using the available survey data themselves (without requiring outside sources). (Grooves; 1987; 159). On the whole we are content that both measurement and non-observation errors were minimized.

CHAPTER 4

HISTORICAL BACKGROUND OF THE NZOIA SUGAR COMPANY

4.1 Introduction

The Nzoia Sugar Company (NSC) is situated in Bungoma district of Western Province of the Republic of Kenya. It was incorporated as a limited liability company on 1st August 1975 with the Kenya Government holding 95 percent of the shares. The other share holders were a French company Five Coil Babcock (F.C.B) and a local Kenyan company Industrial Development Bank (I.D.B.)

The NSC was the fourth sugar project by the Kenya government after Muhoroni, Chemilil and Mumias sugar factories. Prior to their establishment, there were two private sugar factories operating in the country, namely Miwani and Ramisi. The government commissioned these factories following sharp increases both in home sugar consumption and import bills due to rises in world sugar prices. The NSC was commissioned in October 1978 and has continued to be in operation since then.

The establishment of the NSC in 1978 was a deliberate policy measure by the government to revitalise the sugar industry with a view to enhancing self-sufficiency in sugar production and at the same time realise the following objectives:

1. To accelerate and enhance the economic growth of the country.

2. To decentralise industries from major urban centres to rural areas thereby opening the latter sector to increased commercial activities.

3. To discourage rural-urban migration by offering employment opportunities within the rural sector.

4. To enhance the socio-economic well being of the rural population.

5. To develop the badly needed infrastructure by improving communication systems etc.

The scheme incorporates a factory with a planned capacity of 2,000 tonnes of cane per day or 50,000 tones of sugar per year.

The company at present has a nucleus estate comprising 3,600 hectares, but mostly relies on the cane produced by the contracted outgrower zones which currently comprise 13,000 hectares. The company has 16,000 contracted farmers, with the average smallholder cultivating 0.8 hectare of sugarcane land.

The whole population of Nzoia outgrower are grouped into four management zones. This distribution of cane is based on distance from the factory. The outgrower zones are further divided into five management District based on local administration boundaries (see table 2 and 3 below)

Table 2: Distribution of Outgrower cane according to zones and distance from the company

ZONE	DISTANCE FROM FACTORY (KM)
A	0-10
B	11-16
C	17-24
D	25-32

(Source: NZUCO magazine 1986, published by the Nzoia sugar company).

Table 3 Distribution of outgrowers according to local administration boundaries as at october 1991

Constituency	Number	Sublocation	No. of farms	Surface (Ha)
KABRAS	521	KIVAYWA	131	105.03
	522	KILIBOTI	338	268.21
	523	LWANDETI	6	9.51
	531	MATSAKHA	96	81.11
	541	SAMITSI	44	37.83
SUB-TOTAL			615	773.10
LURAMBI	621	SIDIKHO	229	178.09
	622	NAMBACHA	374	271.31
	623	NAMIRAMA	323	255.82
	624	SIVILIE	77	67.88
SUB-TOTAL			1004	773.10
KANDUYI	131	E. SANG'ALO	2449	1766.65
	133	N. SANG'ALO	489	560.77
SUB-TOTAL			2938	2327.42

KANDUYI	121	S. KANDUYI	536	555.16
	132	W. SANG'ALO	1081	843.14
	134	NAMIREMBE	526	479.51
	151	N. KANDUYI	28	47.82
	161	W. MATEKA	172	182.65
	162	KABULA	78	68.74
SUB-TOTAL			2421	2177.02
SIRISIA	451	N. NALONDO	212	150.02
	452	S. NALONDO	838	650.91
	453	W. NALONDO	1613	475.69
	461	CHWELE	48	54.54
SUB-TOTAL			1674	1601.85
WEBUYE	352	MUCHI	593	473.18
	332	MALAKA	125	113.04
	333	KHALUMULI	1370	1015.63
SUB-TOTAL			1674	1601.85
WEBUYE	352	KITUNI	930	666.02
	351	MISIKHU	623	496.0
	321	NDIVISI	27	65.14
	322	MIHUU	63	65.14
		MAKEMO		
	323	MAKISELWA	31	23.91
SUB-TOTAL			1674	1316.21
WEBUYE	342	MIENDO	914	764.46
	341	BOKOLI	672	498.38
	233	KIBINGEI	117	151.66
		KIMILILI	1	
SUB-TOTAL				1414.50

All cane in the Nucleus Estate fall in Zone A. While the (13611.21 ha.) cane surface in the outgrower is distributed all over the three zones.

4.2 Management of The Sugar Scheme.

Right from the outset the Kenya Government was the major shareholder with the French based Five Coil Babcock Company (FCB) a multinational corporation offering technical and consultancy services. The F.C.B. initially entered a three year contract with the NSC until a time when the factory could fully take off and be handed over to the local management. Thus, the French based multinational firm constructed and developed the factory and continued to offer technical expertise up to the year 1982 when their contract expired. However, despite the fact that the contract had expired the consultancy firm retained its share in the factory and even left some of its personnel mostly in the technical field, who have been managing and servicing the machine until recently. In 1989, the government refused to renew their contract and engaged an American based Arkel international inc. to rehabilitate and revitalise the poorly technically managed factory. Up to date, the NSC continues to pay the French company for consultancy services and loan advanced to it at inception. On the onset the FCB launched a feasibility study of the NSC environs (neighbourhood) with a view of establishing the suitability of the project in terms of achieving Kenya's policy of self-sufficiency in sugar, increasing the production output,

as well as improving the living standards of the farmers in question.

Eventually, on completion, the feasibility study report was written out in French and up to date it has never been translated in English. Information from the current management of the NSC at the time when this research was carried out revealed that, most of the Kenyan NSC personnel who were meant to study the report and implement its policies were and are still not in a position to read and appreciate the French language in which the report was drafted. The feasibility report is available in pieces but continues not to be of any significant value to the NSC management. It is therefore ironical that the same management has to implement the policies that were drawn in this study.

The feasibility study was not readily available at the NSC for the researcher to have a glimpse of it, neither is it available in any established libraries in the country, leave alone the Ministry of Agriculture library under which the sugar scheme falls. Nevertheless, an interview with the NSC management exposed some of the shortcomings of that study. The study did not take into account the creation of what could be called the 'cane development fund'. Under this fund the company would have set aside some standby revolving money which the company could readily use to pay its workers, farmers, purchase machinery, fertilizers, pesticides etc, without waiting for the company to raise income for the above needs through the sale of the cane crop. Today, the company is financially unstable, partly as a

result of this oversight. Thus, the company must plant and market the cane crop to raise capital to pay the workers, farmers, and to purchase the needed technology for the sugarcane production. This is a very serious shortcoming, and therefore, there is an urgent need for the company management and the government to act swiftly and find an immediate and lasting solution, if the credibility of the company has to be restored. If the present trend persists, the NSC is not likely to recover economically and consequently farmers are less likely to invest in sugarcane.

The process of waiting for cane payments for as long as one year has caused serious suffering on the part of the farmers and their families. Those farmers who rely on the crop as their only source of income, have had their children drop out of school, and hunger is the order of the day in their families. The NSC on the other hand has been unable to purchase adequate stocks of fertilizers, pesticides, as a result of this financial crisis. Farmers have thus planted the cane crop without some of this necessary inputs. Many farmers complained that they got poor yields as compared to those who were supplied with fertilizers.

The French coil Babcocks project planning was improper. This was disclosed by the NSC management. The management blames the poor performance of the agribusiness firm (FCB) and therefore the NSC, on the Kenya government machinery, who negotiated and eventually signed an agreement with the French government. The personnel comprised of Kenya's Ambassador to France and other

members of the diplomatic corp who were involved in the bargaining process with the French firm. Contends the NSC management were not qualified in the relevant areas of specialization such as economics, Finance, Agronomy, social systems etc, to have the appropriate and adequate knowledge to evaluate the worthiness of the project given the terms and conditions laid down in the agreement by the French Firm.

Furthermore the Kenyan government negotiators are blamed for the financial quagmire the NSC finds itself today. Indeed, it has been a major set back to the NSC performance. This scenario dates back to the bad financial set up right from the outset, especially, in loan amounts and repayment terms, overpriced agricultural machinery and technical assistance. Two main conditions set by the French firm were (1) to use their French manufactured machinery and (2) to utilize their French personnel as technical experts in the construction of the NSC. The rates for these services were too high for any meaningful enterprise. For example, the NSC management revealed that the tractors purchased cost six times more, than they could be obtained here locally. The salaries for the technicians and the loan repayment rates were equally unrealistic. Thus, the general cost were inflated, forcing the financial outlay to be quite high than the factory could sustain at the same time functioning optimally. To add on the high technical and consultancy fee paid to the French company, the NSC has to pay Revenue to the Government promptly. Per every tonne of sugar milled the company has to pay Ksh:1000/-

to the government. All these costs in total have rendered the NSC financially unstable and thus it has continued to operate at a loss nationally (i.e. negative returns) and to offer very poor services to the contracted farmers due to circumstances they can not easily control.

Frequent machine break downs have rendered the sugar scheme completely unable to cope with the outgrower production rates and therefore most of the outgrower cane remains in the farms overmature and unharvested. In some extreme cases some farmers have had their cane rot and dry in the farms for a period of six years thus suffering an absolute loss. This phenomenon has affected the farmers both socially and financially causing a hue and cry in all the outgrower zones. Apart from affecting farmers this technical bottlenecks have affected the NSC'S production performance. The factory has continuously made losses at the National level (i.e has had negative returns) and thus the Kenyan Government has failed to achieve its policy of self-sufficiency in sugar an objective the factory was established particularly to achieve. Hence the Government has continued to import sugar to meet the country's consumption needs.

Faced with the above problems of inflation and poor performance, the government was forced to discontinue the French, Five Coil Babcock company's contract. The NSC is currently being managed by the American based Arkel International inc which offers technical expertise. The Arkel is an agribusiness company which has been developing the sugar industry in some parts of the

Third world over the years. Arkel built the Kenana sugar factory in Khartoum which crushes 21,000 tonnes of cane per day and is the biggest sugar factory in Africa. It has also undertaken other projects in Egypt, Ivory Coast and the Sudan.

The Arkel International inc was hired to rehabilitate the NSC to achieve its planned capacity of 2,000 TCD which has never been achieved since inception. They took up the project on 15th May 1989 and hoped to achieve the 2,000 TCD in January 1990. After that, they were meant to expand the factory to 3,000 TCD to reach this capacity in September 1990 and thereafter make further negotiations for a further large scale expansion to 7,000 tonnes of cane per day. The expansion programme estimated to cost Kshs:1.8 billion will bring the NSC's crushing capacity to the level of Mumias Sugar Company which currently produces half of Kenya's sugar.

The current expansion phase by the Arkel company even if commissioned will not alleviate the farmers problems in the near future. The problems will persist for a long time. According to the management the NSC has 1.6 million tones of ready-to-cut sugarcane, against a crashing capacity of about 600,000 tonnes per year. When the current phase of expansion is commissioned, the factory will be able to crush 700,000 tonnes of cane per year leaving a backlog of one million tonnes. When the management was interviewed on what will happen to the outgrowers crop and the effort they have put in, they said they would continue to cut the over mature cane to boost the farmers morale.

However, an interview with several outgrowers revealed that the NSC was not willing to harvest the dry cane which the company claimed is a factor contributing to machine breakdowns. Secondly less sugar is realised from this hard fibred cane. Some of the smallholders cane has dried up to the extent that it's useless harvesting and is hence used as firewood by the neighbouring households. This particular farmers can not be helped in any way by the sugar scheme since there is no form of compensation being done. The company will have to take a long time to attract or convince such worst hit farmers to join the contract again.

Furthermore, the extent to which farmers morale will be boosted remains to be seen especially in view of the fact that the earliest date for clearing the backlog of over-matured cane within the NSC zone is three years from now. This is because the expansion programme to reach 7,000 tonnes of cane per day is expected to materialise by the year 1994. To make matters worse since the Arkel company took over the rehabilitation and expansion work, the company's target of achieving 2,000 TCD and expanding it to 3,000 TCD has remained a dream. The technology applied by the Arkel company seems not to combine well with that of the former Five Coil Babcock company and hence when one machine functions the other breaks down in the process. In actual fact, the NCS has rarely been able to crush more than 1,500 tonnes of sugar per day. What this means is that, from the time the first crop under the acreage expansion programme matured

early in 1988 to-date farmers have been tending sugarcane which the NSC lacks the capacity to crush. More information from officials of the outgrower Farmers co-operative society revealed that about 16,000 farmers have not benefited from the NSC's expansion programme six months after a KSh. 600 million expansion project was completed. On a similar line of thought an official with the Kenya sugar Authority (KSA) who are in charge of factory operations revealed that one major stumbling block to NSC efficient performance is finance and continued machine breakdowns. He quoted an example of the expansion project at the NSC which was actually supposed to be completed in February 1990 but due to lack of money to pay for the expansion work the project was only completed in September 1990 and it was yet to be commissioned. And because the factory has to cope with a huge tonnage of sugarcane, it delayed the routine annual shut-down from July to October by which time, the factory was fatigued due to lack of service. Thus, the current hue and cry over unharvested cane says the KSA official results from the fact that NSC has been suffering from frequent breakdowns - the result of poor maintenance, which in turn is a result of lack of money. With the prevailing state of affairs is there hope for the contracted farmers?

4.3 The contract Agreement

On the outset the smallholder signs a contract agreement with the company committing him/herself to the conditions and

regulations therein. The contract's blue print spells out what the scheme expects of the smallholder who joins the contract to produce sugarcane on outgrower basis, and what is expected from the company in return.

According to the contract the outgrower has to commit the sugarcane land for a period of six years after which he or she can renew the contract if he/she wishes to continue producing sugarcane with the factory. During this six years the factory is supposed to harvest the farmers cane crop three times. The plant crops is harvested at 24 months while the first and second ratoon crops are harvested at 18 months respectively. But the factory has a clause which states that the factory will harvest the contracted crop only if it is in a position to do so. As we will see later the farmers who were committing themselves to this contract were not made aware of this clause by the factory field instructors who were administering the contract forms to them.

The contract also states that the farmer will not sell the crop to any other person or company other than the NSC. The farmer is also forbidden to uproot the crop before the six year contract period expires. The farmer is expected to plant and weed the cane and take care of it up to maturity when it is ready for harvesting while the factory supplies machinery, seeds, fertilizers, pesticides extension services, harvesters and transport to ferry the cane from the farms to the factory. The factory delivers all these inputs and services on credit which has to be deducted from the farmers cane earnings on harvest.

The contract agreement forms are written in English and yet most of the contracted farmers are illiterate and even those who are literate to some extent may not be able to read and appreciate the English language in which it is written. The field instructors who were sent out in the field to have the contracts signed by the farmers did not explain the contract well to the farmers. They were out to get as many farmers as possible and had little time to spell out to the farmers those rules that affected them directly. The farmers revealed to the researcher in the interviews that they only knew well that to be contracted farmers the forms had to be signed but the content of the forms they were signing was not known to them. Hardly did they know for instance that the contract had a clause stating that the factory could only harvest their crop only if it was in a position to do so until when quite a number of them organised themselves in a group and sued the factory for non-harvests in a Bungoma court. The magistrate shocked them by revealing this clause taken care of in the contract they signed and thus the NSC had no case to answer since they stated the non-harvest resulted from the continued machine breakdowns a factor beyond their control.

The farmers on signing the contract also did not know that it was illegal to sell the crop to any private owner or any other company until they were faced with a critical situation whereby for a period of three years or more the company has not been able to harvest even a quarter of cane in the outgrower zones. Those

farmers who tried to sell their crop elsewhere were threatened with being taken to court. This was the case for those farmers who tried to uproot the crop to have another crop planted. This ignorance on the part of the farmers has plunged them into untold suffering with most of them experiencing hunger and children dropping out of school due to lack of school fees. Some farmers had overcommitted their fertile and arable land to sugarcane which they had never harvested or have harvested only once and thus are now supposed to purchase food stuffs and yet they do not have money.

Generally the conditions under which the contract was signed were not clear. Farmers expressed disgust over it and to use their words "it was like signing a 'death warrant' without knowing". They were tying up their hands for six long years.

4.4 Transportation

Transportation is a very costly operation at the NSC. It has been a problematic area and a major barrier to efficient delivery of services by the NSC to the contracted farmers. The NSC has been having inadequate transportation fleet to meet their needs and have therefore been relying on contracted (hired) transporters to transport the harvested cane to the factory, to distribute seedlings, fertilizers, and pesticides and to do the ploughing. The farmers meet the transportation costs, which are normally deducted from their cane incomes. Information from the outgrowers revealed that transportation costs are very high and

they take most of their income. The transportation costs are deducted per tonne and also depending on the zones (i.e. distance from company) in which the farmers fall. (see table 3) indicating current transportation costs per tonne.

Table 4: Transportation Costs Per Tone According to Zones.

ZONE	DISTANCE FROM FACTORY (KM)	COST PER TONE (KSH.)
A	0 - 10	66.90
B	11 - 16	86.30
C	17 - 24	115.70
D	25 - 26	145.90

(SOURCE : NZUCO News No. 21 1986. NSC Magazine)

As shown above the factory recovers all these transportation money per each tonnage transported. The farmers who harvest many tonnes of sugarcane (e.i farmers) are deducted so much money and this trend tends to demoralise their expansion capabilities. The NSC does not compensate nor try to shoulder part of the transportation costs.

When the company started commercial cane Transport operation in 1978 its machinery fleet consisted of 27 - 4000 Agip tractors with double bundle trailers and 14-5000 Agip Tractors with 12-tonne basket trailers. Four side loading winches together with five Cameco Mechanical Grab loaders formed the loading strength. Unfortunately there was no provision made for towing stuck tractors at the beginning, a factor that was a must for a suc-

cessful cane transport system. The trailers continued to get stuck while transporting cane and it took the factory a long time to pull them away. The transporters who were contracted continued to deliver nearly 100 per cent of the factory cane. This was done until 1982 when the management decided to purchase 14 new tractors which were modified to suit the French manufactured Legras Trailers. This was a very welcome and timely decision but unfortunately the same Lamborghini modified tractors could not match very well with the big trailer loads a factor that contributed to their short life apart from non-availability of spares.

Today, the NSC owns very few tractors and trailers of its own, which are few to cope up with the increased demand of the 16,000 outgrowers. They continue to rely heavily on the private contracted transporters to date. These transporters dictate terms to them and occasionally choose to go on strike without notice paralysing the transportation work since the company has no sufficient fleet to sustain factory requirements. Even the tractors the NSC owns often break down from time to time making the company drivers, unable to compete with the contracted drivers. Currently the company relies on 14 Ford tractors in daily circulation with one loading winch. They deliver an average of 800 tonnes of cane a day.

The management of the NSC pin pointed three factors affecting Transport performance (1) Human (2) Machinery (3) Field or environmental factors. Some of the human factors

include:- proper and sound transport management, sufficient and trained field crew of drivers, operations, and cane loaders. The factory has few drivers who have to work for long hours. Environmental wise during rainy seasons and in swampy conditions, tractors transporting cane to the factory get stuck, yet the factory has limited towing facilities. The roads used are in bad condition since the scheme has not been able to maintain them due to lack of funds.

On the whole the outgrowers have had to suffer because cane overstay in their farms unharvested because of lack of tractors to transport the cane, or bad roads mostly during rainy seasons. Information from the outgrowers revealed that some farmers are asked to open up roads manually if their cane has to be harvested. Some farmers also reported cases of harvested cane drying up in their farms due to lack of transportation facilities. Some of the financially able farmers have to hire private tractors to transport their cane to the factory in such situations. The same tractors are meant to transport seedlings, fertilizers and pesticides to farmers during planting time. Some farmers reported that they could not receive their ratio of fertilizers and pesticides which are necessary in the production process if high output has to be achieved due to inadequate transportation facilities.

4.5 Delivery of services and farm inputs

Machinery

According to the contract the factory is supposed to plough the outgrowers cane farm using their tractors, and for those farmers who could plough their cane land on their own they were allowed to do so. However, the NSC faced with inadequate tractors could not plough land for all the farmers, quite a number of farmers ploughed their land using their own or hired ox-ploughs. The farmers in question were disadvantaged in that the ox-ploughs could not plough deeper like the tractors and so their cane had little soil to support it right up to the second ratoon crop. And by the time the first and second ratoon crops are harvested the yields are quite low.

Fertilizers/Pesticides

The sugar scheme gives the outgrowers the fertilizers namely DAP and UREA in their cane production on credit. Pesticides for white ants and any other destructive insects are applied on the seed cane before they are planted. Unfortunately the NSC has not been able to supply all the farmers with this basic inputs. The management claimed that this has been so as a result of inadequate stocks which in turn are a result of limited finance.

The blame on this phenomenon goes back to the omission of a cane development Fund mentioned earlier which the feasibility study did not take care of. The factory has to crush the cane and sell the sugar so as to purchase the said inputs. For example, in

1988/89 the supply of (DAP and UREA) fertilizers both in the Nucleus Estate and the outgrower zone was irregular and also inadequate because of unavailability. The worst hit are the outgrowers. When the fertilizers are available the nucleus Estate is given first priority and the remaining quantities are distributed to a few outgrowers mostly those neighbouring the factory. Quite a number of outgrowers reported having planted their cane without these inputs. A few farmers had purchased the items privately. Once again this inadequacy affected their production output.

4.6 Harvests and Payments

The NSC has been harvesting the outgrowers cane late contrary to the agreed upon time as stated in the contract. In some extreme cases as mentioned earlier some farmers crop has never been harvested for a period of six years, a duration when the contract they prior signed is meant to expire. Similarly, the payments to farmers are done late mostly after a period of 6 months to 1½ years. These means that a farmer takes 3 to 4 years before he or she receives a first payment from the crop.

The management confirmed this phenomenon which they said had created a bad image for the company among the outgrowers, who have since been demoralised and are less enthusiastic to expand their acreage. However, contends the management, this problem was exacerbated when the management of the day went out of their way to increase outgrower acreage anticipating the governments

decision to expand the factory to 3,000 tonnes and later to 7,000 tonnes of cane per day in 1985. Large surfaces of cane were planted between 1983/84 and 1985/86 seasons.

In 1985 the Kenya government promised to rehabilitate the NSC to increase its crushing capacity. But even before the company's crushing capacity was expanded, the management of the day went out of their way to borrow sh.50 million, which they used to expand acreage under cane. But factory rehabilitation involving installing of an extra mill, boiler and boiling house only took off in 1989 about four years behind the cane expansion programme. The government in 1984 had proposed to make negotiations to expand the factory's capacity to 3,000 tonnes of cane per day by the year 1986. The management totally blames the non-harvest crisis they are facing to the government which did not honour their word. The rationale of expanding the acreage before the expansion began was to have the cane mature and ready for harvest by the time the expansion of the factory is complete, in order to avoid a situation where the factory could be forced to operate below capacity.

The delay in harvest and payments have demoralised farmers to a great extent. Some of them reported that when the contract is over they will never venture into sugarcane production on contract basis. They felt they would rather grow the crop privately so that when it is ready for harvest they can sell to private jaggaries or to sugar companies like Mumias Sugar Company as private farmers.

Delay in harvest makes farmers even burn their cane so that they can be harvested. To reduce such occurrence the factory's policy has been not to harvest burnt cane and this policy has been very unpopular among the farmers who go at a loss.

Information from outgrowers interviewed revealed that some farmers had to burn the nucleus estate cane owned by the factory so as to have their cane harvested. The NSC gives priority to their nucleus estate which is harvested first before any outgrower is harvested for.

Of late, instead of now burning cane, outgrowers now illegally sale contracted cane to private jaggaries. This has been much prevalent over the period 1988/89 and 1990/91 in some locations in Bungoma, Kabras, and Bunyala locations in Kakamega district. In 1989/89 in Kabras, farmers sold out illegally approximately 10 hectares each month. The highest number of the farmers who abandoned cane was recorded in February 1989. Cane has been mismanaged, the parameters observed were poor weeding, animal damage on cane and poor maintenance among others (observes the NSC management).

The delay in harvests and payments, has exposed the NSC outgrowers to varied social and economic problems. Economically, some farmers have lost absolutely, because their over-matured cane has dried up and is only good for fuel wood. The cane can not earn any income to this farmers since it can not be harvested at all. The survey revealed that most of the outgrowers are experiencing hunger since food production had been neglected in

favour of sugarcane production. The outgrowers reported that they had spared less land for food crops which is now not adequate for family needs in the absence of any income from sugarcane. Sugarcane is a labour intensive crop, the farmers have to weed eight times or more before the crop is ready for harvest and thus, there is less time spared for food cultivation.

On the local market maize which is the staple food crop is costing a higher price than ever recorded before. By the time of this research, the price of maize was Kshs. 10 per two kilogramme measure locally called 'gorogoro'. Most of the unemployed farmers rely on sugarcane as their source of income to purchase food stuffs, and for over three years their cane has not been harvested. Thus, they are faced with hunger and consequently the children in the area covered were reported to be malnourished. An interview with key informants in the outgrower zones which included, local chiefs, assistant chiefs, headmen/"liguru", nurses teachers, progressive farmers (generally the rural elite) confirmed that there has been a substantial reduction in food production with the introduction of sugarcane in the area and at the moment starvation was rampant among the outgrower households. Some families are left with little food for subsistence, forcing the children to chew the sugarcane as part of their meals.

Education is another area that has greatly suffered as a result of the non-harvests and delays in harvesting on the part of the NSC. Farmers who rely entirely on the cane crop to educate their children in secondary school had their children

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drop out of school. The primary schools are not well equipped as farmers are not able to raise building Funds. Some parents have even had their children discontinue school at primary level for the same reason. The family institution has similarly had its share. Some families have been destabilised and some broken due to financial constraints. A number of contracted farmers reported that their wives ran away due to the inherent poverty in the homes. Others were recalled by their fathers when their husbands failed to pay bridewealth. The household head unable to provide the family with basic needs have been frustrated and some have ended up with depressions. Two family men even attempted to commit suicide after realising that they could not provide for their families. To say the least, the NSC, has been a mess right from its inception to date. The major stumbling blocks being, finance, technical bottlenecks and mismanagement. Thus, these shortcomings have adversely affected the farmers, socially, economically and even psychologically. Furthermore, the NSC continues to make negative return at the national level, and has been unable to achieve the objectives, for which it was intended.

CHAPTER FIVE

5:1 PRESENTATION AND DISCUSSION OF RESEARCH FINDINGS

Descriptive Data.

Introduction

The presentation of the research findings has incorporated both descriptive and inferential statistics. This chapter in particular presents the findings using descriptive data. The chapter presents the background information relating to the socio-economic characteristics of the contract farmers before and after the establishment of the sugar scheme, as well as, the general performance of the scheme in sugar cane production and the impact it has had on the socio-economic welfare of the contracted families.

5.1 Background Information.

Table 5: Distribution of household heads according to age.

AGE	N	PERCENT
20-29	7	4
30-39	45	23
40-49	53	28
50-59	49	25
60 +	39	20
Total N = 193		100%

In our sample, household heads comprised of both men and women. Men were the majority. Women household heads were either widowed or their husbands were employed and residents in urban areas away from their rural homes.

In our random sample as reflected in the table above, all the stages in the life cycle of the household are represented. Young, newly-established households consisting of only a husband and wife, and may be a few children under school age (4%), middle-aged well-established households with many children who may contribute to production of both food and cash crops (76%), and finally old households where the husband and wife are living alone because the children have grown up and have established their own households (20%).

It is evident from the frequency table that the stage in the life cycle of the household which is most heavily represented in our sample of contract farmers is the middle stage at which we find the well established households with the necessary resources in terms of money, land and labour.

consequently, middle-aged and to a lesser extent older household heads predominate in our random sample drawn from contract sugar cane farmers within the NSC out-grower Zones.

Table 6: Frequency table for marital status of out-grower household heads.

MARITAL STATUS	N	PERCENT
Now Married	183	95
Widowed	8	4
Separated	2	1
Total N = 193		100%

Table 6 above indicates that most of the household heads

were once married. In our random sample 95 percent of them are married, 4 percent are widowed, while only 1 percent is separated. It is evident that in our sample there were no cases of single or divorced people. Most importantly, out of 193 valid cases 183 were within a marriage union at the time of research. This information shows how marriage as a social institution is held sacred and respected within this rural community, a phenomenon celebrated in most of the African societies. It also tells us about the present level of cohesion. The community holds an ideology about marriage being a must. In fact it is a taboo to be single/unmarried.

To-day, as in the past, women's main aspiration in life is to get married and bear children. In the luhya tradition, women's status and prestige are to a very large extent determined by and attached to their roles as wife and mother and, intimately linked to these, their role as food producers.

As concerns access to essential economic resources in society, marriage plays an important role for both men and women. Although men primarily get access to resources through inheritance, marriage enables a man to establish his own household and to claim part of his father's land and cattle long before any legal sharing would take place. Furthermore, marriage enables a man to get access to the labour of his wife and in turn also that of his children, because as head of the household he has a right to command, the labour of other family members, - a right which is related to the patriarchal ideology of collective

interest of household members as determined by the male head of the household (Whitehead 1981).

Table 7: Frequency for the number of wives per male contract farmer

NUMBER OF WIVES	N	PERCENT
1	69	52
2	48	36
3	12	9
4	2	1
5	3	2
Total N = 134		100%

Table 7 illustrates that most of the out-growers in our sample have monogamous families (52%). Forty eight percent of the household heads have more than one wife. The average number of wives is two. The range in distribution is 4. Farmers thus generally have a minimum of one wife though there are some who may have a maximum of five wives.

This finding highlights how polygamy has persisted over the years in the African tradition, despite the social and economic changes that have affected the family as a social institution. However, today monogamy has become the prevailing marriage pattern among the Banyala and Bukusu people as indicated by our respondents in the sample (52%). It can be observed that there is a shift from polygamy to monogamy though the pace is very slow within this particular community under study.

Polygyny is still connected with a high social status - that

is, among men - but it is on the decline and this may be perhaps because of the influence of christianity, modern education as well as the general financial and debt crisis which has affected the global economy at a macro and the family at the micro level. Furthermore, polygyny seems to have lost its economic role within this community and has become the privilege of a few influential men, which however, has not made it less attractive. This is not to say that the lower class respondents are not polygamous. In fact quite a number of them are since polygyny was a common practice in the past. Besides, poorer men need more wives as a much valued source of labour, power as well.

However, from being an economic asset polygyny has today become an expensive affair. The relative shortage of land and high prices of land have made it increasingly difficult for a man to acquire land for a second wife. In addition he would have to provide satisfactorily for more than one family in terms of maintenance, school education, provision of food and clothing, medical care, etc. Farmers today have an average of twelve acres of land as we shall see later and this is a relatively small piece of land especially when it has to be sub-divided between the sons in the family when they mature and get married. The traditional belief that many wives and many children are an asset to the family has generally ceased to apply with the recent changes in the social and economic spheres of the family. Many respondents observed that at present many wives and children are more of a liability rather than an asset.

Table 8: Number of children per each out-grower family.

NUMBER OF CHILDREN	N	PERCENT
4	7	3
5	15	8
6	25	13
7	30	16
8	33	17
9	55	28
10+	28	15
Total N = 193		100%

Findings in the table above indicate that a relatively large percentage of out-growers have large families. For example 76% have seven children and above with a minority 24 percent having 6 children or less. Our sample displayed a wide range of variations with some farmers on one extreme having as few as 4 children while some polygynous families had as many as 20 children on the other extreme.

In most of the out-grower families the children fell in the youth category (i.e. 24 years and below) and thus they were heavily dependent on their parents for support in all spheres of life. Sugar cane as a cash crop came in handy in such families where money is needed in abundance to sustain the children. Therefore, the availability of sugar cane as an economic enterprise is a determinant factor in relation to improved standards of living for the contracted families.

The phenomenon of large families is common in Africa and generally in the Third World Countries. It has been associated to lower levels of education, non adoption of family planning methods and poverty. In our sample, respondents who were lowly educated, unemployed and who fell in the category of low-income earners reported having large families i.e. eight children and provide adequately for them. This was despite of the fact that they were not able to .

Table 9: Level of education of contract farmers

LEVEL OF EDUCATION	N	PERCENT
None	52	27
Primary/Intermediate	79	41
Secondary (O-level)	45	23
Secondary (A-level)/Diploma	15	8
University	2	1
Total	N = 193	100%

Table 9 displays a wide range in the distribution of the levels of education, with some out-growers having no formal education on one extreme, while others had University education on the other. However, a large percentage of farmers (68%) have primary level or no education with a minority 32 percent having attained secondary education or above. Thus in a nutshell, our sample consisted of largely lowly educated contract farmers.

Farmers with none or primary level education consisted mostly of old household heads aged over 50 years old and to a lesser extent middle-aged household heads. These were contract

farmers born at a time when formal education was not popular in the community - (as was the case during the colonial era). Nevertheless, historical information concerning the evolution of agricultural production over the years (i.e. before and after the establishment of NSC) was obtained from this category of respondents. This is because they were participants at all levels/stages in the production cycle to date. They were able to give detailed information on the farming practices of the community i.e. crops that were planted, acreage committed to food and cash crops before and after the introduction of sugar cane. They had an edge over the younger out-growers who had little or no knowledge of the agricultural activities carried out in the

Table 10: Frequency of occupation of the contract farmers.

OCCUPATION	N	PERCENT
Farmers/(Unemployed)	59	31
Small traders/casual/semi-skilled workers	80	41
Primary teachers/clerks/field instructors	38	20
Secondary teachers/personnel officers	9	5
Professionals/businessmen	7	3
Total	N = 193	100%

Findings in table 10 show that a large percentage of contract farmers are engaged in poorly paying occupations. Relatively fewer farmers are engaged in permanent occupations which guarantees a constant source of income for the family. Therefore, it follows that a large percentage of contract farmers rely heavily on farm incomes for their subsistence.

For example, 72 percent of the out-growers fall in low-income class category. These are farmers who are either unemployed and thus depend entirely on farm incomes or are engaged in petty trade (such as sell of vegetables, paraffin, salt), semi-skilled workers (i.e. carpenters, masons etc) or are casual wage labourers earning a little income to supplement farm incomes. Thus, for this category of farmers, incomes from cane is a major base for their subsistence, and therefore, any inefficiencies in the payments of such incomes will definitely destabilise the social fabric of the family.

Twenty percent of the out-growers could be classified in the middle income class category. These farmers who include, primary school teachers, factory field instructors, nurses, clerks etc are better placed economically than the former class of farmers by virtue of their being in permanent employment. They do not rely on farm incomes for their maintenance. A minority 8 percent of farmers could be classified in upper middle class. These are progressive farmers well established in their professions or businesses and hence have a stable economic base. This group of farmers plant sugar cane mostly as an economic enterprise aimed at supplementing their incomes for purposes of more investment in viable economic spheres. Sugar cane is not relied upon as a source of income for their family maintenance. Thus, they are in a better position to improve their position with incomes derived from cane.

However, evidence from this table indicate that a large

percentage of farmers in our sample need to obtain a substantial income from cane if they have to improve the living standards of their families. The kind of occupations most contract farmers hold are lowly paying and hence they need a profitable cash crop to drive them to high levels of prosperity

	10	10
	20	20
	30	30
	40	40
	50	50
	60	60
	70	70
	80	80
	90	90
	100	100
Total	100	100

The average sugar yield was 100 tons per acre. This is a very low yield compared to the world average of 150 tons per acre. The low yield is due to the low level of fertilizer and irrigation. The average yield of cane is 100 tons per acre. This is a very low yield compared to the world average of 150 tons per acre. The low yield is due to the low level of fertilizer and irrigation.

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5.2. Agricultural Practices

Table 11: Total land acreage owned by contract farmers.

ACREAGE	N	PERCENT
2	7	4
3-5	30	16
6-8	50	26
9-11	28	15
12-14	22	11
15-17	20	10
18-20	16	8
21+	20	10
Total		N = 193
		100%

This findings display a wide range in the distribution of landownership among the contract community with some farmers owning two or less acres of land on one extreme, while others own as many as fifty acres of land on the other. However, a relatively large percentage of out-growers could be classified as small farmers owning eight or less acres of land (46%). This category of farmers cannot practice extensive sugar cane cultivation due to scarcity of land, which they have to spare for food crops and livestock production.

Twenty six percent of farmers could be classified in the middle class land owning category, owning between nine and fourteen acres of land. They are better off than the former because they are able to spare some few acres of land for food crops, while planting at least four acres of cane.

Twenty eight percent of farmers could be classified as large

land owning farmers with fifteen acres and above. They have an edge over the above farmers since land may not be a serious limiting factor when it comes to extensive agricultural production. In our sample, farmers owning over thirty acres of land committed 15 acres on sugar cane. Such farmers were able to derive substantial incomes from cane. As we shall see in the next chapter, sugar cane as a cash crop is economically viable when a farmer commits at least over eight acres of land.

However, this does not mean that total land acreage owned strictly connotes a clear class stratification in all cases in terms of those with fewer acreage being poor. There are cases where farmers with large land acreage as many as 30 acres were not utilizing them economically. Nevertheless, in this community, a farmer needs to own 15 acres and above in order to plant food crops for the family while committing a substantial percentage of land on sugar cane, if they have to profit from the enterprise.

According to the Bungoma District Development Plan 1989-93 most of the land in the district is privately owned. Many people practice small-scale, mixed farming. These small scale farmers keep animals in addition to growing cash and food crops. The ministry of Agriculture's most recent information put the number of holdings at 89 392 with an average of 4.8 ha per holding. The largest holdings are estimated to be over 80 ha, while the smallest are estimated at 2 ha. The large holdings are quite few and are found in the settlement scheme in Tongaren

area. The area under study did not extend to the schemes such as Tongaren but concentrated on areas surrounding the NSC, where farmers do not own such large pieces of land - (Bungoma District Development Plan: 1989-93).

Table 12: Comparison of percentages of out-growers growing various food and cash crops before and after the establishment of the NSC

CROP	BEFORE		AFTER		DROP/RISE
	YES	NO N=193	YES	NO N=193	
Maize	98%	2%	99	1%	+1%
Beans	97	3	67	33	-30
Cassava	97	4	76	24	-21
Potatoes	94	6	51	49	-43
Sorghum	75	25	25	75	-50
Finger millet	71	29	43	57	-28
Bananas	55	45	31	69	-24
Groundnuts	55	45	24	76	-31
Cashewnuts	42	58	18	82	-24
Simsim	37	63	11	89	-26
Sunflower	82	18	18	82	-64
Cotton	21	79	5	95	-16
Coffee	-	-	10	90	+10

+ represents a rise in the percentage of outgrowers growing the crop after the establishment of the NSC

- represents a drop in the percentage of outgrowers growing the crop after the establishment of the NSC

Findings in the table above show a remarkable decline in the percentage of contract farmers growing various food and cash crops after the establishment of the NSC. However, maize is still grown by a majority of out-growers since it is a staple food crop of the people in the area under study. Farmers

reported to have reduced the acreage under food crops or have abandoned the production of certain crops altogether. Crops such as cassava, potatoes, sorghum, finger millet, bananas, simsim, have been abandoned by some percentage of farmers in favour of sugar cane.

Cash crops such as cotton and sunflower which were grown previously have been abandoned by a substantial percentage of out-growers in favour of sugar cane. Farmers reported that prices offered for cotton and sunflower were quite low and therefore unattractive, in comparison with sugar cane which earns them more income. Sunflower recorded a substantial drop of 64%, which is a significant decline indeed.

Before the introduction of sugar cane, contract farmers practised mixed farming and grew a variety of food crops for domestic consumption. Large farmers produced a lot of food crops enough for household consumption and a surplus for sell. Small farmers produced enough food crops for their families with little or no surplus for sell. Among the food crops marketed were maize, beans, cassava, finger millet and groundnuts. Maize in particular was marketed extensively with some large farmers marketing over a hundred bags of maize per season. This trend has changed drastically with the introduction of sugar cane. Farmers have tended to evaluate sugar cane as a more profitable cash crop and therefore allocate more land, time and labour to sugar cane than to other food crops. Thus, a number of them have dropped growing some particular food crops, at the same time

reducing the acreage under main staples such as maize, cassava, sorghum, finger millet and beans.

This uncertain change in the agricultural production has had adverse effects on the family. The result has been continued shortage of food stuffs, especially for small farmers (i.e. those with few acres of land) who are forced to purchase food stuffs to supplement family production. The large farmers who devoted most of the land on sugar cane equally purchase food stuffs for their families. This situation has caused a lot of suffering for those farmers without a stable financial base (e.g. off-farm incomes) to fall back on. Consequently, prices of food stuffs on the local market are sky rocketing and are out of reach for what we would call low class farmers. Coupled with non-harvests and therefore non-payments to the farmers because of the NSC's incapability to harvest out-grower cane, the whole scenario is pathetic. Children have resorted to chewing cane as part of their meals in some poor families, hence increasing the rate of malnutrition in the area.

The decline in the number of food crops has been observed in a number of studies carried out on sugar cane contract farming in Kenya. For example, Odada, et al, in a study of Kenya's sugar industry observed that in the Mumias sugar zone, there has been a drastic reduction in the food crops and the heads of cattle per household after the introduction of sugar cane. Maize production had gone down by more than 50% and livestock by more than 30%. Indeed, the visual deficiency of food in the mumias sugar zone

can be witnessed at night when traders carry maize on bicycles from areas (for example mount Elgon region) to the sugar cane zone (Odada, 1986). The current author happens to come from around the mumias area and her first hand experience supports this observation.

Table 13: Comparison of acres allocated to food production before and after the establishment of NSC.

ACRES	BEFORE	AFTER	DROP/RISE %
0-2	26(13%)	84(43%)	+30
3-5	63(33)	80(41)	+8
6-8	53(28)	25(13)	-15
9-11	26(13)	3(2)	-11
12+	25(13)	1(1)	-12
	N=193 100%	N=193 100%	

+ + Shows rise in percentage of farmers.

- Shows a drop in percentage of farmers.

Table 13 indicates a considerable decline in the number of acres allocated to food production after the establishment of the NSC. There is a sharp drop in the percentage of farmers allocating over 6 acres of land on food production, and a rise in the percentage of farmers allocating between 0-5 acres of land on food production after the introduction of sugar cane. In other words, out-growers tended to allocate less acres of land on food production after the introduction of sugar cane.

Before the introduction of sugar cane some farmers whom we will categorise as large farmers were allocating substantial acreage on food crops. In this category there are farmers who were planting as many as 30 acres of land under food crops.

Maize production took most of the land since it was a viable cash crop earning the farmers substantial incomes. A number of farmers educated their children with incomes from maize.

This is no longer the case with the introduction of sugar cane. Only 1 percent of the farmers allocate many acres of land on food crops. Farmers in this category reported to have invested in sugar cane on a large scale leaving few acres for food crops. These farmers previously planted a lot of maize for sale and thus with the introduction of sugar cane they switched to producing cane which they believed would earn them more income than maize.

Today, unlike before, there is a marked increase in the percentage of out-growers allocating less than 5 acres of land to food production. Before the sugar scheme 46 percent of the farmers were allocating between 0-5 acres, this figure has doubled to 84 percent with the introduction of sugar cane. Indeed, a large percentage of out-growers fall in what we would call small scale food producers, producing purely for household consumption with no surplus for sale. In a number of large families, this food crops are inadequate for family consumption.

Table 14: Number of bags of maize marketed by contract farmers before and after the establishment of the sugar scheme.

BAGS	BEFORE		AFTER		DROP/RISE(%)
	N	%	N	%	
0	48	(25%)	116	(60%)	+35%
1-5	51	(26)	30	(16)	-10
6-10	40	(21)	21	(11)	-10
11-15	17	(8)	9	(5)	-3
16-25	18	(9)	12	(6)	-3
30+	19	(10)	5	(3)	-7
	N=193 (100%)		N=193 (100%)		

+ Represents a rise in the percentage of out-growers not marketing maize after the sugar scheme.

- Represents a drop in the percentage of out-growers marketing maize after the sugar scheme.

The table above shows a substantial drop in the quantity of maize marketed after the scheme. This may be perhaps as a result of sugar cane being given priority in terms of acreage, time and labour as we have argued earlier. There is a drastic rise in the percentage of out-growers not marketing maize after the scheme. Previously 25 percent of the out-growers were not marketing the crop, but today this percentage has almost tripled to 60 percent. A rise of 35 percent is incredible indeed.

In all the categories of contract farmers as we shall classify them below, there is a remarkable drop in the quantity of maize marketed after the scheme. Among farmers marketing

between 1-10 bags of maize (i.e. small farmers) there is a 20 percent drop, in the middle category (i.e. those marketing 11-25 bags) there is a 6 percent drop, while in the large farmers category (i.e marketing 30 and above bags) there is a 7 percent drop in the quantity of maize marketed after the scheme.

Before the scheme, at least a substantial percentage of farmers (27%) were marketing a substantial quantity of maize. (i.e. over 11 bags). This percentage has dropped to 14 percent after the introduction of sugar cane. Presently, a relatively large percentage of contract farmers (60%) grow maize only for domestic consumption with no surplus for sale. Sugar cane has become the sole cash crop for this category of out-growers. Information from our respondents and key informants revealed that maize was rated high among the profitable cash crops in the area before the scheme. A number of contract farmers produced large quantities of maize for sale. For example in our sample, 3 farmers reported marketing between 250-500 bags of maize, while 16 others marketed between 30-100 bags of maize every season. Indeed, this was large scale production. Today only 2 farmers market up to 100 bags of maize every season.

Studies carried out on sugar cane contract farming in Kenya observe a marked decline in the area planted under food crops and quantity marketed. Thus, this phenomenon is not peculiar to the NSC contract farmers. Recent studies on sugar schemes located in Western, Nyanza and Coast provinces of Kenya confirm this fact.

Other than maize, farmers reported that other food crops

which were previously marketed are not being marketed after the scheme. They include, groundnuts, beans, cassava, sorghum, finger millet etc. The few food crops grown, are purely grown for household consumption by a majority of contract farmers. The percentage of out-growers marketing food crops is actually negligible.

Table 15: Acres allocated to sugar cane production by contract farmers.

ACRES	N	PERCENT
0.5-2	94	49
3 - 4	57	29
5 - 6	22	11
7 - 9	13	7
10+	7	4
	N = 193	100%

Findings in this table indicate a wide range in the distribution of cane acreage. On one extreme are farmers cultivating as few as half an acre of cane while there are those cultivating as many as twenty acres of cane on the other extreme. However, a large percentage of farmers (78%) could be classified as small scale farmers cultivating between 0.5 - 4 acres of sugar cane. Eighteen percent are middle category/scale farmers allocating between 5- 9 acres on sugar cane. While only 4 percent are large farmers committing over 10 acres of land under sugar cane.

Evidence from this table shows that a relatively large percentage of out-growers in our sample, do not venture into

viable sugar cane production. As we shall see in the next chapter, out-growers committing over 8 acres of land under cane were reaping substantially high profits from the crop. In economic terms therefore, farmers cultivating less than eight acres of sugar cane could be seen as growing sugar cane for subsistence. This category of farmers do not obtain adequate income from cane to meet their basic needs leaving a surplus for investment. In fact a large percentage of them use their incomes to meet their day-to-day needs. In essence, this trend does not augur well with the whole notion of capitalist production.

Interviewed on this issue, respondents cited scarcity of land and labour as limiting factors to expanded production. Out-growers owning a total of three acres of land could only allocate a half an acre on sugar cane production. Some respondents allocated few acres to cane because, large pieces of land under cane will mean higher labour input for those who cannot afford hired labour. Another reason given which will come out more clearly in the next section is inefficiency on the part of the NSC. For a long time, the NSC has failed to offer efficient services to farmers, thus making farmers to lose. This has demoralised the farmers and has lowered their enthusiasm to expand their sugar cane acreage.

Table 16: Frequency table of who weeds the sugar cane

WEEDING DONE BY	N	PERCENT
Family members	108	56
Family and hired labourers	71	37
Hired labourers	14	7
	N = 193	100%

The table above indicates that a slightly larger percentage of contract farmers rely on family labour to weed their cane (56%). Thirty seven percent utilize both family and hired labour, while seven percent rely entirely on hired labour. Farmers relying on hired labour perse were those who were engaged in formal employment and therefore had limited time to work on their farms. Moreso, such farmers had small children who could not provide farm labour.

Information from the NSC management and the contract farmers revealed that weeding of cane is left entirely to the contract farmer. The NSC like other multinationals involved in the sugar industry throughout the world does not participate in the production process itself or in the organisation of labour. The scheme prepares land, provides farm inputs and extension services to the farmers on credit. Thereafter its up to the out-grower to raise the crop to maturity and deliver it to the scheme. The factory does not meet the transportation cost of cane on harvest as well.

This production organization implies that the agribusiness

firm has deliberately pushed all the production and marketing risks to the farmer; while enjoying the most profitable ventures. As we shall see in the later chapter, these production and marketing risks shouldered by the farmer are much beyond the farmers' comprehension and thus amounts to exploitation of the farmer.

Contract farmers hiring labour have to use their own income to pay the hired labourers. Respondents reported to have paid their labourers from their farm incomes, that is sell of food crops and livestock, sell of sugar cane for the first ratoon crop, while those in permanent occupations used their salaries. The fact that the scheme does not compensate the weeding costs implies that weeding costs cut into the farmers' personal/domestic budget thus making the out-grower even more poorer. The worst hit are those respondents who sold their livestock or food crops to weed the cane and yet the crop was never harvested to-date. Such farmers have suffered a compound loss. Furthermore, weeding of cane is quite intensive and therefore takes up most of the farmers' time and labour denying the food crop sector adequate attention. The result has been a decrease in the acreage planted under food crops and a general decline in food output. This situation has led to food shortages in contracted households, with some families reporting prolonged hunger. Malnutrition in children has increased according to reports from the local health dispensaries-management who were interviewed in connection with this issue.

The number of out-growers hiring labour to supplement family labour is quite significant. Forty four percent of the respondents hired labour. It is clear that hired labour is increasingly used in sugar cane production. This phenomenon has been observed by scholars who have studied sugar cane contract farming in Kenya. Lemmens (1987) in a study of sugar cane industry in western Kenya observed a marked increase in the use of hired labour in cash crops.

The pre-capitalist forms of labour have increasingly declined today. The traditional mutual assistance labour teams which existed have increasingly broken down with individualisation of land. Furthermore a majority of farmers in the community plant cane and so each one of them concentrates on their farm. Those available are only willing to provide wage labour. Secondly the size of the sugar cane plot and the availability of money influences the farmers decision to hire labour. Farmers planting less than four acres of cane manage with family labour alone and this pattern is confirmed in our sample.

However, there are some farmers with similar number of acres who use hired labour for other reasons. For instance, those with small families and also where couples are employed elsewhere are forced to rely on hired labour. Nevertheless, there are also farmers planting over eight acres of cane who do not hire labour. These are mostly polygynous households where the number of wives and children form a sufficient labour force.

Among the 108 respondents who reported not to have hired labour 60 of them cited lack of money as a limiting factor.

These were farmers who could have hired labour since they planted substantial cane acreage. But since they were unemployed they had to rely on the available family labour.

Thus, whereas farmers with small sugar cane plots may use only family labour or supplement it with hired labour, farmers with large acres under cane (eight acres and above) cannot rely on family labour alone. Hence, they have to make use of hired labour. The extent to which hired labour is used thus, seems generally to increase with acreage and the availability of money, but is certainly not restricted to large sugar cane farmers alone.

To sum up, the extent to which hired labour is used and the duration of the period depends on a number of factors, e.g. changes in family size and composition, the size of the sugar cane plot and the economic situation of the household.

Table 17: Frequency table of who weeds sugar cane more often in the contracted family.

FAMILY MEMBER	N	PERCENT
Wife	112	59
Children	41	21
Husband	20	10
Hired Labour	20	10
	N = 193	100%

The term 'more often' refers to a family member weeding cane for longer hours or many times than any other member of the family. That is, one putting in most time and labour in the production process.

Findings in the table above show that it is predominantly the women who weed the sugar cane. Besides 59 percent of the households where women weed many times than any other member of the family, 21 percent reported it being done by children, 10 percent by hired labourers.

The phenomenon of women putting most of their time and labour in the production process is directly linked to the aspect of gender. In the African tradition weeding has been a reserve for women. This attitude was expressed in our sample. A large percentage of male respondents reported to be still clinging to the traditional belief that weeding is done by women. In some extreme cases especially in polygynous households, some husbands have abandoned weeding completely. While women do the bulk of subsistence labour in sugar cane production, they do not control

much of the surplus generated from this labour. This trend has been observed by most feminist scholars studying the gender issue in agriculture in the Third World (see, Hay and Stichter 1984, Remy, 1975, Boserup 1970).

Social norms for gender relations in the luhya tradition demonstrates that the relationship between the genders is unequal as in the rest of the rural communities in Africa. The husband is considered the head of the household, and it is he who makes decisions and commands the labour of his wife and children. A 'good' wife is supposed to obey her husband and accept her place in the power hierarchy within the household. This tradition has belittled the woman's position in the production system as a decision maker. She has to provide the necessary labour and look upon the husband to decide on how the earning from the sugar cane crop is to be spent within the household economy.

Besides being marginalised in the decision making process, women have found themselves over burdened with the introduction of the cash crop. The family is the core of the household, which in turn is the basic unit of production and consumption. All members of the family participate in the various activities on the farm but in particular the wife's daily labour input in both food and cash crop production as well as in domestic work is crucial. In our case, the wife has to weed the cane at the same time producing food crops. This is added on to other domestic chores such as, taking care of the husband and children and sometimes looking after cattle.

The system of sexual division of labour involves the issues of labour allocation and of control over labour and products of this labour within the household. That is, it allows us to consider the household not only as a unit of communality but also as a unit governed by power hierarchies and conflicting interests. Within the framework of production we can thus look at the question of labour both as a matter of allocation and just as importantly a matter of control (Bulow and Sorensen CDR paper 88). Women in Africa and in this study in particular have been marginalised to the extent that they are only there to provide labour and not to benefit from their sweat.

Women seem to have accepted this state of affairs to the extent that when we visited the home and approached them for interviews they referred us to the husbands who are the legitimate owners of sugar cane. Cane has been defined as a male crop in the community. Studies on women in agriculture in the Third World confirm this trend. Bulow and Sorensen contend that the sexual division of labour has been subject to gradual and complex alteration over the past century as a result of the dynamics of gender relations. Furthermore, due to colonization and integration into the world market, present day agriculture has come to be associated with men rather than women. A perception which is effectively reinforced by the government policies regarding agricultural extension services and foreign aid projects, where men are seen as farmers while women are seen as family labour and 'house wives'. This situation has led to

disputes in families as we shall see more clearly in the next chapter.

A part from women, children between ages twelve and twenty five contribute a substantial part of the work related to sugar cane production. It is however a well-known fact that school attendance is a crucial limiting factor on children labour input. They mostly participate in weeding on weekends and over the school holidays.

On the whole, there is need for the company to devise ways and means of paying women who put in much labour in the production process, besides men who are the legitimate recipients of the cane money. According to the cane contract it is whoever signs the contract with the scheme who is paid on harvest. In our sample most of the contracts, i.e. 90 percent were signed by men. This implies that it is the men who benefit. Thus, in order for women to be rewarded for their sweat, the government and the scheme must come up with a clear policy protecting the women from marginalisation and exploitation at the family level. This will go a long way to boost agricultural production in the country.

Table 18: Application of modern agricultural technology in food production by contract farmers.

MODERN TECHNOLOGY	N	PERCENT
N=193%= 100		
Farming Methods:		
Mixed cropping	189	98
Mono-cropping	4	2
Ploughing Mechanism:		
Tractors	6	3
Ox-plough	141	73
Jembe/hoe	46	24
Use of fertilizer:		
Applies fertilizers	85	44
Doesn't apply fertilizers	108	56

Findings from this table reveal that a large percentage of farmers practice subsistence farming in their food crop production. They largely rely on traditional agricultural methods despite the advent of sugar cane farming which utilizes modern capital intensive technology. For instance, the majority of our sample of sugar cane contract farmers practice mixed cropping (98%), with a minority 2 percent engaging in modern mono-cropping. What this implies in essence is that not much change has occurred as concerns farming methods. Mixed-cropping predominates in Bungoma and kakamega districts as before, despite the new idea which put more emphasis on mono-cropping for maximizing output. Little change has been observed in areas such as adoption of new cash crops and the rearing of graded dairy cattle. On the whole the farming system has remained subsistence-dominated.

This scenario has been similarly reflected in the type of ploughing mechanisms adopted by contracted farmers as well as the type of farm inputs that go into the food crop sector. Sugar cane farmers still cling on the traditional ploughing mechanisms with a minority utilizing modern ploughs. For example 73 percent use ox-ploughs with only 3 percent using tractors. It is no wonder that 24 percent still rely on the most traditional hoe/jembe for cultivation. Farmers and key informants interviewed blame this on lack of funds on the part of farmers to purchase the modern agricultural technology. The introduction of sugar cane does not seem to have helped them much as expected by the multinational and government planners.

Multinational crusaders in the Third World have always claimed that the operation of agribusiness companies in a host community facilitates the transfer of technology to the local community. They also claim that with the high returns from the agribusiness crop, the farmers are able to purchase modern agricultural technology to boost their food crop production. This is what the modernization theorists refer to as the trickle down approach. This has not been the case at the NSC. All seems to be contrary, farmers reported ending up with negative returns from the sale of cane and thus are financially handicapped when it comes to increased food production. As you can see only 44 percent of contract farmers reported to apply fertilizers in food crops. Though this seems to be a fair representation of farmers applying fertilizers, the amounts applied in practice are

negligible for any meaningful increased food production. Twenty percent of those applying fertilizers reported to be using fertilizers issued by the company for sugar cane production.

Tractors are a preserve for sugar cane production. As we shall see later not all farmers had access to tractors on their cane plots due to a shortage of tractors on the part of the company. Tractors have remained a leased item on credit and farmers have not been in any position to even own them on a co-operative basis. The few farmers who own tractors are the rich businessmen and well paid professionals. They have stable financial bases and are therefore able to purchase modern agricultural technology for their food crop production.

A large percentage of our sample (90%) reported decreased food production with the introduction of sugar cane. They associated this drop to food crops being allocated limited poorly drained, less fertile and hilly land, limited labour and time due to competition with the labour intensive sugar cane crop and inadequate finance to invest in food crop production. Thus, there is an urgent need for the company and the government to draw appropriate policies that will assist farmers in revitalizing their food crop production. Increased food productivity is vital for a healthy and hard working rural populace. The company for example should spell out clearly how much land should be spared for farmers' food crops. This provision is not taken care of in the NSC contract agreement. Hence there are cases where most of the farmers land is put under

cane cultivation at the expense of food production. The company should also devise a loan scheme where money, or machinery and farm inputs are advanced to contract farmers to increase their food productivity.

Like other agribusiness companies the NSC has no deliberate policy to improve food productivity nor the general welfare of out-growers. As observed by Dinham and Hines (1983) agribusiness' main concern has always been that of finding a profitable means of involvement in food and agricultural production, and not with the transformation of peasant agriculture. The central focus of the companies remains in the industrialised countries and Africa is seen primarily as a source of cheap labour and a market for manufactured inputs and technical expertise. Under these conditions, it is not possible for local producers to accumulate sufficient advantage and surplus, given the adverse price mechanisms which operate against them.

5.3 Commercial Activities

Table 19: Types of businesses contract farmers engaged in with cane incomes

TYPE OF BUSINESS	N	PERCENT
Passenger vehicle/matatu business	3	8
Diary animals	3	8
Rental houses	8	21
Trade in livestock/butchery	10	26
Shop/hotel	12	32
Petty businesses (salt, paraffin etc)	2	5
Total N = 38		100%

Findings in the table above illustrate that a larger percentage of our sample contract farmers invested their cane incomes in low income earning projects (63%). With a minority investing in fairly moderate high income earning businesses (37%). The data displays a wide range in the distribution of investments, with some farmers on one extreme investing in very petty businesses such as sell of salt while others invest in more lucrative businesses such as matatu businesses on the other extreme.

Farmers investing in low-income earning projects cited limited funds as a major factor. Most farmers (as will be explained in more detail in the next chapter), ended up with negative returns after the deductions of farm inputs and transportation costs were made. Moreso, after meeting the family's subsistence needs, a large percentage of farmers are left with no surplus for investment. The fact that only 38 respondents out of 193 interviewed invested testifies.

Furthermore, information derived from in-depth interviews of selected households reveals, income from cane is not even sufficient to provide adequately for the subsistence needs of the contracted families. Despite the harvests and payments made, some families' living standards have not improved, especially the unemployed households who rely entirely on farm incomes for their survival.

The 8 percent farmers who reported to have bought passenger vehicles were mostly large scale farmers committing 15 and above acres of land under cane. Apparently it is more economical for farmers to plant over eight acres of cane if they have to reap higher incomes. Apart from planting many acres of cane, two of the farmers were big businessmen earning substantial amounts of income, while the other was engaged in a high paying occupation. With the off-farm incomes they were able to combine efforts and invest in viable economic projects.

Generally farmers tended to invest in petty business or not to invest at all due to limited income obtaining from the sale of cane. After meeting the essential needs as we shall see in the next table, many contract farmers in our sample were starved of funds for investment.

Table 20: Types of priorities sugar cane farmers channel their sugar cane incomes to.

PRIORITIES	YES	NO	N=153 %=100
Purchase of food and clothing	146(95%)	7(5%)	
Settlement of debts	121(79)	32(21)	
Expenditure on education	113(74)	40(26)	
House construction	96(63)	57(37)	
Purchase of livestock	72(47)	81(53)	
Investment in commerce	38(25)	115(75)	
Sugar cane maintenance	31(20)	122(80)	
Maintenance of food crops	20(13)	133(87)	
Married another wife	21(14)	132(86)	
Saving in the bank	13(9)	140(91)	
Purchase of land	7(5)	146(95)	
Purchase of vehicle	5(3)	148(97)	

The table above shows that most of the income earned from cane is utilized by the majority of farmers on domestic consumption. Among the priorities are purchase of food and clothing (95%), settlement of debts (79%), expenditure on education (74%) and construction of residential houses (63%). A minority 25 percent reported to have invested in income generating projects. However, the type of projects invested in are of doubtful economic value. They include petty businesses such as sale of vegetables, salt, paraffin, kiosks, among others which do not in real terms earn substantial income to the farmer. The income accruing from these businesses are not sufficient for expanding the businesses leave alone providing for the family.

Nevertheless, a smaller percentage of farmers, most of who were big businessmen, progressive large scale farmers, and well paid professionals were able to invest some of their cane incomes

in viable economic projects. Such projects include, passenger vehicles operations (matatu) (8%), Dairy animals (8%), rental houses (21%). These projects earn a substantial income for the farmers in question and indeed, their standards of living have been uplifted. Farmers in this category (i.e. richer cane growers) associated their increased economic progress to the establishment of the sugar scheme.

Whereas domestic consumption and expenses for clothes are very much linked with the daily survival of the family, there are other expenses relating to the future welfare of the family which farmers invested in. They are, education, medical care, purchase of land and construction of houses. The researcher who happens to hail from this area was much impressed with the permanent and semi-permanent structures that have come up in the area courtesy of the introduction of sugar cane. Farmers pinpointed housing as one area that has immensely benefited with the introduction of monetised economy. Another area worth mentioning is education of children. A large percentage of contract farmers reported to have used cane money to educate their children right from primary to secondary level of education. The schools in the neighbourhood were not left out, those who had agricultural land benefited as actual registered cane growers. Five percent of the farmers purchased land for agricultural production.

Though the onset of monetised economy has fuelled disputes in a number of homes where money was misused by the household head, the presence of money has helped to improve and even cement

relationships within a number of homes where it has been spend for the benefit of the family. Some poor families where money in lumpsum to the tunes of over ten thousand shillings had never been handled, they were most delighted to receive such amounts and construct houses and take children to school something they may never have received without the sugar scheme. Ten families most of who were poor by any standards when interviewed confirmed this fact. They argued that though non harvests and delays in harvests had caused misery to many, still the scheme had something to offer to the community. Improvement had been realised in areas such as medical care, education, housing and commerce.

To sum up, little has been realised in the area of investment due to inadequate funds on the part of contract farmers. What emerges is a clear differentiation within the out-growers, with the richer out-growers investing in viable economic projects while the poorer ones not investing at all. The middle class category tended to invest in petty businesses. All this is a result of the negative returns the farmers end up with, after the NSC makes deductions of the inputs, services and transport cost advanced on credit to them. Moreso, this situation has been exacerbated by the continued delay of harvests and in extreme cases of non harvests of the farmers cane. The payments are made after a 'dry' period of approximately three to four years during which time farmers have borrowed heavily from friends on mutual understanding. The money received is used to service debts

leaving a little surplus for domestic consumption. The fact that 79% reported to have settled debts testifies. In actual terms the scheme has only helped a smaller percentage of farmers to adequately meet their basic needs, and has not gone far to enable them become capitalist producers able to accumulate and expand their production.

5.4: Performance of the Nzoia Sugar Scheme. (1969-70)

Table 21: Delivery of farm inputs and services to contract farmers by the NSC.

TYPE OF INPUT	YES	NO
Machinery	151 (78%)	42 (22%)
Fertilizer	126 (65%)	67 (35%)
Insecticide/pesticide	73 (38%)	151 (78%)

The table above shows that not all contract farmers were provided with the farm inputs and services on credit as provided for by the contract. Twenty two percent did not have access to the NSC machinery, 35 percent were not given fertilizers while 78 percent were not given insecticides and pesticides.

The contract farmers are engaged in sugar growing through the out-grower scheme. They own the land on which the sugar cane is grown and they rely principally on family labour to grow the contract crop. The NSC itself does not interfere much in the production process or in the organisation of labour, but provides its sugar cane growers with a wide range of services on credit.

The services and farm inputs provided include, seedlings,

fertilizers, pesticides, machinery for ploughing and harrowing, tractors for transporting harvested cane to the factory, and extension services to farmers through field instructors of the NSC.

As revealed by the above findings the NSC has not been able to provide the inputs and services to farmers efficiently. According to the contract agreement all the farmers are supposed to be provided with farm inputs on credit. Thus, this inefficiency on the part of the NSC has been detrimental to the actual production output of the sugar cane crop. Among the percentage of farmers who did not get fertilizers for instance, were poor farmers who did not have funds to purchase fertilizers locally for the crop. This category of farmers planted their cane without this necessary input, which resulted into poor yields and therefore less returns. Out-growers interviewed on why they never got any fertilizers revealed that the NSC had an inadequate stock that could not satisfy the out-growers demand. The NSC management confirmed this fact. The management blamed the shortage on the financial crisis facing the company. The company has to sell its sugar to purchase farm inputs and this takes a long time.

The NSC management revealed that in 1988/89 the supply of (DAP and UREA) fertilizers for both the nucleus estate and the out-growers was not only irregular but also inadequate because of the unavailability. However, most of the available fertilizer was utilised in the nucleus estate rather than on the out-growers

field. The nucleus estate which is owned by the factory itself is undoubtedly given more preference when it comes to farm inputs than the out-grower fields.

Similarly farmers who used ox-ploughs for ploughing their cane fields reported lesser yields than their counterparts who used NSC tractors. The NSC does not have adequate tractors for ploughing out-grower fields and thus some farmers were forced to hire ox-plough to plough their cane fields. Unlike tractors, ox-ploughs cannot dig deeper and hence do not provide sufficient soil able to support the cane for the six years of contract period. Thus by the time the cane is in its first and second ratoon, the yields drop. The NSC management revealed that most of their french manufactured tractors are grounded due to lack of spare parts and thus they have to rely on hired tractors for ploughing and transportation of harvested cane.

Poor performance on the part of the NSC has generally lowered the farmers morale and even dampened their initiative to expand their planted cane acreage. Even for those farmers who were provided with fertilizers and pesticides, the input was not provided on time. In most cases the fertilizers were provided after the farmer had already planted the crop. For instance, DAP fertilizer is supposed to be mixed with the soil before the seedlings are planted. When such an input is delayed then it is less effective if not completely useless to the crop. In such instances, some farmers tended to sell the fertilizer to other farmers or use it in their food crop fields. UREA fertilizer was

sometimes provided at a time when the crop was already ripe for harvest and thus at the least appropriate time.

On the whole, there is urgent need for the NSC to improve its services to the farmers at all costs if the venture has to be of any economic value to the farmer, the NSC, and the Kenya government. As long as the services remain the same the objective of self-sufficiency in sugar will not be achieved as many farmers drop out of the contract. The dream of rural development and improvement of living standards of the rural populace will remain a dream.

Table 22: Major problems encountered by contract farmers since joining the scheme

TYPE OF PROBLEM	YES N=193	NO	%=100
Delayed harvests	193(100%)	—	
Delayed payments	192(99%)	1(1%)	
Delayed fertilizer distribution	118(61%)	75(39%)	
Fertilizer not given	67(35%)	126(65%)	
Burnt cane not harvested	28(15%)	165(85%)	
Never harvested	33(17%)	160(83%)	

The table above illustrates the major problems facing the contract farmers of the NSC. Delayed harvests, payments and on the extreme non-harvests ranked highest among the problems facing the out-growers. For instance 100 percent of the farmers reported that their sugar cane was not harvested on time and payments made as per the contract agreement. Other than harvests, crucial farm inputs such as fertilizers and pesticides as mentioned earlier are either distributed late or are not

provided at all. We are therefore faced with a situation where the factory offers very poor services to the contract farmers.

According to the contract agreement the factory is supposed to harvest the plant crop at 24 months, the first and second ratoon crop at 18 months respectively. The payments are supposed to be made within two months after harvesting. This principle has not been adhered to in practice. The issue of delayed harvests has caused a hue and cry among out-growers, with the majority of the out-growers harvesting their cane only once in the whole six year contract period. A percentage of farmers (17%) have never harvested their cane throughout the contract period.

An interview with the NSC management confirmed this fact. The management blames the disaster on the technical bottlenecks facing the company and the Kenya government which failed to expand the factory as promised when the out-grower acreage had already been expanded. The French-managed factory was intended to have a crushing capacity of 2000 tonnes of sugar a day. This capacity has never been achieved since inception. In fact the factory has never crushed beyond 1,500 tonnes of sugar a day. The factory much too often breaks down due to technical problems that have never been resolved by the French Babcock Company which offers technical expertise. Much sugar cane was planted in the out-grower zones between 1983 and 1986. This is the time when most of the respondents also planted the crop. This expansion in acreage was done for two reasons. There was a fire which

destroyed over 700 hectares, in the nucleus estate in 1979. Secondly, the government had planned to contribute finance to expand the factory's capacity up to 3000 tonnes by the year 1986. More sugar cane was planted but the factory was not expanded until 1989, when the Arkel International took over the contract. The company was expanded up to 2000 T.C.D. by the year 1990 and has not been commissioned yet. Unfortunately to date the company has not achieved its crushing capacity of 2000 tonnes of sugar a day. Thus, the factory has been unable to cope with the out-grower output. The delay in payments to farmers was blamed on the bad financial set up right from the outset, especially in loan amounts and repayment terms, over priced agricultural machinery and technical assistance.

The technical situation as it stands has been described in more detail by Coughlin P.; Odada J.E.O.; and Owino P. (1986) in their study of sugar industry in Kenya. According to them most of the equipments (tractors generator turbines) purchased from France were highly over priced. These high charges burdened the plant with unmanageable annual finance charges even at the supposedly reduced interest charges (7.95%). These charges would chew up 35 percent of the expected annual sales revenue. The plant was crippled with an insupportable financial drain immediately.

The plant was supposed to be able to crush 2000 tonnes of cane per day continually but ever since inception the plant has never crushed and processed more than 1600-1700 tonnes per day on

a continual basis. But in order to pass the test for acceptance of the factory, the French managers reportedly ran the crushing mill for 36 hours at that rate. Then, just as the juice processing house was jammed full, they stopped the test and declared it to have been a successful demonstration of the plant's capacity. The mills would have had to stop anyway to allow the process to clear. The middle level African managers (many of whom are to-day's managers were not tricked, but the 'test' allowed the French suppliers to gain official acceptance for the plant.

The plant was also poorly designed. Most key pieces of equipment lack backups that can be used if the primary equipment breaks down (e.g. mills, boilers, turbine generators, vacuum pans). Since the process is continuous, if a breakdown occurs in any one of these the entire plant will suffer a partial or complete shutdown. Moreover, compared to Kenya's other plants that are rated for 2000 tonnes per day, this plant has the smallest capacity for most key pieces of equipment, as a result these design deficiencies, as soon as the plant became older and more susceptible to breakdowns, the critical failure to provide more back up equipment became evident in increasing hours that the entire plant was shut due to breakdowns. (Coughlin 1986:1-2). Afterwards, the failure of the government bureaucracy to decide to invest the required balancing equipment and working capital condemned the factory to under use its rated capacity and to incur continual massive financial losses.

Another problem faced by out-growers is that their burnt cane is not harvested by the scheme. If by any chance a farmer's cane is burnt accidentally or mysteriously the scheme refuses to harvest, making the farmer to suffer total loss. In the past, delayed harvest made farmers even threaten to burn their cane so that it can be harvested. In order to reduce such occurrence, the factory's policy has been not to harvest burnt cane, and this policy has been very unpopular among the farmers who go at a total loss. Instead of burning cane, out-growers now illegally sell contracted cane to private sugar mills. This has been much prevalent over the period 1988/89 and 1990/91 in Kabras and Bunyala locations. In 1988/89 in Kabras, farmers sold out illegally approximately 10 hectares each month.

The highest number of farmers who abandoned cane was recorded in february 1989 according to NSC records.

Sugar cane has been mismanaged. Amongst others, the parameters observed were poor weeding, animal damage and poor maintenance. This phenomenon was more prevalent among farmers who never harvested.

Thus, the survey found out that a minority 10 per cent of farmers still had a wish to expand their cane acreage with a staggering 90 per cent having lost morale and enthusiasm to expand their acreage. A fairly larger percentage of farmers (45%) expressed their wish to quit the contract. The 55 percent who opted to continue with the contract hoped that the situation would change. The majority of them relied on cane as their major

Cash crop to supplement meagre farm earnings or poorly paying occupations.

5.5. Development of Rural Infrastructure.

Table 23: Improvement of roads in the out-grower zones

SITUATION OF ROADS	N	PERCENT
Improved	48	25
No Improvement	145	75
Total	N=193	100%

Findings in this table indicate that the NSC has not contributed greatly to the improvement of roads in the out-grower community. Only 25 percent of our sample contract farmers reported a slight improvement of roads by the NSC, with a staggering 75 percent reporting no improvement at all.

Information from the key informants and our sample out-growers revealed that the general improvement of the out-grower zones was not a priority of the scheme. The few roads improved on were purposely for the transportation of cane to the factory during harvesting seasons as well as the distribution of farm inputs during the planting season. However, the maintenance of the said roads was short-lived. For example, these roads tended to get worn out after the harvests. The tractors which transport cane to the factory are quite heavy and thus wear out the roads in the transportation process. The NSC does not maintain these roads until the next harvesting season, making it difficult for farmers to use the feeder roads for transportation of their food

crops. It is therefore in order to conclude that, the scheme has no deliberate policy of improving the roads within the out-grower community.

The out-grower community relies heavily on roads constructed by the government under the rural access programmes initiated by the ministry of transport and communication. Furthermore, the farmers reported to have opened up feeder roads manually where none existed, so as to have their cane harvested and transported to the factory. The factory made it clear to such farmers that those who did not open up roads would not have their cane harvested.

This issue was confirmed by the NSC management who argued that road construction was not a priority. They maintained that the few roads and bridges they constructed were purely meant to facilitate their own transportation needs within the out-grower fields. The NSC is faced with a financial crisis as mentioned earlier and is therefore not in a position to improve the roads.

According to information obtained in the NSC magazine-NZUCO NEWS No.21 (1986) the establishment of roads in both the nucleus estate and the out-grower zones are approximately 170 km. The classified earth roads in the zone are approximately 500 km. However, road construction and maintenance remains one of the major constraints because of the limitations in the availability of funds.

To sum up, the NSC has not succeeded in achieving one of its intended objective namely, the improvement of rural roads.

infrastructure within the contracted community. The few roads constructed have not been maintained and hence the community has been left in the same if not worse communication problems. Moreso, some roads which were passable before the scheme have been spoilt by the NSC tractors and trailers, leaving them in an appalling condition.

Other than roads, the NSC has not contributed much in the provision of other social amenities, namely, water, electricity, schools, hospitals etc. The NSC has built one primary school which it sponsors and it caters mostly for the children of the company employees and neighbouring areas. This is one project the NSC strongly feels is a social amenity for the out-growers. But in practical reality the out-growers most of who stay over 10 km away from the factory can not utilise this facility. The same applies to the hospital the NSC has built.

The scheme does not give any grant to any school or dispensary within the out-grower zone for development purposes. The NSC has only assisted when out-growers as a group approach the management to deduct some money from their cane incomes and give in lumpsum to a school of the farmers' choice for construction purposes. In fact children have dropped out of school due to lack of fees while farmers payments are withheld by the company.

Thus, the NSC's approach to improvement of the rural infrastructure is similar to that of most agribusiness firms operating in the Third World. According to Dinham and Hines

CHAPTER SIX

DATA ANALYSIS OF THE IMPACT OF SUGARCANE CONTRACT FARMING ON THE SOCIO-ECONOMIC DEVELOPMENT OF NZOIA SUGAR COMPANY'S OUTGROWER COMMUNITY.

This chapter examines the relationships and associations between the independent and dependent variables. Two inferential statistical methods are used to measure the relationships between the independent and dependent variables. They include, the chi-square, and the contingency coefficient. The chi-square is a test of significance. Therefore it is used to establish whether there is a relationship/association between the independent and dependent variables. The contingency coefficient is used to measure the degree of association between variables, that is, how strongly related the variables are: (see chapter three for details on methods of data analysis).

H1: The profit - oriented approach enforced by the agribusiness firms in the contract farming system tends to retard the growth in incomes of the peasant community.

In testing this hypothesis the farmers economic position was evaluated in terms of growth in incomes at the family level. The farmers farm and off farm incomes were assessed before and after the introduction of the sugar scheme, with a view to establishing

any growth in incomes with the onset of sugar cane farming. The farmers' total net sugar-cane incomes were obtained. The farmers were found to have harvested either once or twice during their contractual period. Relatively, a large number of farmers were on their sixth and therefore last year of their contracts. Hence the net total cane incomes used in this study stands for what the farmers earned in their four or five years of their contractual term.

The farmers expenditures with cane money were looked into with a view to assessing whether at the end of the day the farmer is left with substantial income to invest in viable projects. Investment, therefore is seen as a sure means to growth in incomes of the contract farmers. In other words, investment is a catalyst without which substantial increase in incomes cannot be realised.

Table: 24: The relationship between the total cane income received and probable increment in farmers' family incomes

INCOME INCREASED	TOTAL CANE INCOME			TOTAL
	0-40000	41000-80000	81000-120000+	
YES	19(13%)	11(65%)	21(91%)	51(27%)
NO	132(87%)	6(35%)	2(9%)	140(73%)
	157(100%)	17(100%)	23(100%)	*191(100%)

* Total less than 193 due to non response
 $\chi^2 = 76.97$ significant association at 3 df.
 $c = .54$ strong association
 significant level - 0.05

Findings in the table above indicate that 27 percent of the

farmers reported an increment in their family incomes with the introduction of sugar cane farming, while 73 percent did not. Among the farmers who received between Ksh 0-40,000 total cane income, 13 percent reported an increment in their family incomes while 87 percent did not. This suggests an under-representation on the part of those whose incomes increased, and an over-representation on the part of those whose incomes did not increase, in relation to the row marginal percentages.

On the other hand, farmers who received Ksh 41,000 and above are over-represented among those whose incomes increased. For example, in the category of farmers who received over Ksh 80,000, 91 percent reported an increment in their family incomes. This clearly indicates an over-representation in relation to the row marginal percentage (27 percent).

Conclusion: The Chi-square ($\chi^2 = 76.97$) is significant at 3 degrees of freedom, .05 significance level, suggesting an association between the two variables. That, farmers whose family incomes increased are likely to have had a relatively higher total cane income, while those whose incomes did not increase are more likely to have had a relatively lower total cane income. However, the degree of association is strong. (C.54).

However, a look at the table base indicates that it is quite high. Indeed, out of 191 valid cases, only 51 respondents reported an increase in family incomes with a substantial 140

respondents reporting no increment. It is evident therefore, that a large number of farmers complained that their family incomes did not increase with the onset of sugar cane farming. Nevertheless, this finding may be treated with caution given the fact that the topic on incomes was a sensitive and delicate issue during the research process. Some farmers were not willing to come out openly in terms of incomes obtained from cane, their expenditures and the comparisons of available income presently and before the establishment of the scheme. Some farmers preferred to respond negatively to the effect that they were more poor than before even when the researcher could observe some marked improvement in areas such as housing compared to before the sugar scheme.

Evidence from this table indicates that although sugar cane farming has helped increase family incomes of a number of farmers a relatively large number of farmers have not experienced a growth in their family incomes. Indeed, sugar cane as a cash crop has failed to achieve one of the major goals it was intended to. That is economic upliftment of the contracted community. This finding is backed up with the information from the key informants who revealed that, sugar cane farming has not only failed to increase farmers incomes, but further enhanced the degeneration of the existent family incomes with its accompanied negative effects. (This will come out more clearly as this chapter unfolds)

This state of affairs that is, non-increment in incomes

also referred to as negative returns obtaining to farmers is not only peculiar with the NSC contracted farmers. In a study of the Kenya's sugar industry, Odada et al (1986), observed that a large number of farmers in Kenya's sugar industry end up with negative incomes after complete crop cycles lasting six years. He concluded that this results from charges for services rendered in the three crop cycles in excess of the gross returns earned from three harvests. He further observed that the price structure for the inputs and the product (sugar cane) is unrealistic.

Glover (1985) studying Honduras contract farming in sugar cane, was able to give explanations to most problems facing contract farming. Some of his findings include excessive charges for technical assistance by the companies and non-payment of price differentials for cane quality specified in the contract. This indicated that most terms in the contract were not met, because maybe the farmers were not aware of them or the company intentionally refused to meet them.

The kind of predicament, that is "negative returns", these farmers find themselves in cannot be explained in any other way other than to be linked to the kind of contractual agreement they enter in with the agribusiness firm. The agribusiness firms have minimised their risks in production and have instead burdened the farmer who actually meets the production cost of the crop. Clearly the farmer not only bear the usual risks associated with agricultural enterprises, but in addition the whole set of factory level risks largely beyond their comprehension even

though they could be within the control of the companies. These has driven the farmers into getting negative returns and therefore, a retardation in the growth of their incomes.

In view of the afore mentioned one is compelled to agree with the radical critics who contend that contract farming is purely an exploitative system aimed at exploiting the small-scale farmers. It is their belief that the degree of exploitation is unparalleled since the peasants cover their own production costs either via the market and/or their food plots and because family labour can extend workers almost indefinitely. (Glover 1984).

The meagre financial returns from cane are depressed even further with the kind of obligations the farmer has to meet in supporting the family. The farmer uses up most if not all of the income obtained from cane to provide the necessary basic needs to the family, thus, being left with little or no surplus for investment as we shall see in the following findings.

Table 25: Total cane income obtained and expenditure on housing.

BUILD A HOUSE	TOTAL CANE INCOME			TOTAL
	1000-40000	41000-80000	81000-120000	
YES	64(57%)	13(77%)	19(83%)	96(63%)
NO	49(43%)	4(23%)	4(17%)	57(37%)
	113(100%)	17(100%)	23(100%)	153(100%)

$X^2 = 7.1$ Significant association at 2 df
 $C = 0.21$ Rather weak association
 0.05 Significance level.

Grand total 153 represents farmers whose cane was harvested.

Findings in table 25 show that, in relation to the marginal percentages farmers earning between, ksh.1000-40000 total cane income are less likely to have build houses with their cane incomes. For example 57 percent of the farmers in this category reported to have improved their housing. This is an under representation of the total percentage (63%) of farmers who improved their housing with cane incomes.

Farmers earning above Ksh 41000, are more likely to have build houses. For instance, among farmers who earned over Ksh 81000, 83 percent spend some of their incomes on housing. This suggests an over representation in relation to the row marginal percentage.

Conclusion: The chi-square ($\chi^2 = 7.1$) is significant at 2 degrees of freedom 0.05 significance level, thus confirming an association between the two factors. That high cane income earners are more likely to have build houses while low income cane earners are less likely to have build houses with incomes earned from cane. However contingency coefficient (c.21) implies a rather weak relationship.

Nevertheless, it is clearly evident that regardless of the total cane income obtained, improvement of housing ranked high among the farmers' priorities. The researcher observed a relative improvement in housing, since she happens to come from that area. A relatively large number of farmers have constructed semi-permanent houses with a few erecting permanent houses. The

respondents confirmed that housing is one area that cane earnings has enabled them to improve.

Table 26: Total cane income and expenditure on education.

SPEND ON EDUCATION	CANE INCOME			TOTAL
	1000-40000	41000-80000	81000-120000	
YES	77(68%)	14(82%)	22(96%)	113(74%)
NO	36(32%)	3(18%)	1(4%)	40(26%)
	133(100%)	17(100%)	23(100%)	153(100%)

$X^2 = 8.20$ Significant association at 2 df

C.23 weak association

0.05 significance level

The table above shows that a relatively larger percentage of farmers in the Ksh.41000-80000 and above category reported to have spend their cane money on education, than is expected from the row marginal percentages. For example, among farmers earning Ksh.81000 and above, 96 percent reported to have used some of the cane money on academic ventures; which in essence is an overrepresentation in relation to the marginal percentage (74%).

Similarly, fewer farmers in the ksh.1000-40000 category reported to have used money on education (68%) than is expected from the marginal percentage.

Conclusion: The chi-Square ($X^2 = 8.20$) is significant at 2df and 0.05 significance level, suggesting a relationship between the two variables. That farmers earning over Ksh.41000 from cane are more likely to spend some of their money on education, than those earning Ksh.40000, or less. The contingency coefficient (c.23)

implies a weak relationship. It is not surprising that farmers earning Ksh.40000 or less are less likely to invest in education.

This is because after a farmer has purchased food for the household, build a house for example, is left with no income to spend on school fees. However the number of farmers who spend money on education in this category is still high.

Indeed, in absolute terms, there are still many more farmers using cane money on education. Together, with the low association of the table, we may maintain that education takes much of the farmers income. Information from the respondents and Key informants reveal that education is one among other areas that have benefited significantly from sugarcane farming. This explains why the field of investment is starved of funds. In a study of the sugarcane industry in western Kenya Lemmens (1987) found out that farmers spend quite a large sum of their cane incomes on education. Farmers testified to have educated some of their children upto University level, a factor they were very happy about.

Table 27: Total cane income and maintenance of the sugarcane crop.

MAINTAINED SUGARCANE	CANE INCOME			TOTAL
	1000-40000	41000-80000	81000-120000	
YES	13(12)	6(35)	12(52)	31(20)
NO	100(88)	11(65)	11(48)	122(80)
	113(100%)	17(100%)	23(100%)	153(100%)

$X^2 = 22.24$ significant association at 2 df.

$C = 0.36$ moderate association.

0.05 significance level.

Findings in table 27 show that fewer farmers in the Ksh 1000-40000 category used some of their cane income to maintain their sugar cane crop (12%) than is expected from the marginal percentage. While a considerably large percentage of farmers earning over Ksh.41000 from cane utilized some of their cane incomes on maintaining the sugar cane crop. For instance, 52 percent of the farmers who earned over Ksh.81000 from cane maintained their cane crop. This is an overrepresentation in relation to the marginal percentage (20%).

Conclusion: The chi-square ($X^2 = 22.24$) is significant at 2 degrees of freedom 0.05 significance level implying an association that; farmers who reinvest their cane income in the crop itself are more likely to be those earning a substantially high income from the crop. The association is moderately strong ($C=0.36$).

What comes out clearly in this finding is that relatively

fewer farmers reinvest their cane incomes in the crop itself. Only 20 percent of the farmers reinvested in the crop leaving a majority 80 percent unable to spare a cent for reinvestment. This trend does not augur well with the whole notion of capitalist agriculture where increased productivity and therefore higher returns are the main goal.

The question we need to ask therefore, is, if returns to sugar cane are not even sufficient for reinvestment in the crop itself, of what economic value is the crop to the farmer? how is the farmer going to improve his economic status given the prevailing conditions? It is the belief of the researcher that reinvestment in the crop itself is the only sure way of raising productivity and consequently higher income on harvest. As indicated earlier, the farmers shoulder all the production costs, with weeding taking up most of the farmer's time and money. Farmers reported to weed cane over six times before it is ready for harvest. Farmers with many acres of land under cane or with inadequate family labour have to hire labour to supplement their family labour and this involves money, thus cutting into the farmers' domestic budgets.

The situation of proper cane maintenance is worsened by the sugar scheme itself which for a long time has failed to supply a large number of farmers with the farm inputs namely, fertilizers, insecticides, and pesticides as provided for in the contract. The result has been for the financially unstable out-growers to plant their cane without these essential inputs. Thus, their

productivity has been immensely affected. The well to do farmers have had to dig deeper into their pockets to purchase fertilizers and insecticides for the sugar cane crop. This has depreciated their family incomes even more. Further more these costs are not compensated by the company nor are the financial returns obtaining from the cane crop sufficient to cover up for the extra expenditure.

We are therefore faced with a unique situation where by not only farmers are not in a financial position to maintain the crop but the factory as well. An interview with NSC management confirmed the shortage of fertilizers. The NSC management blamed this situation on the financial difficulties (i.e. insufficient cash flow) facing the company, which has its roots in the type of agreement the Kenya government entered in with the French based agribusiness firm the Five Coil Babcock Company. The contract was highly overcharged in terms of technical equipments, salaries to expatriates and fixed consultation fees. The feasibility study also did not take care of the cane revolving fund and thus the factory has to market the crop so as to buy fertilizers. Thus there is a shortage of fertilizers both in the nucleus estate and in the outgrower farms. Nevertheless, from the statistics of fertilizer made available to the researcher the nucleus estate gets a lions share with the out-growers getting a small supply of fertilizers.

However, the management did not show any indications of a brighter future for farmers as the situation presents now.

Therefore, there is an urgent need for the government to act promptly to ease this financial quagmire facing the company. This can be done if the government temporarily exempts the company from paying revenue to the government for some reasonable period of time until the company stabilizes financially. More proper policies have to be drawn and implemented, if the numerous problems facing the farmers have to be ameliorated.

Table 28: Total cane income and settlement of debts.

-SETTLED CANE INCOMES				
	DEBTS 1000-40000	41000-80000	81000-120000+	TOTAL

YES	84(74)	16(94)	21(91)	121(79)
NO	29(26)	1(6)	2(9)	32(21)

	113(100%)	17(100%)	23(100%)	153(100%)

$X^2 = 6.00$ Significant association at 2 df.

$C = 0.19$ Weak association

0.05 significance level.

Findings in the table above indicate that farmers earning higher cane incomes are more likely to have settled their debts with their cane incomes. For example among the Ksh.81000 and above earners, 91 percent reported to have settled debts; which is an outright overrepresentation in relation to the marginal percentage (79%). On the other hand farmers earning low cane incomes i.e. Ksh.40000 or less are just slightly less likely to settle debts using income derived from cane sales. This suggests a slight underrepresentation in relation to the marginal percentage. What the later means is that farmers in this category are equally in debts but may perhaps not be in a

position to settle most if not all their debts due to the little financial returns from cane.

Conclusion: The chi-square ($X^2 = 6.00$) is significant at 2 degrees of freedom, 0.05 significance level, confirming an association; that, higher cane income earners are more likely to have settled debts while low cane income earners are slightly less likely to have settled debts with their cane income. However the degree of association is weak ($C=0.19$). Nevertheless, considering the low association of the table we may maintain that most if not all farmers settled their debts with cane incomes, regardless of their social or economic class.

Thus, this issue of indebtedness of the farmers could be closely linked to the long duration cane takes to get ready, harvests done and payments met to the farmer. Evidence from this table shows that relatively more farmers are in debts. For instance, out of 153 valid cases, 121 respondents (i.e. 79 percent) reported to have settled debts. This percentage is quite high. Indeed, this situation is worsened by the delay in harvesting of sugar cane by the NSC. On average a farmer waits for three to four years before the cane is harvested and payments met. During this long period of waiting, a farmer has to borrow heavily from friends or any other formal institution to meet the day to day family needs. Thus the sugar cane farmer is caught up in what Mwandishi (1985) calls a debt trap.

Farmers earning less than Ksh.40000 of whom relatively the

majority are small scale farmers are worst hit. Particularly small-scale farmers without the necessary financial resources for carrying out their cultural practices independently are more vulnerable. Odada et al in a study of the Kenya Sugar Industry observes a similar trend. Contends Odada, after earning negative returns in the plant crop harvest, farmers have to borrow to maintain the subsequent ratoon crops and to meet their family needs, thus getting deeper into indebtedness. Such farmers are caught up in a desperate vicious circle. Similarly, Mwandishi in a study of the mumias sugar factory observes the same phenomenon.

Table 29: Total cane income and savings in the bank.

SAVED MONEY	CANE INCOME 1000-40000	41000-80000	81000-120000	TOTAL
YES	4(4)	2(12)	7(30)	13(9)
NO	108(96)	15(88)	16(70)	139(91)
	112(100%)	17(100%)	23(100%)	152(100%)

$\chi^2 = 17.86$ Significant association at 2 df.

C = 0.32 Moderate association

0.05 significance level

Total less than 153 due to non-response

Table 29 indicates that high cane income earners are more likely to have saved some of their cane money in the bank than low cane income earners. For example in the Ksh.81000 plus category 30 percent of the farmers reported to have saved some of their cane incomes in the bank; which is an overrepresentation in relation to the marginal percentage (9%). On the contrary, among

farmers earning less than Ksh. 40000 from cane, 96 percent did not save any money in the bank. This illustrates an overrepresentation among the percentage of farmers who did not save.

This finding clearly demonstrates the fact that farmers are not saving any money in the banks. The issue of meagre cane earnings is an overriding factor. It is not surprising therefore that out of the 152 respondents interviewed only 13 i.e.(9%) made some savings leaving a staggering 139 respondents i.e.(91%) barely surviving. In an interview with the farmers they expressed the fact that after meeting their immediate needs, they are not left with anything to save. Surely a farmer earning Ksh.10000 for example cannot save. The few farmers who made some savings as seen earlier earned a substantially high income from cane. A part from that, they happened also to be well established businessmen or well paid professionals who did not rely on cane incomes entirely to support their families. Once again small-farmers and moreso the unemployed who rely on cane entirely are marginalised.

Conclusion: Chi-square ($X^2 = 17.86$) is significant at 2 degrees of freedom 0.05 significance level demonstrating an association between the two variables. That higher cane income earners are more likely to have saved their cane incomes in the bank than low cane income earners. The relationship however is moderately strong ($C=0.32$).

With the aforementioned, the pricing of sugar cane and the inputs that go into the crop have to be reviewed thoroughly to arrive at the proper pricing figures if sugar cane as a crop has to move from its present role as a mere subsistence earner crop to its position as a viable economic cash crop, able to earn substantial income that can boost the growth in farmers' incomes. There is also need for the agribusiness firm to re-examine its role in the production process, so that it can assume some of the roles presently shouldered by the farmer, if the farmer has to benefit as a producer. The essence of capitalist agriculture of which cash crop production is part is accumulation. One way in which a farmer is seen to be accumulating is through savings in the bank. Thus, it is therefore, evident that farmers of the NSC are far from being properly in-co-operated in the market system. The growing of cane has integrated part of the farmers in the market system, at a stage when cash crop and subsistence production exist next to each other. Lemmens (1987) observes a similar trend in his study of the sugar cane industry in western Kenya.

Table 30: Relationship between farmers occupation and hiring of labour in sugar cane production.

OCCUPATION	HIRED LABOUR		TOTAL
	YES	NO	
FARMER/UNEMPLOYED	19(32)	40(68)	59(100%)
SMALL TRADER SEMI-SKILLED	19(38)	31(62)	50(100%)
CLERKS/FIELD INSTRUCTORS	12(40)	18(60)	30(100%)
PRIMARY TEACHERS	11(61)	5(39)	18(100%)
PROFESSIONALS/ BUSINESSMEN	13(81)	3(19)	16(100%)
TOTAL	74(43)	99(57)	*173(100%)

$\chi^2=15.40$ Significant Association at 4 df, 0.05 significance level.

C = 0.29 Rather weak Association.

* Total less than 193 due to non responses

Findings in the table above indicate that 43 percent of farmers hired labour to weed their sugar cane, while 57 percent did not. In relation to the marginal percentages therefore, primary school teachers, professionals and businessmen are overrepresented among farmers who hired labour. For example, 61 percent of farmers in the professional/businessmen category reported to have hired labour. On the other hand, farmers who were unemployed are underrepresented among farmers who hired labour to supplement family labour in sugar cane production.

Conclusion: The chi-square ($X^2=15.40$) is significant at 4 degrees of freedom 0.05 significance level, implying a relationship between the two factors. The contingency coefficient ($C=0.29$), however, suggests a rather weak association.

Evidence from this table demonstrates that regardless of their occupations, relatively a large percentage of farmers hire labour to supplement their family labour. Coupled with the low association of the table we may maintain that in absolute terms hired labour is commonly used in sugar cane production regardless of the social classes of the farmers. However, the unemployed farmers may be utilizing less hired labour due to financial handicap, given the fact that they do not have a constant source of income. They reported to rely entirely on surplus from the farm for their subsistence. Farmers in permanent occupations, hire much more labour not only because of their financial capability, but also due to lack of time.

One would wonder why hired labour is increasingly used in sugar cane production. This is because the communal forms of weeding which existed before are increasingly disintegrating, since most of the farmers in the outgrower zones plant sugar cane. The weeding period of cane coincides and therefore getting communal labour is not easy. Farmers are busy on their individual plots. This phenomenon is not only peculiar to NSC farmers, but is also reported to be on the increase among sugar cane farmers in the Mumias and Kabras areas (Lemmens 1987).

Lemmens in a study of these areas similarly observed a clear change from family to hired labour, particularly in the cash crops.

Farmers committing over 5 acres of land under cane may not have sufficient family labour, thus they are forced to hire labour. Hiring of labour is another expensive cost the farmer meets which is not compensated by the sugar scheme. Farmers reported to have sold their food crops and livestock to pay the hired labourers. Salaried farmers and businessmen also used their personal incomes to pay the hired labourers. There is no doubt that sugar cane production is cutting into the farmers family/domestic incomes, thus degenerating the farmers' financial status even more. In this circumstances it is not possible to envisage a real growth in the farmers incomes coupled with the negative returns from cane at the end of the day. More pathetic are the situations where a farmer spends a considerable amount of his/her own income to weed the cane and yet the cane has never been harvested since the farmer joined the contract six years ago. Such farmers suffered compound loss from their investment in the crop, the harvests and the many years cane stood rotting and drying in the shamba without bringing in any income. We are therefore faced with a situation whereby the sugar scheme meant to increase the farmer's income, instead relegates them to a poorer economic state than ever before.

What we are trying to say in essence is that the profit-oriented approach expressed in terms of pushing the production

costs to the farmer renders the whole sugar cane contract absolutely unprofitable to the farmer. Profitability of farm enterprises is normally analyzed on the basis of gross margins which are arrived at by deducting variable costs of production and marketing, from the gross values of output.

In the case of sugar cane, variable costs include the cost of land preparation, the cost of intermediate inputs like seed cane and fertilizers, the cost of hired labour involved in planting, gap-filling, fertilizer application and weeding, the cost of chemicals for controlling weeds and pests and the cost of harvesting and transportation of sugar cane; interest cost operations performed for the farmers by the sugar company. These variable costs are deducted from the gross value of sugar cane to arrive at the gross margins. When all these numerous costs are deducted from a farmer's income the company recovers almost three quarters of the total earnings leaving the farmers with very little income. A look at the farmers receipts of accounts confirmed this fact.

Table 31: Distance from the sugar scheme and the transport cost incurred.

TRANSPORT COST LEVIED	DISTANCE IN KM.			TOTAL
	0-16	17-32		
VERY HEAVY DEDUCTIONS	33(56)	96(96)		129(81)
FAIR DEDUCTIONS	20(44)	4(4)		24(19)
	59(100%)	100(100%)		153(100%)

² = 38.92 Significant association at 1df
0.05 significance level.

C= .44 Strong Association.

Findings in the above table illustrate that farmers living far away from the sugar scheme incurred heavier transportation costs than those living nearer to the sugar scheme. Ninety six percent of the farmers living between 17-32 km away from the factory reported having been deducted a lot of money as transportation cost. This is an overrepresentation in relation to the marginal percentage 81 percent. On the other hand farmers living within 0-16 km away from the NSC reported to have been deducted transportation costs fairly. The NSC management interviewed on the transportation issue confirmed that transportation is a very costly affair among their establishment. Transportation cost is charged per tonne depending on the distance from the factory.

Conclusion: The chi-square ($X^2=38.92$) is significant at 1 degree of freedom, 0.05 significance level. This implies an association between the two factors; that the longer the distance from the company the higher the transportation cost. However the contingency coefficient (C=.44) suggests a strong relationship.

Once more transportation cost like other production cost is met by the farmers. A cross-check of the farmers' sugar cane receipts of accounts revealed that transportation ranked highest in amounts of the deductions recovered by the company from the farmers gross income. In a study of Kenya Sugar Industry Odada et al observed the same phenomenon. According to Odada et al, the

costs of production and marketing of sugar cane take an average of 80.5 percent of the gross value of the plant crop, 65.8 percent of the value of the first ratoon crop and 72.1 percent of the value of the second ratoon crop. Consequently gross margins accruing to the average sugarcane farmer is only about 27 percent of the gross value of his sugar cane output of the production and marketing costs. Cane marketing which constitutes the largest cost item using up as much as 33.1 percent of the gross value of cane output. This is an indication that the cane transportation rates fixed by the Kenya Sugar Authority are out of proportion with the fixed price of sugar cane which was Ksh.525 per tonne at the time of this research. If not then it means the transporters are being over-rewarded at the expense of the contracted farmers.

What this situation calls for, is a review of the transportation costs in a way that the farmers' returns can be increased. This will be a sure way of effectively reflecting the relative importance of the farmer in the Sugar Industry. The agribusiness firm should in this light reconsider meeting some of the transportation cost. As long as the production system remains, the farmer's chances to increase his economic position will be permanently thwarted.

It is quite clear that sugar cane production costs and the basic needs the farmer has to meet outstrip the income the farmer earns from sugar cane. Small Scale farmers come out as the worst hit, considering their meagre earnings obtained and the kind of family obligations they have to meet. Food and clothing consume

a substantial amount of income since farmers presently grow less food crops. The moot question therefore, is how much surplus is left to a farmer in terms of investment after meeting most of the above needs.

Table 32: Total cane income and investment in viable economic projects.

INVESTMENT IN VIALE PROJECTS	CANE INCOME		
	0-40000	41000-80000	81000-120000
TOTAL			
YES	18(12)	8(47)	12(52)
NO	133(88)	9(53)	11(48)
	151(100%)	17(100%)	23(100%)
			*191(100%)

* Total less than 193 due to non response
 $\chi^2 = 28.93$ Significant association at 2 df
 0.05 significance level.
 C = .36 Moderate association.

The table above shows that 20 percent of the contracted farmers reported to have invested some of their cane incomes in viable economic projects; while 80 percent did not. In relation to the marginal percentage, farmers who received between Ksh.0-40,000 are underrepresented among farmers who invested their money in income generating projects. On the other hand farmers earning over KSh.81,000 are overrepresented among the percentage of farmers who reported to have invested their cane incomes in viable economic projects.

Conclusion: The chi-square ($X^2=28.93$) is significant at 2 degrees of freedom 0.05 significance level, confirming an association. That, farmers earning higher cane incomes are more likely to invest their cane incomes in viable economic projects than low cane income earners. However, the degree of association is moderately strong ($C=.36$).

Evidence from this table reveal that quite a large number of farmers did not invest in viable economic projects. Out of 191 respondents only 38 invested. Indeed, we may maintain that a large number of farmers were starved of funds for investment. Moreso, low income earners who in this case are small scale farmers were most affected. For example in the Ksh.0-40,000 category only 12 percent invested which is less than is expected from the marginal percentage. More importantly the kind of investments they made are questionable. According to the findings in this table 63 percent of the farmers of who the Ksh.0-40,000 category are a majority invested in small scale petty businesses. Some as petty as sell of paraffin, salt and vegetables, trade in livestock, operation of small kiosks and shops. Such businesses do not in actual terms bring in much income for these farmers. Most of them bring in not more than Ksh. 500 per month. Twenty one percent of the farmers owned rental houses in the local urban centres, while only 8 percent ventured in more profitable businesses such as matatus (passenger vehicles). The later were mostly large scale farmers, who were also either well paid professionals or fairly established

businessmen. What emerges in essence is differentiation within the peasantry (i.e. contracted farmers) with the small farmers being marginalised in terms of real investment in viable economic projects.

If the total cane incomes and the farmer's ability to invest are anything to go by as a major factor contributing to growth in incomes of the farmers; then it is quite clear that these sugar cane farmers are less likely to accumulate. The amounts of cane incomes obtaining to the farmer and the possible chances of investment available are negligible in terms of real accumulation or growth in incomes of the farmers. The question that immediately comes into mind is how can the farmers improve their wealth position if they can hardly invest? With the present contracting policy, is the economic position in the future likely to change for the better or the worst? What we are trying to say is that the contract agreement which presently binds the farmer with the agribusiness firm in the production process is unrealistic in its entirety. The maximization of profits which is an overriding factor for the agribusiness firm can not allow the farmer to accumulate. Thus, the contracted farmers are just mere pawns in the hands of agribusiness contractors.

This finding tallies with what Mwandishi (1985) found out in a study of Mumias Sugar Company. He observed that after farmers having met their immediate requirements a majority of them are not left with incomes sufficient enough for investment in income generating activities. This explains why sectors such as

industry and commerce are starved of investment funds. Instead, a significant proportion of cane incomes is channelled into consumption among others. Thus, given these circumstances the farmer is incapacitated and therefore unable to increase his wealth position. The farmer is therefore relegated to a position where he grows sugar cane from whose income he meets his immediate subsistence requirements.

Other than just the incomes derived from cane, other factors also influence the farmer's capability to invest in viable projects. This includes the number of acres of sugar cane the farmer has and his/her occupational status.

Table 33: Number of acreage planted under cane and investment in viable projects.

INVESTED	CANE ACREAGE			TOTAL
	0-4	5-9	10+	
YES	23(15)	11(31)	4(57)	38(20)
NO	127(85)	24(69)	3(43)	154(80)
	150(100%)	35(100%)	7(100%)	*192(100%)

$X^2 = 11.07$ Significant association at 2 df
0.05 significance level.

C = .23 Weak association.

* Total less than 193 due to non response

Findings in the table above illustrate that farmers with larger cane acreage are more likely to invest in viable economic projects, than farmers owning relatively fewer cane acreage. For example among farmers who planted over 10 acres of cane, 57

percent reported to have invested in income generating projects. This indicates an overrepresentation in relation to the marginal percentage (20%). On the other hand farmers who planted 4 acres of cane or less, a majority i.e. 85 percent reported not to have invested in income generating projects. This is an overrepresentation in relation to the percentage of farmers (80%) who reported not to have invested.

Conclusion: The chi-square ($X^2 = 11.07$) is significant at 2 degrees of freedom, 0.05 significance level, demonstrating an association between the two variables. That farmers planting larger acreage of cane are more likely to invest some of their cane incomes in viable projects, than farmers planting relatively fewer acres of cane. The degree of association is weak ($C = 0.23$). With the low association of the table however, we may maintain that farmers owning large cane acreage have a slight edge over farmers owning fewer cane acreage in terms of investing some of their incomes in viable projects.

The number of cane acreage determines the amount of incomes derived during harvests. A perusal of the farmers' cane receipts of accounts confirmed this fact. Farmers owning eight or more acres of cane obtained a substantial income. Most of them received over Ksh.100,000 with farmers planting over 15 acres of cane reaping higher returns. Farmers in the 15 plus category obtained right over Ksh.200,000. On the other hand farmers owning four or less acres of sugar cane obtained relatively low

returns. For example some farmers owning between 0.5-1.5 acres of land earned Ksh.10,000 or less. Farmers owning between five and seven acres of land earned fair incomes of between Ksh.50,000-100,000 depending on their distance from the factory. Farmers leaving nearer to the factory earned relatively higher incomes due to lower transportation costs.

However, it is interesting to observe that, in our sample of 192 respondents 150 respondents committed four or less acres of land under cane, with a minority 47 respondents planting over five acres of sugar cane. Thus, it is obvious that a majority of the NSC contract farmers fall within the category of small farmers, reaping substantially low incomes from sugar cane. What emerges, therefore, is a differentiation within the peasantry with a minority large farmers, obtaining higher cane incomes, and therefore investing in relatively viable projects, while the majority small farmers utilize their cane incomes for subsistence purposes, being left with none or little surplus to improve their economic positions. We may perhaps conclude that, planting less than five acres of sugar cane is in itself uneconomical and may not facilitate a realistic growth in incomes of the farmer, coupled with the shortcomings inherent in the contract system itself. We are therefore faced with a situation whereby the majority of the NSC contract farmers are less likely to improve their wealth position, unless some of the production costs such as weeding, transportation among others are partly met by the firm. This may reduce the burden on small farmers and may go a

long with increasing their sugar cane returns.

With such a finding, we may not agree with Buch-Hansen and Mercussen who contend that contract farming has or is creating a rural bourgeoisie. The view that sugar cane contract farming as a form of capitalist production could /can help develop a middle peasantry in agricultural sector does not hold in this study. We thus, uphold Nyong'o's (1982) views on contract sugar cane farming. He contends that, "assumptions that the intensification of commodity production by introducing sugar would lead to the development of middle peasantry (the so called prosperous peasants whose standards of living are higher than those of the small petty commodity producers or peasants) are replete with problems. It is contended that the Sugar Industry has neither stimulated the development of middle peasantry nor that of a dynamic African class in agriculture."(Nyong'o 1982:2).

Table 34: Farmers' occupation and investment in viable economic projects.

	OCCUPATION				
	INVESTED FARMER/ UNEMPL- OYED	SMALL TRADERS/ SEMI-SKILLED LABOUR	PRIMARY TEACHERS/ CLERKS ESSMEN	PROFESSIO/ NALS BUSIN-	TOTAL
YES	2(3)	20(25)	11(29)	5(31)	38(20)
NO	56(97)	60(75)	27(71)	11(69)	154(80)
	58(100%)	80(100%)	38(100%)	16(100%)	*192(100%)

* Total less than 193 due to non response
 $\chi^2 = 14.46$ significant association at 3 df
 0.05 significance level.
 C=.26 Rather weak association.

Table 34 shows that the unemployed farmers and to some

extent the small traders and semi-skilled labourers tend to be less likely to invest in viable economic projects with their cane incomes. For instance only 3 percent of the unemployed farmers reported to have invested while 97 percent did not. This suggests an outright underrepresentation and overrepresentation respectively in relation to the marginal percentages (i.e. 20% and 80%).

On the contrary, farmers in permanent employment and big businesses and more so well paying are more likely to invest some of their cane incomes in income generating projects. For instance, 31 percent of the farmers who belong to the category of professionals and businessmen reported to have invested, while 69 percent did not. This indicates an overrepresentation in the case of those who invested and an underrepresentation in the case of those who did not invest in relation to the marginal percentages. This is not a surprise in that farmers with constant sources of income do not rely on cane incomes to support their families. Thus, they are able to spare some surplus from their cane incomes to invest in income generating projects without straining their domestic budgets. Unemployed farmers, particularly have to rely on cane incomes for subsistence. Thus, given the low returns to sugar cane, they are financially handicapped and therefore unlikely to invest in any viable economic venture. For those who managed to invest, they engaged in petty trade such as sell of paraffin, salt, small kiosks, and this in economic terms are negligible in terms of realising any

substantial profits.

Conclusion: The chi-square ($X^2=14.46$) is significant at 3 degrees of freedom, 0.05 significance level, implying an association between the two variables: That farmers in stable businesses and well paying employment are more likely to invest their cane incomes in viable economic enterprises than the unemployed farmers and to a larger extent small traders and semi-skilled labourers. However, the contingency coefficient ($C=.26$) suggests a rather weak relationship.

Nevertheless, evidence from this table demonstrated that, the majority of the contracted farmers were either engaged in poorly paying occupation or were initially unemployed. For example out of 192 valid cases, 138 respondents belonged in this category, they were either engaged in petty businesses, or were semi-skilled, carpenters, masons etc or totally unemployed thus earning very little off-farm income. Thirty eight respondents were engaged in fairly paying occupations as teachers in primary schools, Field instructors, clerks, nurses and so on. Only 16 respondents were in well paid employment or running stable businesses. Hence, coupled with the low association of the table, we could maintain that a relatively large number of NSC contract farmers were either unemployed or in lowly paying occupations and therefore were less likely to invest some of their cane incomes in viable economic enterprises. On the whole therefore, a large percentage of farmers did not realise a growth

in their family/personal incomes, with the low returns to cane being the overriding factor, hindering any investment prospects open to the farmer.

Once more, the issue of social status/social class is evident, with farmers in poorer occupations being marginalised or proletarianized, while farmers in well paying occupations who have their jobs to fall back on being able to invest some of their incomes in viable economic ventures, thus improving their wealth position. More saddening is the fact that the majority of the farmers are not able to invest and therefore, improve their wealth positions given the meagre cane earnings. The outgrower is in fact a microcosm of the experience at the larger (national) level i.e. the growing indebtedness of an economy all in the name of transferring technology and capital into its fragile production base.

This finding coincides with what Hampton (1977) observed in a study of Mumias Sugar Factory. He observed that the uses of incomes from the new cash crop provide an interesting measure of on-going economic differentiation. Cash moves both outward and upward, it provides a mechanism by which resources are dispersed (in the case of the least advantaged recipients) or accumulated (for the emergent rural elite). The impact of the outgrower programme in these respects has been widely and quickly felt. The transformation of agriculture accomplished by Mumias Sugar Company has endowed locally-based traders and members of the salaried with means to strengthen their position through

participation in commercial cane farming. He concludes by saying that, the probable long term outcome of planned economic intervention this project suggests, is enhanced differentiation within the peasantry rather than equitable development.

A number of studies on the penetration of capitalism into African agrarian systems have concluded that, African peasants have gone through a different form of proletarianization, different, that is, from the classic form that occurred for example in Britain and most Western Countries. This view has been advanced by scholars such as Barr Munslow and H.Finch (1984). They contend that,

"---the experience of the third world has not been on the whole, simply a replication of the kind of proletarianization that occurred in Britain and other advanced countries, with the creation of a large scale permanent proletariat, divorced from the ownership of the means of production and thus totally dependent on the sale of its labour power for survival."(Munslow and Finch 1984:1).

They emphasize the point that in Africa the peasants have not been separated from the land and this has therefore made the transformation a complex process. This view which seems to be supported by many others (see Magubane 1976;Cohen 1976), does not seem, however, peculiar to Africa or for that matter the so-called Third World. A similar conclusion was arrived at by Clement in his study of the Canadian situation (Winson, 1988).

Clement observed that in Canada independent commodity producers have been turned into dependent commodity producers who retain ownership of the means of production but lose the organization of the labour process to capital. This has been the case with the contracted farmers of the Nzoia Sugar Company.

Overall conclusion:

It has been observed in the above analysis that on the whole the contract farmers were not able to accumulate due to the negative returns they ended up with from the sale of cane. The negative returns are as a result of the type of contract agreement the farmer gets into with the agribusiness firm. The agribusiness firm has minimised its risks in production and has instead burdened the farmer who actually meets the production cost of the crop. Farmers not only bear the usual risks associated with agricultural enterprises but in addition the whole set of factory level risks largely beyond their comprehension even though they could be within the control of the company.

The meagre financial returns the farmer ends up with, are depressed further by the kind of family obligations the farmer has to meet in supporting the family. Thus, the farmer is left with little or no surplus for investment. The fact that only a minority 20 percent were able to invest in viable projects with a substantial 80 percent not investing at all testifies to this.

fact. Therefore the production costs which cut into the farmers personal income combined together with the subsistence needs the farmer has to meet for the family makes it difficult for the farmer to accumulate.

More importantly, the small scale farmers especially, the unemployed and those in poorly paying occupations were greatly marginalized in terms of investing because they have no other source of income except the farm.

To conclude, the contract agreement presently binding the farmer with the agribusiness firm in the production process is unrealistic in its entirety. Maximization of profits which is an overriding factor for the agribusiness firm cannot allow the farmer to accumulate. Thus, the contracted farmers have become mere pawns in the hands of agribusiness contractors.

H2: The lack of success on the part of the management to fulfil the mutually agreed contractual services to contract farmers tends to dampen the farmers initiative in improving and expanding the planted acreage.

Before becoming a Nzoia sugar company outgrower, a farmer signs a cane farming, contract with the company. The contract binds the farmer to strictly adhere to requirements set therein by the company in the production of sugarcane. The contract agreement entered in between the farmer and the NSC demands that the NSC provides the farmers with services and inputs for cane

cultivation on a credit basis.

The functions carried out by the company and charged to the farmer are; plot selection and surveying, land preparation (ploughing), harrowing, and furrowing), the delivery of seed cane, delivery of fertilizers pesticides and insecticides, cane harvesting and stock loading and transportation by tractors - trailer to factory and general administration (including activities of extension staff)

The factory's ability to deliver the above services efficiently, is a determinant factor, in relation to the farmer's willingness to expand his/her sugarcane acreage and to continue or even quit the contract. This section evaluates the general performance of the NSC in this area and the impact it has had on the farmers morale as producers in the contract production system.

Table 34: Relationship between harvesting and farmers willingness to continue with the cane contract

WISH TO CONTINUE WITH THE CONTRACT	HARVESTED CANE		TOTAL
	YES	NO	
YES	96(91)	57(68)	153(80)
NO	10(9)	27(32)	37(20)
	106(100%)	84(100%)	190(100%)

Missing values = 3
 $\chi^2 = 14$ Significant association at 1 df
 0.05 Significant level
 $C = .27$ Rather weak association.

Findings in this table show that a relatively large percentage of farmers whose cane was harvested are more likely to

continue planting sugarcane under the contract system, than farmers whose cane has never been harvested since they entered the contract. For example, 91 percent of the farmers who had their cane harvested at least once wish to continue planting cane under the contract system. This is a clear overrepresentation in relation to the marginal percentage (80%).

On the contrary, 32 percent whose cane has never been harvested in the 6 years they have been in the contract wish to discontinue the contract. This indicates an overrepresentation of the percentage of farmers who wish to quit the contract.

Conclusion: The Chi-Square ($\chi^2 = 14$) is significant at 1 degree of freedom 0.05 significance level, confirming an association between the two variables. That, farmers whose cane was harvested are more likely to wish to continue with the contract than farmers whose cane has never been harvested. However, the contingency coefficient (C.27) suggests a rather weak relationship.

Evidence from this table indicate that a relatively fewer percentage of farmers wish to quit the contract (20%). On the whole 55 percent wished to continue with the contract while 45 percent did not. This sounds incredible given the fact that the contract system is not working to the expectations of the farmers. More so, the farmers who strongly wish to quit the contract are those who have never harvested. This is expected of this farmers because they have not benefited in any way and

therefore may see no use of continuing to invest in a venture that brings in no income.

The unexpected response from the contract farmers, given the pathetic economic situation they find themselves in may be nothing other than due to the absence of a competitive profitable cash crop in the area. Farmers interviewed in relation to this issue expressed disappointment to the fact that the NSC has failed to deliver their services to schedule, but they could not quit the contract since there was no other profitable cash crop to venture into. Cotton, sunflower and coffee grown in the area earn them considerably low incomes. Maize that could be relied on still holds a second position in profitability as compared to sugarcane. Farmers seem to be left with not much choice but to wish that the NSC improves its services in future. This is not surprising considering the fact that a majority of the farmers are either unemployed or are engaged in poorly paying occupations. Such farmers rely entirely on farm incomes for subsistence. Thus, its only logical for them to hold on a worse evil and hope for a better change in the future.

However, this should not be confused to be a general reaction of all the farmers. Forty five percent of the farmers, expressed a desire to quit the contract citing, exploitation and non-profitability. Even when harvests are done, they are not done on time. The contract stipulates that plant cane should be harvested at 24 months, with the first and second ratoon at 18 months respectively. This has never happened at the NSC. The

earliest harvest has been at 3 years when cane is over mature and therefore has lost its tonnage. The factory simply pays the farmer according to the present tonnage, ignoring the fact that it is their delay to harvest which has contributed. This has gone along with diminishing returns to cane. On harvest, the farmer has to bribe the NSC cane cutters and loaders to harvest the cane well which is an extra cost to the farmer. The factory may not even transport all the cane citing, transportation problems. Such cane when it dries in the farmers shamba is not compensated by the company.

The farmer is not represented at the weighbridge where the transported cane is weighed and tonnes recorded. This is another area where a farmer has to bribe to get the clerks record the correct tonnage. The illiterate farmers who may not understand the accounting process are required to accept the payment they get with a hope that it is a fair transaction. The payment may take over 6 months before it is due to the farmer. With all these inefficiencies the farmers saw no point of continuing with the contract, which they evaluated as purely exploitative and unprofitable enterprise considering the long period cane takes to be harvested and payment to be met.

In this context therefore, it is appropriate to ask, in what sense the out-growers are producers as opposed to mere suppliers of land and recipients of money. In other words, are they peasant producers or labourers? They are actually workers who have been for all practical purposes stripped of real economic

asset. Their orientation is more passive than active in fact the farmers expressed this complain to the researcher. An issue they claimed to have continuously raised in local chiefs barazas, time and again but all in vain,

Studies carried out on sugarcane contract farming in Kenya reveal this dissatisfaction. In a study of the sugar Industry in Western Kenya, Lemmens (1987) observed that in the Kabras region farmers felt exploited and some even vowed to quit the contract. Fifty five percent of the farmers in this region were dissatisfied, citing reasons such as delayed harvests, bribery and/or exploitation. In this study of the NSC 99 percent of farmers reported to be dissatisfied with the services delivered by the NSC.

Information from the NSC management confirmed that delayed harvests and non harvests were among the serious problems facing the company. The management blamed this situation on the technical bottlenecks (i.e. recurrent machine breakdown) and the governments failure to expand the factory as was promised in 1985 up to 3,000 tonnes of cane per day. The factory management went out of their way to expand the outgrower cane acreages yet the factory rehabilitation, involving installing of an extra mill, boiler and boiling house only took off in 1988, three years behind the cane expansion programme. Thus the factory is not in a position to clear this backlog hence a lot of cane still dries and rots in farmers plots unharvested.

This state of affairs has immensely deteriorated the

farmers socio-economic welfare, forcing some to abandon the contract prematurely. The category of farmers who have never harvested have been exposed to extensive economic difficulties which have even shaken the stability of their family relationships. The premature abandonment of the contract is seen through farmers deliberate neglect of the sugar cane plots. The cane fields have remained unweeded, some even graze their livestock in the farms. This phenomenon has drastically lowered the farmers morale and thus lessened the farmers enthusiasm to expand their cane acreage. Some have even wished to quit the contract. This is a dangerous trend as far as increased productivity in sugar cane production, as well as Kenya's objective of achieving self-sufficiency in sugar is concerned.

Table 35: Number of times farmers' cane was harvested and willingness to continue with contract.

WISH TO CONTINUE WITH CONTRACT	NUMBER OF TIMES HARVESTED		
	ONCE	TWICE	TOTAL
YES	55 (53%)	43 (83%)	98 (63%)
NO	47 (47%)	8 (17%)	55 (37%)
TOTAL	104 (100%)	52 (100%)	153 (100%)

$X^2 = 11.90$ Significant at 1 df
 0.05 significant level
 $C = 0.30$ moderate association.

In relation to the marginal percentage, farmers whose cane was harvested once (53%) are underrepresented among farmers who

wish to continue with the contract, while farmers whose cane was harvested twice (83%) are overrepresented among farmers who wish to continue planting sugarcane under the contract system .

Conclusion: The chi-square ($X^2 = 11.90$) is significant at 1 degree of freedom, 0.05 significance level confirming an association between the two factors; that farmers whose cane has been harvested more than once are more likely to continue growing sugarcane under the contract system than farmers whose cane was harvested only once in a six year contract period. The contingency coefficient ($C = 0.3$) implies a moderately strong relationship.

More harvests in itself implies higher returns. It therefore makes sense for farmers who harvested twice to wish to continue planting sugarcane. Thus, considering the moderate association of the table, we may maintain, that farmers wish to continue planting sugarcane depends on whether the company can harvest the cane on time. If the company can do that, then farmers are likely to reap higher returns from sugarcane. Otherwise, on the whole, farmers complained that the factory was not delivering the services to them on schedule, particularly cane harvests, transportation and payments.

Delayed harvests seems to be a common occurrence in the sugar industry. Odada et al cite delayed harvests and payments as a serious problem facing sugar cane contract farming in the SONNY sugar company and chemilili company in Nyanza province. More

studies on the sugar Industry indicate that this phenomenon is not only prevalent in Kenya but also in other Third World Countries. In studying Honduras contract farming in sugarcane, Glover found out that sugar cane was not harvested as per the contract agreement. He also observed that the monopoly of harvesting cane was responsible for low returns to farmers, since the company has a great deal of its own cane (in the nucleus) to cut. Contracted growers are often left at the end when the cane has become overripe.

The above practice results in great losses by the contracted farmers. Growers are reported to have said that even when harvesting was done on time, it was carried out inefficiently. By cutting the cane too high, the company can leave usable cane in fields if it does not want to accept the contracted amount.

Table 36: Total cane income obtained by a farmer and willingness to continue with the contract.

WISH TO CONTINUE WITH CONTRACT	CANE INCOME				TOTAL
	0 1000-40000	41000-80000	81000-120000		
YES	11(28)	65(59)	11(65)	20(87)	107(56)
NO	28(72)	46(41)	6(35)	3(13)	83(44)
	39(100%)	111(100%)	17(100%)	23(100%)	*190(100%)

$\chi^2 = 22.02$ Significant association at 3 df, 0.05 significance level.

C = 0.32 moderate association.

* Total less than 193 due to non response

Findings in this table indicate that farmers earning

substantially higher cane incomes are more likely to continue growing sugar cane under the contract system than farmers earning relatively low incomes from cane. For instance, in the category of farmers earning between ksh 81,000-120,000 plus, 87 percent wished to continue planting sugar cane. This in itself is a clear overrepresentation in relation to the percentage of farmers who wished to continue with the contract. On the contrary, 72 percent of the farmers who earned zero income (i.e. those who never harvested) did not wish to continue. This indicates an overrepresentation in relation to the marginal percentage (44%).

Conclusion: The chi-square ($\chi^2 = 22.02$) is significant at 3 degrees of freedom; 0.05 significance level, suggesting an association between the two variables. However, the variables are moderately associated ($C=0.32$).

Evidence from this table reveal that the profitability of the agricultural enterprise influences the farmers wish to either continue or quit the contract. This makes sense to the farmer, it is only natural and logical that one continues with an economic venture and reinvests more in it if it has high returns. So far we have observed that the sugarcane contract is actually unprofitable to farmers, considering the meagre incomes obtained. This situation has been facilitated by the nature of services delivered by the company to the farmers. For example farmers have reported to have planted their cane without the necessary inputs such as fertilizers and insecticides, cane is harvested

when it is over mature and has lost tonnage, and the transportation of cane is not done as expected making farmers to lose when cane dries in the farms due to transportation breakdowns. All these shortcomings have rendered sugar cane farming unprofitable and not worth investing in. This situation is more pathetic and quite demoralising for the percentage of farmers who never harvested, after putting more time and labour in the crop for a complete contract period of six years. Though the company also lost since it did not recover the inputs invested in these farms, the farmer suffered the most severe loss, considering the fact that some of them relied on the incomes from cane for their livelihood. It is difficult to envisage such kind of farmers wishing to expand their cane acreage, leave alone continuing with the sugar cane contract.

A number of studies on sugarcane contract farming have indicated that, quite a number of farmers have pulled out of sugar cane production at the end of a contract period after discovering that sugar cane crop enterprise does not offer them as high returns as they were promised. This has been particularly so in Miwani and Sony sugar schemes. An even greater number of farmers in those two schemes are known to have pulled out of sugarcane production even before the end of the contract (Odada et al 1986).

However, Odada et al attributes the abandonment to the less returns to cane. He argues that, the farmers' decision to produce more of a commodity is always based on how they view the

profitability of the commodity, in relation to the profitability of alternative crop enterprises available to them. This study confirms this fact. But other than the economic aspect of it, farmers in the current study, opted to quit the contract due to non-fulfilment of the mutually agreed on contract terms. The NSC's failure to provide efficient services to the farmers remain the area of dissatisfaction to most if not all the farmers.

Farmers expressed the desire, for their important role to be recognised by the company so that the company feels accountable to the farmers, whenever it is not in a position to fulfil any of the stipulated contract terms.

	YES	NO	TOTAL
How Acres of land	60(43)	71(9)	131(52)
poor services	72(53)	41(11)	113(44)

We realise that a substantial percentage of farmers received little incomes from cane that cannot be termed as profitable for

all practical purposes, but expressed the wish to plant sugar cane if the services were improved. Therefore, it is evident that, provision of efficient services in itself enhances the

farmers morale to even invest more in agricultural production. The economic returns in itself, though significant, may be least appealing if the farmer has to go through a process of self-dehumanization to get them. This is demonstrated by the three

farmers i.e. 13 percent of the farmers who although they obtained over Ksh. 300,000 wished to discontinue with the contract citing inefficiencies, exploitation and non-accountability on the part of the factory.

Thus, the recognition of the farmer as the most important person in the contract, without whom nobody else would be in

business in the industry is paramount; if the sugar cane contract system has to achieve its intended objectives, namely national self-sufficiency in sugar, and socio-economic development of the contracted communities.

Table 37: Reasons given by farmers for their unwillingness to expand their planted acreage.

SEASONS	HARVESTED		TOTAL
	YES	NO	
Few Acres of land	60(45)	7(19)	67(39)
Poor services	72(53)	4(11)	76(44)
Never harvested/ lack of motivation	3(2)	26(70)	29(17)
	135(100%)	37(100%)	172(100%)

$\chi^2 = 96.50$ significant association of 2 df, 0.05 significance level.

$C = 0.60$ strong association.

The grand total 172 represents the number of farmers who did not wish to expand their existent cane acreage. Only 10 percent of the contracted farmers expressed a desire to expand their planted cane acreage, while a majority 90 percent did not.

Farmers gave different reasons for their unwillingness to expand their cane acreage. According to the above table a relatively large number of farmers cited poor and inefficient services provided by the NSC as an inhibitive factor (53%), which is an overrepresentation in relation to the marginal percentage. Seventy percent were not willing to expand their acreage because they had never harvested since entering the contract. Note that

the farmers citing poor services and never harvested could have been classified into category since they all complain of inefficient services. This was not done considering the fact that farmers who never harvested were most affected economically and they did not even want anything to do with the company. In fact, to them the question of expansion does not arise. Therefore, to put this two categories of farmers together with their different experiences is to peg the question.

However, other than the poor services provided by the company, farmers who would otherwise have wished to plant even more acres under cane, cited fewer land acreage as a limiting factor. For example some of our respondents had a total of three acres of land and were committing one acre of land under sugar cane leaving the rest for food crops. Such farmers could not expand even if they wished to.

We have so far examined the contract system under which the NSC farmers operate and we have observed that, they are totally dissatisfied with the services being offered by the company. However, the problems faced by the contract farmers are inherent in the type of contract agreement they enter with the company, which is non-committal on the part of the farmers. A major criticism of this contract is that it is more explicit and stringent on the farmers obligations than on the companies obligations (which sometimes are not clearly stipulated). For example, under this contract, the company can intervene through the performance of any tasks which in their judgement have not

been performed by the farmer or whose performance is deemed inadequate at the farm level.

On the other hand, there are no provisions for the farmer whose cane may be ready, while for various reasons the factory cannot harvest it. The farmer in such or similar situations cannot seek remedy. On the contrary, the sugar company is absolved from a broad stipulation worth quoting in full i.e. "Neither party shall be responsible to the other party for failure to fulfil the terms of this Agreement if such failure shall be caused directly or indirectly by fire or explosion at the said mill, flood, earthquake, tempest, war, civil commotion, riot, arson, sabotage, shortage of labour, strike, lockout or other industrial dispute, breakdown or damage to plant, machinery or transport equipment, shortage of supplies, fuel power, shipping or railway services, inability to effect delivery or sugar cane produced or to transport cane because of road conditions or other circumstances. PROVIDED always that the circumstances occasioning such failure shall not be within the reasonable control of the party in default".

What emerges clearly is the fact that the farmers interests are not taken care of by the contract. Thus the farmer bears all the production risks as well as the factory level risks, which are beyond the farmers' comprehension. More saddening is the fact that quite a good number of the contract farmers are not literate to understand the kind of contract they were entering into. Moreso even the more literate ones were not any better,

the factory personnel did not enlighten the outgrower community on the stipulations of the contract. A few elite farmers even sued the NSC for failure to harvest their cane only to be told by the court that the contract clearly says the factory will not be held liable in case of damage to the plant or any machine breakdowns. When interviewed on this issue, farmers likened the signing of the cane contract to signing their own "death certificates".

The contract also states that the company will not harvest any burnt cane, or even if it does given the circumstances the farmer has to pay a penalty. Farmers' sugar cane burnt in mysterious circumstances have not been harvested. The NSC management confirmed this issue giving the reason that farmers purposely burnt their cane so as to have it harvested. The management agreed it was a very unpopular policy among farmers but showed no signs of reversing it. A few farmers whose cane burnt in similar circumstances when interviewed expressed outright contempt at the policy. They described the act as beastly and a subordination of the farmers role in the production process. Farmers going through this traumatic experiences were downhearted with even some contemplating suicide, after failing to support their families from the cane which was their only source of income.

What we need to ask therefore is are some of the stipulations in the contract realistic? is contract farming as a strategy for rural development achieving its intended purposes?.

We need to look at contract farming in its entirety, not only as a mechanism of improving the living standards of the outgrower community, but also as a strategy for achieving self sufficiency in sugar at a national level. The farmer whose cane is burnt and not harvested and one whose cane is not harvested due to factory machine breakdown suffers paramount loss, but what does the nearest factory stand to gain?. The factory loses their farm investments in those particular cane fields, as well as the government which earns no revenue as a result. Thus the contract agreement has to be reviewed in a way that if the company is not in a position to harvest the farmers' cane, the farmer is at liberty to sell his/her cane to the nearest company with instructions from the contracted company. In this way the farmer gets his due as well as the company, which can arrange to have the credit advance to the farmer recovered on their behalf by the buying company.

Mumias sugar company is very near Nzoia sugar factory and this kind of arrangement can be done. It is unfortunate that as over mature cane dry in farms of the NSC farmers, the Mumias sugar company is operating under capacity due to a shortage of sugar cane. Thus, politics should be completely removed from agricultural operations. Information gathered from the out-growers and some NSC management members revealed that politics has penetrated the NSC factory management to the extent that a local powerful politician from Bungoma district can not allow sugar cane of NSC out-growers to be sold at the Mumias sugar company which is situated in Kakamega district due to political

differences. Furthermore, the factory is poorly managed due to nepotism, where by it is this powerful politician who has a say as to who is to be appointed on the management posts. Thus, currently most of the senior management officers come from his constituency, most of who do not have any qualifications to serve in the capacities they presently hold. Therefore, the government should step in swiftly and recruit qualified personnel, if the ailing services and the poor financial state of the company has to improve. This will be in the interest of the out-growers and the nation at large. The NSC has since inception had its back to the wall, in terms of making negative returns year after year, and this trend must stop if any meaningful productivity and development has to be attained.

On the whole, a way has to be found to improve the NSC services to the farmers particularly, there is an urgent need to have the cane harvested and payments met promptly if the ailing morale of the farmers has to be restored. The point that the Kenyan farmer remains a prime mover of this country's economy does not need belabouring. What must be done and urgently is to devise a way of increasing the sugar cane prices, making the price increases useful to the farmers by shielding them as much as possible from the inflationary trends in the economy and price fluctuations in sectors related to agriculture.

Overall conclusion.

It has been observed that the manner in which the services

are delivered to farmers by the company is a determining factor, as to whether the farmers will wish to expand their cane acreage or even quit the contract. The NSC as stated earlier has never been able to deliver any services to the farmers according to schedule. The inefficiencies have been experienced right from planting through harvesting and upto payment time. This phenomenon has drastically lowered the farmers' morale and thus, lessened their enthusiasm to expand their cane acreage. Some have even wished or literally quit the contract prematurely.

Profitability of the agricultural enterprise influences the farmers' wish to either continue or quit the contract. But as we have seen a substantial percentage of farmers received little incomes from cane that cannot be termed as profitable for all practical purposes, but still wished to continue with the contract if services were improved. Thus, it is evident that provision of efficient services in itself enhances the farmers morale to invest even more in production. The economic returns in itself though significant may be least appealing if the farmer has to go through a process of self dehumanization to get.

The NSC like other agribusiness companies operating in the Third world has failed to incorporate the farmers fully in the production process. The farmers role as a producer is not recognized and therefore he/she is not consulted on any matters concerning production or informed in case of failure on the part of the company to deliver service. Hence, this lack of participatory process on the part of producers in the economy is

affecting productivity. Therefore, the recognition of the farmer as the most important person in the contract without whom nobody else would be in business in the industry is paramount if the sugarcane contract system has to achieve its intended objectives.

H3 The operations of an agribusiness firm in a contract farming community can enhance the transfer of technology to the local community as well as the improvement of the rural infrastructure.

Table 38: Utilization of cane income on food crop production

MAINTAINED FOOD CROPS	CANE INCOME			TOTAL
	1000-40000	41000-800000	81000-120000	
YES	9 (8)	3 (18)	8 (35)	20 (13)
NO	103 (92)	14 (82)	15 (65)	132 (87)
112 (100%)	17 (100%)	23 (100%)	*152(100%)	

$\chi^2 = 12.28$ significant association at 2 df

0.05 sign: level

C = 0.27 Rather weak association

* Total less than 153 due to non response

Findings in the table above illustrates that 13 percent of the farmers used some of their cane incomes to improve their food crop production while 87 percent did not.

In relation to the marginal percentage therefore, a large percentage of farmers earning high incomes from cane reported to have used some of their incomes to maintain their food crops, than farmers earning relatively lower incomes from cane. for example among farmers earning over Ksh. 81,000, 35 percent reported to have invested some of their incomes in food production, which is an overrepresentation in relation to the

marginal percentage. On the contrary farmers earning less than Ksh. 40,000 (92%) are over-presented among the percentage of farmers who reported not to have invested any of their cane incomes in food crop maintenance.

Conclusion: The Chi-square ($X^2 = 12.28$) is significant at 2 degrees of freedom, 0.05 significance level, confirming an association between the two factors: That high cane income earners are more likely to invest some of their cane incomes in food crop production than farmers earning relatively low incomes from cane. However the contingency coefficient (C. 27) suggest a rather weak relationship.

It is evident from the table that a majority of the farmers are left with little or no surplus to invest in food crops. Out of 152 respondents who harvested their cane, only 20 respondents had very little surplus to invest with a majority 132 respondents, lacking funds to invest in food crop production. Thus, in absolute terms, we may maintain that relatively, a large number of contract farmers, after meeting their immediate needs are not left with much surplus to invest in the food crop sector.

In other words, if incomes obtained from sugarcane sells are anything to go by in relation to increased food productivity, then it is clear that, the financial returns to cane may not or cannot make a mark towards the improvement of the food crop sector. In fact, the credibility of the improvement done by the 13 percent of farmers in improving their food crop production is

questionable. Information from the respondents and the key informants revealed that generally the amount of income invested in food crops maintenance was quite insignificant. A few farmers only managed to purchase few bags of fertilizers and seedlings which in economic and/or agricultural terms are not sufficient to stimulate any meaningful production increase. A few well to do farmers hired tractors to plough their land. While a majority small scale farmers, mostly unemployed or engaged in lowly paying occupations, continue to raise their food crops on a subsistence basis. The ox-plough is the most common mechanism of ploughing, with a few poorer farmers still cultivating with the hoe. Furthermore a number of farmers reported to have sold their oxen to pay hired labourers who weeded their sugar cane with a hope that they would replace them on harvests. Unfortunately some of them never harvested their cane. Thus, they have been relegated to a poor situation of having to cultivate few acres of food crops with hoes or hired ox-ploughs before the introduction of sugar cane.

Thus, we may maintain that the role played by the sugar scheme in transferring of technology in the food crop sector, and assisting the farmers to increase food crop production is in itself negligible, if not absent. The NSC does not have any credit system to advance farm inputs for food crop production to the farmers. To make matters worse, the delayed harvests and payments which have become a norm at the NSC have completely paralysed the food crop sector, as we shall see more clearly in

the next hypothesis. The farming methods remain subsistence, with most farmers practising mixed cropping. In fact some farmers insist that farming has worsened with the onset of sugarcane. The cane takes most of the fertile and well drained land leaving food crops occupying swampy, hilly or unfertile soils. For farmers who uprooted their sugarcane before the end of the contract and planted maize did not do well. Prolonged stay of sugarcane in the fields removes most of the nutrients in the soil necessary for agricultural production. Hence, farmers should be allowed to grow leguminous crops which take shorter time to mature in their sugarcane fields so as to improve the soil fertility at the same time providing the families with more foodstuffs.

It has been the belief of the agribusiness crusaders in the Third World that, one important factor the host country benefits is the transfer of technology. For example, Glover points out some of the benefits that may be realised from contract farming. He says that contract farming organised by agribusiness has "potential for rural development if it can facilitate the transfer of technology and the integration of smallholders into the national economy" (Glover, 1984;1143). Glover is cautious in his pronouncements. His "if" is significant in that it directs us to the idea that though contract farming has the potential for rural development, we should remember that it has just that - the "potential". This can only be transferred into reality if and when certain conditions are met, maintains Glover. The two conditions are 1). The crops cultivated should be suitable to

smallholder production. He gives the example of fruits and vegetables since these require heavy inputs of labour, careful attention and manual harvesting. Their income return per acre can also be high.

2). Growers have to be supplied with ancillary services, machinery equipment, fertilizers and seeds. Is sugarcane a suitable crop for contract farming? if the sugar scheme in the study is unable to provide farm inputs for sugar cane production to the farmers, then of what value is the firm in terms of actual transfer of technology to the farmers in other agricultural sector?

Glover also makes an interesting observation about the distribution of benefits. The distribution of benefits he asserts, is determined by political and economic factors. He goes on to say this:

"A study of contract farming system which attempts to assess its potential as a tool in rural development strategies and its impact on smallholders should therefore include two elements: an analysis of the economic logic of contract farming and an assessment of its political aspects. The latter can explore both the effects of contract farming on the process of political organization by out-growers. Such a study should also assess the degree of variation of outcomes in different situations" (Glover, 1984, 1144).

In this regard therefore, could we say the Kenyan government is not interfering enough in the operations of agribusiness firms in the country; in terms of regulating their management in the production process, with a view to ensuring proper returns to the farmer, appropriate transfer of technology and general improvement of rural infrastructure in the outgrower communities? Here is a situation whereby the NSC is unable to deliver services to the farmers, making farmers lose dearly as the government sits back and watches. When the situation gets out of hand, with local members of parliament raising the issue in parliament is when the government lends the firm money to pay farmers whose cane was harvested a year ago. Perhaps there is a need for the government to thoroughly scrutinize the credibility of these agribusiness firms before they are allowed in, and thereafter closely monitor their operations if the farmers have to benefit as well as the nation as a whole. Otherwise out-growers may be forced into a situation where they have to revolt against the firm and the government of the day. Currently the NSC farmers are forced to set the company's nucleus cane on fire, so as to have their over mature cane harvested. this was communicated to the researcher by the farmers neighbouring the factory and the key informants. Who reported that the incidents of burning factory cane is now on the increase.

Table 39: Total cane income obtained and use of fertilizers in food crop production.

USES FERTILIZERS	CANE INCOME					TOTAL
	0	1000-40000	41000-80000	81000-120000		
YES	11(28)	6(49)	13(77)	70(87)	100(52)	
NO	28(72)	57(51)	5(23)	31(13)	92(48)	
	39(100%)	113(100%)	18(100%)	23(100%)	193(100%)	

$\chi^2 = 24.46$ significant association at 2 df
0.05 significant level

C = 0.34 moderate association.

Table 40 shows that farmers earning less than Ksh. 40,000 from cane are over represented among farmers who did not use fertilizers in their food crops. Moreso farmers earning no income (Zero income) from cane (72%) are much over represented in relation to the marginal percentage (48%).

On the other hand, 87 percent of the farmers earning over Ksh. 81,000 reported to have used fertilizer in raising their food crops. this indicates an over representation in relation to the marginal percentage (52%).

Conclusion: The Chi-square ($\chi^2 = 24.46$) is significant at 2 degrees of freedom, 0.05 significance level implying an association between the two factors: that farmers earning higher incomes from sugarcane are more likely to have used some of the money to purchase fertilizers for food crop production, than farmers earning lower incomes from sugarcane. However the variables are moderately associated.(C.34).

It can be observed from this finding that a fairly large number of farmers used fertilizers in raising their food crops. Fifty two percent is a substantial percentage which could be interpreted at face value to imply that the transfer of technology is penetrating in the food crop sector. However a number of factors such as the outgrowers occupational status and level of education contribute as we shall see in this discussion. Nevertheless a number of farmers reported to have spared some of the fertilizers they were given for sugar cane application and used in growing maize. What this means is that farmers did not have enough funds to purchase fertilizers for food crops. It also implies that this lack of funds forced farmers to utilize less fertilizers in sugar cane against the proper requirements thus lowering their sugar cane yields. Thus, we may maintain that incomes from cane are not sufficient for the farmers to purchase modern agricultural technology in growing their food crops.

This finding does not concur with the popular claims of the proponents of agribusiness operations in the Third World. They contend that contracted cash crops yield high financial returns and this benefit automatically trickles down to other sectors of the economy. The result is manifested in increased yields in food crop production, improvement of the rural infrastructure, improved standards of living of the rural populace among others. The farmer is assumed to have the purchasing power and hence, he is able to utilize the modern agricultural technology to improve

food production.

Table 40: Farmers' occupation and use of fertilizer in food crop

This has not been the case at the NSC. The meagre returns to cane makes the crop an unviable economic enterprise. The

economic logic of contract farming in this case is absolutely

ruled out. Considering the fact that, farmers are left with no

funds to invest in food crop production, an agricultural sector

they must improve at all costs. Studies carried out on contract

farming in the Third World have revealed that farmers have been

unable to support their families with their cash crop incomes,

and thus have had to fall back on their subsistence food crop

sector. The NSC outgrowers are no exception.

It must be stressed that while smallholder, cash crop contract farming using agribusiness and foreign aid may appear to be an attractive option, it can divert necessary resources away from the subsistence sector, where the majority of Africa's population is to be found. The big schemes have a disruptive effect on the social fabric of the rural areas affected and so may only serve to weaken the indigenous subsistence agriculture upon which the majority of the population still depend to avoid famine.

This suggests an overrepresentation in relation to the marginal percentage (52%).

Conclusion: The chi-square (28.86) is significant at 1 degree of freedom, 0.05 significance level, indicating an

Table 40: Farmers occupation and use of fertilizer in food crop production.

USES FERTILIZERS	OCCUPATION					TOTAL
	FARMER/ UNEMPLOYED	SMALL TRADER/ SEMI-SKILLED LABOUR	PRIMARY TEACHER/ CLERK	PROFESSIONAL/ BUSINESSMEN		
YES	20(34)	36(45)	29(76)	15(94)		100(52)
NO	39(66)	44(55)	9(24)	1(6)		93(48)
	59(100%)	80(100%)	38(100%)	16(100%)		193(100%)

$X^2 = 29.48$ Significant association at 3 df, 0.05 significance level.

$C = .36$ moderate association This is because unlike the

In relation to the marginal percentage unemployed farmers, small traders and semi-skilled labourers are underrepresented among the percentage of farmers who used fertilizers in raising their food crops, while primary school teachers, clerks, professionals and businessmen are overrepresented. For example, 66 percent of the unemployed farmers reported not to have used fertilizers, which is an overrepresentation in relation to the marginal percentage (48%). On the other hand 94 percent of the farmers belonging in the category of professionals and businessmen reported to have applied fertilizers in their food crops. This suggests an overrepresentation in relation to the marginal percentage (52%).

Conclusion: The chi-square ($X^2 = 24.46$) is significant at 3 degrees of freedom, 0.05 significance level implying an

association between the two factors. That, farmers in permanent occupations are in a financial position to use fertilizers in raising food crops than the unemployed farmers and to a large extent farmers engaged in occasional and poorly paying occupations. However, the variables are moderately associated (C.36). It is not surprising that farmers in permanent occupations i.e with a constant source of income are better placed financially, and are therefore able to spare some of their income to purchase fertilizers (generally, modern agricultural technology) for their food crops. This is because unlike the unemployed farmers, this farmers do not rely on cane income for their subsistence. It is easier for them to invest some of their cane incomes in food crop production. Thus, coupled with the moderate association of the table, we may assert, that in absolute terms, the farmers occupational status is a determinant factor in improved food crop production. Income from cane perse cannot contribute significantly to increased food productivity.

Table 41 Level of education of the farmer and use of tractors in food crop production.

USES	LEVEL OF EDUCATION				TOTAL
	NONE	PRIMARY	SECONDARY	DIPLOMA/UNIVERSITY	
YES	1(2)	1(1)	4(8)	3(25)	9(5)
NO	51(198)	78(99)	46(92)	9(75)	184(95)
	52(100%)	79(100%)	50(100%)	12(100%)	193(100%)

$\chi^2 = 15.34$ significant association at 3 df
0.05 sign: level
 $\phi^2 = 0.27$ Rather weak association.

Table 41 shows that relatively a large percentage of farmers with secondary level of education and above used tractors as their ploughing mechanism in food crop production than is expected from the marginal percentage. While relatively fewer farmers with primary level of education or none used tractors in food crop production than is expected from the marginal percentage.

Evidence from this table reveal that a very small percentage of farmers used tractors to plough their land (5%) with a staggering 95 percent not using tractors. Coupled with the low association of the table we may conclude that a large percentage farmers rely on subsistence means of production in their own or hired ox-plough with a few using the traditional hoe to plough their land. Hiring tractors is an expensive affair for the farmers who as we have seen earlier are financially handicapped after meeting their day to day needs. They are left with little or no surplus to invest in any sphere of development:

Conclusion: The Chi-square ($\chi^2 = 15.34$) is significant at 3 degrees of freedom, 0.05 significance level implying an association between the variables. That farmers with higher levels of education are more likely to use tractors in their food

production than farmers with lower levels of education. However, the contingency coefficient (0.27) suggests a rather weak relationship.

Most often people with higher levels of education join better occupations and thus earn higher incomes. With such level of education like secondary and university these farmers are able to understand and utilize better agricultural advices given by agricultural extension officers. They are also in a position to purchase the relevant agricultural technology. It is no wonder that this category of farmers reported to use fertilizers, insecticides and tractors in their food crop sector than the lowly educated farmers.

So far our findings have revealed that the introduction of sugarcane on contract basis has not in itself transformed the agricultural production methods in the outgrower community. The slight transformation evident cannot be attributed to sugarcane farming perse. Farmers level of education and their occupational status are contributing factors. The meagre returns to cane are negligible, and cannot facilitate any meaningful technological transformation within the agricultural sector.

The farmers presently rely on loaned technology advanced by the company for sugarcane production. The technology is not even owned on a co-operative basis by the farmers. Thus, whether the host country and the out-growers in particular benefit from such a heavy reliance on the services and expertise of the agribusiness corporations is open to question.

A part from the farming methods the rural infrastructure has remained the same. Not much has been done to the roads. The factory clears the existing roads that have been constructed by the government, through Rural access programmes, only during harvest for the purpose of transporting sugar cane. These roads are left in a worse state after the harvest, by the transportation trailers which damage the roads extensively. A few bridges have been constructed for the same purpose. The factory has not made any direct contribution towards the improvement of schools, hospitals, water facilities etc in the out grower community. The factory has built one school and a hospital for its employees, which they claim is open to the cane grower community. Considering the vastness of the outgrower zones which extend up to 34 km away from the company, it is impractical for most of the farmers to utilize these services. The factory management, interviewed on this matter expressed the fact that as much as the development of the rural infrastructure is one of the objectives the factory was meant to achieve they do not have the capital. The NSC operates on deficit financially and therefore, the improvement of the infrastructure has never been a priority.

On the other hand, the majority of the farmers and workers get inconsequential remuneration from their participation in the industry. Since these are the same people who are expected to swing the pendulum of rural development by using their earnings in building social and physical infrastructure, it follows that their contribution is minimal if not negligible. Before they can

built schools or any other project they must first of all feed, shelter and clothe themselves. The kind of earnings obtained from the sugar industry are not adequate for all these necessities, leave alone public utilities such as schools, hospitals, roads and others. In the case of sugarcane farming, it is thus concluded that the contribution made by the agribusiness corporation (in the form of contract farming) to rural development, the improvement of the rural infrastructure as well as the transfer of technology to the contracted community has been rather ineffective, to say the least.

Our finding on the whole, does not concur with what Buch-Hansen and Kieler (1983) found out in their study on the impact of contract farming among tobacco producers in Kenya. Their study found that contract tobacco producers had cash incomes almost 150 percent greater than similar farmers in the same area. More surprising, the study concluded that farmers in the contract production schemes have a higher degree of self-sufficiency in food compared to those outside. Buch-Hansen and Kieler express the success of contract farming as follows:

"The contract farming system, which result into increased purchasing powers have enabled the producers not only to develop the productivity of each cash crops production but agrochemicals, ploughs, hybrid seed, hiring of tractors and so forth are increasingly used in subsistence production"

In this regard then agribusiness firms operating in the sugar industry should borrow from their sister transnational

companies in the tobacco industries; if the proper and meaningful transfer of technology they claim, has to be realised and is particularly felt by the contract farmers themselves.

Available literature on multinational corporations in the Third World assert that, contract farming is one of the most effective means of overcoming stagnation in smallholder productivity which has characterised many developing countries. They proceed on the premise that smallholders are not able to invest in such technological inputs. As hybrid seed and fertilizer hence limiting the expansion of peasant commodity production the expansion of production.

Thus, the idea of contract farming is falsely believed to be the best in smallholder farm development in less developed countries where capital is a major obstacle. Glover, for instance, affirms that contract farming provides a considerable coordination for a potential rural development since it can facilitate the transfer of technology and the integration of smallholders within the national economy. He concurs with most writers that contract farming is a means of availing to small scale farmers inputs which they could not otherwise afford individually. Glover, then seems to praise transnationals for mobilising smallholder agriculture through contract farming, though he is reluctant in talking about the distribution of benefits between growers and firms. However, in conclusion, Glover admits that the extent to which farmers benefit from contract farming depends on the strength of the out-growers

organization and the government's role in the contract.

As much as this argument may be factual in relation to the Third World situation, it is absurd for the Multinational Corporations to be seen in terms of just advancing small scale, farmers with farm inputs and machinery on credit instead of economically enabling the farmers to acquire the necessary technology. This trend must change, so that in the long run farmers independently or on co-operative basis acquire this technology and freely use it in their production of cash and food crops. This is how the much debated Stagnation in the smallholder productivity will be overcome. Otherwise this stagnation will definitely stay with us as the finding in this study clearly demonstrates.

We may perhaps blame out-growers association and the government's non-aggressive role in the contract. These two factors as Glover states are of paramount importance if the farmers have to benefit. Presently the out growers association is docile if not dormant and therefore cannot lobby for the farmers interests. The government on the other hand has been blamed for the financial difficulties the company faces which dates back to when the contract with the agribusiness firm was signed and the present backlog of overmature cane which remains uncrashed, thus continues to dry and rot in the outgrower fields. The future of contract farmers in Kenya therefore, relies on the role the government will play in the rectification of this project by inserting suitable incentives, taking a totally new look at out-

grower enterprises and their appropriateness for small farmers
 44. The introduction of the sugar scheme in the smallholder
 which are by no means a homogeneous category. 1 on food production

Table 42 Comparison of land acreage committed to food crops
 before and after the introduction of sugarcane.

Overall conclusion.

ACRES OF LAND	TIME PERIOD	
	BEFORE	AFTER
0-3	39 (20)	92 (48)
3-9	42 (22)	32 (16)

So far our findings have revealed that the introduction of
 sugarcane on contract basis has not in itself transformed the
 agricultural production methods and the rural infrastructure

within the out grower sector. The meagre returns to cane are
 negligible and cannot facilitate any meaningful technological
 transformation within the agricultural sector. Farmers rely on
 loaned technology advanced by the company for cane production. In
 the food crop sector farming methods have remained subsistence
 in relation to the marginal percentages relatively some farmers
 with most farmers practising mixed cropping. The ox-plough and
 the hoe remain the most common mechanisms for ploughing.

The NSC has no deliberate policy aimed at transferring
 technology in food crop production. The improvement of the rural
 infrastructure is not a priority due to financial problems
 experienced by the company. Like most agribusiness firms the
 transfer of technology is not a priority. The main goal is to
 make maximum profit by putting in as little technology as
 possible.

Establishment of the NSC; in relation to the marginal percentage
 (11). In our sample there are farmers who planted between 23 and
 10 acres of maize before the introduction of sugarcane. Presently
 none of these is doing the same.

Similarly relatively fewer farmers committed this than A.

H4. The introduction of the sugar scheme in the smallholder community tends to have a negative effect on food production

Table: 42 Comparison of land acreage committed to food crops before and after the introduction of sugarcane.

ACRES OF LAND	TIME/PERIOD	
	BEFORE	AFTER
0-3	39 (20)	92 (48)
4-6	75 (39)	85 (44)
7-9	42 (22)	12 (6)
10 +	37 (19)	4 (2)
	193 (100%)	193 (100%)

$\chi^2 = 65.30$ significant association at 3 df
 0.05 sign: level
 C = .38 moderate association.

in relation to the marginal percentages relatively more farmers were committing over seven acres of land on food crops before the establishment of the Nzoia Sugar Company than the percentage of farmers committing the same acreage on food crops after the establishment of the NSC. For example 19 percent of the farmers committed over 10 acres on food crops before the NSC while only 2 percent commit the same now. This indicates an over presentation on acreage committed to food crops before, and an under presentation on acreage committed on food crops after the establishment of the NSC, in relation to the marginal percentage (11%). In our sample there are farmers who planted between 25 and 30 acres of maize before the introduction of sugarcane. Presently none of them is doing the same.

Similarly relatively fewer farmers committed less than 6

acres of land on food crops before the establishment of the NSC, than the percentage of farmers who commit the same now (after the NSC). For example, 20 percent of the farmers were committing 3 or less acres of land on food crops before the establishment of the NSC, while, presently 48 percent of the farmers commit the same. This indicates an under presentation on acreage committed to food crops after the NSC, in relation to the marginal percentage level (34%).

Conclusion: There is a clear difference in acreage committed to food crops before and after the establishment of the sugar scheme. The significant Chi-square ($X^2 = 65.30$) confirms this. Indeed the moderate association (C.38) further confirms that this difference is substantial.

Contract farmers reported to have committed more land to sugarcane than to food crop production. they believed that sugarcane would earn them higher returns and thus, they would use some of these incomes to purchase highly nutritious food stuffs for their families. As a result there has been a drastic reduction in the area planted under food crops and consequently a sharp drop in food production. this has been detrimental to the nutritious standards as well as the general welfare of the family. In fact the outgrower is a microcosm of the experience at a larger (national) level i.e the growing deficiency in food of an economy all in the name of promoting smallholder cash crop production for the sake of earning foreign exchange.

The Economic survey of 1991 confirms this fact. For example the 1990/91 season was characterized by a reduction in acreage planted by small holders under some major food items particularly maize, beans, potatoes, sorghum and millet. This coupled with poor weather led to below average performance for these crops and for the entire sector in general. Latest estimates put production of maize at 25.4 million bags, 13 percent below previous years level of 29.2 million bags. Production of beans and potatoes dropped by 24.9 percent and 33.6 percent respectively. The table below testifies to this declining trend at the national level.

Table 43: Estimated production of selected agricultural commodities in agricultural years 1986/87-1990/91.
(Based on crop forest surveys)

CROP	Million bags				
	1986/87	1987/88	1988/89	1989/90	*1990/91
Maize	32.20	26.84	30.68	29.23	25.44
Beans	3.60	2.31	2.70	2.85	2.14
Potatoes	6.11	2.41	2.55	2.59	1.72

* Provisional

Source: Economic Survey 1991: Central Bureau of Statistics: Ministry of Planning and National Development.

Kenya's agricultural sector appears to have encountered some serious bottlenecks over the last few years. Food production per capita has been falling so drastically, that the country has had to import from time to time some very essential food products in

whose production she had always remained self-sufficient (Odada et al 1986). An interesting question one would ask is, what has gone wrong in Kenya's agricultural sector? There seems to be more emphasis on smallholder cash crops production yet the meagre returns to such crops have failed to off-set the food gap they create, thereby exacerbating the food problem.

Makwata (1979) in a study of the Mumias Sugar Factory observed that the introduction of sugarcane farming on a commercial basis has interfered with the production of food crops. Most farmers dedicate more time and land to cane and ignore growing food crops with the belief that sugarcane offers higher returns. But they have not taken into consideration that the higher returns come after along time.

However this phenomenon is not peculiar to Kenya alone. In many countries sugar is an important export commodity as well as important import substitution commodity. In spite of its positive effects on the macro-economy the overall effect is not "a priori" a positive one. Sugarcane as a crop e.g is in competition with various other (food) crops. (Lemmens 1987)

Comparison of food crops grown by contracted farmers before and after the introduction of sugarcane.

Table 44: Maize production

PLANTED/ PLANTS MAIZE	1991/1992 BEFORE NSC	1992/1993 AFTER NSC
YES	190 (98)	192 (99)
NO	3 (1)	1 (1)
	193 (100%)	193 (100%)

The percentages in the table indicate that the difference between the percentage of farmers growing maize before the introduction of sugarcane and after the introduction of sugarcane in the outgrower community is not significant. We therefore maintain that farmers have continued to grow maize even with the introduction of sugarcane. What has actually reduced is the acreage committed to maize.

This finding is not surprising considering the fact that maize is a main staple food crop in this community. Farmers reported to be still growing maize, however, they expressed the fact that the production output is low. Very few farmers reported to have some surplus for the local market. A relatively large number reported growing maize mainly for domestic consumption unlike in the past when they had a surplus for sale.

Table 45: Beans production

PLANTED PLANTS BEANS	BEFORE NSC	AFTER NSC
YES	188 (97)	129 (67)
NO	5 (3)	64 (33)
	193 (100%)	193 (100%)

$X^2 = 58$ significant difference at 1 df

0.05 sign: level

C = .36 moderate association

Findings in this table illustrate that a higher percentage of farmers used to grow beans before the establishment of the NSC than after. For example, 97 percent of the farmers reported to have grown beans before the NSC was established which is an over representation in relation to the marginal percentage (82%). On the contrary only 67 percent of the farmers are growing beans which indicates an under representation in relation to the marginal percentage.

Conclusion: The Chi-square X^2 (58.07) is significant at 1 degree of freedom 0.05 significance level implying that there is a difference in the percentage of farmers growing beans before and after the introduction of sugarcane. However the difference is moderate (C.36)

Farmers reported to be growing less beans due to a reduction in land committed to maize. Beans is inter-planted with maize. The land previously used to grow these crops is now under cane.

the crop now as compared to the percentage of farmers who used to grow cassava before the NSC was implemented.

Table 46: Cassava production

PLANTED/PLANTS CASSAVA	BEFORE NSC	AFTER NSC
YES	186 (96)	146 (76)
NO	7 (4)	47 (24)
TOTALS	193 (100%)	193 (100%)

$\chi^2 = 34.00$ significant difference at 1 df

0.05 sign: level

$C = 0.29$ moderate association

0.05 sign: level

In relation to the marginal percentages relatively a higher percentage of farmers used to grow cassava before than after. For example before the sugar scheme 96 percent of the farmers were growing cassava, which is an over representation in relation to the marginal percentage. Today the percentage has dropped and now 76 percent of the farmers are growing cassava. This indicates an under representation in relation to the marginal percentage (86%).

Conclusion: The significant Chi-square confirms that there is a difference in the production of cassava before and after the introduction of sugarcane. The contingency coefficient confirms a moderate association. Cassava is one of the staple food crops in the area. Its production has been affected by the introduction of cane, with 20 percent of the farmers not growing

the crop now as compared to the percentage of farmers who used to grow cassava before the NSC was established.

Table 47: Potato production

	BEFORE NSC	AFTER NSC
PLANTED/PLANTS POTATOES		
YES	182 (94)	98 (51)
NO	11 (6)	95 (49)
	193 (100%)	193 (100%)

$\chi^2 = 91.77$ significant at 1 df

0.05 sign: level

$C = 0.44$ moderately strong association.

Findings in the table above show that in relation to the marginal percentages, relatively higher percentage of contracted farmers used to plant potatoes before than after the establishment of the NSC. There is a clear drop of 43 percent of farmers who used to grow potatoes before the sugar scheme but who are not growing potatoes now.

Conclusion: The significant Chi-square confirms that there is a difference in the number or percentage of farmers who used to grow potatoes before and after the introduction of sugarcane. However the contingency coefficient suggests a moderately strong association. So that in absolute terms we may maintain that there is a substantial drop in the percentage of farmers growing potatoes.

Table 49: Groundnut production

Table: 48 Banana production

PLANTED/PLANTS BANANAS	BEFORE NSC	AFTER NSC
YES	106 (55)	59 (31)
NO	87 (45)	134 (69)
	193 (100%)	193 (100%)

$\chi^2 = 23.4$ significant difference at 1df 0.05 sign: level

$C_0 = 0.24$ Rather weak association.

$\phi = 0.31$ weak association.

In relation to the marginal percentage a relatively higher percentage of contract farmers were growing bananas before than after the introduction of sugarcane. There is a clear drop of 24 percent of the out-growers who used to grow bananas before the sugar scheme, but who are not growing bananas now. Bananas it was reported by our respondents need intensive weeding and thus fewer farmers are able to maintain at the same time with sugarcane which is equally labour intensive.

Conclusion: There is a difference in the percentage of farmers growing bananas before and after the sugar scheme. The significant association confirms this fact. However, the contingency coefficient illustrates a rather weak association.

Table 49: Groundnut production

PLANTED/PLANTS GROUNDNUTS	BEFORE NSC	AFTER NSC
YES	108 (56)	47 (24)
NO	85 (44)	146 (76)
	193 (100%)	193 (100%)

$\chi^2 = 40.11$ Significant difference at 1df

0.05 Significance level

$C = 0.31$ moderate association.

Findings in this table indicated that a higher percentage of farmers grew groundnuts before than after the introduction of sugarcane. There is an evident drop of 32 percent.

Conclusion: There is a difference in the percentage of out-growers growing groundnuts before and after the sugar scheme as illustrated by the significant Chi-square. The contingency coefficient however implies a moderate association.

The crops presented above are among the crops farmers grew before the sugar scheme and after in greater numbers. However, they are not the only crops grown in the outgrower community. A few traditional staple crops such as finger millet, sorghum and simsim for instance were currently being grown by very few farmers. There has been a sharp decline in the production of these crops that we could not present them statistically since

the Chi-square cannot be used in a table with empty cells. The number of farmers growing these crops is statistically insignificant. From the tables presented above it is evident that there is a drop in the production of food crops with the onset of the sugar scheme. Farmers allocated most of the fertile and productive land to sugarcane leaving food crops with less acreage and in some cases, unfertile swampy and hilly pieces of land. The result has been a shortage in foodstuffs for family consumption. Today hunger is the order of the day in outgrower families particularly the small farmers whose cane incomes are inadequate to purchase enough food crops. Quite a number of small farmers are unemployed or engaged in petty trade, thus they rely entirely on sugarcane incomes, which in most cases are not sufficient for family needs. Children in these families chew sugarcane as their food most of the day waiting for one meal in the evening. Malnutrition cases among children have increased. This fact was expressed by the respondents themselves and the hospital staff at the local dispensaries. Nutritionist nurses said the number of kwashiorkor and marasmus infected children has increased due to food deficiencies. In the past farmers grew a variety of food crops which were adequate for a balanced diet. Today most of these crops have been dropped in favour of sugarcane.

A study by UNICEF established that Siaya, Kisii, Bungoma, Kakamega, South Nyanza and Busia all located in Nyanza and

Western Province have high incidences of malnutrition. These districts also rank high in having large numbers of stunted children and high rates of sicknesses furthermore, the mortality rates are among the highest in the country (UNICEF Child Nutrition Survey 1982). The district named above happen to be the largest producers of sugarcane in the country. Our study was carried out on the NSC whose out-growers Zone extends to Kakamega and Bungoma districts. The malnutrition reported by the UNICEF study could be as a result of sugarcane production. The production of food crops has declined so much in the outgrower community to the extent that the local prices of major food staples like maize, beans and cassava are skyrocketing. For example at the time of study the 2 kilogramme tin of maize popularly known as "goro goro" was costing Ksh. 10/= which is quite expensive as compared to the Ksh 2.50/= the same was costing in 1987. A sack of beans was costing Ksh. 800/= as reported by the farmers. Most of the out-growers purchase foodstuffs to supplement their food output. Ninety five percent of the farmers reported to purchase foodstuffs with their cane incomes. This include both small and big/large scale sugarcane farmers. Farmers have neglected food production because they felt sugarcane would earn them a lot of money. Also, sugarcane is labour intensive and therefore the family lacks adequate time and labour to put in the food crop production. The out-growers experiencing a lot of hunger are those whose sugarcane was never harvested for a period of six years. Such

farmers had committed more land to sugarcane than food crops, hence they harvest very little foodstuffs not sufficient for household consumption such farmers cannot uproot the cane to plant food crops because the contract does not allow unless the farmer gives the company a three years notice. These farmers with no income from cane are actually starving with the unemployed at the verge of despair. The sugar scheme has wrecked their lives both socially and financially. The family heads cannot support their families and thus the family squabbles are the order of the day in such homes. To say the least things have not been rosy for the contracted farmers. A relatively large number of farmers have been left in dire economic straits. The meagre cane incomes are not sufficient for the purchase of foodstuffs for the family. Thus the unemployed farmers have to engage in petty trade and wage labour to make ends meet.

This finding concurs with what Mwandishi found out in a study of the Mumias Sugar Factory. In analysing the trade-off between sugarcane and food production Mwandishi found out that there was a significant difference in the output of major food crops before and after the establishment of the sugar scheme. The output of maize sorghum and cassava had fallen while that of beans and potatoes had not changed significantly. Thus, he concluded that this decline in the output of food crops, is due to a larger proportion of land being devoted to sugarcane production thereby denying food crops land. Devotion of much of the land to the sugarcane crop enterprise at the expense of food crop production

has relegated Mumias region to the status of having to depend on the generosity of neighbours for food requirements.

Mwandihi further observed that most of the farmers spend their income on food purchases. However, the cane incomes were not sufficient in meeting the farmers basic needs.

Overall conclusion:

Considering the aforementioned it is evident that the sugar scheme has not done much for the outgrower community in fact it has worsened their social and economic positions. A large number of farmers have not been able to improve their wealth position with the meagre cane incomes, food production has dropped leading to untold hunger and farmers have to borrow to meet their day to day needs thus locking the farmers up in indebtedness or what could be referred to as the vicious circle of poverty.

However, these problems are common in the Third world where agribusiness corporations have penetrated the agricultural sector. Introduction of cash crops in the Third world on a commercial basis in a region formerly dependent upon subsistence production came at the expense of the resources. It turned most of the region into a deficit area with respect to food supplies. The colonial legacy of emphasizing cash crop production at the expenses of producing food for subsistence purposes seems to have persisted up to the present. In many third world countries, pricing policies discriminate against the production of mass-consumed staples and encourage the production of quality and luxury food and other agricultural exports.

This agribusiness trend is for example evident in the Awash Valley of Ethiopia cotton and coffee plantations were expanded into the traditional pasture areas of the nomadic tribes or in the sahel region of West Africa where transportation corporations profitably used thousands of hectares for truck farming cotton growing and cattle ranching at the expenses of domestic grain production. In many underdeveloped countries today, a close relation has become apparent between the agricultural operations of the transnational corporations and the imminent danger of famine (Jacoby 1975)

H5: There tends to be a correlation between the introduction of monetization in the smallholder rural economy and the distabilization of the traditional family life.

Table 50: Relationship between the total cane income obtained (monetization) and domestic disputes in the family.

EXPERIENCED	CANE INCOME			TOTAL
	1000-4000	4100-8000	8100-12000+	
Domestic disputes				
YES	69 (61)	16 (94)	16 (70)	101 (66)
NO	44 (39)	1 (6)	7 (30)	52 (34)
	113 (100%)	17(100%)	23(100%)	153(100%)

$\chi^2 = 7.35$ significant association at 2 df

0.05 sign: level

$c = 0.21$ weak association

Findings in the above table indicate that farmers earning

higher income are slightly more likely to have had strained relationships in the family than those earning relatively low income from cane. The farmers earning what we would term middle category of income recorded the highest percentage of family disputes. For example in relation to the marginal percentage, farmers earning Ksh. 40,000 or less are slightly under represented among farmers who reported to have had domestic disputes over the expenditures made while farmers earning above Ksh. 81,000 are slightly over represented.

MARRIED (WIFE)	CANE INCOME			TOTAL
	0-40000	41000-80000	81000-120000+	
NO	303 (92)	12 (7)	17 (7)	332 (100)
YES	123 (100)	17 (100)	21 (100)	161 (100)

Conclusion: Farmers earning higher cane incomes are slightly more likely to have had domestic disputes in relation to expenditures made from cane money than farmers earning relatively less cane income. The significant Chi-square ($X^2 = 7.35$) confirms this relationship. However, the contingency coefficient implies a rather weak relationship.

This finding has to be treated cautiously because farmers were not open when it came to such personal matters. Quite a number of them tended to say what they felt the researcher would like to hear. The men especially did not want to disclose that they used most of the money on leisure while the family suffered at home. In fact most of the time we cross checked the information given by interviewing their wives or key informants such as the assistant chiefs and their "liguru" headmen who were close to the people and got to know which homes had disputes. One would expect the farmers earning low cane incomes to have

more domestic disputes which is not the case in this finding. Thus coupled with the low association we may maintain that in absolute terms a large percentage of farmers had domestic disputes in the family with the monetization of the rural economy.

Table 51: Total cane income obtained and marrying of another wife.

MARRIED ANOTHER WIFE	CANE INCOME			TOTAL
	1000-40000	4100-80000	81000-120000+	
YES	9 (8)	5 (29)	6 (26)	20 (13)
NO	103 (92)	12 (71)	17 (74)	134 (87)
	121 (100%)	17 (100%)	23 (100%)	*152 (100%)

$\chi^2 = 9.87$ significant association at 2 df

0.05 significant level

$C = 0.25$ rather weak association

* Total less than 153 due to non response

The table above shows that, in relation to the marginal percentages, farmers earning relatively higher income from cane, tended to marry another wife than farmers earning less cane incomes. For example among farmers earning over 81,000, 26 percent reported to have married another wife which is an over-representation in relation to the marginal percentage (13%). On the contrary, farmers earning less than Ksh. 40,000 (8%) are under represented in relation to the marginal percentage.

Conclusion: The significant Chi-square confirms that there is a relationship between the amount of cane income obtained and marrying of another wife. However, the contingency coefficient suggests a rather weak relationship thus, coupled with the low association of the table, we may maintain that in absolute terms fewer farmers used their cane incomes to marry another wife.

Several studies on contract farming in Kenya have alluded that farmers misuse their incomes on leisure, with marrying more wives. This finding concurs with this observation. Thirteen percent of the farmers reported to have acquired other wives and spend cane incomes on bride wealth and maintenance of the wives. In most cases the welfare of the first wife and the children was neglected. The husband literally moved out of the house, settling with the new wife in another house. In the final analysis therefore, the first wife after toiling for long hours in the sugarcane farm gets a raw deal.

This situation has led to strained relationship in the families where it has happened. There have been recorded severe disputes between some wives and husbands and some have led to temporary separations. In some families, sons feeling bitter about the labour input of their mother and themselves have gone out of their way to fight their fathers and such cases have ended up to the chiefs barazas. One woman was reported to have attempted to commit suicide when the husband married another wife.

Marrying of many wives is a common practice in the African

tradition. It is the rich or the well off men who tend to marry many wives. Therefore it is not surprising that farmers obtaining higher cane incomes went out of their way to marry an additional wife. However, this act did not help to improve the living standards of the family, but instead facilitated the deterioration of the standards of living while locking the family members in more conflicts.

Table 52: Farmers occupation and present living standards of the family

CARE OF CHILDREN	OCCUPATION			TOTAL
	FARMERS/ UNEMPLOYED	SMALL TRADERS/ SEMI-SKILLED	PROFESSIONALS/ BUSINESSMEN	
Living standards have improved with the NSC	4 (7)	15 (15)	19 (56)	38 (20)
Living standards lower than before NSC	16 (27)	30 (30)	13 (38)	59 (30)
Living standards worse off than before	39 (66)	55 (55)	2 (6)	96 (50)
	59 (100%)	100 (100%)	34 (100%)	193 (100%)

$X^2 = 46.50$ significant association at 6 df

0.05 sign: level

$C = 0.44$ moderately strong association.

Findings in the above table reveal that there is a tendency for farmers in low occupations to report that their standards of living have worsened with the introduction of sugarcane, while

farmers in high occupation group tended to report that their standards of living have improved.

For example, in relation to the marginal percentage, a larger percentage of professionals/businessmen reported that their standards of living have improved with the introduction of sugarcane. Fifty six percent reported that their living standards had improved and in relation to the marginal percentages, they are over represented.

Conclusion: The Chi-square is significant at 6 degrees of freedom 0.05 significance level confirming an association between the two variables that farmers in higher and therefore well paying occupations are more likely to have had improved standards of living with the introduction of sugarcane, while those ones in lower occupations are more likely to have had worsened standards of living.

The inability on the part of the NSC to deliver services efficiently to the farmers has led to a deterioration in the living standards of the farmers. Farmers who were otherwise fairly off before the introduction of sugarcane have sunk into squalor. All this has been precipitated by the delayed harvests on one hand and absolute non-harvest on the other extreme. As mentioned earlier the NSC takes an average of 4 years to make the first harvest and payment met to a farmer. In such a long period of time a farmer who committed most of his/her land to cane is left with no alternative but to starve. Providing for the family

becomes very difficult. Those who never harvested are left worse off. The farmers who have been most affected are the unemployed and those in poorly paying occupations who rely heavily on farm incomes to maintain their families.

A relatively large number of farmers reported that for the first time in their agricultural and family history their granaries have stayed empty and their children have survived on one meal per day. Before the sugar scheme farmers tried as much as possible to be self sufficient in foodstuffs, and with a surplus for sale. Farmers planted a lot of maize and beans for sale, to pay school fees for their children. This trend was interrupted with the introduction of sugarcane which farmers defined as a lucrative cash crop. Most of the available fertile land previously for food crops was allocated to sugarcane denying food crops of much fertile land. Thus, the delay in harvest and non-harvest, has made farmers pay dearly for this over commitment. Children of farmers in low occupations are not well taken care off; some go in tattered clothes, under fed while others have dropped out of school.

On the contrary, professionals and businessmen have had their living standards improved because cane incomes supplements their constant source of income. They are in a position to take better care of their children with the additional income.

On the whole, the sugar scheme has not done much in terms of improving the standards of living of the farmers. With only 20 percent reporting an improvement, the role of the scheme is

actually negligible. If anything it has enhanced the deterioration in living standards of farmers who were previously fairly off.

The introduction of sugarcane in a previously subsistence economy has not been without problems for the family as an institution. Marital disputes both social and financial were common within the families before the sugar scheme, but they have been exacerbated with the penetration of the cash economy reported the farmers. Contract farmers with exception of a few, practiced subsistence farming, growing food crops such as maize, beans, groundnuts, cassava, sorghum, finger millet and others mainly for household consumption with little or no surplus for sale. A few farmers planted maize on large scale for sale, while others planted cash crops such as sunflower and cotton. These crops were not earning them substantial income as compared to sugarcane, if only sugarcane were harvested on time.

A number of small scale farmers had never handled money in lumpsum to the tune of Ksh. 10,000 at a go. Sugarcane with its lumps payments got some of these farmers off balance i.e. unprepared, not knowing what to do with their money. The farmers were not prepared for this abrupt social change and thus, for many it has had a destabilising effect on their families. When interviewed in connection with expenditures, farmers contended that sugarcane money is "cursed" and one cannot do much with it. This reaction testifies to the haphazard manner with which the cane income was spent.

In a study of agribusiness and the small scale farmer, Williams (1985) concedes the negative impact of agribusiness. He says that: "stresses and strains may result in family life and in social order when neither time nor talent is allocated to prepare people for abrupt shifts in life-style.... more than anything else, the radical challenge to investors in the private sector lies in the validity of claims that on-farm increases in net income and increases in family income from wages are truly significant, particularly when compared with corporate profit and management salaries. There may be no argument about the value of doubling, trebling or quadrupling income but there is dispute over the freedoms gained and the equity achieved when in absolute terms income per family remains very low". (Williams 1985, 2)

But Williams dismisses this negative impact by arguing that it is "the ineluctable consequences(s) of the process of change" and also that this "is natural and predictable". Starting from this premise he makes his stand clear by saying that "(t)his book takes the position that the industry has in fact set the stage not only for conflict resolution but also for a further rapid expansion of benefits for rural people and their government". (Williams 1985, 3)

We do not agree with Williams quick dismissal of the

stresses and strains that occur in the family with the cash economy with the hope that the conflicts may be cancelled off with the expected high income increases from the crop. Many studies on contract farming have found out that cash incomes from such crops are inadequate for family needs. This study is a case in point. Not only do farmers end up with negative returns inadequate for their family maintenance, but the rapid expansion of benefits for the rural people and their government that William talks about is not realised. Not much is done in terms of the improvement of the rural infrastructure, standards of living, employment, transfer of technology and thus the whole concept of rural development remains hollow.

In fact, it seems as if the agribusiness firm has set the stage for the rapid deterioration of the standards of living of the rural populace given the meagre earnings from cane and the non-harvests which have left the farmers in pathetic conditions. The biting poverty the farmers who never harvested are facing will take a long time to be eliminated even if the farmers invest a fresh in other food or cash crops. This situation makes the families more stressful and strained than ever before. Thus, this situation in other words, leads not to conflict resolution but conflict generation.

Strains in family relationships are directly linked to cane income expenditures on one hand and lack of income for those who never harvested on the other. For example, contracts are usually signed by men as heads of households, which makes them direct

recipients of any benefits later on. For instance, they are the ones who receive payment after the commodities have been delivered to the company. They then go ahead to use the money in any way they deem fit. In this study 90 percent of the contracts were signed by husbands while only 10 percent were signed by wives. It follows that males take an upper hand in the decision making on the expenditures to be made with the cane incomes. Women who signed their cane contracts were either widowed, separated, or their husbands worked in urban centres. A number of women reported that their working husbands travelled home just to have the cane contracts in their names.

The issue of who should be registered on the cane contract has its roots in the colonial land changes (i.e individual land tenure) and the traditional customs which define women as dependant. Traditional practices such as the payment of bride wealth, predominantly male inheritance of land, and the belief that children "belong to their fathers lineage" in patrilineal societies all continue to limit the freedom of choice and the economic independence of African Women.

This study found out that sugarcane is defined by men as a male crop and therefore it is the husband who owns the crop and thus decides on how the cane income is to be spent. Women were hesitant during the interviews and expressed the view that the crop belonged to their husbands and so it is them who have the right to be interviewed. This phenomenon is observed in the cotton industry of the Ivory Coast. When cotton which in the pre-

colonial era had been grown by women to meet family clothing needs, become a cash crop, heads of households began to require that the portion of the crop which would be sold must be grown on their personal fields, a practice which established the head of the households ownership of the product. (Etienne, 1980). Thus, it is clear that throughout Africa, heads of households always retain the general control over family operations, especially family cash resources in an effort to minimize the economic independence of their male and female dependents.

This phenomenon is elaborated on clearly by Remy (1975) who contends that:

"As property rights become individualised under the influence of colonial legal changes and planting of tree crops, African men who had been powerful in the pre-colonial era were able to accumulate much of the best land. Women's access to land for subsistence farming and especially for market farming was highly circumscribed. Women faced the encroachment of private male claims to land they had traditionally used for food farming and gathering but they were barred by tradition rather than by colonial law from becoming land owners.

Nearly every investigation of African women farming and craft activities shows that they were always physically and intellectually repressed by traditional and colonial practices of land and crop control, ideological restrictions on rights to mobilize family labour which gave such powers primarily to patriarchs, and customs defining women as dependant. Such

socially constructed and socially reproduced constraints on a woman's ability to make economic choices and investments remain a fundamental frustration to millions of African women today (Remy: 1975:370).

As we can see the subordination of women in the agricultural economy is a common phenomenon in Africa. At the NSC men who receive the cane payments tend to misuse them other than using them to improve the family's living standards. A number of women reported that their husbands spent their money drinking, others married another wife, some refused to pay school fees for children even to purchase foodstuffs for the family. As a result disputes have occurred between wife/wives and husbands, father and children. Some of these disputes led to separation or wife temporarily running away from home. The chiefs, Assistant chiefs and "liguru" confirmed this incident which they said was on the increase and had caused much suffering to the wife and children. The local administration was forced to intervene in some extreme cases to get some money from such husbands and give to their wives for family use. Some children especially sons have attempted to kill their fathers after dropping out from school as the father drinks all his cane money.

The introduction of sugarcane has exposed the outgrower families to hunger. Food shortages have been exacerbated as said earlier. It is known that in traditional societies, food crops are the preserve of women while men control cash production. Expanded cash crop production reduces the availability of land

and household labour for subsistence food production and thus reduces women control over household incomes since women have traditionally been responsible for assuring the necessary food intake of the family and since a strong separation may exist between men's and women's income and their uses the loss in food consumption from own production may not be matched by increased food purchases. Men tend to spend their cane incomes to improve homes, purchase livestock, buy clothes among others at the expense of food requirements.

For example, in a study on Mwea Irrigation Scheme in Kenya, it was found that a higher percentage of income was being spent by participating households on items like bicycles, children school fees than was being spent by farmers not participating in the scheme. (Korte, 1981).

Food shortage in the outgrower community is also related to the increased work load on the women with the introduction of the sugarcane. Sugarcane is labour intensive crop. Weeding is done seven times on average before the crop is ready for harvest. This continued weeding denies the food crop sector labour, since women are the major cultivators of food crops for household consumption. In this study it was found out that women do most of the weeding of cane. Fifty one percent of the women reported to weed cane many times than any other member of the family as compared to the 5 percent of husbands weeding many times. This condition has led to hunger and malnutrition among the family members. Family disagreements are the order of the day in

families where household heads cannot support the family. As the saying goes a hungry man is an angry man. Children in such families cannot even perform well in school.

Feminist scholars observe this trend in agricultural production throughout the Third World. The production of export crops altered the sexual division of labour and significantly increased the total time of all members of the rural household. The increased work load fell hardest on women. Men commonly withdrew from food production but also helped with the new colonial crops. (see Bukh, 1979, Stichter 1976). Among the Betipples of southern Cameroon for example during the depression year 1934 when cash crop prices were extremely low and taxes high, women had to work over 70 hours a weeks compared to an average of 46 hours in the pre-colonial period. The corresponding labour time for men in 1934 was 25 hours a week for household heads and 55 hours (or twice their pre-colonial average) for the dependant males of the household (Henn, 1980: 140).

Families where sugarcane was never harvested for an average of five years suffered most. The sugar scheme has failed to harvest most of the outgrower cane citing machine breakdowns and low crashing capacity as major limitations. The affected farmers have experienced varied problems ranging from hunger and malnutrition, children dropping out of school, family disputes resulting into temporary separations, family breakups in a few cases, fights between wife and husbands, fathers and sons, and many other destabilizing acts. All as a result of lack of money

to provide basic necessities for the wife and children. The farmers hit hardest in this category are those who were unemployed and who relied heavily on farm income for their subsistence. Three farmers were reported to have attempted to commit suicide while several had their wives running away temporarily due to poverty in the home. Two farmers families were broken down as they sunk deeper into squalor. Those cases were well known to the chiefs, assistant chiefs, "ligurus" and the neighbouring farmers.

We interviewed some of those farmers on the traumatic experiences and they seemed to blame their problems on the failure of the NSC to harvest their cane. Farmers starved as cane stood rotting in the shamba giving no income to supplement for food shortages. Farmers who used to grow a lot of maize and beans and sell for school fees could not do it, since they planted a lot of cane hoping to earn more income for such needs. The household head (husband) suffered psychological trauma, when he failed in his role as a bread winner in a society where men are expected to support families. Women could not bear sight of their starving children, bright children dropping out of school and frequent disputes with their husbands.

The economic impact of contract farming on family welfare (i.e improved standards of living) is thus reduced. With only a few people reaping benefits from those farming enterprises the kind of rural development that has emerged is lop-sided. This is perverted development with a few households enjoying numerous

social amenities while the rest remain spectators. (Makokha 1990, 127).

Overall conclusion:

To conclude, we have observed that the introduction of monetisation in the outgrower community has not played a tracing, significant role in improving the standards of living of farmers, as well as cementing the social relationships in the family. Though, a few farmers reported having benefited, in terms of improved housing purchase of clothes and more nutritious foods, purchase of vehicles, land, and livestock, setting up small business, paying school fees, medical care and so on, which went along with improving family relationship between wife and husband, parents and children, a larger percentage of farmers reported destabilising incidences. The meagre earnings from cane limited the farmers purchasing power thus, brewing economic disputes between family members. The farmers who never harvested and who relied heavily on farm incomes for subsistence sunk into squalor. The household heads who earned substantial incomes, but misused it on leisure do not enjoy warm relationships with their spouses and children, than before when family income was less but was used for the benefit of the family.

CHAPTER SEVEN

RECOMMENDATIONS AND CONCLUSION

This study examined outgrower agriculture in Kenya by placing it within the framework of multinational corporations and Kenya's agricultural and rural development contexts, and tracing the historical facets of these two types of development. The first chapter outlined the objectives of this study. The study in broad terms examined in detail whether the introduction of contract sugarcane farming has enhanced rural development as well as succeeded in improving the living standards of the smallholder households in the local community.

The second chapter demonstrated the fact that contract farming has been adopted increasingly in the last two decades by both the multinational corporations and the host governments in the developing World, replacing plantation agriculture as a policy and strategy geared towards increased agricultural productivity and social upliftment. This process of transformation engineered by the government and aimed at revitalising the social and economic life of the rural populace has had mixed fortunes; success in some cases and failure in others. Chapter five and six presented empirical evidence of sugarcane contract farming. Statistical evidence illustrating the performance of the NSC and the impact it has had on the contracted farmers was given.

The present chapter attempts to condense the major issues in the preceding chapters with a view to making the thesis more

coherent. By bringing the loose ends together, this chapter tries to show what all the evidence here gathered so far points to. Contract farming is one of the strategies employed by the multinational corporations in the third World aimed at increased agricultural production and social upliftment. It has been amply argued in this study that the role played by agribusiness companies in agricultural development of the Developing countries has been negative to say the least. More and more people have been brought by the independent regimes to participate in the expanded economy (contract farming) but their participation has been limited to being producers and not real beneficiaries of the fruits of the increased production. In other words, their role as key producers without whom nobody could be in business has been assumed and their active participation in the production process stripped off; thus relegating them to a position of mere pawns in the hands of the agribusiness companies. Furthermore, when taken as part of a larger rural population, those participating in the expanded economy are a small fraction. It was also observed that the economic benefits reaching the participating peasants are limited.

Our primary data indeed, demonstrates that the contract farmers hardly benefitted from their involvement in the contract. More so, there are cases where some infact came out worse than they went in. What can be observed is enhanced differentiation within the peasantry due to unequitable distribution of benefits accruing from the sale of cane. With greater marginalisation for

small scale farmers who are unemployed and who depend wholly on farm incomes for subsistence. The actual beneficiaries may have been the agribusiness firm, the government and other middlemen with the farmers getting a raw deal. Considering our findings and the general performance of agribusiness companies in developing countries, it is indeed self-defeating for a developing country like Kenya to adopt the agribusiness stereotype contract farming as a way of revitalizing the agricultural sector, with the aim of achieving self sufficiency as well as the noble objective of rural development.

Going back to what was hypothesized earlier, the first hypothesis i.e that "the profit oriented approach enforced by the agribusiness firms in the contract farming system tends to retard growth in the incomes of the peasant community" was supported to a large extent by the primary data.

The findings indicated that the agribusiness firm has minimised its risks in production and has instead burdened the farmer, who actually meets all the production cost of the crop. The production costs eventually cut into the farmers' personal income making accumulation difficult if not impossible. Coupled with the negative returns obtained from the sale of cane and the basic subsistence needs the farmers have to meet on behalf of their families, larger percentage of farmers are not able to invest their cane money in income generating projects.

Investment is a key to capitalist accumulation without which a growth in income is not possible. In this study a very small

percentage of contract farmers were able to invest their money in viable economic projects. These were mostly members of the salaried and established businessmen. For the majority cane incomes were used to meet their subsistence needs. Thus, the general trend observed was a marked differentiation within the peasantry rather than equitable distribution of income, with greater marginalization for the majority especially the unemployed who have no other source of income except the farm. Hence it is concluded that sugarcane contract farming has been less beneficial to the farmers in terms of real capitalist accumulation. The increase in real personal incomes for a small percentage of farmers (i.e businessmen and highly paid professionals) is insignificant compared to the large percent of farmers who reported no increase in incomes or worse still a depreciation in their personal incomes with the introduction of sugarcane farming.

Hence, a majority of contract farmers (mostly small scale farmers) are languishing in poverty and squalor, while a few well to do farmers try to better their living standards. In essence contract farming as a strategy aimed at increasing incomes of the farmers, improving the living standards of the farming community as well as achieving the noble objectives of rural development has failed to achieve these intended objectives.

However, given the limited finance and duration for this research, and the sensitivity of the subject in question i.e (incomes), further research is recommended to put this finding

above and beyond mere conjecture.

Nevertheless, this finding tallies with observations made in several studies carried out on agribusiness contract farming in the Third World as well as sugarcane contract farming in Kenya. In most cases the majority of farmers end up with inconsequential remuneration from their participation in the industry, while the agribusiness companies end up making overwhelming profits.

The kind of contract terms drawn by the company are aimed at profit maximisation on the part of the agribusiness company. The development of peasant agriculture and growth in incomes of the contracting community is not a priority nor concern of the firm.

The second hypothesis that, "The lack of success on the part of the management to fulfil the mutually agreed contractual services to the smallholder farmers tends to dampen the farmers initiative in improving and expanding the planted acreages was largely upheld by our findings.

Since inception the NSC delivers very poor services to the contracted farmers right from planting up to harvesting. No particular service is delivered on schedule as laid down in the contract agreement. Our findings indicated that ploughing and harrowing was poorly done for the farmers whose farms were prepared by the NSC tractors on credit. While a substantial percentage of farmers hired ox-ploughs or tractors to plough their land due to a shortage of tractors at the company. Fertilizers, pesticides and insecticides were distributed late to farmers. A number of farmers failed to get any supply from the

NSC. Thus, a few well off farmers had to purchase the inputs privately while the rest planted without these necessary inputs. Prolonged delays in harvesting has been the most painful phenomenon. It has caused a hue and cry among farmers but all in vain. After harvesting payments take too long as well. Some farmers have had to wait for payments for a period of between 6 months and 2 years. On the other extreme are the worst hit farmers whose cane has never been harvested for a whole six year contract period. Seventeen percent of the farmers reported that their cane had never been harvested. The majority of contracted farmers have their cane drying and rotting in the fields. Such a sugarcane is no longer fit for harvesting. It is currently used as firewood by the neighbourhood. Most farmers have had their cane harvested only once in a six year contractual period instead of three times as laid down in the contract. Whenever such harvests are made by the NSC, they are carried out so inefficiently by the company harvesters. The farmers have to bribe the harvesters to have the cane cut and tonnes counted appropriately. Some farmers have been left stranded with already cut cane in the farms due to transportation problems breakdowns by the inefficient NSC transportation fleet.

The above factors have drastically lowered the farmers morale and thus, lessened the farmers enthusiasm to expand their cane acreages. A substantial percentage of farmers expressed their wish to quit the contract while quite a number of them have abandoned the contract prematurely. Farmers have largely

neglected their cane crop (in terms of general maintenance) and some are illegally selling their over mature cane to private jaggaries.

However, despite this grim picture, 55 percent of the contracted farmers wished to continue with the contract. These were mostly low class farmers who depend entirely on the farm for their subsistence. There is no other competitive cash crop in the area. Maize which is the next competitive cash crop does not pay as well as cane. Thus such farmers have no alternative than to hope that things will change for the better in future. This finding exposes the kind of poverty and desperation entrenched in our Kenyan rural communities. Farmers have to hung onto the worst exploitative and dehumanising projects for the sake of survival.

As a result contract farming in Kenya has hijacked the control of the production process from the peasants. Since the supreme desire is "high quality" production, the farmer is not trusted by contracting companies to decide where to plant when to plant and how to plough, weed and generally maintain the crop. The NSC for instance does not feel obliged to communicate to the farmers whenever it fails to deliver a certain service. The farmers in actual sense do not participate in the production process that directly affects them. The farmers have been turned into workers who have been for all practical purposes 'stripped' off real economic assets. Their orientation is passive than active. In other words they are mere pawns in the hands of the

agribusiness. Their human right to participate in this economic venture has been overstepped. They have been manipulated by the company whose main aim is to maximise profit. As a result they have been exploited and the contract has now become unprofitable and unattractive.

The absolute lack of participatory process on the part of producers in the agricultural sector is affecting productivity throughout the Third World. This observation has been reflected in the case of the NSC farmers. Buch-Hansen Kielier (1982) in a study of contract farming in Kenya concluded that a common cause for rural poverty in Kenya is non-participation in capitalist development and isolation of markets.

If this state of affairs is allowed to continue, contract farmers will never feel part and parcel of the production process, in which they should be in fact actively involved. This state of inertia will definitely ruin the chances of farmers towards improving their social and economic position. Thus defeating the purpose of contract farming as a strategy aimed at increased production and productivity as well as social upliftment as envisaged by the local planners.

The third hypothesis that "the operation of an agribusiness firm in a contract farming community can enhance the transfer of technology to the local communities as well as the improvement of the rural infrastructure" was hardly supported by our findings.

The transfer of technology and improvement of the rural infrastructure was barely evident among the NSC contracting

community. Our data reveals that the role played by the sugar scheme in transferring technology particularly in the food crop sector, as well as improving the rural infrastructure is negligible if not absent. Capital intensive technology remains a preserve of sugar cane production. Farming methods in the food crop sector are predominantly subsistence, with the majority of farmers practising mixed cropping. The tool commonly used in ploughing by a larger percentage of farmers is the ox-plough, there are isolated cases of contract farmers (mostly the well off) who utilise tractors in their food production. What is more evident is a drastic drop in food production as well as the number of food crops planted, as food crops continue to compete for land and labour with the cane.

The NSC unlike its counterpart the Mumias Sugar Company does not have any deliberate policy aimed at assisting farmers to boost their agricultural production and productivity. Mumias sugar company for instance loans maize seedlings and fertilizers to its contracted farmers, which is eventually recovered from their cane returns on harvest. This has enabled the poorer farmers to increase their food output.

The findings revealed that the meagre incomes obtained from the sale of cane have not made a mark towards the improvement of the food crop sector. Outgrowers reported lacking the purchasing power to purchase the modern agricultural technology needed in increased food production. Hence, it is concluded that the introduction of sugarcane on contract basis has not in itself

helped to transform the agricultural production methods within the outgrower community. The meagre returns to cane are in themselves negligible and can by no means facilitate any meaningful technological transformation within the agricultural sector of this peasant community. The rural infrastructure (i.e roads, schools, hospitals etc.) have remained the same if not worse off. The scheme is going through a financial crisis and consequently it has no funds to allocate for road construction, hospital and schools. Roads are only cleared during harvesting period. After harvest, they are badly damaged by the heavy trailers. They become impassable but are left in that appalling condition to be used by the community.

Thus, the scheme has failed to achieve its intended objective of transferring technology, improving the rural infrastructure and providing social amenities to the contracting rural community, as envisaged by the agribusiness company and the local planners.

Development scholars have time and again emphasised that, the technology transferred by agribusiness companies is inappropriate for the Third World situation. Most of agribusiness assisted industries in Africa are littered with disasters including technical and managerial problems, with vast underestimates of the costs involved.

This has been the case at the NSC. The kind of technology applied in constructing the factory by the French based multinational was absolutely inappropriate. Since inception the

scheme has been marred by technical bottlenecks and has never attained its intended crushing capacity of 2,000 TCD. The machine has never crushed cane for a period of one month consecutively without breaking down. As a result farmers have lost greatly since their cane remains unharvested for this reason. The late infertile, swampy or hilly land is also occupied by cane.

The fourth hypothesis that "The introduction of the sugar scheme in the smallholder community tends to have a negative effect on food production" was upheld to a large extent by our findings. Generally our data indicates that there is a drastic drop in the quantity of food produced and the number of food crops planted with the introduction of the sugar scheme. Previously, the outgrowers practised subsistence farming with a little or no surplus for sale. A variety of food crops were planted (such as maize, cassava, sorghum, finger-millet, groundnuts etc.), mainly for household consumption. Most of the households were almost self-sufficient in food.

Currently, the quantity of food produced by these households is much lower and therefore, inadequate for domestic consumption. Food crops compete for land and labour with the cane crop. Sugarcane has been favoured by the outgrowers because it pays more than food crops. Currently farmers are planting mainly staple food crops namely maize, beans and cassava. Most families regardless of their social status now purchase food crops to supplement their food production. As a result prices for food crops (especially maize) on the local market have doubled if not

trippled as compared to before the introduction of the sugar scheme.

Food production has been neglected by the outgrowers to some extent because sugarcane is a labour intensive crop. Farmers allocate less time on food crop production. The food crops now occupy the less infertile, swampy or hilly land as cane occupies the most of fertile arable land.

The NSC has no policy on how much land a farmer has to commit on sugarcane and how much should be left for food production. Thus, there are several cases where farmers plough most of the arable land leaving food production with less than an acre of land. The food problem has been exacerbated further by delays in harvesting and payments of the cane crop by the NSC. Most farmers hoped to obtain substantial amount of money from cane which could be eventually used to purchase even more nutritious food stuff for the family. Unfortunately farmers have been caught up in the prevailing NSC financial crisis, leaving them in a very pathetic situation. The little food crops planted are inadequate for domestic consumption and yet they have no income from cane to purchase additional food stuffs to bridge the food gap.

In view of the foregoing discussion, it is concluded that the introduction of sugarcane has negated the process of increased food production in the outgrower community, exposing the families to food shortage and therefore hunger.

What this general finding points to is that agribusiness

involvement in Africa is likely to destroy the traditional structures that existed before without offering a better alternative. Apart from failing to increase food productivity it is likely to change the eating habits of the peasants for the worst. Instead of agribusiness uplifting the living standards of the peasants it is enhancing poverty.

The last hypothesis, that: "There tends to be a correlation between the introduction of monetisation in the smallholder rural economy and the destabilisation of the traditional family life" was upheld to some extent by the data. There tended to be a correlation between misuse of money obtained from cane and strains in the family relationships.

Our findings revealed that a number of families experience marital problems due to misuse of money from cane particularly by husbands. According to the contract it is the registered farmer who receives the cane payments. Most of the contract holders were men and therefore they were the legal recipients of the money. In most families the decision making process was a preserve of the husband. It is the husbands who decide on how the money is spent. Infact in most cases women were not consulted. The men tended to spend substantial amount of money on leisure. Among the items spent on were beer, marrying second wives, buying clothes etc. Some men literally abandoned their wives and children and went to stay in urban centres or bars until all the income was spent.

This phenomenon created tension on homes where it happened

and in some cases it ended up in temporary separation. In homes where children's school fees was not paid, sour relationships developed between the parent and children. The conflict was much more evident between fathers and sons. There are cases where sons literally fought the fathers. The chiefs and their assistants reported having handled several cases of family disputes in the local barazas as a result of cane money expenditures.

Generally women and children were most affected, since they are the ones who put in much labour and yet benefited least from the venture. Traditionally men are seen as the heads of the household and therefore make key decisions in the family. They control the labour of their wives and children without questioning thus, sugarcane was defined as a male crop, with the man controlling the expenditure as the wife and children provided labour.

Nevertheless in households where money was spent well it helped to cement the relationships between wife and husband, parents and children.

RECOMMENDATIONS

Implications for Policy Makers

The findings in this study have exposed several shortcomings which need urgent attention by the government and the company management. The government needs to actively regulate the activities of the agribusiness assisted industries in the

country. If they have to succeed in achieving their intended objectives, it may seem to be unrealistic financially in relation to the crop. The farmer is currently overburdened by the production cost of the crop which he/she meets in totality. This factor has made contract farming in Kenya a very uneconomical and unattractive enterprise. Instead of increasing the income of the farmer, in most cases the production costs cut into the farmers personal incomes making accumulation very difficult indeed. The government needs to negotiate and agree with agribusiness companies before hand, on the need to share some of the production costs. (for example, weeding and transportation). Unless this is done, contract farming will remain unprofitable and of no economic value to the farmer. The farmer will always end up with negative returns after all the deductions are made.

The state equally needs to draw more appropriate policies that will ensure maximum profit on the part of the farmer. Currently the policies in force seem to be benefiting the agribusiness company, the government, and other middlemen (such as the transporters) while farmers get a raw deal. The pricing policy of the cane crop and the inputs that go into sugarcane production need to be reviewed. Furthermore, there is a need for a government subsidy on these inputs (i.e fertilizers, insecticides, pesticides etc.) to reduce the production cost of the crop which is currently beyond the farmers comprehension.

Transportation is another area that needs re-examination. Transportation is presently rated as the highest expensive item

met by the farmer. The transportation cost set up by the Kenya Sugar Authority seems to be unrealistic especially in relation to the prevailing market price of the cane crop per tonne.

transportation is charged per tonne according to the distance from the company. Farmers staying as far as 30 kilometres are deducted so heavily and this demoralises them especially large farmers. Transportation consumes almost half of the farmers' income and thus drives farmers into ending up with negative returns. The Kenya Sugar Authority should review this pricing because it seems to be profiting the contracted transporters, while exploiting the farmers who in actual sense should be the most rewarded.

This study set out to explore the viability of contract farming to the smallholder. This is because the Kenyan government is encouraging it on a large scale as a sure way of increasing productivity and uplifting the social standards of the rural populace. Our findings revealed that small farms are characterised by economies of scale. Small farmers planting less than four acres of cane have been greatly marginalised, and could be seen to be growing cane purely for subsistence and not as a capitalist enterprise. It seems as if the government has been assuming that all smallholders are benefiting from this enterprise regardless of the farm size. The objective of incorporating very small farmers in the contract should be reviewed. This is because there are those farmers with less acres of land who can not be advised to expand their acreage.

The planners should therefore, take up this challenge and rectify this project by inserting suitable incentives and taking a totally new look at outgrower enterprises and their appropriateness for small farmers, who are by no means a homogeneous category.

Food security is one area which the government nor the sugar scheme need not to comprise. The government must ensure that any agricultural enterprise introduced does not negate the process of food production; for such an occurrence will expose the country to hunger, forcing the same government to import food grains thus, loosing alot of foreign exchange. For any social development to occur we need a well fed and healthy population. It was observed in this study that food production has drastically dropped. Food shortage and hunger has become the order of the day among the contracted households. Some families are forced to chew sugarcane as part of their meals.

Presently, there is no policy at the NSC regulating how much land should be committed to cane and how much for food production. Farmers have been left to decide and they seem to allocate more land in favour of sugarcane. This has seriously affected food production. There are farmers who even spare less than an acre of land for food crops. The government and the company must come up with a clear policy on this very delicate issue. The company should be made to understand that they need to assist the farmers in boosting productivity. Since cane takes long to mature farmers wait for a long period to derive any

income from it. Hence, the company should be advised by the state to come up with a loan system of advancing inputs to farmers before hand which should be latter recovered from their earnings. The scheme should also allow farmers to raise short period leguminous crops in the sugarcane to ensure food sufficiency for the families.

The Nzoia Sugar Company contracted farmers have had their cane over-mature dry and rot in their shambas without harvesting as the company and the government looked on helplessly. For the NSC it is in the name of observing their contract terms which state that the crop will only be sold to the company.

Politicisation of the project came up clearly from our findings as one issue that contributed greatly to this unfortunate situation. It is unfortunate to realise that as cane dries and rots in the farms at the NSC outgrower zones neighbouring Mumias Sugar Company is operating under capacity due to less supply of cane. All in the name of politics.

The management must rise above petty political squabbles and make appropriate decisions for their mutual benefit. The flexibility of the contract must be allowed in such situations. If the scheme cannot harvest cane for one reason or another, then it should make arrangements to have the cane sold elsewhere. Farmers who depend entirely on the farm must not be left to suffer. For such a situation as the one existing at the NSC will kill the morale of our Kenyan farmers. A factor which can completely jeopardise our economy, which relies solely on

agriculture. The problems experienced at the NSC have been largely blamed on the French based multinational company which constructed the company and has been offering technical service. We realise that there are various MNC'S operating in the Third World some of which do not have any success record anywhere in the world. As a result, the industries they assist are littered with technical and management problems. The kind of technology the Five Coil Babcock Company used in constructing the NSC was very inappropriate. Hence, the company is marred with technical breakdowns for a long time it has failed to achieve its intended crashing capacity, forcing most of the outgrower cane to remain unharvested. The government was largely blamed for this disaster. The MNC needs to be censored and its track record evaluated before it is given a contract. The government bargainers must be professionally competent people able to judge the credibility of the contractor and the viability of the project to the local people. Those who bargained and signed the contract with the French Company on behalf of the Kenyan government lacked this professional input. For the problems at the NSC to be ameliorated, the government needs to waive the revenue the scheme pays to the government treasury for a reasonable period of time to enable the company to recover and stabilise financially. This will allow the company to accumulate money to pay its loans, staff and the

farmers. The Arkel international, currently rehabilitating the company must be closely supervised by the local professionals to completely clean up the mess left behind by the French company. The management of the company should be completely overhauled to get rid of the supposedly incompetent staff and deploy professionally competent and experienced staff to manage the company. A majority of the current management team it was alluded in this study were selected on tribal and political bias and some of them seriously lack the skill and knowledge to perform the duties under their areas of jurisdiction.

This study also endeavoured to find out some of the problems affecting the smallholder with the introduction of the scheme. One factor found out that is likely to undermine social stability and rural development stemming from contract farming is the gender imbalance. It was observed in this study that, stresses and strains in the family life have been occasioned by contract farming. It was stated that while women and children do the donkeys work in sugarcane farming, men end up pocketing the income and disappearing to the towns to spend it on prostitutes and beer, as the women (wives) and children go hungry and naked. Contract farming can do a major service to socio-stability and rural development in Kenya by changing this unfortunate and tragic trend, by dealing explicitly with gender issues. Perhaps instead of paying the officially registered contract holders who are usually men, a system should be found whereby the women who actually work on the farm are paid part of the earnings. Such a

system would ensure that women and children benefit directly from their work in the farms. This can go a long way in improving both the economic and political bargaining power of women.

Another factor detected was the lack of participatory process. Lack of participation on the part of the farmers in the production process was seen to be affecting productivity. Farmers have been dehumanized and demoralised in the process, forcing them to express their wish to quit the contract. The foreign companies as well as the local management do not seem to recognise the right of the farmers to participate in what affects them. It should be pointed out clearly that the producer welfare is not just the economic aspect but also the social and psychological aspect. This stereotype assumption must be done away with. The factories should actively involve outgrowers in the decision making process of what affects them for their mutual benefit. This is a sure way of increasing production and thus, achieving Kenya's objective of self-sufficiency in sugar.

Meaningful, sustainable rural development can only be brought about by a rural population that is economically able, socially coherent and politically free. A rural population which does not participate in the making of decisions affecting their economic and social lives cannot contribute much to rural development. Hence, if contract farming does not contribute not only to increasing the economic but also the socio-political bargaining power of rural communities, then it is of little value to these communities. This study concludes that contract farming

in Kenya is not doing this and therefore needs to be radically revamped.

Implications for the farmers

Farmers ignorance of what the contract agreement they signed with the NSC entail was noted in this study. They were bewildered to learn that the company had a clause protecting it from being sued by the farmers for failing to harvest their cane. They also realised too late that it was illegal to uproot the cane crop before the contract period expires or to sell cane to another factory. Therefore, the farmers in future should know that it is their right to be explained to fully by the contracting company, all the areas of the agreement that affects them before signing the forms. Instead of assuming that things will always go well like in any other neighbouring company. It was also pointed out that the outgrowers association of the NSC is very passive. The representatives are easily manipulated by the management and hence, they end up serving the interests of the company instead of the farmers. The outgrowers are challenged to come up with a strong outgrower association comprising of well informed farmers able to lobby and seriously bargain with the management on all matters affecting the outgrowers. The NSC management could not be indifferent to farmers as it is today, if they had a strong association.

Such an association can co-ordinate joint transportation system on harvest to reduce costs, ensure farmers representation at the weighbridge for proper recording of tonnage, ensure

proper ploughing, harrowing, harvesting and delivering of farm input to schedule. Find out a possible way of farmers owning tractors on a co-operative basis, to assist in sugarcane and crop production among others.

Implications for further research

Further research is recommended to establish the appropriateness of contract farming as strategy aimed at revitalizing agricultural productivity, increasing farmers incomes improving the rural infrastructure, and in general enhancing rural development in Kenya. So far, the existing contract farming projects appear to be more subsistence oriented rather than capitalistic ventures. Cash crop farming seems to have failed to integrate farmers in the market and therefore, facilitating capitalistic agrarian transition and is instead paving way to some form of proletarianization.

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3. THE RESEARCH QUESTIONNAIRE

Introduction

I am a student from the university of Nairobi. I am carrying out a study on outgrower farming at the Nzoia Sugar Company. I would very much appreciate if you would share your views on certain issues that I wish to explore and which are important for this study.

Thank you.

1. Name of outgrower

2. Sex: Male

Female

(put a tick where appropriate)

3. Age:

1. 2024

2. 2529

3. 3039

4. 4049

5. 5059

6. 60 +

4a. Marital status:

1. Single.....

2b. If you are married.....

3. Widowed.....

4. Divorced.....

5. Separated.....

4b. If married, how many wives do you have?

5. Level of education:

1. Never went to school.....

2. Primary/intermediate school.....

3. Secondary school (ordinary level).....

4. Secondary school (advanced level).....

5. Technical Training/Diploma.....

6. University.....

7. Others, specify.....

FARMING CHARACTERISTICS:

6. What do you do for a living apart from farming?

1. Unemployed

2. Self employed in petty businesses, (e.g traders in vegetables, paraffin, kiosk, casual labourer etc.)

3. Clerical personnel

4. Nursing personnel

5. Teacher

6. Medical personnel

7. Business man/woman

8. Others specify

7a. If you are a farmer how many acres of land do you own?

b. Are they all in one plot?

1. Yes.....

2. No.....

c. If No how many plots?.....

8. How many acres of land are under sugarcane?.....

9. What food and cash crops did you produce and market before the sugar scheme was established?.....

CROP	ACREAGE	QUANTITY	PRICE
------	---------	----------	-------

		MARKETED	
--	--	----------	--

cotton

coffee

sunflower

groundnuts

maize

cassava

finger millet

sorghum

potatoes

beans

vegetables

others (specify)

10. What food crops did you produce purely for subsistence purposes before the sugar scheme was established? _____

11. At present what cash and food crops, other than sugarcane do you produce? _____

12. How many acres of land were you previously using on food crops alone before the introduction of the sugar scheme? _____

13. How many acres of land do you spare for food crops now, with the establishment of the sugar scheme? _____

14. Would you describe yourself as primarily a food-grower or a cash-crop farmer before the establishment of the sugar scheme? _____

15a. Do you use any of the following farming inputs and services on your sugarcane production? _____

b. If yes, state the type, where obtained, price and whether you used cash or credit:

1. seeds: _____ Yes

_____ No

2. fertilizers: _____ Yes

_____ No

Name	Where obtained	Price	Cash/Credit
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

3. Machinery _____ Yes

_____ No

Name	Where obtained	price	Cash/Credit
------	----------------	-------	-------------

4. Insecticides/Pesticides Yes No

Name If yes Name, ID Where obtained Price cash/credit

1. Dieldrin 2. DDT 3. ...
4. ... 5. ...
6. ... 7. ...
8. ...

5. Extension services Yes No

Name of extension where obtained Price Cash/Credit

1. ... 2. ...
3. ... 4. ...
5. ...

16. Who weeds the sugarcane?

- 2. Nzoia Sugar Company
- 3. Self-hired labourers

17. If it is the family, how many of your family members are able to help you with your farm work?

- 1. Adults (including those who work for you)
- 2. Children (including those who work for you)
- Total

18. Who weeds the sugarcane?

- 1. Female members mostly
- 2. Male members mostly

Yes

19. Apart from family labour, do you hire any labour to weed the sugarcane?

1. Yes
2. No

20. If yes, in no. 19 above, how many times do you hire such labour before the crop is ready for harvesting?

1. Once
2. Twice
3. Three times
4. Four times
5. Five times

21. Approximately, how much money each time do you pay such casual labourers in one ratoon plant?

22. Are any relatives/co-operative family - mutual systems used to undertake this task to avoid cash expenditure?

23a. Does the company compensate you for this money you spend on production (weeding) costs?

1. Yes
2. No

b. If the answer in question 23a. is No where do you get money to pay for the hired labour?

24. Apart from the weeding costs what other costs do you incur, that are not compensated by the company? (for example pre-planting land, tilling, planting period, survey, harvesting time, mulching after harvest etc.)

INCOMES

25. Have you ever harvested your cane since you planted?

1. Yes

27. List 2. No sources of income for your household for just year in the table below.

26a. If yes how many times have you harvested since you started the contract? Amount/Ksh.

1. Once

Income 2. Twice

Income 3. Three times

4. N/A

26b. Which year did you plant your first sugarcane crop?

c. How many acres did you harvest in the past two years?

d. If you have never harvested for how many years has the cane stayed on your farm from the time you entered the contract?

1. Two years

Business 2. Three years

Family 3. Four years

Others 4. Five years

5. Six years +

27a. How many tonnes did you harvest the last time you harvested?

b. What was the price of sugarcane per tonne that year? Ksh.....ment of the Nanda Sugar Scheme?

28a. What was your total income (earnings) from the sugarcane sale? Ksh.....

b. What deductions were made from your total net return?

(Details for each item for the years you harvested?)

29. List the sources of income for your household for last year
 Butch in the table below.

Trade in livestock

SOURCES OF INCOME AMOUNT/KSH.

1. Income from sugarcane
2. Income from other crops
 - specify you still operating some of these business(es) now?
 - a. _____
 - b. If some were dropped state reasons why those business
 - c. activities were given up?
3. Employment
4. Livestock you started - including sugarcane has your income in
5. Businesses (specify)
6. Remittance from working children
7. Others

30a. What business(es) if any, did you have before the
 establishment of the Nzoia Sugar Scheme?

TYPE OF BUSINESS ESTIMATED MONTHLY INCOME

- Selling vegetables, paraffin, salt etc
- Shop keeping
- Bicycle repair

Hotel operation

Butchery operation (specify)

Trade in livestock (specify)

Carpentry (specify)

Masonry (specify)

Others (specify)

30b. Are you still operating some of these business(es) now?

c. If some were dropped state reasons why these business activities were given up?

d. Were any taken up after the scheme?

31. Since you started planting sugarcane has your income increased?

1. Yes

2. No

32. What have you done with your money?

33. Have you invested in viable income generating projects?

1. Yes

2. No

34a. If your answer in 33. above is Yes, which ones? (or several)

35. In whose name is the sugarcane plot registered?

1. Husband

2. Wife

3. Son

4. Other (specify)

36. Who receives sugarcane payments?

1. Husband

2. Wife

3. Other

37. How do you spend money obtained from the various cane harvests?

1. Improvement of housing

2. Savings in the bank

3. Cane maintenance

4. Development of other crops

5. Investments in commerce

6. purchases of livestock

7. Expenditure on food and clothing

8. Expenditure on education

9. Settlement of debts

10. Purchase of land

11. Purchase of vehicles

12. Purchase of farm machinery

13. Married another wife

14. Other miscellaneous expenses (tick one or several

If you tick any of the above) _____

38a. In what ways has the family benefitted from the sugarcane-farming?

b. Would you say that with the introduction of sugarcane you have taken better care of your children? (for example buying clothes, purchase of more nutritious food, paying school fees, medical care etc.)

39. Has the money earned from sugarcane caused any disputes within the family?(i.e either between wife and husband, son and father, or children and parents

1. Yes

2. No

40. If yes in 39 above explain

41a. Would you say the money earned from sugarcane has brought more solidarity and cohesion in the family?

b. For those who have never harvested what problems have you encountered in the family?

SERVICES TO FARMERS

42. Were the terms of your contract fully explained to you? and by who?

43a. Have you encountered any problems since joining the contract?

1. Yes

2. No

b. If yes in 42 above what are these problems?

44a. Are you satisfied with the services provided by the company?

1. Yes

2. No

b. What other services would you want them to deliver?

45a. Does the company deliver the services on time?

1. Yes

2. No

b. If No what is the company's explanation to the farmer?

46b. Does the company harvest your sugarcane?

1. On time: 1. Yes 2. No

2. Properly: 1. Yes 2. No

46b. If No Why (for each one)?

c. For those who have never harvested what has been the company's explanation?

47a. Is it possible to sell your crop to any other sugar scheme?

1. Yes

2. No

b. Does the scheme always buy your crop?

If No why?

48a. Do you intend to expand your sugarcane acreage?

1. Yes

2. No

b. If No explain

49a. Do you intend to continue producing sugarcane under contract farming?

1. Yes

2. No

b. If No explain

c. What alternative mode of organisation (production) would you suggest?

50a. How far is your sugarcane farm from Nzoia Sugar Scheme?

_____kms

51a. Who pays for the transport costs

1. Company

2. Farmer

b. If it is the farmer are the deductions made by the company?

1. Fair

2. Heavily charged

3. Very heavily charged

51c. Are all your costs of production covered / met by the company?

d. Enumerate what you pay for and what the company pays for?

52. Since the scheme started operating in this area have

1. Roads

CASE STUDY QUESTIONS

1. How many of the _____ of _____ are _____
to _____ and _____ THE _____ COMPANY is
_____ in the Republic of _____

2. Hospitals

3. Schools improved or have they in fact worsened?

(in other words is more taken out than put in?)

53a. Has the presence of the sugar scheme helped you to improve farming methods in producing other crops? (for example improved farming methods in raising maize, sorghum, cassava, etc.)

b. Do you use any tractors, fertilizers and pesticides in producing your other food crops other than sugarcane?

c. What farming mechanisms do you use in raising food crops?.....(for example hoe, ox-plough tractors etc.?)

d. What farming methods do you use in raising the food crops?

- 1. Mixed-cropping
- 2. Mono-cropping
- 3. Shifting-cultivation
- 4. Crop-rotation
- 5. Other (specify)

CANE FARMING CONTRACT

This AGREEMENT is made _____ day of _____ one thousand nine hundred and _____ BETWEEN the NZOIA SUGAR COMPANY a Company incorporated in the Republic of Kenya and having its registered office at Chalicha in the said Republic (hereinafter called 'the Miller') of the one part and Mr/Mrs/Miss _____ ID/NO. _____ the registered owner of plot No. _____ in location _____ and S.I. location _____ of _____ District in the Western Province of the Republic of Kenya (hereinafter called the farmer) of the other part.

WHEREAS:

1. The Miller owns and operates a Sugar Mill at Chalicha aforesaid and is desirous of purchasing sugarcane for the purpose of extracting and manufacturing therefrom sugar of commercial standard.

The farmer wishes to produce sugarcane on his said land and to sell the same to the Miller.

NOW IT IS HEREBY AGREED as follows:-

2. The term of this agreement shall commence on the date thereof and shall unless sooner determined under the provisions of clauses 2, 3, or 4 hereof continue until the farmer has harvested one plant and two ratoon crops PROVIDED that by mutual consent the said term be extended to include the harvesting of one more ratoon crops or by such period as may be agreed or without modifications of the terms and conditions hereof by a memorandum of extension endorsed hereon not less than three months before.

The date of the anticipated commencement of _____ of what would otherwise have been the last ratoon crop under this contract.

3. Should either party commit a breach of this agreement and fail to remedy such breach within thirty days after receipt of notice in writing to that effect from the other party, the party serving such notice may, by further notice terminate this Agreement as from the date of completion of delivery of cane from the next ensuring harvest.
4. Should the farmer decide to discontinue the production of cane, he may terminate this Agreement by giving the Miller three years notice of this intention to do so. PROVIDED however that such notice shall only be effective if the farmer shall within such period of notice repay in full all loans received by him from the Miller and/or Nzoia Outgrowers Company Ltd. (hereinafter called 'NSC').
5. Any termination of this Agreement shall be without prejudice to all rights accrued and obligations incurred, to or either part prior to the date of termination and shall not prejudice any claim for damage for breach of contract.
6. If in the opinion of the Miller there shall be any doubt whether any money due to the Miller or to NSC will be recoverable from the proceeds of the farmer's next harvest the miller may immediately and without notice suspend the supply of goods and services hereunder until it is satisfied that it will be possible to deduct the price of such goods and services from such proceeds.
7. Should at any time legal conditions be imposed by the Government of Kenya which are inconsistent with the terms of this Agreement then such terms shall be modified in such manner as the parties may agree or failing such Agreement in such manner as shall be recommended by an expert to be appointed in the same way as an arbitrator may be appointed under Clause 9 hereof.

8. Neither party shall be responsible to the other party for failure to fulfill the terms of this Agreement if such failure shall be caused directly or indirectly by fire or explosion at the said sugar mill, flood, earthquake, tempest, war, civil, commotion, riot, arson, sabotage shortage of labour, strike, lockout, or other industrial dispute, breakdown or damage to plant, machinery or transport equipment, shortage of supplied, fuel power, shipping or railways services, inability to effect delivery of sugarcane produced or to transport cane because of road conditions or other circumstances.

PROVIDED always that the circumstances occasioning such failure shall not be within the reasonable control of the party in default.

9. All questions or differences which shall at any time hereafter rise between the parties hereto touching or as to any other matter in any way arising out of or connected with the subject competent arbitrator to be nominated by agreement by the President for the time being of the Law Society of Kenya and such arbitrators by the Arbitration thereof for the time being in force.

10. The Farmer shall -

- a. Cultivate an area of _____ hectares of sugarcane on his land in accordance with the terms hereof and for the purpose clear such area for planting within three months after the date hereof.
- b. Offer for harvest and transport by the Miller and such cane as is delivered from his registered cane plot and no other.
- c. Plant his field of cane without delay as soon as he has received the seedcane at his field or as near to field as access permits.
- d) Not sell to the Miller through a middleman, not dispose of his cane or any interest therein to any other parties without the written permission of the miller, such permission to specify the tonnage of cane which may be sold, the date on which the sale may take place and the destination of the cane.

- e. Be responsible for the preparation of his said land and for the planting of cane, the application of fertilizers and other material in accordance with the recommendation of the miller and the removal of the weeds or other crops from the cane area.

PROVIDED that if the milling so requires the farmer shall allow all or any such work to be carried out at his cost the miller and its agents or employees working in conjunction with the farmer.

- f. Not plant, cultivate, harvest or deliver to the miller any variety of cane other than those specified in the hereto.
- g. Either attend himself or send an authorised representative to the buying point to witness the condition of the cane at the time of delivery and to obtain a ticket showing the net of cane delivered.
- h. Permit the miller or its agents or employees to harvest the farmer's cane and prepared all such cane for loading and transport and to load and transport such cane from within the said field to the sugar factory in a manner and at the time to be determined by the miller and to deduct the cost of all these operations from the payment for the said cane PROVIDED that in conducting these operations the miller will be responsible for ensuring that the cane is cut close to the ground and that cane taken to facilitate delivery of the farmer's cane, quota to the miller in accordance with the terms of this Agreement.
- i. (a) To inspect the land and the cane growing thereon
(b) To sample the cane
(c) To gain access to other farmers land, including such constructions of access tracks as may be required for the transport of cane produced by the farmer or other farmers and to do anything required to be done by either party in terms hereof.

PROVIDED that, should the farmer fail to be facilitated the harvesting of his cane at the appointment time the Miller shall be permitted to cut any portion of such cane as may be required to provide access to other farmers' plots and in such cane the Miller will not be liable for any loss or damage suffered by the FARMER PROVIDED also that in exercise of these rights the Miller shall take all researchable care to minimize loss, damage or inconveniences to the farmer.

- j. Maintain his cane cultivation in a manner which will enable a satisfactory yield to be achieved, and, to this end, will
- (i) each month over a period of seven months in the case of ratoon cane remove all weeds or other crop plant from the cane area.
 - (ii) apply at recommended time and in the recommended amount all fertilizers and/or other materials recommended by the miller for application.
 - (iii) undertake the planting and gapping of his cane area at the times recommended by the miller in order to ensure a high plant population, and
 - (vi) apply all services and goods which he may have obtained from the miller for the benefit of his sugarcane crop solely for that purpose and no other.
 - (v) undertake smut and strange control according to the Miller's recommendations.

PROVIDED that if the Miller so requires the farmer shall allow all or any such work to be carried out at his cost by the Miller and its agents or employees working in conjunction with the farmer.

- k. Within seven days of receipt of a written notification from the miller that such operations are necessary to achieve a satisfactory yield of cane, allow unimpended access to the Miller and his equipment for the purpose of carrying out any or all operations which the farmer has failed to carry out or, in the opinion of the Miller, is likely to fail to carry out PROVIDED that, such notification shall have either been handed to the farmer or his representative and acknowledged, or shall have been posted to the farmer or by registered mail.

- l. Bear all direct and indirect costs of the work goods and services supplied by the miller under this Agreement and (unless the same are paid) earlier allow such costs to be deducted from payment for cane supplied by the farmer.
- m. Permit all moneys due from the farmer to the Miller (including the cost of harvesting preparation for loading, unloading and transporting) to be deducted from the proceeds of cane supplied by the farmer to the Miller.
- n. Be responsible for maintaining suitable permanent boundary markers and cleared fire-breaks for his cane plot.
- o. Be liable to pay the cost of any damages suffered by other farmers as a result of failure to comply with the terms hereof.
- p. Take precautions against cane fire according to the advices of the Miller or his representatives.
- q. Not assign his land or any interest therein or any of his rights or obligations under this Agreement without the written consent of the Miller.

The Miller shall:-

- a. In each harvest period purchase from the farmer sugarcane in the quantities and at the dates specified by the Miller, such cane to be made available by the farmer in accordance with the terms hereof.
- b. Within the limits imposed by the condition of the roads, provide and operate an efficient system of transport (as to which the miller shall be the sole judge) from the field to the said mill PROVIDED that, in the event that access to the Farmer's field with the transport equipment is economically impracticable (as to which the miller shall be the sole judge) the transport of cane and cutting thereof will not be the responsibility of the Miller.

- c. Cause the farmers' cane to be weighed on arrival at buying point, allow the farmer or his representative to check the weight, maintain in duplicate a written or printed record of the weight of each load of cane delivered and give to the farmer or his representative on the day of delivery one copy of such record.
- d. Become the owner of the cane it has issued to the farmer a certificate of its weight as delivered to the buying station.
- e. Have sole and absolute charge of all matters directly or indirectly associate with the operation of the transport system and the transloading and weighing facilities at the buying points and with the operation.
- f. Have absolute charge and control of all equipment, machinery, staff and labour concerned with operations on the farmer's land PROVIDED that the miller shall exercise due care to ensure that the operational costs to be charged to the farmer shall be kept at a reasonable level as to which the Miller shall be the sole judge.
- g. Be entitled in the event that the Farmer does not prepare plant and maintain his land and cane in accordance with Clause 10 to carry out all and any such operations on the Farmer's land which the Miller shall consider necessary to ensure that the Farmer's quota of cane is of satisfactory quality will be delivered on the due date which case the Miller shall further be entitled to deduct the cost of these operations from the payment to be made for the Farmer's cane.
- h. Charge interest on any credit that may be allowed by the Miller to the Farmer (such credit only to be allowed in exceptional circumstances) at such rate as may from time to time be notified by the Miller and be entitled to deduct such interest from the payment due to the Farmer in respect of the first cane harvested from the Farmer's land subsequent to the grant of the credit.

- i. Not be bound by this contract to purchase from the Farmer any cane which:
 - (a) has been burnt
 - (b) is found by sampling to have a first expressed juice with an apparent purity below 80%
 - (c) has been harvested by other than the Miller or his agent
 - (d) is not of variety listed in the schedule hereto
 - (e) has not been made available to the Miller on the appointment date.

- j. Be entitled to return to the farmer at the farmer's expenses, any cane rejected at the buying station under the Clause 11 (i) above.

- k. It agrees to accept burnt cane
 - (i) the time when it would have been due for harvest under Clause 10 (h)
 - (ii) Be entitled to deduct a penalty of six shillings per ton from the payment from such cane.
 - (iii) Operate its factory for sufficient period in each year to enable all contracted farmers to supply their cane under the terms of their contracts.

- l. PROVIDED that the Miller may suspend Factory operations at its discretion when it considers it advisable to do so because of weather conditions or because it requires to carry out maintenance replacement or repair its machinery and equipment.

- m. Notify contracted farmers through the provincial administration of its intention two weeks before starting routine milling operations and one week before routine stopping.

- n. Pay to the farmer within thirty (30) days of its delivery at a buying station the value of the Farmer's cane at the designated price. From such payment the Miller shall be entitled to deduct all costs and charges billed to the farmer by the miller in all respect of land preparation and cultivation services, transport and any other services provided to the farmer by the Miller or its agents or employees under the terms of this Agreement together with any interest payable under the terms of this Agreement.

0. Be entitled to charge the farmer for all work, goods and services supplied to the farmer by the Miller in accordance with the Millers' Schedule of charges from time to time in force (the schedule in force at the date hereto being annexed to this Agreement).

PROVIDED that

- i) The said charges shall at all times be calculated on the basis of the actual or estimated average cost for the time being of providing the respective work, goods and services to all contracted farmers.
- ii) The Miller shall maintain such records as are necessary to show anybody authorised that the charges from time to time in force are calculated as provided in (i) above.
- iii) The Miller shall notify all charges to the farmer at least 7 days before they are due to take effect.

THE SCHEDULE HEREIN BEFORE REFERRED TO

List of sugarcane varieties which may be grown by the farmer for sale to the Miller:

Cc - 421
CCc - 407
NCo - 376

AS WITNESS WHEREOF the Miller and the farmer or their authorised representatives have hereon to set their hands and seals the day and year first above written.

SIGNED BY

for and on behalf of
NZOIA SUGAR COMPANY LIMITED
in the presence of:-

SIGNED BY

for and
the said
in the presence of the Assistant
Chief of the Sub-Location
mentioned on the first page of
this contract

MEMORANDUM

1. The hectares shown in Clause 10 sub-clause (a) of this contract subject to correction following final survey of land actually cultivated.
2. The farmer hereby appoints Mr/Mrs/Miss _____ as agent on any occasion when the Farmer is away from his cane plot. Such agent may commit the Farmer in respect of operations carried out by the Miller on his behalf.