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Delivery of Services to Smallholder Coffee Farmers and Impacts on Production Under Liberalization in Kenya

Hezron O. Nyangito DP/04/2000

THE KENYA INSTITUTE
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Productive Sector Division
Kenya Institute of Public Policy Research and Analysis

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Abstract

In a liberalized economy, provision of services in the agricultural sector, including financing of inputs, collection of produce, and processing and marketing of farmers' outputs, is a fundamental issue because it affects the efficiency of the entire agricultural sector. The current focus in liberalized policies is to replace a single vertically integrated system with a set of systems, each of which may be provided by a different enterprise. But liberalization of the delivery of services for the country's export crops may not necessarily lead to the establishment of competitive marketing and processing systems for small-scale producers since natural monopolies may emerge. Because of this, no alternative system may adequately replace the single channel in effectively providing services to farmers.

This paper presents results of a study on the provision of services to smallholder coffee farmers and the impact of liberalization on coffee production in Kenya. The study analysed data collected from farmers, primary institutions (factories, societies and unions) involved in delivery of services to farmers in Murang'a, Meru and Kisii Districts, and national-level organizations, namely, millers and the Coffee Board of Kenya. The aim is to promote understanding of the factors that have affected coffee production in Kenya, which declined by more than 50% in 1998 when compared to production in 1990.

Delivery of services to smallholder coffee farmers is dominated by co-operative societies for coffee pulping and the KPCU in coffee milling, while the CBK has the monopoly in coffee marketing and regulation of the industry. The costs of delivery of services to farmers by various institutions are generally high and take about 60% of the f.o.b. world market price, which greatly reduces payments made to farmers. At the farm level, coffee production has declined due to low levels of input use and neglect of the farms. This is attributed to non-availability of credit for purchasing inputs, high input prices, poor delivery of processing and marketing services, and low payments to farmers. Thus the poor incentive structure, which includes low output prices, poor delivery of services by various institutions and lack of credit for production, is a major factor in explaining the decline in coffee production in Kenya. Efforts are required to improve incentives for increasing payments to producers if this declining trend in coffee production is to be reversed.

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Abbreviations

ASK	Agricultural Society of Kenya
CBD	Coffee berry disease
CBK	Coffee Board of Kenya
CRF	Coffee Research Foundation
ICO	International Coffee Organisation
KCA	Kenya Coffee Auctions
KPCU	Kenya Planters Co-operative Union
NIE	New institutional economics
SCIP	Small Coffee Improvement Project
TCM	Thika Coffee Mills

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1 Introduction

Implementation of policy reforms, particularly deregulation of markets and divestiture of the government from productive activities in the agricultural sector, has become a subject of debate with respect to its effects on the development of the agricultural sector. Although substantial implementations of trade liberalization and institutional policy reforms in the agricultural sector have occurred since 1993, there have been mixed trends in agricultural production.

In the coffee industry, production declined from about 117,000 tonnes in 1989 to about 53,000 tonnes in 1998 (Figure 1). The worst decline occurred on smallholder farms, which account for over 50% of the country's total coffee production.

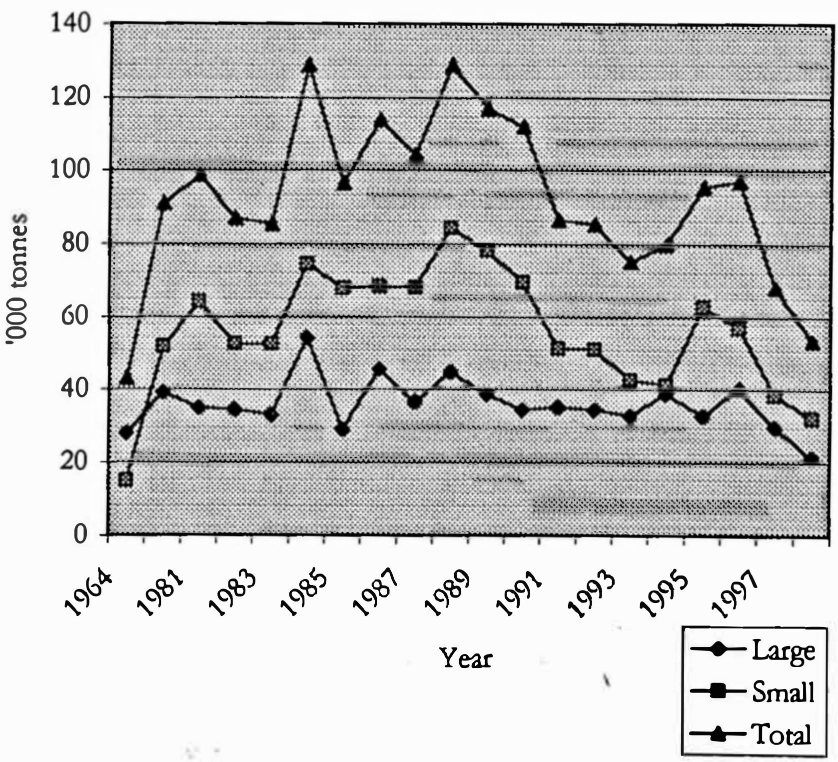

Figure 1. Coffee production in Kenya, 1964–1998

Yields on smallholder farms are about 2.5 times lower (400 kg per ha) than on estates, where yields are about 1,013 kg per ha. As a result of the decline in production, coffee's contribution to foreign exchange earnings, and as a source of income for farmers and employment for the majority of the population, has also declined.

Coffee now lags behind tea and horticulture in foreign exchange earnings. However, coffee remains one of the major export crops in the Kenyan economy and government policy is to increase its production. The main factors underlying the decline in production are associated with the incentive structure that is determined by producer and input prices and the delivery of production and marketing services to producers. The gross market price for coffee farmers has generally increased in nominal terms since 1993, except for a fall in 1996 (Figure 2).

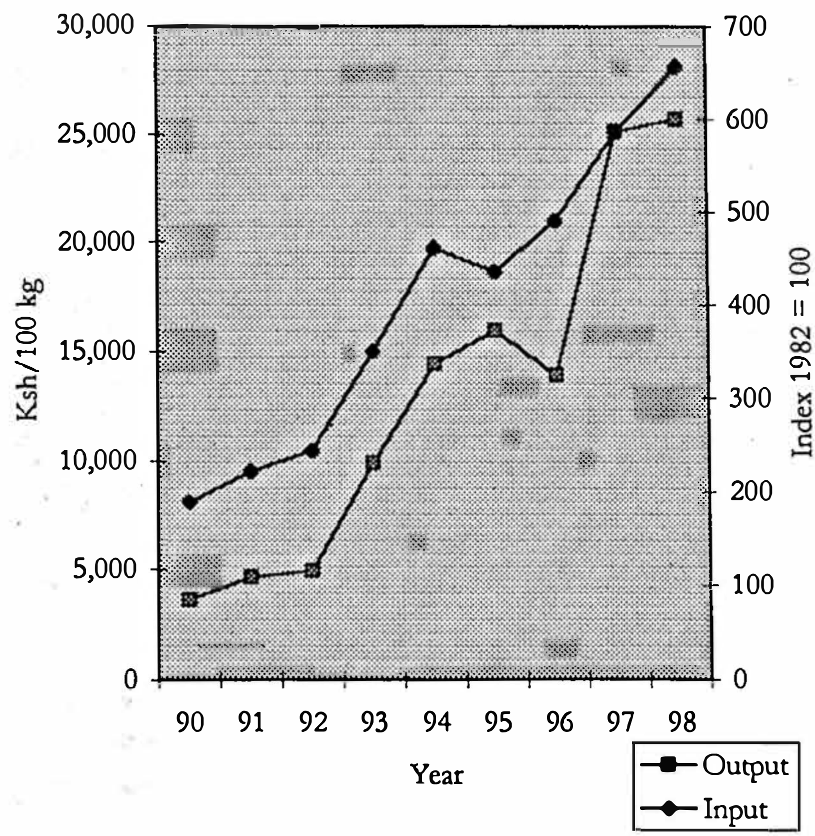

Figure 2. Trends in coffee prices and input price index

However, the production response shown in Figure 1 has been contrary to this price trend. This may be because world market prices are not adequately transmitted to producers. Figure 2 also indicates that input prices have generally risen since liberalization of input markets in 1993 and the removal of government subsidies that may have existed. This could mean that inputs have become more expensive and therefore that they are used less, leading to the observed decline in production.

Although output and input prices ultimately determine the profitability of producing coffee, the final payment (incentive) to farmers also depends on the costs of the production, processing and marketing services offered to them by various institutions. Thus, a major concern in liberalization of the coffee industry is how it has affected the delivery of these services to producers and consequently the impact on final payments that provide the incentive for coffee production.

1.1 The study problem

Provision of services in the agricultural sector in a liberalized economy is a fundamental policy issue because it affects the efficiency of delivery of all agricultural services, including financing inputs, collection of produce, and processing and marketing of outputs for the farmer. The current focus in liberalized policies is to replace a single vertically integrated system with a set of systems, each of which may be provided by a different enterprise. But liberalization of the delivery of services for the country's export crops may not necessarily lead to the establishment of competitive marketing and processing systems for small-scale producers since natural monopolies may emerge. Because of this, no alternative system may adequately replace the single channel in effectively providing services to farmers. This means that the policy framework for provision of services to coffee farmers could be one of the factors explaining the decline in coffee production in Kenya.

Thus, to understand the factors governing coffee production in Kenya, there is need to analyse the provision of services by different institutions under a liberalized market regime. The focus should be on answering questions such as:

- What types of institutions are involved in provision of services and what are their organizational structures?
- What role do the services play in agricultural production?
- How efficient are the institutions in the provision of services?
- What are the impacts of liberalizing the provision of services on farmers?

This study focuses on the smallholder coffee subsector. This subsector is dependent on many organizations for supply of production inputs, coffee processing and milling, unlike the estates subsector where individual companies are responsible for the delivery of these services to farmers. The most important services are provision of production inputs, extension, coffee pulping, storage, transportation, milling, marketing and payments to farmers. Before liberalization of the coffee sector, the Coffee Board of Kenya (CBK) had control over all the organizations involved in the delivery of these services, but this has changed. The CBK continues to be the regulator of the industry but it does not control the delivery of services to farmers except for marketing the coffee on the auction market and making payments to producers.

This study focused on analysing the nature of organizations involved in the delivery of services to smallholder coffee farmers, efficiency in the delivery of these services and the impact the services have had on smallholder coffee production. The major purpose was to examine how the efficiency of service delivery to producers affects the incentives (output and input prices, and other services) for coffee production. The ultimate aim is to indicate areas for policy intervention for improving efficiency in the delivery of the services and consequently incentives for increased coffee production.

This paper is divided into four sections. The first section outlines the problem under consideration and the regulatory framework for the coffee industry, and discusses the conceptual framework and methodology used. The second section presents an analysis of the institutions that provide services to smallholder coffee farmers. In section three the results of analysis of the impacts of liberalization on smallholder coffee production are presented. The conclusions are presented in section four.

1.2 Regulatory and policy framework for the coffee industry

Coffee growing, production and marketing are regulated by the Coffee Act (CAP 333). The Act gives regulations on coffee production, processing, milling, marketing and financing, and the organizations to be involved. Under the Act, the Coffee Board of Kenya (CBK) is empowered by parliament to regulate the coffee industry and to control production, marketing and export of coffee as well as all activities incidental to and connected with the industry. Thus, the CBK is also responsible for licensing and control of producers, processors and marketers of coffee, and relevant research.

Before liberalization of the sector in 1993, the Board included members from the plantations and co-operatives representing the interests of estate and small-scale farmers, respectively, and others from the Ministries of Agriculture and Co-operatives and the Treasury. The Minister for Agriculture appointed the members on advice from the growers (planters) in the case of their representation, and from the government for all the others. In general, the Act gave the Minister for Agriculture the powers to control the activities of the Board and therefore the coffee industry. However, the Minister was required to exert this control in consultation with the Coffee Board.

The Act defined coffee-growing zones and the varieties of coffee to be grown in the respective areas. In the case of small-scale growers, the license was usually given to a co-operative society following consultation with the Director of Agriculture. The licensing was aimed at ensuring the maintenance of good crop-husbandry practices that would lead to high-quality production. Licensing was also aimed at monitoring changes in the area under coffee and estimating overall coffee production in the country, particularly in view of the quota requirements of the International Coffee Organisation (ICO). Most importantly perhaps the Board could withdraw a planter's license on advice from the Director of Agriculture.

The Coffee Act also outlined regulations with respect to coffee processing at factory and society levels, and milling, marketing and export. Implementation of the requirements of the Act were undertaken by the farmers' organizations—the coffee factories, coffee processing societies and unions—and the Kenya Planters Co-operative Union (KPCU) for milling, but was overseen by the CBK. Coffee marketing and financing, however, were exclusively undertaken by the CBK.

Efforts to implement liberalized market policies in Kenya were first begun in 1986 after the realization that the government's control of all sectors of the economy, including the coffee subsector, constrained their development. The policy reforms were spelt out in the Government of Kenya's 1986 Sessional Paper No. 1 on *Economic Management for Renewed Growth*. This paper called for a reduction of government involvement in non-strategic sectors of the economy and promotion of the role of the private sector. However, reforms in the coffee sector were not actually undertaken until 1993. The reforms undertaken since then have been

- payments to farmers in US dollars and holding of foreign exchange retention accounts after removal of foreign exchange regulations
- liberalized processing, delivery to millers and milling
- new rules and regulations for coffee brokerage and auctioning, particularly in increasing the number of brokers and participants in the auction centre
- withdrawal of government controls on the CBK and exemption from the State Corporations Act.

The major change with implications for the delivery of services to farmers was CBK's exemption from the Corporations Act, which meant that the government lifted its controls over management of the CBK. Thus the CBK became a farmers' organization managed by farmers and with powers to regulate and control the coffee industry. However, modification of the Coffee Act to accommodate these changes adequately has yet to be carried out.

The only changes made to the legal framework for the regulation and control of the coffee sector were effected in 1999 by way of a special issue of the *Kenya Gazette Supplement No. 7* entitled *Legislative Supplement No. 6 on the Coffee (Authorized Marketing Agents) Rules.* These changes made by the Minister of Agriculture under the powers conferred on him by the Coffee Act focused on the rules governing coffee marketing. According to the *Gazette* notice, the powers given to the Coffee Board of Kenya to control the appointment of pulping factories, millers and marketing agents were revoked and planters were given powers to appoint their own pulping stations, millers and marketing agents. The agents were then registered with the CBK. Planters are, however, still prohibited from selling cherry or parchment coffee except through a central auction and an authorized marketing agent.

Under these new regulations, a co-operative society is considered an agent for the purposes of handling farmer's payments and issuing credit to growers and advances on parchment and cherry. A coffee co-operative society can appoint its own marketing and commission agents for the purposes of handling farmers' payments and providing management, merchandise and other related services. The co-operative societies are, however, restricted to one commission agent per crop year.

A coffee factory or coffee co-operative society can deliver its coffee to its chosen miller or authorized marketing agent provided the coffee samples are delivered to the Board for classification and the coffee is stored in a warehouse and offered for sale at the central auction. Factories are empowered to change their bylaws to provide for methods of payments (which may avoid pooling of proceeds at society level), milling and determination of where to mill coffee and when to auction it. Where viable, individual factories can be registered as co-operative societies but they must concentrate on the stated primary objectives.

In summary, these policy reforms and changes in the Coffee Act enacted through *Gazette Supplement No. 7* empower the CBK to act as a regulator of the coffee industry and as a marketing agent for all the coffee produced in Kenya. The rules allow for more players in the areas of coffee pulping, milling and marketing, but these must be licensed and registered by the Board. The CBK also has the powers to arbitrate disputes. Where the Board is involved, the Minister of Agriculture appoints a chairman of the arbitration panel committee, and one member in such a committee represents the Board.

The Minister of Agriculture is empowered to make changes in the regulation and control of the industry in consultation with the Board. However, it is apparent that in practice the Board has supreme powers over all players in the sector and this may be a source of conflict in the industry. Furthermore, the rules do not allow authorized marketing agents to sell coffee at the auction market but only to do so through brokers who are answerable to the CBK. This has also become a major source of wrangling between millers.

1.3 Conceptual framework

Analysis of agricultural markets/institutions has traditionally focused on measuring market performance. This is based on the industrial organizational 'structure, conduct, performance analysis model' which is a compromise between formal structures of neoclassical economic theory and empirical structures of organizational experience in imperfect markets (Harris 1993). In this model, market performance represents the economic results of structure and conduct, in particular the relationship between distributive margins and the costs of production of marketing services. The analysis is built on the concepts of market integration, competition and efficiency but it has a number of limitations. These include:[1]

[1] See discussion by Harris 1993, for example.

- The assumption that commodity markets are polar, that is, either perfectly competitive or monopolistic.
- Concentrating attention on concepts of competition diverts attention from structural interrelationships between production, exchange and consumption which are essential in an understanding of the role agricultural markets play in economic development.
- Conclusions from the studies are strongly anti-interventionist and pro-infrastructure focused following logically on the verdict that markets are competitive, but this ignores questions on the means and nature of policy implementation.

A recent approach to the study of institutions is the new institutional economics (NIE). Application of NIE concepts to smallholder agriculture in Africa has provided seminal breakthroughs in understanding how structural constraints operate to constrain market participation by smallholder farmers (Delgado 1998). In NIE the focus is on market co-ordination and control, exchange and transaction costs of institutions in a system such as that covering an agricultural commodity.

Most commodity system studies by agricultural economists and agribusiness specialists describe both horizontal and vertical structural elements (Jaffee and Morton 1995). The former relate to entry and competitive conditions prevailing at each industry stage (for instance processing and retailing), the latter to the location, timing or clustering of marketing functions, interstage differences in size, seasonality, the number of parallel marketing channels and incidence and form of contractual or ownership integration. Other institutional elements of the commodity-system environment are government programmes, which affect the commodity's production and marketing, and institutions such as banks, auctions, trade associations and insurance companies, which perform specific facilitative functions.

Market co-ordination and control

The central focus in commodity system analysis is the mechanisms for co-ordination and control. Co-ordination is a general problem of arranging interdependent activities which require linking the decisions and actions of different technical and ownership units and determining when collective or overlapping tasks are performed. A major challenge in agricultural marketing is vertical co-ordination. Vertical co-ordination is defined as the process of harmonizing the decisions and actions of input suppliers, farmers, processors and traders to match the supply and demand for raw materials and products at various value-adding stages. The process entails significant flows of information and other resources which define and shift incentives. The absence of effective vertical co-ordination is likely to result in resource misallocation, technical inefficiency and greater production and marketing risks.

An issue closely related to co-ordination is the control of the commodity system, namely, the ability to exercise influence over key variables in the environment of others. The main forms of control are vertical and horizontal. Vertical control deals with the right or ability to make strategic decisions that will influence the activities and welfare of participants at different stages in the commodity system. Horizontal co-ordination, on the other hand, is the ability to influence prices, incomes and other results in particular markets as a result of one's large market share and/or product differentiation. In general, co-ordination and control in agricultural commodity systems can be achieved through a wide range of institutional measures in the market, administrative or regulative areas.

The exchange process

The central focus in the exchange process is information. Exchange does not occur without collection, processing and transfer of information regarding preferences, products and transactor behaviour. It involves a two-way transfer of goods, services and money, as well as transfer of property rights associated with these assets. These are the rights to control the use, alteration or further transfer of assets. Transacting parties offer one another benefits, but these are conditional upon certain patterns of behaviour which the parties either explicitly agree to or they assume under the prevailing system of laws, norms and conventions. However, there are several problems that are associated with information, property rights and conflict between transacting parties. These include:

- costly acquisition and processing of information
- opportunistic behaviour due to uneven distribution of information
- risky transfer of assets due to incomplete property rights being accorded to individuals, and
- the lack of a mutually satisfying agreement between parties due to the lengthy and costly bargaining process resulting from conflict of interests.

These problems of information, property rights and conflicts of interest create direct barriers to mutually beneficial exchange and greatly increase the costs associated with trade. These lost opportunities and expenditures are generally referred to as transaction costs.

Transaction costs

In broad terms, transaction costs are defined as the full costs of carrying out exchange, presumably including marketing costs (Coase 1963 cited by Delgado 1998). They include intangibles such as search, monitoring and enforcement, and vary by product, type of agent in the marketing chain and individual agent within a category of agents. In an agricultural commodity system, transaction costs are the whole array of costs associated with buying, selling and transferring ownership of goods and services. They can be broadly grouped into search, screening, bargaining, transfer, monitoring, and enforcement costs (Jaffee and Morton 1995). The concept of transaction costs in exchange can further be broadened to include transaction costs in production since asymmetries in access to assets and information shape production as well as exchange patterns (Delgado 1998).

The competitive structure of the market determines the level of transaction costs in that fewer alternative buyers or sellers may lower screening costs while increasing bargaining and enforcement costs. Further, if there are relatively fewer alternative trading partners, one might expect

- less complete disclosure of interests to trade and disclosure of product information
- better opportunities for strategic bargaining, and
- more transaction-enforcement problems since threats to terminate trade and deal with competitors will be less credible.

In this study, the co-ordination and control of the coffee system is analysed by identifying the institutions involved in the production, processing and marketing activities. Each level of activity is described and analysed to determine the costs incurred in undertaking it. The focus on the exchange process is intended to lead to greater understanding of the rights involved in the control and transfer of coffee among various agents. The focus is on the benefits the transacting parties confer on one another based on the patterns of behaviour they explicitly agree to or assume under the prevailing system of laws, norms and conventions. The analysis of transaction costs focuses on identifying the main components of the costs of coffee production and marketing and how they affect the performance of the activities.

1.4 Methodology

The fieldwork for this study was carried out in 1998 and both secondary and primary data were collected. Most of the secondary data dealing with organizations were collected from documents published by the organizations involved in delivery of services to smallholder coffee farmers and other published and unpublished literature on the subject. Primary data were collected using a structured questionnaire administered to a number of farmers, who were selected randomly, and managers of coffee factories and societies which were also selected using a stratified sampling procedure. Discussions were also held with various individual farmers, leaders and employees of selected coffee factories, societies and unions.

Primary data on the activities of coffee farmers were collected from three districts, namely, Murang'a, Meru and Kisii. These districts were selected because they represent major, moderate and minor smallholder coffee producing regions in Kenya, respectively. Murang'a District represents the Mount Kenya coffee-growing region, which accounts for about 66% of total national production. Meru District represents the eastern region, accounting for about 22% of total national production, and Kisii District represents the western region producing about 12% of the total. Thus these districts were used to provide data for comparing the delivery of services across these three types of coffee-growing region.

A stratified sampling procedure was used to select societies, factories and farmers for interview. First, all the societies in each district were listed and a random sample of four selected from each of Murang'a and Meru Districts where there is an average of five factories per society. Seven societies were selected for Kisii because in that district there are fewer factories in each society. Indeed, some societies there consist of one factory. Secondly, three coffee factories belonging to a particular society were randomly selected from a list of all factories in that society for Murang'a and Meru Districts, while two factories were selected for Kisii District. Finally, at each factory four farmers were interviewed using a systematic sampling procedure. The sampling frame is shown in Table 1.

Table 1. Sampling frame for selection of coffee farmers for interview

District	Societies	Factories	Farmers
Murang'a	4	12	48
Meru	4	12	48
Kisii	7	14	56

The information collected covered farm size, area under coffee and number of trees, other farm enterprises, inputs and costs for coffee production, procedure for delivery of coffee to factories, constraints or problems experienced in delivery, processing and payment.

2 Institutions and organizations

The organizations serving smallholder farmers are governed by the Coffee Act which allows the CBK to control coffee pulping, milling and marketing. Beginning at the primary level, where farmers are served directly, these organizations are the coffee factories, societies, unions, millers and the CBK. The structure and management of these organizations and their functions and performance in service delivery to farmers are discussed in this section.

2.1 Coffee factories

Almost all the existing coffee factories serving the smallholder coffee sector belong to farmers' co-operative societies and therefore are collectively owned by the farmers. These farmers are licensed to grow coffee under the planters' license granted by the CBK to the respective co-operative society. When joining a factory, a farmer is given a membership number, which must be produced upon delivery of ripened fresh coffee berries (cherry) or dried coffee berries (*mbuni*). This number is used when processing each farmers' payments and in all transactions between the farmer and the factory. The factories are financed by co-operative societies using loans to be repaid later by factory members. A few private factories have emerged since the liberalization of coffee processing and milling, but in this paper we focus on the factories owned by farmer co-operative societies because there are still very few private factories involved in smallholder coffee processing in the country.

Factory affiliation and capacity

The factories differed in their installed capacity, a function of the total quantity of cherry produced in the respective catchment area. The largest factories were in Meru District, where mean annual factory capacity was 10,070 tonnes, while the smallest factories were in Kisii District with an average of 3,460 tonnes installed capacity. Factories in Murang'a District recorded the highest capacity utilization (estimated at 36.67%), thus being the most technically efficient, compared to Meru District at about 29%, and Kisii District at about 26%. Thus, all factories in the three districts were inefficient in capacity utilization (below 50% for the whole year as estimated for this study), but it must be recognized that capacity utilization is a function of the seasonality in coffee production. There are two coffee-harvesting periods that coincide with the rainy seasons. The main harvest, which constitutes about 60% of the total coffee crop, is in November–December following the short rains and the second season occurs in May–July following the long rainy season.

Factory management

A manager employed by the society manages each factory, assisted by an assistant manager. Other employees include a machine operator, clerk (cherry recorder), foreman, watchmen and permanently hired labourers. A major criterion for appointment as an employee of the factory is that one be a coffee grower or a family member of a coffee grower. Thus, almost all factory workers are either coffee farmers or the children of coffee farmers in that particular area. This requirement often takes precedence over technical or academic qualification. As a result, most factories employ managers who are poorly qualified. This has led to mismanagement and deterioration of factory facilities. Factory staff are paid by the society using deductions from member's proceeds from coffee. Supervision, bookkeeping and credit services (where they still exist) are provided to the factory by the parent society.

Factory services

The major services provided by factories are processing cherry coffee, drying the processed coffee, temporary storage of processed coffee and ***mbuni***, transportation to society stores for bulking before forwarding to the millers, and making payments to farmers. Farmers pay for these services through deductions from their coffee payments.

Coffee processing

The processing starts at the factory level. Once the factory receives coffee in cherry form (fresh fruits), the first stage is pulping, the process of removing the outer skin and pulp around the beans, which results in what is referred to as coffee parchment. The removal of the pulp is important if the fruit are not to ferment and ruin the beans' flavour. The resulting parchment is soaked in tanks for 2–3 days to remove the remainder of the pulp. The wet beans are then dried on open racks. The dried berry parchment is then stored in bulk and later delivered to millers for milling. The manner in which the pulping or wet processing is carried out greatly influences the quality of the resulting coffee beans. An alternative procedure to pulping is to dry the fruits in the sun, but this results in a much lower quality of bean when the coffee is finally milled.

Factory costs

The costs of services offered to farmers at factory level are divided into operational and fixed costs. Operational costs include fuel charges, casual-labour wages, salaries and allowances, and other expenses such as maintenance, and bank overdraft payments and interests. The fixed costs include depreciation on buildings, machinery and equipment, but due to unavailability of accurate data on fixed items only operational costs are discussed here. They are shown in the Appendix (Tables A1, A2 and A3).

The average costs for the period 1990/91–1996/97 are shown in Table 2. Operational expenses were highest in Murang'a District, followed by Meru and Kisii Districts, in that order.

The expenses were highest for factories which handle large volumes of coffee (Murang'a District). Diesel and other fuel costs were low and made up less than 1% of the operational expenses. Wages, salaries and allowances associated with labour varied from 2% to 18% of the total costs. These costs were relatively low because in most cases farmers offer free labour for operations such as drying and packing parchment and ***mbuni*** for delivery to millers.

Table 2. Mean operational expenses per factory for three districts

District	Diesel and other fuels (Ksh '000)		Wages, salaries and allowances (Ksh '000)		Factory maintenance and other costs (Ksh '000)		Total (Ksh '000)	
	No.	%	No.	%	No.	%	No.	%
Murang'a	21.7	0.1	367.9	2.3	15,597.6	97.6	1,5987.3	100
Meru	5.7	0.1	219.3	3.7	5,649.1	96.1	5,874.0	100
Kisii	10.3	0.2	894.8	18.3	3,998.1	81.5	4,903.2	100

The costs were also lower in the case of factories where societies catered for salaries and allowances, such as in Meru and Murang'a Districts. This low labour cost is the strongest point in favour of retention of the co-operatives' role in coffee processing.

In all areas, factory maintenance and other expenses were the highest category, ranging from 81.5% to about 97% of total costs. This category includes factory repairs for equipment, buildings and machinery, and interest on working capital and other loans, but the figures are not easy to verify as the category is also used to mask several unspecified expenses, including corrupt practices.

The volumes of coffee handled and efficiency of delivery of services by factories are major determinants of their overall operational costs (Table 3). The costs per kilogram of cherry by category of expenses are as follows: fuel, less than 10 cents; wages, salaries and allowances, 10–60 cents; and factory maintenance and other expenses, Ksh 6–11. The total costs per kilogram range from 18% to 50% and are lowest for factories which handle large coffee volumes.

Table 3. Relationships between coffee volumes, payment and operational expenses, 1996/97

Item	Murang'a	Meru	Kisii
Coffee output (kg)	5,528.5	2,897.0	1,636.2
Producer price (Ksh/kg)	35.25	33.40	22.10
Fuel costs (Ksh/kg)	0.07	0.01	0.04
Wages and salaries (Ksh/kg)	0.12	0.10	0.59
Maintenance, other costs (Ksh/kg)	6.36	8.03	10.55
Total expenses (Kshs/kg) (%)	6.55 (18.6)	8.14 (24.4)	11.18 (50.6)
Residual to farmers (Kshs/kg) (%)	27.70 (81.4)	25.26 (75.6)	10.92 (49.4)

The factories' payout to farmers as a proportion of what the factories receive from societies per kilogram of coffee ranges from 50% and 82%, the former in Kisii and the latter in Murang'a District. These figures are largely determined by charges for their services (coffee processing, repairs, interest charges, storage, bulking and transportation) and other overheads. The payout is also dependent on the price received in the auction market, which is determined by the quality of the processed coffee and demand for coffee on the world market. Thus, high deductions for factory costs and lower quality coffee result in lower payouts to producers, which in turn are a disincentive to coffee production.

2.2 Society activities

The societies carry out both physical and facilitative functions for all affiliated factories. These functions include

- bookkeeping and auditing factory records
- providing credit to members
- marketing (mainly coffee transportation) for members
- repair and maintenance of factories
- employment of factory staff.

All these services except credit provision and transport were provided by all the societies. Credit was not provided in Meru and Kisii Districts because of non-repayment by members and this had become a thorny issue. Transport was provided to members by those societies that owned trucks. This was rare, however, and most societies only helped to organize hired transport for delivery of coffee from the factories to millers.

Society ownership

Usually, coffee co-operative societies are formed by a group of factories, but in rare instances a society may consist of only one factory. Farmers own societies through their affiliated factories and each member has a voting right as stipulated in the Co-operative Societies Act. Each factory has a share in the ownership of all the society's assets and liabilities. The society is the channel by which affiliated members, through their factories, market parchment and *mbuni*. Kisii District had the highest number of coffee societies but these societies also had very few factories affiliated to them (an average of 4 factories per society). The average number of factories per society was highest in Meru District (10 factories per society) followed by Murang'a District with an average of 7 factories per society.

Management of societies

The societies are managed by a management committee comprising the chairman, an honorary secretary, treasurer and three committee members elected by members of the affiliated factories. The committee also includes a secretary manager who is a permanent employee of the society. In most cases the secretary managers are employed by the respective district union, except in the case of Kisii where they were employed and paid for by the societies. The management committee members are paid allowances for the duties performed rather than a fixed monthly salary.

The efficiency with which the societies are run varies from one society to another and from one district to another. In general, the societies are poorly managed, as can be judged by the wrangling among members and management coups that occur in many of them. In-fighting and disputes between management committees and members are common in all the districts. Ministry of Agriculture staff, the co-operative office and union officials blame the wrangles on the manner in which committee members are elected and their capabilities. Three main reasons were cited as the cause of the problem:

1. The elected members of the management committees are often wealthy and politically powerful individuals who bribe their way into these leadership positions. Once in power, they reward themselves corruptly.
2. Some of these leaders are not coffee growers and therefore care little about effective management of the societies for the coffee farmers' benefit.
3. Some of the committee members do not have the education and skills required for efficient running of a society.

Society outputs, expenses and payments

The volumes of coffee handled by the sampled societies are shown in Table 4. The average quantity of coffee handled by a society was highest for Murang'a District (estimated at about 2,700 tonnes), while the lowest was for Kisii District societies, estimated at about 425 tonnes. Thus, societies with a large number of factories tended to handle larger quantities of coffee.

Table 4. Volumes of coffee handled by sampled societies, 1997 (tonnes)

District	Cherry		*Mbuni*		Total	
	Total	Average	Total	Average	Total	Average
Murang'a	10,322.0	2,580.0	516.0	129.0	10,838.0	2,709.0
Meru	9,696.5	2,424.1	281.0	70.3	9,977.5	2,494.4
Kisii	2,711.6	387.4	265.4	37.9	2,977.0	425.3

The expenses incurred by societies include salaries and allowances for employees who provide the services offered to factories and farmers, management-committee allowances and factory costs (repair and maintenance of factories, transport, power, processing materials and rent seeking) (Table 5). The expenses per kilogram of coffee delivered per society and the proportion of the individual expenses to the total costs show that factory expenses form the highest category—over 96% of the total. These expenses range from Ksh 4.84 per kg for Meru District to Ksh 25.14 per kg for Kisii District, while they are estimated at Ksh 11.64 per kg for Murang'a District. The lowest expense component is allowances for society management committee members, which is estimated at less than Ksh 1 per kg for all societies.

Table 5. Expenses per kilogram of coffee delivered by societies and proportion of total expenses by category, 1996/97 (Ksh)

District	Wages	Allowances	Factory expenses	Total
Murang'a	0.39	0.01	11.64	12.04
	(3.30%)	(0.10%)	(96.6%)	(100%)
Meru	0.06	0.02	4.84	4.92
	(1.20%)	(0.40%)	(98.4%)	(100%)
Kisii	0.25	0.003	25.46	25.72
	(0.99%)	(0.01%)	(99.0%)	(100%)

The results in Table 5 indicate that Kisii District societies spend more money on all expenditure items than the other districts. The expenses for Kisii District are high partly due to corrupt practices (rent seeking) under which payments are made for non-existent coffee (referred to as 'air kilos') and huge bank overdraft payments to management committee members. A reduction of these malpractices could help reduce the expenses. Meru and Murang'a Districts have lower expenses partly due to the large output of coffee, which significantly reduces the costs per kilogram. This implies that economies of scale may exist in coffee processing. The high proportion of expenses spent on factory operations suggests that this is an area where savings could be made, thus allowing payments to farmers to be increased.

The relationship between total payments for cherry and *mbuni* and expenses for the 1996/97 coffee year is shown in Table 6. Total earnings from both cherry and *mbuni* were highest in Murang'a District because of the higher prices paid than the other districts. However, the proportion of expenses to payments is lower for Meru District (6.73%) than for Murang'a District (13.47%) because societies in the former carry out fewer functions. The proportion of expenses to payments is highest for Kisii District (53.46%) due to higher deductions to cover society services and overdrafts and recording of inflated weights as a result of corruption at the factories.

Table 6. The relationship between expenses and payments, 1996/97 (Ksh/kg)

Item	Murang'a	Meru	Kisii
Mean price	88.90	73.00	48.15
Wages	0.39	0.06	0.25
Management allowance	0.01	0.02	0.03
Factory expenses	11.64	4.84	25.46
Total expenses (% of price)	11.98 (13.47)	4.92 (6.73)	25.74 (53.46)
Payout to factory (%)	76.92 (86.53)	68.08 (93.27)	22.41 (46.54)

The price of coffee is also dependent on its quality, and it is apparent that the quality of coffee is highest in Murang'a District. Besides the quality of the coffee sold, Murang'a District had much higher payments for both *mbuni* and cherry because the district union closely monitors the societies' overdraft position and had better control over activities of member societies. The farmers' payments were also affected by deductions to cover the accumulated arrears of Small Coffee Improvement Project (SCIP)[2] loans and interests.

2.3 District union activities

Each district has a coffee co-operative union which draws its membership from coffee-society growers and in some cases from other farming activities such as dairying. The co-operative unions in the three study districts are Mugama Farmers Co-

[2] SCIP was a World Bank and Government of Kenya funded project which gave loans to societies for renovation of factories and improvement of coffee farms.

operative Union in Murang'a, Meru Central Farmers Co-operative Union in Meru, and Kisii Farmers Union in Kisii District.

Union functions

Unions provide services which facilitate the production, processing and marketing of coffee for the societies and factories but they do not physically handle coffee. The services provided by the unions differ from one district to another. The functions offered by various unions are summarized in Table 7.

The main services, which all the unions offered to farmers, were education and training, bookkeeping for the societies and supervision of societies and factories. The Mugama union offered the widest range of services, which in addition to the above included transport, credit and employing secretary managers for the societies. The Meru union is the only one with a banking section and it offers credit and employs secretary managers. The Kisii union, in addition to the services offered by all unions, also provided transportation services for societies and factories.

Table 7. Services provided by district unions

Service	Murang'a	Meru	Kisii
Banking	Not offered	Offered	Not offered
Transport (for societies)	Offered	Not offered	Offered
Credit to farmers	Offered	Offered	Not offered
Education and training	Offered	Offered	Offered
Employment of secretary managers	Offered	Offered	Not offered
Bookkeeping	Offered	Offered	Offered
Supervision of societies	Offered	Offered	Offered
Warehousing	Not offered	Not offered	Not offered

Credit

Although Meru Central Farmers Union provided credit services to farmers, their policy was recently revised to lending in cash rather than providing inputs on credit. This is in spite of the fact that the union has a retail outlet where the relevant inputs are sold on a cash basis. However, the union's prices are lower than in most other retail shops. This new policy was adopted because of loan-recovery problems as a result of repayment defaults and evasion. Previously, credit in kind was repaid through a system of check-offs from the members' coffee accounts, but some farmers evaded repayment by registering coffee accounts in different names (for example, that of a wife or son) soon after obtaining the credit. When the union tried to recover the loans through guarantors, serious litigation complications arose forcing the union to review its credit policy.

Education and training

The education and training offered by the unions deals mainly with general issues affecting coffee production and marketing through holding field days for farmers rather than farm visits. The level of education and training offered to farmers differed from one district to another. Meru and Kisii Districts have a coffee education and publicity office to co-ordinate farmers' education and training activities.

Transportation

The transportation service is provided by some of the unions (Kisii and Murang'a) for a fee to those societies that do not have trucks and who request the service from the unions. Such societies were, however, at liberty to look for alternative transport elsewhere if they found it to be cheaper.

Bookkeeping and auditing

In all three districts the unions did their bookkeeping and internal auditing centrally, although the societies also employed their own bookkeepers. Before liberalization in the sector, there was a requirement that all the books of accounts for societies should be remitted to the union accounts office regularly. This was continued in all districts except for Kisii where the societies maintained their own accounts and only informed the union of the results. The unions were also supposed to closely supervise the activities of societies, especially their accounts. Murang'a union had the best supervision record in the financial area with a requirement that all cheques drawn by the societies be counter-signed by the union's chief accountant. This was seen as necessary to avoid corrupt practices. Supervision was weakest in the Kisii union and this explains why many societies there abusively used overdraft facilities, thereby plunging the societies into financial crises.

In order to maintain links with the societies, Meru and Murang'a unions were responsible for the employment and re-deployment of the secretary managers on behalf of societies. In Kisii District, however, the union withdrew this service leaving it to the societies as a result of the many wrangles with them over who to employ and deductions for salary payments.

Management of the district unions

A management committee (board) elected by the committee members of the constituent factories manages each union. The board comprises a chairman, vice chairman, secretary, treasurer and a varying number of committee members. In addition, each union has a general manager who is an ex-officio member and secretary to the management committee and chief executive of the union. The board is responsible for making plans and taking policy decisions. The general manager and his/her management team of heads of departments undertake implementation of policy decisions taken by the management committee. Decisions affecting activities of the societies are passed on to the secretary managers in meetings between them and the union general manager held at least once a week. The secretary managers then implement such decisions in their respective societies.

Union expenses

Farmers, through deductions from their coffee earnings, pay for the costs incurred by the unions in the provision of services to societies and factories. Under the terms of the old Co-operative Act (CAP 390) before its revision in 1996, the unions were allowed to deduct 17.05% of farmers' proceeds to finance their operations. These costs include wages and salaries for the personnel involved in provision of the services and allowances to the management committee.

But with liberalization of the co-operative sector (the revised Co-operative Act 1996), the unions are no longer guaranteed this 17.05% from farmers' proceeds and as a result have initiated efforts to reduce their operational costs by changing some of the services they offer. There is a tendency to reduce involvement in the employment of secretary managers for all unions, and this has led to a reduction in the number of union employees. Some unions are also divesting of some of their functions. However, in all districts the absence of the unions' active role in arbitration has led to an increase in the number of unresolved society disputes.

2.4 Coffee millers

Prior to the liberalization of the coffee subsector in 1995, coffee milling was the reserve of the Kenya Planters Co-operative Union (KPCU). Currently, however, new millers are involved in milling. These include Thika Coffee Mills, Socfinaf Coffee Mills, Gatatha Farmers' Company and Brooke Bond Coffee Millers.

Coffee societies and estate factories deliver coffee to the millers for milling and processing and thereafter the millers deliver bagged clean coffee to the Coffee Board of Kenya for marketing. The millers are allowed to charge up to 4% of the final market price for milling the coffee, but each miller is at liberty to set his own milling charges provided it is within that ceiling. The capacities of these millers in tonnes per year are as follows: KPCU, 140,000; Thika Coffee Mills, 50,000; Socfinaf, 30,000; Brooke Bond, 2,500; and Gatatha, 16,000. Their respective shares of the market are shown in Table 8. The KPCU dominates coffee milling and handles about 70% of the total milled coffee, mostly from the smallholder sector.

Table 8. Amount of coffee handled by millers, 1994/95–1996/97 (kg)

Crop year	KPCU	Socfinaf	Thika	Gatatha	Brooke Bond	Others
1994/95						
Parchment	66,832	9,683	7,575			
Mbuni	11,683	161	801			
Total	78,515	5145	8376	N/D	798	1,423
1995/96						
Parchment	59,721	9,683	10,986	224		
Mbuni	10,196	458	1,940	14		
Total	69,917	10,141	12,926	238	1,024	1,620
1996/97						
Parchment	39,519	8,243	7,838	582		
Mbuni	7,931	363	1147	34		
Total	47,450	8,606	8,985	616	624	1,100

Source: CBK 1997.

N/D never delivered.

Kenya Planters Co-operative Union (KPCU)

Initially, the KPCU was registered both as a company and a co-operative society with its membership being drawn from coffee estates and coffee co-operative unions countrywide. A board of directors elected by the members governs the KPCU. The main services offered to farmers, other than milling, are storage, grading and sorting, field advice to farmers, provision of short-term credit, access to inputs, transportation, acting as a marketing agent, and liquouring.

KPCU's close relationship to coffee farmers as a result of the monopoly it held in coffee processing prior to liberalization, and its ownership through co-operative societies and estates' shareholding, now gives it easy access to the co-operative societies. In some cases the KPCU borrows from the CBK to fund provision of services, particularly in providing credit to farmers. The lending and recovery record is poor, however, and over the years the KPCU has had to write off bad debts repeatedly, negatively affecting its performance (Table 9).

The figures in Table 9 indicate that the KPCU had 174 dormant members' accounts with a total balance of about Ksh 877 million, but recovery was only about Ksh 11 million. The active accounts showed a balance of about Ksh 406 million and advances of Ksh 246 million, but recovery only amounted to about Ksh 279 million. This amount included all charges for loans and services offered to members. The poor record in collecting these debts affected KPCU's cash flow and its ability to finance farmers. The magnitude of the dormant accounts is also worrying for KPCU because these unrecovered debts hinder the miller's efficiency and therefore delivery of its services to growers.

Table 9. KPCU's analysis of growers' accounts, 1996–1997 (Ksh'000)

Item	Dormant	Type of account Active	Total
No. of accounts	174	1550	1724
Balance July 1996	877,265	406,680	1,283,945
Advances	–	246,331	246,331
Interest charged	69,128	121,289	190,417
Recovery	(11,603)	(279,314)	(290,917)
Balance June 1997	984,790	494,986	1,429,776

Source: KPCU 1997.

KPCU's performance was made worse by its registration as a co-operative, which gave the government an opportunity to interfere in its management through the Co-operative Act. This changed in 1997, however, when the KPCU was exempted from the Co-operative Act and remained registered only as a limited company under the Company's Act. KPCU's performance was made worse by its registration as a co-operative, which gave the government an opportunity to interfere in its management through the Co-operative Act. This changed in 1997, however, when the KPCU was exempted from the Co-operative Act and remained registered only as a limited company under the Company's Act.

The main sources of funds for KPCU are milling charges levied per tonne of coffee handled, and a marketing-agency fee of 1% per tonne. It also generates income from the lease of its warehouses to CBK for coffee storage and from the sale of charcoal made out of husks form milled coffee, commonly referred to as 'kahawa coal'. The KPCU borrows from the CBK or offshore to obtain funds for advancing to farmers, and in recent years it has faced severe competition from Thika Coffee Mills (TCM) and other private millers.

Private millers

Coffee milling by the private sector is a new phenomenon in the country but it is developing quickly. The major challenger to the KPCU in coffee milling for smallholders is Thika Coffee Mills. The TCM also offers services such as credit for coffee production and transportation to growers. The company has new milling machines and records lower milling losses than those of KPCU. However, its capacity utilization is low, as is its effectiveness in providing services to farmers. It has tended to limit provision of services to farmers in Central and Eastern Provinces and in general it has yet to penetrate the industry adequately.

2.5 The Coffee Board of Kenya

The Coffee Board of Kenya (CBK) was formed by Act of Parliament to play a regulatory role in production, processing, marketing and research in the coffee industry. Its functions are described in this section.

Production

The Board, through the area managers and field inspectors of its Agriculture Field Services Department stationed in every coffee-growing region, offers advisory services to farmers. Because of their close contact with farmers, these field officers are in the best position to solve farmers' problems and they advise on the best seedlings, application of insecticides, fungicides and other sprays for controlling diseases and pests, amongst other aspects of husbandry. They also assist in developing annual production estimates for CBK planning purposes.

Processing supervision

The Board does not process coffee directly but it licenses the millers and processors who undertake the processing. It also monitors processing losses by millers and advises farmers accordingly. It co-ordinates marketing and advises millers when to deliver coffee for marketing.

Marketing

The CBK controls and regulates the marketing of coffee. Marketing is done through a central marketing auction system under the control of the CBK. Most of the coffee produced (95%) is exported, the remaining 5% being absorbed by the domestic market. In this case the Board sells directly to consumers through its customer service shop on the Board's premises. The CBK has a roasting plant in the Industrial Area of Nairobi which roasts, grinds and bags clean coffee for the local market.

The CBK does not sell to foreign markets directly but coffee dealers or exporters do this. The Board licenses the dealers and exporters and controls the auction market. Before 1998, the auction market was handled entirely by Kenya Coffee Auctions (KCA), which is wholly owned by the CBK, but currently other auctioneers have been allowed to participate in the market. The auctioneers sell on behalf of the CBK or other marketing agency. After sale of the coffee, farmers have the choice of being paid in US dollars or local currency, either directly by CBK to their accounts in the case estates or through their factory accounts in the case of co-operatives. The necessary statutory deductions are made by the CBK to cover costs for functions undertaken by various institutions before paying the balance to farmers.

Research

The Coffee Research Foundation (CRF), based at Ruiru near Nairobi, carries out research on various aspects of coffee growing such as diseases and pest control and development of high-yielding varieties. The CRF is run by a board of directors which includes CBK representation. The CBK funds the Foundation's activities through a levy which is included as part of the CBK's deductions on total coffee earnings to cover all its functions.

Publicity and product promotion

The CBK undertakes both local and international publicity. Local publicity is done through participation in the Agricultural Society of Kenya (ASK) shows held annually at various provincial and district headquarters and through the mass media. The Board also participates in domestic trade exhibitions. International publicity is undertaken through the Board's London office. The office is manned by an overseas representative who is charged with handling all queries concerning Kenya coffee on the world market. The representative participates in exhibitions in various countries and attends all gatherings concerned with production and consumption of Kenya coffee.

Financing

The operations of the CBK are financed through a variable levy of 1–5% of the gross income from coffee sales. The levy is based on expenses incurred and is determined by the CBK. The marketing expenses are also deducted directly from the gross coffee sales. Nyoro (1994) estimated that CBK's operational and marketing costs accounted for about 8% of the f.o.b. coffee price. The cost components (with the percentage of total expenditure) were interest payments (36.1%), marketing (25.5%), intermediates (16.8%), research (13.5%), labour (4.8%) and promotion (3.3%). These expenditures could be greatly reduced if the CBK liberalized many of its functions, such as coffee auctioning, marketing and borrowing, to finance payments to farmers. The other deductions that lower the final payment to farmers are 5% presumptive tax and 1% cess to county councils.

3 Farm-level activities

This section presents the survey's results on farm-level activities in coffee production and marketing.

Coffee was a dominant cash crop in amount of land devoted to it in all the districts surveyed, but it was not the most profitable enterprise, as shown in Table 10. Bananas were the most profitable enterprise in Murang'a and Meru Districts, while tea was the most profitable in Kisii. Few coffee farms were well taken care of and husbandry management levels were low. There were numerous cases of intercropping, possibly because of the legal restrictions on uprooting coffee trees. The most affected district was Kisii where the coffee industry was on the verge of collapse.

Table 10. Gross profit margin for major crop enterprises, 1997 (Ksh/hectare)

Enterprise	Murang'a	Meru	Kisii
Coffee	56,696	38,952	50,240
Maize	13,417	22,934	37,950
Tea	73,265	87,040	63,568
Bananas	117,789	89,011	–

3.1 Production trends

There have been fluctuations in coffee production in the three districts since 1990/91, but in general a decline in the quantity of coffee delivered to factories began in 1995/96 (Table 11).

Table 11. Volume of coffee delivered to factories by district (tonnes)

Year	Murang'a	Meru	Kisii
1990/91	6,669	14,382	3,922
1991/92	3,726	18,126	3,772
1992/93	2,607	12,143	3,072
1993/94	3,729	15,246	6,273
1994/95	6,315	11,370	5,035
1995/96	5,294	8,084	2,465
1996/97	4,587	7,697	2,384

The main reason for this low production is the neglect of coffee farms (poor weeding, and bushy, unpruned and chlorotic[3]

[3] Fungal infested and therefore rusty

coffee trees) as a result of several production and marketing constraints encountered by farmers (Tables 12 and 13).

Table 12. Relative importance of constraints in coffee production

Constraint	Murang'a	Meru	Kisii
High input price	1	1	1
Pests and diseases	3	2	2
High labour costs	4	5	5
Vagaries of weather	5	3	3
Coffee wastage at factory	2	4	4

Table 13. Relative importance of various marketing constraints in coffee production

Constraint	Murang'a	Meru	Kisii
Low producer prices	1	1	1
Poor storage	2	2	6
Delayed payments	5	3	2
Poor roads	3	5	4
High less charge	6	6	5
Coffee theft	4	4	3

For farmers in all the three districts the most important production constraint was high input prices. This was followed by high incidence of coffee berry disease (CBD) for Meru and Kisii Districts, while this factor was relegated to third position in Murang'a. The remaining constraints varied in relative importance between the districts. The fact that input prices ranked highest in all three districts indicates that they were unaffordable, resulting in low levels of use.

As indicated in Table 13, the highest ranked marketing constraint was low producer prices, followed by poor storage at the factories, which led to coffee theft and spoilage. The farmers' perception that output prices are low explains the neglect of most of the coffee farms and frequent intercropping. The prices received by farmers for coffee cherry and *mbuni* have fluctuated over the years (Table 14). In general, there was an upward trend from 1991/92 to 1994/95 for all districts, and a decline in 1995/96 followed by an increase in 1996/97 except for *mbuni*. The producer prices are generally higher for *mbuni* than for cherry on a kilogram basis. However, to get a clear picture on relative prices received for cherry and *mbuni*, comparison should be made on the basis of processed cherry (parchment) and *mbuni* as they are sold by factories. On this basis, the value of parchment by weight is higher because the ratio of processing cherry into parchment is 6:1, meaning that 6 kg of cherry are required to obtain 1 kg of parchment. Therefore, the price of parchment should be multiplied by a factor of six to allow for comparison of parchment and *mbuni* prices. Indeed, Kenyan coffee fetches a high price on the world market because most of the beans are processed into parchment rather than being sold as *mbuni*.

The prices received by farmers are also determined by the deductions made by factories, societies, unions, millers and the CBK and the quality of the coffee, as discussed in the previous sections.

Table 14. Payments to farmers for cherry and *mbuni*, 1990/91–1996/97 (Ksh/kg)

Year	Murang'a		Meru		Kisii	
	Cherry	*Mbuni*	Cherry	*Mbuni*	Cherry	*Mbuni*
1990/91	12.20	13.70	6.90	13.90	4.40	10.30
1991/92	8.50	15.10	5.90	15.50	4.30	10.60
1992/93	13.30	26.10	6.10	19.30	4.80	15.20
1993/94	23.50	43.60	10.70	28.00	7.00	22.50
1994/95	23.20	45.80	15.90	33.60	7.00	32.40
1995/96	21.20	44.60	15.50	33.20	8.10	30.30
1996/97	25.90	42.40	14.90	32.90	11.00	27.60

3.2 Input use

The level of input use in the three districts is generally low. Fertilizer use ranged from an average of 272 kg per hectare for Kisii District to about 378 kg for Murang'a District, compared to the recommended 780 kg per hectare. The levels of pesticide use varied from 6.2 litres per hectare for Kisii District to 21.7

litres for Murang'a, compared to the recommended 32.9 litres per hectare. This low level of input use is attributed to their high cost and unavailability on credit from the farmers' societies.

The unavailability of inputs for farmers was attributed to problems of funding at society level. In the 1960s, and up to the early 1980s, the societies had schemes for acquiring inputs in bulk and supplying them to members on credit. However, loan-recovery problems with farmers led most societies to resort to selling inputs on a cash basis. Murang'a District is the only one where most societies still gave input loans.

The low level of pesticide use led to a resurgence of diseases and pests on coffee farms. For example, coffee berry disease had become a great menace in Kisii District because farmers abandoned spraying their coffee farms. This has had an impact on coffee yields such that they are estimated at about 1,000 kg of clean coffee per ha for Murang'a District compared to about 600 kg for Kisii.

The main sources of funds for inputs in coffee production were the societies, but since the withdraw of funding for them, informal money lenders and commercial banks had become major sources of funds for sampled farmers, as shown in Table 15. A large proportion of the cash credit from societies in Murang'a, and nearly all in Meru and Kisii Districts, was from the Small Coffee Improvement Programme (SCIP). However, even in Murang'a District, where societies' input loan schemes are still operating, farmers found it quite difficult to obtain cash loans.

Table 15. Average cash credits to farmers and sources, 1997 (Ksh)

District	Society	Bank	Informal
Murang'a	17,014	17,800	–
Meru	7,100	–	23,667
Kisii	3,353	–	13,108

The services offered to farmers by the societies through factories have become less and less tangible in recent years. To most farmers, societies exist first and foremost to help them get credit (cash and inputs) cheaper than elsewhere and to process and market their coffee. With the withdrawal of societies' support in the primary role of input supply, at least in Meru and Kisii Districts, farmers no longer see a need for societies. They argue that with liberalization they can now sell their coffee (be it cherry or parchment) wherever they wish, even though this is illegal under the Coffee Act which prohibits coffee marketing other than through the Coffee Board of Kenya. They do not regard the other functions of the societies such as bookkeeping, auditing, warehousing, transportation and payment arrangements as being important because they pay for them anyway through various deductions made on coffee payments by the society.

3.3 Selling and marketing

All farmers sold their cherry coffee to society factories. In Meru and Kisii Districts, however, some coffee was also sold to private individuals, but the amounts were unrecorded and undeclared. Farmers seemed afraid to admit that they were involved in selling coffee to private traders who bulk and sell it to private factories, but the evidence is that in practice they were selling it informally to roadside buyers. Interviews with union officials and agricultural staff in Kisii revealed that a substantial amount of coffee produced in the district was sold to traders who smuggle it to Uganda and Tanzania. Payments from the traders were assured and prices were as high as Ksh 30 per kg of *mbuni*, compared to the average of Ksh 21 offered by societies.

Another problem, which was observed in Kisii District, was theft of parchment coffee from factory and society stores. Such theft involved employees of the factory. This practice is attributed to liberalization of the local coffee market and hence availability of other outlets for selling coffee.

4 Conclusions

The analysis of the data obtained in this survey indicates that the delivery of services to smallholder coffee farmers is dominated by co-operative societies for coffee pulping and the KPCU in coffee milling, while the CBK has the monopoly in coffee marketing and regulation of the industry. The costs of delivery of services to farmers by various institutions are generally high and take about 60% of the f.o.b. world market price and this greatly reduces payments made to farmers. At farm level, coffee production has declined due to low levels of input use and neglect of the coffee farms. This is attributed to lack of credit for purchasing inputs, high input prices, poor delivery of processing and marketing services, and low payments. The main findings of the study are summarized in this section.

Coffee factories

The coffee factories are the primary organizations that serve farmers directly but most of them operate below capacity and are inefficient. They are also characterized by management problems which arise mostly from nepotism in employing their management teams. The costs of factory operation are high and take up about 35% of the total payments received from co-operative societies to pay farmers. This figure varies from region to region, however, depending on efficiency of operation. The low payments and management problems have led to the widespread break up of societies that have many member factories. In such cases each factory would like to be a society in its own right to allow for direct payments from the CBK for their coffee sales.

Factories could provide a strong focal point for more economic delivery of services to farmers because of economies of scale and the ability of groups of farmers to spread the costs of operation, for example by contributing free labour to factories. However, the management of these factories would need to be strengthened to ensure efficient operation. With little development of private factories, smallholder farmers will continue to rely on co-operative society factories for processing their coffee if the quality of Kenyan coffee is to be maintained on the world market.

Co-operative societies

Co-operative societies provide a wide range of services for farmers through factories, including bookkeeping and accounting, credit for purchasing inputs, transporting coffee to millers and repair and maintenance of factories. However, most societies are poorly managed due to corruption in the management teams, poor management skills, and nepotism in employment of management staff and other workers. On average, factory running costs take up of 25% of the gross coffee sales received from the CBK. These deductions, combined with management problems, have led to many factories breaking away from larger societies. Although coffee processing exhibits economies of scale, for efficient management it may be advisable to encourage the formation of smaller societies, such as those consisting of a single factory.

The duplication of functions such as maintenance and practical operations by factories and societies increases costs to farmers and results in cumulative deductions that are an average of 60% of the farmers' earnings from the world market price of coffee. A strong supervisory team, either from the CBK or the government, is also required to monitor the activities of societies to ensure transparency in delivery of services to farmers.

District unions

District unions draw their membership from co-operative societies and provide facilitative functions (extension, credit, management and auditing books of accounts) rather than physical production, processing or marketing of coffee. The provision of these functions is diminishing with liberalization of the co-operative movement. However, societies that have links with unions, particularly in bookkeeping and supervision of accounts, perform better in terms of low operational costs and record less wrangling among members. If well supported by farmers, the unions can play an important role in supervising and managing societies for farmers.

Coffee millers

Coffee milling is dominated by the KPCU despite liberalization of the industry. It handles about 75% of all coffee milled in Kenya because of its close historical relationship with the growers. The KPCU can be credited for the direct services it provides farmers, such as extension and financing. However, its record of loan recovery is poor and this has affected its delivery of services to farmers. Thus, KPCU will need to improve its efficiency in coffee milling and loan recovery in order to compete effectively in coffee milling.

Coffee milling by the private sector is a new phenomenon and the major challenger to KPCU in coffee milling for smallholder farmers is the Thika Coffee Mills. The other private millers mainly serve the estate sector. One of the problems facing new millers is the ceiling of 4% of export price placed on milling charges by CBK. There are also restrictions on the services they can provide to farmers. An appropriate environment to enable all millers to operate freely could enhance competition and therefore efficiency in coffee milling and provision of services to farmers.

Coffee Board of Kenya

Despite the policy reforms in coffee processing and milling, the CBK still remains the regulatory agency in the coffee industry and also controls coffee marketing. The Board also provides extension services to farmers, sponsors research and the promotion of coffee in the export markets. The CBK charges about 8% of the export price on the marketed coffee to cover its expenses. The CBK's control over coffee marketing and regulatory functions in the industry has been a bone of contention between the CBK and other stakeholders, particularly coffee millers.

A major problem with the CBK is that it plays a dual role in the coffee industry by being both a regulatory body and providing services to farmers. With liberalization of the economy, the Board should become an entirely farmers' organization with a mandate to supervise the delivery of services by other institutions (private or public) and to be a lobby group to protect the farmers' interests. The service functions such as coffee processing, milling and marketing are better undertaken by other organisations. The respective roles of CBK and the other organization should be clearly defined to avoid conflicts. Its regulatory functions—enforcement of rules (licensing, registering and control of the industry)—should be left to a different government body to ensure a level playing field for all players in the industry.

Farm-level impacts

There has been a general decline in coffee production in the country due to the production and marketing constraints that farmers encounter. The most common production constraints are high input prices, high incidence of coffee berry disease, lack of funds (credit) and poor payments. The problem is aggravated by the poor provision of production, processing and marketing services by various organizations.

The services that farmers are offered by the societies through factories are becoming less and less tangible. The most important services required from societies are processing coffee and providing credit (in the form of cash or inputs). With the withdrawal of societies' support from the primary role of input supply, farmers can no longer access inputs cheaply. Besides, the costs of delivering these services are generally high and this reduces payments to farmers by an average of 60%. The efficiency of delivery of services by societies to farmers needs to be improved by enhancing the managerial skills of society and factory officials.

The prices received by farmers have fluctuated over the years, but in general prices for processed cherry are higher than for *mbuni* because wet processed coffee is of a quality that fetches better prices in the world market. Farmers are, however, forced to sell coffee as *mbuni* due to problems encountered in societies and factories, and more of them will follow suit. Processing factories will continue to be required if the quality of Kenyan coffee is to be maintained on the world market.

Rent-seeking practices (corruption, misrecording of weights of farmers coffee, etc.) at the factory level and high factory and society operational costs are also major reasons for low coffee payments to farmers. Theft of parchment coffee from factory and society stores has also become a problem in recent years. This is attributed to the absence of regulatory mechanisms under the liberalized local coffee market, which in turn has provided for unchecked outlets for selling parchment and *mbuni*. There is need to improve the monitoring and regulatory system for the coffee industry to reduce the practices which hinder farmers from benefiting fully from liberalization of the industry.

References

CBK [Coffee Board of Kenya]. 1997. Annual Report. CBK, Nairobi. Unpublished.

Coase, R.H. 1963. 'The problem of social costs.' *Journal of Law and Economics* 3:1–44.

Delgado, C.L. 1998. 'Sources of growth in smallholder agriculture in Sub-Saharan Africa: the role of vertical integration of smallholders with processors and markets of high value-added items.' Paper presented at the Inter-conference Symposium of the International Association of Agricultural Economists (IAAE), Badplas, South Africa. Unpublished.

Harris, B. 1993. 'There is method in my madness: or is it vice versa? Measuring agricultural market performance'. In J. Abbot, ed. *Agricultural and Food Marketing in Developing Countries: Selected Readings.* Wallingford, UK: CAB International.

Jaffee, S. and Morton, J. 1995. *Marketing Africa's High-Value Foods: Comparative Experiences of an Emergent Private Sector.* Dubuque, Iowa: Kendall/Hunt Publishing Company

KPCU [Kenya Planters Co-operative Union]. 1997. Annual Report. KPCU, Nairobi. Unpublished.

Nyoro, J. K. 1994. 'Processing and marketing of coffee in a liberalized market.' Proceedings of the Conference on Market Reforms, Agricultural Production and Food Security, 22–23 June. Policy Analysis Matrix. Egerton University, Kenya.

World Bank. 1994. *Adjustment in Africa: Reforms, Results, and the Road Ahead.* World Bank Research Paper. New York: Oxford University Press.

Appendix

Table A1. Mean operational expenses per factory for Murang'a District, 1990/91–1996/97 (Ksh '000)

Year	Diesel and other fuels	Wages, salaries and allowances	Other	Total
1990/91	1.6	159.3	926.0	1,086.9
1991/92	1.8	151.0	1,314.0	1,466.8
1992/93	22.2	201.6	1,752.2	1,976.0
1993/94	25.8	281.4	5,903.3	6,210.5
1994/95	33.9	670.6	5,103.3	5,807.8
1995/96	25.4	514.1	19,008.7	19,548.2
1996/97	40.8	598.0	75,176.0	75,814.8
Average (%)	21.7 (0.1)	367.9 (2.3)	15,597.6 (97.6)	15,987.3 (100)

Table A2. Mean operational expenses per factory for Meru District, 1990/91–1996/97 (Ksh '000)

Year	Diesel and other fuels	Wages, salaries and allowances	Other	Total
1990/91	3.7	108.4	1,059.0	1,171.1
1991/92	4.1	192.3	1,036.0	1,232.4
1992/93	7.4	268.0	1,574.0	1,849.4
1993/94	5.8	161.5	1,769.1	1,936.4
1994/95	5.7	221. 7	2,372.5	2,599.9
1995/96	5.9.	273. 9	2,414.0	2,693.8
1996/97	7.4	309.9	20,325.0	20,642.3
Average (%)	5.7 (0.1)	219.3 (3.7)	5,649.0 (96.1)	5,874.0 (100)

Table A3. Mean operational expenses per factory for Kisii District, 1990/91–1996/97 (Ksh '000)

Year	Diesel and other fuels	Wages, salaries and allowances	Other	Total
1990/91	7.8	616.1	397.0	1,020.9
1991/92	8.9	874.0	950.4	1,833.3
1992/93	9.6	683.9	1,178.0	1,871.5
1993/94	10.6	848.3	3,730.0	4,588.9
1994/95	11.8	1198.1	3,310.5	4,519.9
1995/96	11.8	1072.1	1,160.4	2,244.3
1996/97	12.1	971.3	17,262.2	1,8245.6
Mean	10.3 (0.2%)	894.8 (18.3%)	3,998.1 (81.5%)	4,903.2 (100%)

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