The Interface Between Farm and Non-Farm Activities Among the Mumias Sugar cane Growers

A Chapter for a proposed book on Micro-enterprises in East Africa

To be published by
Institute for Development Studies,
Nairobi University
In collaboration with
Centre for Development Research, Copenhagen

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A report of a project sponsored by ENRECA programme through a collaborative research project between the Institute for Development Studies (IDS), University of Nairobi and the Centre for Development Research (CDR) Copenhagen.

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[1] The authors wish to thank IDS/CDR most sincerely for the grant which made it possible to conduct the research upon which this report is based.

IDS Working Paper Number 524

I. Introduction and Overview

A major objective of development planning in Kenya is to promote growth, especially within the rural areas. Central to such growth is the promotion of an improved balance between rural and urban development. The primary aim of this strategy is to facilitate the development of an urban system that supports the growth of agriculture and the development of rural areas, and that generates productive employment opportunities in non-farm activities for rural workers close to where they already live (Republic of Kenya, 1986)

This strategy rests upon four objectives: (a) reduction of excessive concentration of population in Kenya's largest cities; (b) promotion of vigorous growth of secondary towns and smaller urban settlements through the development of agriculture; (c) fostering productive linkages between agriculture and other sectors of the economy, between rural areas and local service centres, market towns, gateway towns, and secondary cities; and (d) bringing renewed economic growth to all regions of the country.

In order to achieve these objectives, the Kenya Government has tried to do the following: (1) concentrate scarce resources in selected small towns, also referred to as Rural Trading and Production Centres (RTPCs) with a view to encouraging their development; (2) strengthen local authorities to enable them to provide competent administration and

management of growing rural areas; (3) promote the growth of productive non-farm employment opportunities in rural centres, primarily in small scale manufacturing and commercial activities (small scale enterprises - SSEs), the bulk of which were expected to be in the informal sector (Republic of Kenya, 1986).

The cornerstone of the envisaged rural development regardless of which strategy used focuses upon a productive agriculture and livestock economy that provides growing incomes and employment for rural families. Growth in agriculture also creates the potential for new industries and services in small cities and towns of the rural areas. This implies the need for the growth of very small-scale manufacturing, commerce and other services in the rural areas, expected to supply the bulk of rural, off-farm employment needed because of the rapidly expanding population.

Small scale enterprises also fulfil key functions in support of agriculture and other local production by marketing inputs such as fertilizer, making and selling small tools, vehicle and equipment maintenance, marketing produce and providing local inhabitants with a wide range of affordable basic consumer goods and services needed routinely.

II. Conceptual and Analytical Framework

This brief survey suggests that future development of rural areas will partly depend upon identifying productive relations between agriculture and small scale enterprises, and planning for their mutual and reciprocal development. This is a departure from the conventional approach of developing rural areas which focuses upon a single sectoral perspective (especially agriculture).

The integrated approach to developing rural areas implied here is supported by evidence from recent studies which point out the existence of reciprocal relations between agriculture and other sectors in the rural economy (Mellor, 1976; Ngau, 1989; Wegulo, 1993). Mellor (1976) argued that unlike traditional agriculture which uses few capital goods, modern agriculture purchases large volumes of inputs and capital goods from other sectors. According to the rural-led strategy of economic growth that Mellor advocates, the expansion of modern agriculture creates three types of growth linkages; (1) backward linkages caused by increased demand for intermediate or capital goods; (2) forward linkages caused by increased supply of agricultural products for agro-processing industry; and (3) consumption linkages generated by the expenditure of increased income from marketed output. Taken together, backward and forward linkages are referred to as **production linkages** (Mellor, 1976).

At the same time, recent research points to structural changes taking place within the rural sector. Bryceson and Jarnel (1997) refer to this process as 'de-agrarianization' defined as a process of economic activity re-orientation, occupational adjustment and spatial re-alignment of human settlement away from agrarian patterns. The following are some of the manifestations of this process: a diminishing degree of rural household food and basic needs self-sufficiency, a decline in agricultural labour effort relative to non-agricultural labour in the total national labour expenditure, a decrease in agricultural output per capita in the national economy relative to non-agricultural output and a shrinking proportion of population residing in rural areas (Bryceson and Jamal, 1997).

These changes result from a combination of factors including: high rate of rapid population growth which in many cases has led to land scarcity; economic crisis of the past decade and a half, and the consequent structural adjustment programmes - these have caused a major reduction in urban-based employment opportunities; the current education system in many developing countries which has served to raise expectations among its recipients that the agrarian sector cannot meet. Moreover, within the rural communities themselves, there are fundamental changes taking place, which have influenced the demand for non-agricultural activities (Bryceson and Jamal, 1997).

These ideas offer some guidelines for evaluating the changes taking place within the agricultural sector and the important role SSEs need to play within this context. These views are, however, weak in assessing the reciprocal relations needed for sustained rural development. This perspective is elaborated below.

Rather than adopt a sectoral perspective, an approach used by many researchers on the subject of SSEs, this paper advocates for an examination of the reciprocal and symbiotic relationships between SSEs and the farming sectors, because the two sectors are closely intertwined with resources flowing in both directions, as the paper shows subsequently.

The Rural-Urban Dynamics (RUD) model offers a basis upon which the various components and their relationships between farm and non-farm activities can be assessed. Initial systematic analysis of agriculture and other activities benefitted from the concept of Integrated Development and Planning (IRD). Although somewhat outdated, IRD laid a foundation for systematic thinking and planning of different sectors. The (RUD) model, one of the latest conceptualization of rural development draws inspiration from the concept of IRD.

The RUD approach focuses upon the symbiosis that exists between rural areas and settlements, and it concentrates upon the transactions that occur within a complex of agricultural enterprises, rural households, town enterprises, and town households (Karaska, n.d.). The

RUD model (Figure 1) states that a region's economy can be divided into three components: the marketing system, the agricultural production system, and the consumption system. The marketing system is comprised of patterns describing flows of agricultural produce from rural, farm enterprises to points or settlements where transactions occur between producers and traders.

However, for the agricultural system to produce excess products, it is essential that it continually adapts new technologies. These in turn, require a great deal of variety of tools, ingredients, capital, and services. The settlement centre (market) is the site of firms or establishments that stock these goods and provides the needed services.

The third set of transactions is the consumption structure in which households associated with the enterprise and businesses purchase consumer goods and services. According to the model, these flows begin with the enterprises and businesses transferring their net revenues to household incomes. The latter are then spent in the town businesses which sell consumer goods and services. The consumption expenditure "loop" continues as those town firms gain revenues, which are also transferred to town household incomes.

The total flows for the regions' economy amount to an aggregation of these independent flows, with "net" regional income

being the difference between regional revenues earned from the exporting of local production less the costs of regionally imported goods and services. At the same time, the regional economy generates even more revenues from the internal buying and selling of goods and services as these initiate a chain of incomes for households. The various transactions are shown in Figure 1.

The RUD model has been used in this study since it offers the most appropriate approach to determining the direction and magnitude of resource flow from the farm (in form of sugar cane income and labour), to the small scale enterprise in the market centre or town and vice versa. In this case, the model has served to test the general hypothesis that agriculture can provide a lead in the development process.

III. Rationale and Justification of the study

This study is concerned mainly with determining the income earned among a sample of sugar cane farmers and how the money is spent. Of particular importance is the assessment of the extent to which the income earned facilitates establishment and or expansion of small scale enterprises within the Mumias area of Kakamega District.

A number of reasons underscore the importance of examining income derived from sugar cane cultivation. First, sugar cane cultivation

was introduced into the Mumias area by the Kenya government with a view to injecting money income, and thus helping to transform the local economy. This process was conceived to be in the best interest of the local people as well as the rural economy which hitherto was predominantly subsistence production-oriented (Hazlewood, 1979). It is, therefore, necessary to determine the extent to which sugar cane farming has helped to monetize the local economy, and thus serve the stated objective.

Second, sugar cane growing has been taken up by a large and growing number of farmers, implying that a large proportion of land is taken up for the cultivation of this crop. It is, therefore, important to understand the contribution sugar cane earned income is making in terms of facilitating a number of development objectives within the study area. This study therefore seeks to determine the distribution and expenditure pattern of sugar cane derived income.

Third, the Mumias sugar-cane scheme has been rated as one of the most successful agri-business project not only in Kenya, but in East Africa as a whole. The project has achieved substantial success in the context of rural development (cf. Walter, 1991), as well as national development. Mumias Sugar Company (MSC) supplies more than half of Kenya's sugar requirements, thus, saving the Treasury much needed foreign exchange; MSC is also an important source of revenue to the government exchequer in form of excise duty, income tax, and

dividends. Other benefits include; training of personnel, employment of workers, and provision of infrastructure for the employees at the factory, and in the agricultural department (Walters, 1991; Williams, 1985; Barbara and Hines, 1984). The question, however, is in what ways do these benefits reach out to the local people, and to what extent have they changed their lives? In addition therefore, this study aims to assess the extent to which income from sugar cane cultivation has helped in setting up and/or expanding SSEs within the local area, as well as assessing the employment and incomes arising from these enterprises.

Fourth, there are claims that MSC has pumped substantial sums of cash money into the local area, with the sums increasing each year as the company increases the area under outgrower cane cultivation. Once again, it is essential that this income is disaggregated to facilitate an accurate assessment of which benefits accrue directly or indirectly to the local people. For instance, it is useful to know how much of the income is spent on: investment, social expenditure, consumption and how much is saved for future development.

Few studies have been conducted with these kind of objectives in the Mumias area. Barclay (1977) whose study was a pioneer in this context indicated that a number of farmers were making off-farm investments with money earned from sugar cane sales, notably in the purchase or construction of small shops, matatus, *posho* mills (maize milling machines), etc. Lack of current and detailed information on the

extent and magnitude of farm and non-farm linkages preclude any firm generalization as to the impact of sugar cane derived income in facilitating small-scale enterprise development in the Mumias area. Currently, there is a general lack of data on the extent and magnitude of farm/non-farm linkages arising from cane farming.

This study can therefore be rationalized on several grounds: (a) contribution towards theoretical understanding of the role of agriculture in rural and national development, (b) empirical verification of this importance, (c) guiding policy on similar investments elsewhere in the country.

IV. Study Area and Research Methodology

The study focused on three administrative divisions within Kakamega District, namely: Butere, Mumias and Navakholo (Figure 2). These three divisions form an important part of the outgrower scheme of Mumias Sugar Company.

IV.1 Conceptualization of the Data

Three broad categories of data formed the basis of this study: (a) incomes earned from the cultivation of sugar cane; (b) the extent and magnitude of expenditure distribution of the said incomes on social and investment items, as well as the initial (and expansion) capital for various SSEs; (c) the existing relationships in terms of services and

resource transfer and sharing between SSEs in market centres and sugar cane farming sector.

IV.2 Sampling Procedures: Sugar cane Farmers

Both non-probability and probability sampling procedures were used as a basis for collecting the required data. In the former case, specific categories of people, among them, community leaders, farmers, business people, officers from relevant government departments, Mumias Sugar Company and Mumias Outgrower Company, school teachers, were purposively selected to provide ethnographic data and focus group interviews.

On the other hand, probability sampling procedures were used to collect quantifiable data, e.g. incomes, and their expenditure patterns. Respondents were selected from two sugar cane growing zones: (a) the eastern zone - covering Bunyala and East Wanga administrative locations; and (b) the southern zone - focusing mainly on Imanga within Butere Division.

For each of the two zones, a list of all sugar cane growing farmers was obtained, and for each zone, the farmers were stratified by land size under sugar cane cultivation. The following categories were used: (i) 0.5-1.5ha.; (ii) 1.6-2.5ha.; (iii) 2.6-5.0ha.; and (iv) 5.1ha and above. From each category, a list of farmers was drawn from which every fifth was selected for interview. A total of 177 farmers

(representing 5 percent of the population) were sampled for the interview (Table 1). It was interesting to note that for a farmer to enter a contract with MOCO to grow sugarcane, he/she must own land, irrespective of who works the land. In Mumias area land is mainly owned by men, who also tend to be household heads. In cases where one dies, the wife or son of the deceased takes up the responsibility of ownership. This in effect explains why majority of sample farmers were men other than women.

Table 1: Sampling Distribution of Farmers by Land Size (in Ha)

Land size group	No. of Farmers		
	Total (N)	Sampled (n)	%
0.5-1.5	1920	96 (5%)	54.2
1.6-2.5	780	39 (5%)	22.0
2.6-5.0	500	25 (5%)	14.1
5.1+	340	17 (5%)	9.6
Total	3540	177 (n= 5%)	100.0

Source: Computed from Survey Data

IV.3 Sampling Procedures: Business Entrepreneurs in Selected Market Centres in Mumias Sugar Cane Growing Areas.

Survey on SSEs was based on the following market centres: Malaha, Shianda, Nambacha, and Navakholo; these were purposively selected. For each market, a list of currently operating businesses was established based on the following categories: trade, manufacturing, artisan and service. Using simple random sampling procedures, proportionate samples were randomly drawn to represent each business activity. Table 2 shows the sample distribution of activities by market centre.

Table 2: Distribution of Business Activities by Market Centre

Market Centre Type of Activity

	Trade		Artisan		Manufac.		Service		Others		Total	
	N	n	N	n	N	n	N	n	N	n	N	n
Shianda	54	6	8	2	3	1	12	4	0	0	77	13
Malaha	45	11	15	5	6	1	14	7	1	1	81	25
Nambacha	19	10	6	1	5	2	16	6	2	2	48	21
Navakholo	12	2	4	0	5	1	8	2	0	0	29	5
Total	130	29*	33	8	19	5	50	19	3	3	235	64

Source: Survey Data, 1997

N = Total no. of businesses
n = Sample size
* Of these 3 were wholesalers and 26 retailers

Of the total sample of activities covered in the survey, trade accounted for 45 percent, services 30 percent; craft 12 percent, manufacturing 8 percent, and others 5 percent.

IV.4 Data Collection

Data was obtained from both primary and secondary sources. Primary data was collected through the administration of a standard questionnaire, also used as a recording schedule. Supplementary data was derived from secondary sources, including: (a) Annual Reports of MSC and MOCO; b) Annual Reports of the Ministries of Agriculture; and Commerce and Industry; (c) Theses and dissertations.

V: Results and Discussion

V.1 Structure of the Economy in the Mumias Area:

The study has demonstrated that agriculture plays an important role in the economy of the Mumias area, and in particular it is an important source of income and employment. As shown in Table 3, farming was a principal occupation for 91 percent of the respondents. Only a small number of respondents combined farming with other activities.

At the district level, 465,959 (94%) of the labour force was employed in agriculture in 1993. This number was forecast to increase to 505,940 by the end of 1996 implying an annual increase rate of 2.8%. The majority of labour force work in the small farm sector (Kakamega District Development Plan, 1994-96).

Besides agriculture, SSEs (also referred to as non-farm activities) are far less important although on the increase. The latter are located in the market centres and at the households in small kiosks and other retail outlets.

Table 3: Main Occupation of Sample Respondents in Mumias Area of Kakamega District

Main occupation	No. of respondents	Percentage
Farming	161	91.1
Employee: Govt.	11	6.1
Employee: private sector	3	1.7
Self-employed	2	1.1
N=	177	100.0

Source: Computed from Survey Data, 1997.

V.2 Land Ownership and Participation in Sugar Cane Cultivation

Land is the most important resource for the majority of the population within the study area. Nonetheless, there is a significant variation in land ownership among the sample respondents (Table 1). The size ranges from 0.2ha. to 33 ha., with a mean of 1.9 ha. and a mode of 1.00 ha. These figures are consistent with average hectares per family

which range between 0.8 ha. to 1.9 ha. for the three divisions of Butere, Khwisero and Mumias. In the locations in Navakholo division, however, the average hectares of land per family ranges between 2.5 ha.and 5 ha. (Kakamega District Development Plan, 1994-96).

In addition to total land owned, 27 respondents leased land whose cultivation enabled them to increase their farm output. This ranged in size from 0.4 ha. to 3 ha. The sample of 177 respondents together owned a total of 716 ha. of land, However, only 88 percent of the total was farmed. Table 1 further shows land ownership broken down by land size category. From the table it can be concluded that the study area is characterised by relatively small units of land.

Apart from maize and beans, which are both cash and food crops, accounting for 23% of the total area cultivated land in Kakamega District, sugarcane is also an important cash crop, particularly in Mumias area. Out of the 30 percent of the total land under cash crops, sugar cane cultivation accounts for 15 percent (Kakamega District Development Plan, 1994-96). Moreover, of the total land owned by sample respondents, 53 percent was under sugar cane cultivation. It is noteworthy that out of the entire sample, all except one farmer grew sugar cane on contract with MOCO.

Besides sugar cane cultivation, farmers also grow other crops, notably maize and beans, as well as raising livestock. However, interviews with key informants, revealed that the scale and magnitude

of non-sugar cane cultivation had continued to decline whilst that of sugar cane has tended to expand.

V.3 Farm Income and Expenditure Patterns

Given its predominant status as a cash crop, it is hardly surprising that sugar cane generates the highest income in the study area. In the twelve months preceding this study, a sample of 177 farmers together earned a net total of Kshs. 35,398,482 from all farming activities including livestock rearing. Income from sugar cane made up Kshs. 28,452,015 (79% of the net), while livestock and other crops fetched Kshs. 7,294,126 (21%).

Farmers' earnings from sugar cane cultivation in the year preceding the survey was spent on a variety of goods and services as follows: (a) investment (59.6%); (b) social (12.7%); (c) consumption (19.0%); and (d) savings (19.0%) (Table 4 and Figure 3).

Table 4: Expenditure Distribution of Sugar Cane Income (in Kshs)

Expenditure	Amount	Percentage
I. **Investment Expenditure**		
Business premises construction (n=15)	1,500,361	5.3
Purchase of business stock (n=18)	528,164	1.9
Purchase of matatu/lorry (n=5)	3,732,105	13.1
School fees (n=158)	7,360,457	26.0
Purchase of maize mill (n=3)	598,722	2.1
Business start-up capital (n=5)	137,889	0.5
Servicing business machinery (n=12)	898,440	3.2
Purchase of animals (n= 26)	554,179	2.0
Purchase of shamba/plot (n=5)	588,699	2.1
Leasing sugarcane (n=8)	263,993	0.9
Butchery (n=1)	7,000	0.02
Agricultural Investment (non-cane)(n=5)	264,571	0.9
Loan Repayment (n=12)	452,270	1.6
Sub-Total	20,293,267	59.6
II. **Social Expenditure**		
Construction/repair of residential housing (n=82)	1,246,349	4.4
Leisure (n=4)	52,176	.2
Lending to friends/relatives (n=2)	30,000	.1
Debt repayments (n=2)	225,131	.8
Borehole construction (n=1)	7,000	.02
Others* (n=38)	2,036,14	7.2
Sub-Total	3,596,800	12.7
III. **Consumer Expenditure**		
Household food (n=150)	4,075,102	14.3
Household durable (n=99)	1,039,720	3.6
Medicines/medical treatment (n=13)	309,696	1.0
Sub-Total	5,424,518	19.0
IV. **Savings**		
Unaccounted for/savings (n=53)	2,543,848	9.0
TOTAL EXPENDITURE	28,452,015	100.0

Source: Computed from Survey Data, 1997.

* *Includes funeral expenses, dowry, and income shared out among household members.*

Expenditure on Investment

Within the investment category, most money expenditure went to: school fees (26%), purchase of business machinery including *matatu*/lorry - (13.1%), construction of business premises - (5.3%), and servicing of business machinery including *matatu*/lorry - (5.3%). Together these four accounted for nearly a half of the total income earned - (47.6%). This shows clearly that a significant amount of money earned from sugar cane is devoted to investment purposes. Even if a distinction is made between short-and long-term investment, a classification which would restrict education to the latter category, it can still be seen that a substantial amount of money (38%) is put aside for investment.

Given the perennial scarcity of capital especially in rural areas of developing countries (cf. Aleke- Dondo, 1995), the magnitude of the money invested into various SSEs is by general standards fairly high. A recent study by Obulinji (1996) on a similar subject in Lunza (part of Mumias Sugar cane Scheme) found that approximately 32 percent and 68 percent of the income earned from sugar cane cultivation was spent on investment and social expenditures, respectively. This is further confirmation of the importance of sugar cane in the economy of the study area.

Expenditure on consumption

The next important expenditure category is consumption. A significant proportion of money income goes to purchasing food and consumer durables (household equipment and tools). These two items accounted for 14.8 and 3.6 percent of the total income, respectively. The relatively high expenditure on food signifies a major shortfall in local foodstuffs production. This region relies more on food supplies (mainly maize and beans) from the food surplus areas of Lugari and Turbo located about 70 kilometers to the north. The deficit in food production has, however, given rise to lucrative business of transporting and selling maize and beans in market centres within the sugar cane belt. This has greatly added to the variety of SSEs in the study area.

Social Expenditure

In this study, social expenditure is conceptualized as money spent on social items or capital which do not yield immediate monetary returns or benefits to the farmer. The results show two items as predominating the social expenditure category - construction and repair of residential housing (accounting for 4.4%), and expenses on funerals, dowry, and other household incidentals (7.2%). Information from interviews with key informants indicates that standards of rural housing have remarkably improved as a result of the revenue earned from sugar cane. Moreover, observations made in the course of the research confirm

that a large number of sugar cane growers live in corrugated iron-roofed houses, albeit mostly made of mud walls. It was further learnt from interviews with key informants that most such constructions and or repair take place immediately after payments for sugar cane harvested. It is important to note that the materials used in the construction and repair are bought mainly within the local area; the *fundis* (artisans), are also local. This provides more opportunity to spread the benefits from sugar cane farming to a wider cross section of society.

Expenditure on dowry is small, but still an indication that some farmers spent part of their earnings paying for marriage expenses. Dowry together with expenses on funerals of relatives and friends plus other household incidentals accounts for the 7.2 percent of the earnings received.

These expenditure items may be regarded as constituting social capital, especially so dowry, funeral expenses, and money lent to relatives. An extra wife and her off-springs for instance provide a source of much needed farm labour, especially in a cash crop producing area such as Mumias. Also, providing financial help to relatives and friends provides a basis for expecting help in future, and in establishing social networks of reprocity and mutual assistance.

Savings

Besides the expenditure items elaborated above, part of the money earned from sugar cane harvest (9 percent of the earnings) was at the time of the survey still in their savings bank accounts (farmers draw from their individual sugar cane farmers' accounts at regular intervals and must maintain a certain minimum balance). Interviews with officials of MOCO indicated that it is obligatory for all sugar cane farmers to maintain a bank account. Moreover, all the farmers are also enrolled as members of the MOCO Savings and Cooperative Society to which they deposit a certain percentage of their net earnings after every harvest. This shows that sugar cane farming has facilitated savings and capital accumulation.

From the above findings, it may be concluded that the income earned from sugar cane cultivation has helped to increase the money circulation within the Mumias area. The chapter has shown that the income is spread over a relatively large number of expenditure items, an indication of the importance of the income in the local economy. Interviews with key informants confirmed that establishment of Mumias Sugar Cane Factory has led to a steady growth in the money supply in the area.

Second, it is evident that a reasonable proportion of the total net sugar cane income has been used as start up capital for new businesses as well as support to on-going business concerns. However,

as shown in Table 4 and Figure 3, more money is spent on promoting on-going concerns in comparison to the total expenditure on new businesses. A possible explanation for this could be that a large number of SSEs were already underway at the time of conducting this survey. Indeed, information collected from SSEs confirms that a large number of these enterprises began operation more than five years ago.

This study was also concerned with investigating into the factors that help to explain why some sugar cane farmers invest their earnings in SSEs while others do not. This is an important issue, answers to which could help establish a wider framework necessary in inculcating entrepreneurship among small scale farmers. Three leads were pursued in an attempt to unravel these questions, namely: educational attainment; land ownership (farm income), and income from the farm as well as other sources.

In this context, survey data suggests that those with investment in SSEs, tend to have higher levels of educational attainment (have completed a mean of 8 years at school) on average than the group that has not invested into SSEs. Table 5 shows the details. In an assessment of social background of SSEs operators, Ng'ethe, Wahome and Ndua (1989) reached similar conclusions, noting that the entrants into the rural informal sector are essentially primary school leavers. But it is also evident that a good number had secondary school education (twelve having completed 19 years). This underscores the important role

education plays, for instance in creating awareness as to what opportunities exist. Also, with the structural problems being experienced within the economy, employment oppurtunities within the formal sector are fast diminishing. Small scale enterprises are therefore in the focus as potential sources of employment even for those with formal schooling.

Further, it is observed that those with investments in SSEs tend to have more land per capita (mean of 4.29ha.) than those with no investments (mean of 2.9ha.). The distribution pattern for each land ownership group (Table 6) provides more detail. Generally, farmers owning larger sizes of land tend to be involved in running one type or another of SSEs. This observation seems to contradict earlier views which suggest that non-farm activities are pre-dominated by those with little or landless (e.g. Chuta and Liedholm, 1979).

Table 5: Educational Attainment Among a Sample of Sugar Cane Farmers in Mumias Area

No. of school yrs completed	Farmers invest. in SSEs	Farmers not invest. in SSEs	Total
0	2 (18)	9 (82)	11
1-4	3 (05)	57 (95)	60
5-8	8 (16)	42 (84)	50
9-12	12 (27)	33 (73)	45
14+	2 (18)	9 (82)	11
	27 (15)	150 (85)	n= 177

Source: Computed from Survey Data, 1997.

Chi Square Result: 9.21, df = 4 and significant at 0.10

Additional insights further show that 20 of the farmers who have established SSEs, grow sugar cane on contract with Mumias Sugar Company. Most importantly, these farmers also participate in growing other crops (or raising cattle) from which they derive substantial incomes. This category of sugar cane farmers get an average net income of Kshs. 160,746 per ha. The lowest being Kshs. 12,843.00 and the highest Kshs. 3,405,954.

Table 6: Land Ownership Among a Sample of Sugar Cane Farmers in Mumias Area of Kakamega District

Land size (ha)	Farmers with SSEs	Farmers without SSEs
0.5 - 1.5	7	896
1.6 - 2.5	5	34
2.6 - 5.0	6	19
5.1+	9	8
	n = 27	n= 150

Source: Computed from Survey Data, 1997.
Chi Square Result: 21.08; df=3 and significant at 0.01

As for income from other crops/farm products, it is noted that the lowest is Kshs. 9,452 while the highest is Kshs. 58,252. The average revenue in this category is Kshs. 27,464.

The data, therefore, suggests that most farmers who invest in SSEs are enterprising (have diversified sources of farm income), have more years of schooling, own relatively more land per capita especially under sugar cane, and consequently earn relatively higher incomes. However, it is possible that other factors such as; family size, remittances, and farmers' business acumen may also contribute towards influencing the farmer's decision to invest into small scale enterprise development.

Lastly, it is worth recalling that of the Kshs. 52,452,645 earned as gross income by sample farmers, MOCO deducted Kshs. 24,756,626 (47%) for various services rendered to the contracted sugar cane farmers. These include: (a) transportation (25%); fertilizer (8%); harvesting (5%) of gross income. Ploughing, harrowing, furrowing and seed cane in total accounted for 9 percent of the total gross income. It should be noted that the amount deducted for the first two items is equivalent to the net spent on investment and social expenditures!

This suggests that with coordination and organization, sugar cane farmers could render to their own benefit and that of the local economy, a number of services. The case of transportation stands out very clear. This sub-sector is run predominantly by the Asian

community, and it could be argued that the money paid out to these transporters is largely spent outside the Mumias area to the disadvantage of the local economy. Other services such as land preparation, could, with proper coordination, also be offered by the farmers themselves with a significant proportion of the net benefits retained within the local area.

Moreover, the system used by the company to buy and distribute fertilizers to the farmers also represents loss of business to the local traders. In spite of the economies of scale associated with the bulk purchase of fertilizers, the benefits arising are hardly passed on to the farmer. On the contrary, the fertilizer is sold to the farmer at the reigning market price inclusive of interest charged as from the time the commodity was distributed to the farmer. Leaving the purchase and distribution of fertilizer to market forces could therefore, greatly expand the trading base of business people, including allowing local transporters an opportunity to increase their income levels. This could expand the variety and volume of SSEs within the Mumias area.

V.4 Further Indicators of the Nexus between The Farm Sector and Small Scale Enterprises

Besides examining relations between the farm sector and SSEs, the study also assessed the relations between the two sectors in the

reverse order (i.e. SSEs and farm sector). Table 7 presents the profile of the SSEs in the study area.

Table 7: Sectoral Distribution of SSEs Owned by a Sample of Farmers and Business People in Mumias Area

Type of SSEs	SSEs owned by Farmers	SSEs owned by a sample business people
Trade		
Retail	6	23
Wholesale	-	3
Hardware	1	-
Fish mongers	1	-
Butchery	1	1
Bookshop	-	1
Music Store	-	1
Craft/Artisan		
carpentry workshop	1	3
welding workshop	1	3
Tailoring/knitting	2	2
Manufacture		
Maize milling	2	5
Service		
Hotel/bar	3	10
Rental houses	1	-
Bicycle repair	1	3
medical clinic	2	2
Transport	5	-
Photo studio	-	2
Radio repair	-	2
Others		
Tractor ploughing	1	-
Sale of petroleum products	-	3
Total	27	64

Source: Compiled from Survey Data, 1997.

It is observed (Table 7) that businesses offering services

account for the larger share of SSEs, followed by trade. Craft and manufacturing enterprises are few in number. A further notable feature associated with the businesses run by farmers is the higher number of enterprises in the transport, bar/hotel, and maize milling sub-sectors. It will be recalled that these two sub-sectors also accounted for a significant proportion of farmers' net income expenditure (Table 4).

Five indicators were used to assess these relations: (a) the amount and source of start-up capital for the various enterprises; (b) additional funding sought by the various entrepreneurs; (c) incomes generated in SSEs and their expenditure pattern; (d) employment generated in the various SSEs, and (e) market for SSEs goods and services.

Table 8: Source and Amount of Start-up Capital (in kshs) for a Sample of SSEs in Mumias Area

Source	Amount	Percentage
Farming- sugarcane	2,812,850	56.8
- other crops	113,400	2.3
- animals/dairy	40,080	0.8
Salary savings/retire benefits	1,313,030	27.0
Bank (incl.coop.) loan	418,200	8.4
Friends and relatives	128,650	2.6
Government loan	85,000	1.7
Profit, ongoing businesses	18,500	0.4
Other unspecified sources	23,900	0.5
Total	4,953,610	100.0

n = 91

Source: Computed from Survey Data, 1997.

Concerning start-up capital, the data shows that entrepreneurs rely on a wide range of sources as no single source is sufficient to meet demand for this purpose. Out of the eight potential sources indicated by the entrepreneurs interviewed, the most important are: (a) income from sugar cane (57%); (b) savings from salary and retirement benefits (26.5%); and (c) bank/cooperative loans (8.44%). Together, these accounted for Kshs. 4,330,740 (92%) of the total money used to start various businesses. It is observed, however, that farming was the most important source, accounting for nearly 60 percent of the total amount of money raised to start SSEs.

Incomes and Employment Generation Within SSEs

The issue of incomes and employment within SSEs continues to be of central interest in rural development in Kenya. Recently, Kenya Enterprise Programme (K-REP) conducted a study specifically to assess the contribution of micro and small enterprises towards income and employment (Daniels, Mead and Musinga, 1995). In this study, these two issues were also investigated with the aim of determining the incomes and employment effects associated with SSEs which have been started or expanded with incomes derived from sugar cane income.

Incomes

Table 9 shows the distribution of net monthly incomes generated by sample SSEs in the study area. On average the SSEs generated income of about kshs. 30,000, but there is a large variation in the distribution. For a half the SSEs, it is below kshs. 10,000 with the lowest income ranging between 500-1000, while 5 percent of the enterprises generated more than kshs 80,000.

Table 9: Distribution of Net Monthly Income (Ksh) From SSEs in the Survey Area

Income Categories	Frequencies	%	Cumulative %
1. 500 - 1,000	1	1.1	1.1
2. 1,001 - 5,000	22	24.1	25.2
3. 5,001 - 10,000	25	27.5	52.7
4. 10,001 - 15,000	10	11.0	63.7
5. 15,001 - 20,000	6	6.6	70.3
6. 20,001 - 40,000	8	8.8	79.1
7 40,001 - 80,000	10	11.0	91.1
8. 80,001 - 120,000	4	4.4	95.5
9. 120,001 - 180,000	2	2.2	96.7
10. 180,000 +	3	3.3	100.0
	n = 91	100.00	100.0

Average Income = Kshs. 30,000

Source: Survey Data, 1997.

Expenditure Pattern of Income Earned in SSEs

According to the survey data, a total of Kshs. 2,781,178 was generated from 91 SSEs on a monthly basis (Figure 4). Of the net income generated from SSEs, Kshs. 1,705,551 (61%) and Kshs. 1,075,544 (39%) was spent on investment and social expenditure, respectively. A detailed distribution of the net income on various expenditure items is shown in Table 10 and Figure 4.

Further observations indicate that 23 percent of the income was spent on household food. This is slightly higher in comparison to the income spent on household food by sugar cane farmers. However, given that operators of SSEs are also farmers, the evidence is further confirmation of the shortfall of food crops production within the local area. Further, 17 percent of the income earned in SSEs was spent on purchasing farm inputs such as fertilizers, labour etc.

Another interesting observation is that Kshs. 695, 295 (25%), was re-invested back into the SSEs, while another Kshs. 55, 624 (2%) was used to start up new businesses. This implies that the bulk of the capital used to start new business as well as expanding on-going concerns probably comes from other sources such as farming, and formal employment (see Table 8). More research is needed to pin point the actual sources and their respective magnitudes.

Table 10: Expenditure Distribution of Income Earned in SSEs

Expenditure		Amount (Kshs)	%
I.	Investment expenditure		
	Farming (n=63)	472,800.30	17.0
	School fees (n=71)	472,800.30	17.0
	Re-investment into business (n=58)	695,294.50	25.0
	Investment in new business (n=4)	55,623.50	2.0
	Sub-total	1,705,551.20	61.0
II.	Consumption Expenditure		
	Household food (n=86)	639,671.00	23.0
	Medical (n=52)	139,058.00	5.0
	Leisure (n=16)	55,623.50	2.0
	Others* (n=32)	250,306.00	9.0
	Sub-total	1,075,543.50	39.0
	Total expenditure	2,781,177.00	100.0

n=91

- Source: Compiled from Survey Data, 1997.

* includes funeral expenses, dowry and savings.

Employment

On employment, the data shows that SSEs in the Mumias area have some potential for creating jobs. Moreover, further evidence shows that employment in this sector is growing steadily. However, this growth is related more to horizontal expansion than to vertical growth of existing SSEs. On average, the majority of the enterprises employed only 3 workers including the owner. More than 10 percent of the enterprises did not have any additional employees at the start of the businesses except the business proprietors/owners. Currently, the number of enterprises run by the business proprietors themselves have dropped to 6 (Table 11).

Table 11: Employment Generated in a Sample of SSEs in Mumias Area

Category (At start)	Workers (Current)	Freq.	Workers	Freq.
1	10	10	6	6
2	42	46	70	35
3	69	23	93	31
4	40	10	32	8
5	0	0	30	6
6	0	0	6	1
7	0	0	14	2
8	1	0	0	0
9	0	1	0	0
10	0	0	10	1
14	0	0	14	1
41	0	0	41	1
Total	211	91	316	91

Source: Survey Data,1997.

Notes: Figures in brackets refer to no. of employees in each employment category. Growth rate in employment was worked out as 50 %, with family labour constituting 37% of current number of workers. Of these males made up 24% while females made up only 13 %

At the time of the study, out of the total number of current employees (316), only 117 (37%) were family members. Of these, 28 were females and 53 were males, This suggests that contrary to some literature on the structure of employment among SSEs in developing countries, family labour is relatively not an important feature. This further shows that SSEs are a potential source of new employment. These results are consistent with findings from a broader study focusing upon employment and incomes in micro and small enterprises in Kenya by Daniels, Mead and Musinga (1995).

Summary

This study has established that agriculture, and especially sugarcane farming plays an important role in the rural development process within the Mumias area. Evidence suggests that it is an important source of capital used in starting up and or expanding SSEs in the Mumias area. Moreover, the survival and growth of SSEs is dependent upon the farming population who supply the market for goods and services produced by the SSEs.

Second, evidence shows that most of the SSEs are of the retail trade type. Manufacturing and service sub-sectors play an insignificant role since they are little developed. This may be the result of limited craft and artisanal skills as well as start-up capital, essential pre-requisites in setting up manufacturing enterprises.

The study has, however, demonstrated that the SSEs so far established in the Mumias area are an important source of income, albeit highly varied across the sub-sectors. This underscores an earlier

observation that most of the SSEs in the study area are small in scale, operate on limited capital base and are characterised by low profit levels.

Moreover, the established SSEs offer employment opportunities to the local residents, although most employ only an average of 2 workers. However, SSEs, with higher start-up capital and therefore higher incomes returns, offer higher employment prospects.

Conclusions

In conclusion, this chapter underscores the importance of the relations between the agricultural and non-agricultural sectors in the development of rural areas. These relations need to be strengthened through broad-based programs that focus upon skills development, expansion of the rural sector capital base, infrastructure development, and establishment of producer and development cooperatives.

More specific efforts are, however, needed to broaden the scope of the agricultural-non-agricultural relations. These can and should target the two ends of these relations. With regard to SSEs, there is need to broaden their range within the study area. These could include targeting deserving entrepreneurs with special assistance such as credit, and training. The relevant government ministries and Non-governmental Organizations could spearhead these efforts whose overall objectives should be to encourage vertical integration rather than horizontal proliferation of SSEs. To be more meaningful, these efforts should be proceeded by quick appraisals of existing SSEs in which the local entrepreneurs themselves play an active role.

Lastly, this study looked at only one sociocultural factor

education, in so far as it influences entry and performance among entrepreneurs in a range of SSEs. Future studies that focus on development of rural areas will greatly benefit from detailed appraisal of a wide range of sociocultural factors - religion, ethnicity, etc.

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