



SMALLHOLDER
DAIRY PROJECT

SDP Research and Development Report 2

The Policy environment in the Kenya dairy sub-sector: A review

H. Muriuki, A. Omore, N. Hooton,
M. Waithaka, R. Ouma, S.J. Staal
and P. Odhiambo



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The Smallholder Dairy Project

The Smallholder Dairy Project (SDP) carries out research and development activities to support sustainable improvements to the livelihoods of poor Kenyans through their participation in the dairy sub-sector. SDP is jointly implemented by the Ministry of Livestock and Fisheries Development (MoLFD), the Kenya Agricultural Research Institute (KARI) and the International Livestock Research Institute (ILRI). The project is led by the Ministry with primary funding from the UK Department for International Development (DFID). The three organisations work with many collaborators, including government and regulatory bodies, the private sector and civil society organisations.

Key areas of SDP research and development activities are:

- Analysis of factors constraining the competitiveness of smallholder dairy farmers, including farm constraints, markets and infrastructure, and information services.
- Analysis of policies and institutions affecting the dairy sub-sector, and provision of resulting information to support planning needs of stakeholders and policy-makers in the dairy sub-sector
- Analysis of social benefits of smallholder dairy production, including income, employment and child nutrition
- Participatory development of improved dairy farm technologies, such as improved fodder plants and feeding strategies
- Development of appropriate technologies and strategies for small scale milk and dairy product traders
- Development of extension and training materials to support smallholder farmers and small milk traders, and the development agencies serving them
- Spatial analysis of dairy systems for improved targeting of technology and investment

By combining the research capacity of KARI and ILRI with the experience and networks of the Ministry, SDP has been providing high-quality and wide-ranging research information to support smallholder dairy farmers, market agents, stakeholders and policy-makers since 1997.



MoLFD Ministry of Livestock and Fisheries
Development

KARI Kenya Agricultural Research Institute

ILRI International Livestock Research
Institute

DFID Department for International
Development – Kenya

DFID Department for
International
Development

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This collaborative research report is circulated prior to full peer review to stimulate discussion and comments. Based on that process, its contents may be revised.



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List of acronyms

ABS	American Breeders Service
ADB	Agricultural Development Bank
ADC	Agricultural Development Corporation
AFC	Agricultural Finance Corporation
AHA	Animal Health Assistant
AHITI	Animal Health and Industry Training Institute
AI	Artificial Insemination
CA	Codex Alimentarius
CAIS	Central Artificial Insemination Station
CAB	Central Agriculture Board
CBS	Central Bureau of Statistics
COMESA	Common Market for Eastern and Southern Africa
DANIDA	Danish International Development Agency
DDC	District Development Committee
DIA	Dairy Industry Act
DLPO	District Livestock Development Officer
DRC	District Roads Committee
DRSK	Dairy Recording Services of Kenya
DVS	Department of Veterinary Services
EAC	East African Community
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
HACCP	Hazard Analysis and Critical Control Point
ISO	International Organization for Standardization
ITDG	Intermediate Technology Development Group



KARI	Kenya Agricultural Research Institute
KCC	Kenya Co-operative Creameries
KDB	Kenya Dairy Board
KDPA	Kenya Dairy Processors Association
KEBS	Kenya Bureau of Standard
KLBO	Kenya Livestock Breeders Organisation
KMR	Kenya Milk Records
KNAIS	Kenya National Artificial Insemination Service
KRB	Kenya Roads Board
KVA	Kenya Veterinary Association
KVAPS	Kenya Veterinary Association Privatisation Scheme
KVB	Kenya Veterinary Board
KWS	Kenya Wildlife Services
LPS	Lactoperoxidase System for Milk Preservation
LRC	Livestock Recording Centre
MoALD	Ministry of Agriculture and Livestock Development
MoLFD	Ministry of Livestock and Fisheries Development
MOH	Ministry of Health
NEP	National Enquiry Point
NSC	National Standards Committee
OIE	Office International des Epizooties
SDP	Smallholder Dairy (R&D) Project
SIDA	Swedish International Development Agency
SPS	Sanitary and Phytosanitary Measures Agreement
TBT	Agreement on Technical Barriers to Trade
UHT	ultra-high temperature treated
URA	Uruguay Round Agreements
VAT	Value Added Tax
WTO	World Trade Organization



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Executive Summary



Introduction

While it is difficult to pinpoint a particular consistent agricultural policy in Kenya since both objectives and strategies have been changing over time, a survey of National Development Plans and Sessional Papers (GOK 1965, 1974, 1986, 1994a, 1994b, 1996, 1997a, 1997b, 1997c) shows that the broad objectives have been growth, equity and participation. Other common themes in Kenyan agricultural policy have included increased food supply, security and self-sufficiency, growth in agricultural employment, expansion in exports, resource conservation and poverty alleviation. Given the importance of dairy in Kenya to farmers, consumers and the economy, policies towards the dairy industry will have important implications for these overall objectives of growth, equity, and security.

This report presents a review of the policy environment for the dairy industry in Kenya. The overall objective of the study was to identify and document components of the policy environment concerning dairy input and output markets, relevant stakeholders and their roles, the regulatory environment and factors constraining the implementation of those policies. Besides the review of relevant written



policies, information was gathered in discussions during visits to key stakeholders, government officials, regulatory authorities, donors, non-governmental organisations, other knowledgeable key informants in dairy matters, and at a stakeholder workshop held to present and discuss preliminary findings.

This review is divided into an executive summary and four sections. Section one traces the evolution of the dairy policy environment in Kenya from independence and gives a general overview of the present situation. Section two focuses on the regulatory frameworks that affect dairy production: cattle feeds, animal health, breeding and agricultural credit services are some of the areas reviewed. Section three looks at milk collection, processing and marketing. The regulatory frameworks for milk markets are reviewed and an assessment of the impacts of external milk trade and the informal milk market made. The section also discusses the potential effects of international trade rules and standards and a brief on the various stakeholders involved in milk collection, processing and marketing. Section four summarises the outcomes of the review, and discusses the policy implications.

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reviewed and an assessment of the impacts of external milk trade and the informal milk market made. The section also discusses the potential effects of international trade rules and standards and a brief on the various stakeholders involved in milk collection, processing and marketing. At the end of the report, instead of a separate section for conclusions, they are summarised in this executive summary and as 'main issues' at the end of sections two and three.

Milk production

Some of the main constraints to increased milk production have been identified as inadequate quantity and quality of feed, including limited use of manufactured cattle feeds, and poor access to breeding, health and credit services. In some areas, poor access to output markets reduces the incentives to increase milk production.

Farmers typically regard manufactured feed as being too highly priced, which contributes to its limited use. However, the major policy issue in feeds is the highly variable and often low quality of cattle feeds found on the market. The Kenya Bureau of Standards (KEBS), which is responsible for developing and enforcing quality standards, lacks the capacity to do so. The Ministry of Livestock and Fisheries Development (MoLFD) is currently addressing the need for a specific regulator for the animal feeds sub-sector.

After 1986, the government moved gradually from subsidised services to eventual privatisation of several veterinary services. Privatised or commercialised services in animal health include: clinical services, artificial



insemination, management of cattle dips as well as production and distribution of drugs and vaccines. A major step taken to implement the veterinary privatisation policy is the loan guarantee fund, the Kenya Veterinary Association Privatisation Scheme (KVAPS), established in 1995 to assist veterinarians to get start up capital. However, little progress has been made towards the provision of more efficient private veterinary services. Between 1995 and 2001, only 55 loans had been processed. The apparent slow progress has been attributed to the poor state of the economy, competition from vets still working in the public sector, and regulatory bottlenecks that affect the viability of private practice. These bottlenecks include restrictions that require one to obtain a university degree before qualifying for a licence, restrictions that require only qualified pharmacists to sell veterinary drugs, and weak supervision of health service providers by the Kenya Veterinary Board. However, some 6000 community based animal health workers have also been trained in Kenya, and whilst working predominantly in arid and semi-arid areas, this cadre of community workers could potentially also play a role in service provision to smallholder dairy producers.

There are continuing concerns regarding the existence of several uncoordinated breed improvement organisations including the Kenya Stud Book, Livestock Recording Centre, Dairy Recording Services of Kenya (formerly known as the Kenya Milk Records), Central Artificial Insemination Station and the Kenya National Artificial Insemination Service. A proposal to bring these organisations under one umbrella over a decade ago has not been implemented.

Further, although the government has intensified the training of private inseminators there is still a large gap in availability of artificial insemination (AI) services in many areas. At the same time, privately trained AI service providers are often not recognised by the government. Breed improvements have also been hampered by high charges levied by the government on imported semen and embryos, despite the waiver of import duty on agricultural inputs.

Despite the recognition of the important role of credit input in farming, little has been done to promote appropriate lending institutions for smallholders for several decades. There is evidence to support the contention that commercial banks are not well suited for credit provision and savings mobilisation in the agricultural sector in Kenya. The collapse of institutions such as the Agricultural Finance Corporation has left a gap in credit supply to farmers. The proposed Agricultural Development Bank that was intended to fill part of this gap has never materialised. Most formal credit currently available to smallholder farmers is provided through their own organisations (co-operatives and self-help groups), and increasingly through micro-finance institutions. However, requirements of collateral and high interest rates remain prohibitive to many who wish to access credit. Recent trends towards macro-economic and fiscal policies that promote lower interest rates, if sustained, will help smallholders access more affordable credit.



Milk collection, processing and marketing

Poor infrastructure and unfavourable regulations are the main constraints in milk collection, processing and marketing. Given the high perishability of fresh milk, an efficient collection, processing and marketing system is crucial to the overall viability and profitability of commercial dairying. Overcoming these constraints is therefore critical. The high impact of poor roads alone on milk price is reflected in studies that estimate a price reduction of 47 cents per litre per kilometre of bad road.

Though many marketing channels have evolved following liberalisation, the Kenya Dairy Board (KDB) has not developed consistent criteria for the licensing of some market intermediaries such as raw milk traders. Despite the entry of many processors into the market since market liberalisation, fewer remain in operation, and hardly any operates at full capacity. KDB records show that in 1997 there were some 45 registered private milk processors handling over 400 thousand litres of milk daily. However, the number of operational processors has been fluctuating and by February 2003 there were less than 30 operational dairy processing outfits. The processing market has assumed a potentially oligopolistic structure with four processors controlling more than 60% of the market.

It is noted that despite efforts to promote this channel of milk marketing, the quantity of processed milk has remained about the same for

nearly a decade at approximately 500 thousand litres per day leaving over 80% of the volume of milk sales going directly to consumers or through raw milk market intermediaries (Omoro et al. 2002)¹. The main participants in the raw milk markets are dairy co-operatives, milk bars, middlemen/traders, and farmers.

The main policy issue in milk marketing relates to the licensing and regulation of the many players in the raw milk trade. The dairy industry is still, by and large, dominated by the pre-liberalisation mindset. For instance, trade in raw milk is still deemed illegal even when nothing in the law (Dairy Industry Act (DIA) Cap 336) explicitly outlaws it. Indeed the draft dairy policy (2000) has recognised the critical role played by raw milk vendors as stakeholders in the industry. Another major policy issue relates to the inconsistency between policy statements and the supporting legal framework. The dairy industry is still regulated by the Dairy Industry Act (Cap 336) (MoALD 2000a), first enacted in 1958 and which has not been amended to take into account the changed socio-economic environment. The reluctance to proactively bring all cadres of raw milk traders into the licensed and regulated milk trade in Kenya (unless they form groups and have fixed premises that can be inspected) sharply contrasts with efforts to do so in neighbouring countries, e.g. Uganda and Tanzania.

Regulations in the dairy industry are mainly driven by perceptions of public health threats.

¹ Processed milk sales by KCC alone reached a peak of approx. 1,000,000 litres per day in 1988/89, partly due to the school milk programme that was in existence then.



However, the fact that regulations to reduce public health risks could have negative social consequences in terms of reducing employment opportunities for small-scale traders, or increasing the price of milk to poor consumers, is rarely recognised. Households in Kenya almost universally practice boiling of marketed milk before consumption. Since boiled raw milk is safe for human consumption, (because all bacterial pathogens that may be present in milk are killed by boiling (Omore et al. 2002)), dairy policy should recognise this fact. Recognising that some balance of the public health and social or economic tradeoffs may be necessary, and so some accommodation of regulated raw milk markets is not necessarily a threat the formal dairy industry, which is important for milk supply in major urban centres and for export trade expansion.

It is perceived that there are current and potential threats to the local market from the World Trade Organization (WTO) agreements of which Kenya is a signatory. However, given the strong domestic market and limited external dairy trade, it is not clear whether this perception is based on solid evidence, and some effort is needed to analyse the implications of each WTO regulation and the best implementation mechanisms so as to minimise negative effects. Officially, recorded quantities of imported milk products (mainly milk powder) are relatively insignificant and should not affect the local market.

Institutional capacity and stakeholder representation in the dairy industry

A running theme in this report is that of weak organisations and inadequate resources that limit effective implementation of stated policy and regulations. It has been noted that the major institutions involved in the industry such as: Central Artificial Insemination Station (CAIS), Kenya Veterinary Board (KVB), KDB, Ministry of Health (MOH), KEBS and MoLFD) often lack adequate resources to fulfil their roles effectively. Additionally there is often inadequate human and technical know-how. The KDB is attempting to address this issue through a restructuring process that also aims to transform the body from what has been a policing organisation to an effective regulator and development catalyst.

Related to this is the issue of effective stakeholder representation. Given the realities of dairy production and marketing outlined above, a very significant number of stakeholders have little or no effective voice in decision-making on the industry. Key amongst these are the consumers, most of whom are consumers of milk from the informal/raw milk market, and the market agents that supply most of that milk. This lack of representation is not surprising, given the lack of organisation both of consumers and of informal market players. However, if the interests of all stakeholders are to be addressed, effective representation, whether on the Kenya Dairy Board, or in other stakeholder associations, is crucial.

Lastly, poor co-ordination and information sharing between the various institutions and



stakeholder groups in the dairy industry has been a matter of concern over the years. Though some steps have been taken to harmonise the operations of some institutions, for example the initiative to bring together the Kenya Stud-Book (KSB) and the Dairy Recording Services of Kenya (DRSK) under the Kenya Livestock Breeders Organisation (KLBO) to deliver efficient breeding services, the process has been slow.

Summary of conclusions

The key points emerging from this review are the following:

- A supportive policy environment is needed to aid the development of Kenya's dairy industry, which contributes significantly to employment, public health, and the overall economy of the nation.
- However, certain policy issues need to be urgently addressed, including the pace of review of policy and legislation, the appropriate enforcement of regulation, the development of institutional capacity, and widened stakeholder representation.
- Specific policy priorities relate to provision of veterinary services (particularly health and breeding services for cattle), access to credit, and road infrastructure improvement.
- Current policy and legislation initiatives need to take full account of broader national goals (such as the creation of employment and poverty reduction) and the reality of systems presently operating in the dairy sector

These points lead to the following recommendations:

- There is an urgent need for a quick review of the policies and regulations that are not in tandem with broader national goals (e.g., creation of employment) and the economic reality of the day.
- Harmonization of the different acts that affect the dairy sector is required to reduce existing conflicts.
- Private service provision should be encouraged with appropriate policies to fill gaps created by the liberalization process. Where that is not possible, sustainable alternatives should be sought, such as the introduction of cost sharing, or the training and equipping of community-based service providers. Accomplishing this may require revisiting licensing regulations for private service providers.
- Institutions charged with the implementation of stated policies and regulations should be made effective by provision of adequate resources and capacity. Where appropriate, institutions should explore alternative systems, such as self-regulation and partnership with the private sector. It is noted that the Kenya Dairy Board has embarked on a restructuring process aimed towards becoming a potentially more effective facilitating and regulatory organisation.
- Full representation of all stakeholders on key bodies which influence policy would help ensure that the process of policy reform fully reflects the economic realities currently operating in the dairy sector.



Overview and evolution of the dairy policy environment



Dairy policy setting at independence

While indigenous Kenyans have kept cattle and had milk as an important part of their diet traditionally, commercial dairy farming in Kenya started at the beginning of the twentieth century when colonial settlers introduced dairy cattle breeds from Europe.

The development of Kenya's formal dairy industry therefore spans about 100 years. For the first 60 years, milk production was an activity dominated by large-scale colonial settlers who occupied most of the medium to high potential areas in Central, Rift Valley and Eastern provinces. During that period, indigenous Kenyans were not permitted to engage in commercial agriculture. The status quo remained until 1954 when a significant policy change occurred following the release of a colonial policy document, the Swynnerton Plan, which introduced changes that allowed indigenous Kenyans to practice commercial farming.

The attainment of independence in 1963 ushered in a new regime with a radical development agenda. At the core of the new policies was welfare and equity in distribution of the nation's resources. This aspiration has consistently been reflected in various government policy statements in presidential and ministerial



speeches, sessional papers, development plans, budget speeches and cabinet memoranda. The Sessional Paper No. 10 of 1965 on African socialism and its application to development planning in Kenya (GOK 1965), one of the earliest policy documents, for example, set out as one of the major developmental objectives, the need to achieve high and growing per capita incomes equitably distributed among the citizens.

Agriculture was often fingered for policy intervention because of its dominance in the economy and the desire to 'Africanise' the large settler farms in the highlands.

The immediate post-independence period saw one of the major land ownership transformations in Kenya. Land reforms involving acquisition, subdivision and redistribution of the hitherto large-scale agricultural farms were initiated and thereafter, large numbers of smallholder farmers started engaging in dairy production. By 1965, the cattle population on large farms had declined to 250 thousand from 400 thousand in 1961. The smallholders started to take the lead in development of market-oriented dairy production. Past estimates put their number at approximately 625 thousand (MOA 1996; Peeler and Omore 1997) producing and marketing about 56 and 70% of national milk output, respectively (Omore et al. 1999). However, strong evidence is emerging that in the absence of a livestock census since 1969 these estimates may significantly understate actual numbers of cattle and milk production, and even of smallholder producers (Waithaka et al. 2003 (Western Kenya)); Staal et al, 1998 (Central Kenya)). Later studies (SDP 2003b) have lent further credence

to this argument by showing that livestock numbers and figures are understated in some districts by up to four times. This suggests that the government could be making policy statements on the basis of inaccurate figures.

Contributing to the growth in smallholder participation was a deliberate effort by the government to help build a strong dairy sector after 1963, by intervening with highly subsidised input services for animal health, production and breeding. Many veterinary clinical centres were set up and highly subsidised artificial insemination services and bull schemes established. Dipping programmes were organised and where there was a shortage of veterinary staff, expatriates were hired, while training for local staff was intensified at Animal Health and Industries Training Institutes (AHITI), colleges and universities. Thus, many animal health and production officers were trained and deployed mainly in the medium and high potential areas to provide services to farmers. The active government support for these services soon resulted in a rapid increase in the amounts of milk produced nationally.



Evolution of milk marketing policy

Until the advent of the Kenya Dairy Industry Act (DIA) Cap 336 in 1958, traditional marketing of milk existed without any control. Africans started engaging in commercial agriculture and keeping grade cattle in 1954 after the adoption of the Swynnerton Plan. This colonial policy plan was preceded, in 1950, by a development plan for Central Province that allowed private land ownership and the onset of the current freehold system of land tenure.

The Swynnerton Plan allowed smallholders to engage in cash crop production and keep improved livestock. Along with it also came deliberate efforts to strengthen the marketing of farm produce by small-scale farmers. This saw the emergence of co-operatives and other agencies for marketing of agricultural produce. The DIA was enacted mainly to protect the market interests of the then expanding large-scale commercial dairy enterprises, and to fulfil a need for statutory control to enable continued orderly dairy marketing of improved quality products.

Through the DIA (Cap 336) Subsidiary Legislation, the dairy market was segregated into scheduled (urban or formal) and unscheduled (rural or informal) areas and the Kenya Co-operative Creameries (KCC) was appointed the sole agent of KDB in marketing of dairy products in the scheduled centres. Until the early 1970s access to KCC by smallholder farmers, though, was limited through contracts and milk quota systems that imposed entry restrictions particularly to those who could not meet the minimum quantities acceptable to KCC.

In 1964, the Government appointed a Commission of Inquiry on dairy development (the Kibaki Commission) whose recommendations included abolition of the contracted milk quotas and opening up of KCC to all farmers so long as milk was of acceptable quality. Consequently, KCC became a guaranteed market to all for raw milk and buyer of last resort. In order to raise its capacity to accommodate increasing volumes of milk, KCC embarked, with government guaranteed loans, on a rapid expansion programme during the 1970s and early 1980s when most of its 11 milk cooling and 11 processing plants were built. Meanwhile KCC enjoyed official monopoly access to an urban market so effectively protected that raw milk sales were relatively insignificant in the main Nairobi market.

Up to 1992 (1987 for ultra-high temperature treated (UHT) milk, milk prices for producers as well as consumers were officially set and the minister in charge of livestock development, in consultation with other relevant Government offices, would announce pan-territorial prices that applied across seasons of the year. In 1985, a price bonus was introduced to assist with feeding during the dry season that usually occurs between January and April.

Through this mixture of policies, Kenya was able to create one of the most developed smallholder dairy systems in any developing country, that currently accounts for over 70% of all improved dairy breed cattle in eastern and southern Africa. The country was to be broadly self sufficient in dairy requirements, except during extreme drought, and was occasionally able to export



small quantities of dairy products to surrounding African countries and elsewhere (GOK 1993). At the sectoral levels, one of the first major policy statements was the National Livestock Development Policy of 1980, which identified measures aimed at achieving self-sufficiency. This included service provision in credit and marketing as well as research on breeding and production. That paper also addressed technical staff training and extension services.

By early 1980s, the interventionist policies that centred on subsidised production services were rapidly becoming unsustainable, as budgetary constraints became more severe. For example, there was significant budgetary under-provision in the allocation for various expenditure items of the then Ministry of Livestock Development in key areas such as transport operating expenses that were critical for delivery of field services. Budgetary allocations for transport declined from 32% to 8% of the projected norm between fiscal year 1983/84 and 1990/91 (Peterson 1991).

Highlights of current dairy policy environment

In 1986, Sessional Paper No. 1 on Economic Management for Renewed Growth, was released (GOK 1986). Like the sessional paper of 1965 it marked a major turning point in the policy environment as issues such as sustainability of service delivery took centre stage in policy making and greater emphasis was placed on the principle of beneficiary (cost sharing) support for services. Specific policy actions included: price decontrols and liberalisation of marketing;

financial sector policy reforms; international trade regulation reforms; government budget rationalisation; divestiture and privatisation; parastatals reform; and civil service reforms. This sessional paper was to set the framework for significant changes in the policy environment surrounding the Kenya dairy sub-sector in the 1990s.

Current dairy development policy (1993)

In May 1992, the dairy industry was liberalised and prices decontrolled. The KCC's monopoly on urban milk sales was revoked, and those markets were opened to other private processors. A year later, the Kenya Dairy Development Policy (GOK 1993) was published to guide the dairy industry through the liberalised economy. This was the first comprehensive policy document on the dairy sector and its main objectives included:

- maintaining self-sufficiency and meeting increasing demand due to population increases and changing consumption patterns by improving efficiency in production, processing and marketing
- bringing about a smooth transition from the era of subsidised inputs and services to the new policies of cost sharing, full cost recovery and privatisation of services
- addressing the changes in production including increased intensification and use of grade and improved Zebu animals
- increasing production in Eastern, Nyanza, Western and Coast provinces by introducing grade animals and improving management and husbandry and



- tackling the following issues as they related to dairy:
 - optimal and intensified use of land to maximise dairy and food crops production
 - improved feed production
 - optimal use of farm residues
 - harmonised breeding programme to release improved breeding stock and upgrade Zebus
 - self sustaining AI services
 - self sustaining animal health and dipping services
 - improved research and extension services
 - develop proper pricing mechanisms
 - feeder roads improvement
 - distribution and processing issues
 - decentralisation of school milk programme
 - manage the deregulation of consumer prices
 - maintenance of strategic reserves
 - encourage the introduction of more processors to invest into the industry to deal with the then projected increase in milk production which KCC could not handle
 - decentralise and open the industry to competition as envisaged in the DIA cap 336 as revised in 1984, Sessional Paper No. 1 of 1986, National Livestock Development Policy of 1980 and Sessional Paper No. 4 of 1991 on employment.
 - address the future role of KCC
 - address issues of quality control.

At this stage, it should be noted that certain less obvious policy shifts were occurring in the general agricultural and therefore dairy policy. The stress on equity as a policy objective seemed to have been dropped. This was perhaps due to earlier perceptions that equity meant Africanisation in the immediate post-colonial Kenya. Equity policy, say between small-scale and large-scale producers or between poor vs. rich consumers seems to have suffered as a result.

The following year, Sessional Paper No. 1 of 1994 on Economic Recovery and Sustainable Development to the Year 2010 (GOK 1994a) was released to complement and build on the sessional paper of 1986. Coming after the 1992 UN Rio Conference on Environment and Development, this paper highlighted environmental and sustainability concerns which were to be considered in all activities including dairy farming. Also published in the same year was the revised National Food Policy (GOK 1994b), which underscored the critical role of dairy in food security and self-sufficiency.

In 1996, a sessional paper on Industrial Transformation to the Year 2020 was published (GOK 1996); accordingly, the informal sector would be encouraged to grow while industrialisation would be seen as simply a means of increasing the value of primary production. This paper made it easier for processors and manufacturers of dairy products to import equipment and expand. In 2001, an interim poverty reduction strategy paper (IPRSP) that outlines government strategies for combating poverty was published (GOK 2001b).



All these papers have significantly addressed the needs of the dairy industry.

Because of the reduction in direct public interventions described above, prices were decontrolled and most services in the dairy sub-sector were essentially left to private sector provision. In 1992, the dairy industry was liberalised through decontrol of dairy prices as a first step, and removal of the KCC monopoly in urban sales. The government had already decontrolled prices of meat (1987), animal feeds (1989), fertilisers, minor crops, domestically marketed tea, rice and wheat (1991), and cotton, sugar and maize (1992). However, the role of the government remained to create an enabling environment, control quality of products and services and enforce adherence to minimum standards.

Draft Dairy Development Policy (2000)

Four years after the first DDP (1993) a draft Dairy Development Policy (the current one is 2000 edition) was developed to update the existing policy and harmonise it with other existing policies in sessional papers and development plans and the economic environment in Kenya. Although the first draft was ready in 1997, it has not yet been finalised. The broad objective of the dairy policy is to ensure an orderly development of the dairy sub-sector and to promote an efficient and self-sustaining dairy industry that will effectively contribute towards the achievement of national development goals of poverty alleviation, industrialisation and employment creation. This is captured through the policy's theme 'Towards the Development of a Sustainable Dairy Industry'. The main thrust

of the policy is to develop the dairy industry through collaboration and participatory effort by all stakeholders. The policy looks at short-, medium- and long-term goals and is cognisant of the country's competitive edge and advantage in milk production over others in the region. To achieve the overall objective of the dairy policy, the government will institute actions to enhance:

- access to appropriate dairy production technologies and inputs
- competition and efficiency in the dairy processing and marketing
- entrance of new milk processors in the rural areas to tap the potential in these areas
- delivery of region-specific and demand-driven extension messages that are tailored to suit the farmers
- overall productivity in dairying. This will include recognition of the need to improve the zebu cattle in the milk deficit areas
- collaboration with non-governmental organisation and stakeholders in the dairy industry in search for solutions to the problems which continue to constrain dairy development in Kenya
- conducive and enabling environment to allow investment by all stakeholders in the industry
- consumption and trade in wholesome milk and set standards for product quality, premises and mode of transport
- rationalisation and harmonisation of the co-operative sector to ensure continued developmental role in the dairy industry and



- management of surplus quantities of milk and management of strategic milk reserves. Possibilities to incorporate milk production in arid and semi-arid (ASAL) areas under irrigated agriculture will be explored and supported.

Significantly, both the new Dairy Development Policy (2000) and the revised Dairy Bill explicitly recognise the predominance of the domestic raw milk trade and the need to strengthen regulatory frameworks for informal trade in raw milk.

Legislative environment for the dairy sub-sector

The liberalisation of the dairy industry is an ongoing process, which began in 1986 with the Sessional Paper No. 1 of 1986 (GOK 1986), peaked with the decontrol of milk prices in 1992 and continues today with review of dairy and related legislation and policy.

The development of Kenya's agricultural sector has been steered by a number of legislation, complete with implementing agencies and regulatory bodies, which together constitute the regulatory framework. Implementation of these policies involves provision of legal instruments such as Acts of Parliament, publication in the official Kenya Gazette and issuance of Legal Notices. Acts of parliament that directly effect the dairy industry include:

- The Dairy Industry Act (Cap 336) (GOK 1958, revised 1984; MoALD 2000a)
- The Public Health Act (Cap 242)
- The Food, Drugs and Chemical Substances Act (Cap 254) (GOK 1978b)

- The Veterinary Surgeons Act (Cap 366)
- The Pharmacy and Poisons Act (Cap 244) (GOK 1989b)
- The Agriculture Act (Cap 318)
- The Co-operative Societies Act (Cap 490)
- The Standards Act (Cap 496)
- The Animal Diseases Act (Cap 364) (GOK 1989a)
- The Land Act (Cap 280) (GOK 1982)
- The Factories Act (Cap 514)
- The Companies Act (Cap 486) (GOK 1978a).

To oversee implementation or enforcement of these laws, each Act has provided for the creation of a statutory agency, usually a Board of Directors, with specific functions and sufficient authority to execute prescribed functions. Very few of these laws have been revised to address changes that have occurred over the last ten years and some are even perceived to impose unfair restrictions on some stakeholders in the dairy sub-sector.

However, a review and rationalisation of Livestock Sector Policy and Legislation, which began in 1999, had not yet been presented to the Cabinet of the Kenya Government by 2003. This consultative process, co-ordinated by the Department of Veterinary Services (DVS) and KVB resulted in a rationalisation of the confused and multiple laws into five pinnacle statutes. The draft statutes are currently awaiting approval by cabinet. These pinnacle statutes are:

1. The Veterinary Medicines Bill, 2002
2. The Veterinary Practitioners Bill, 2002
3. The Meat Control Act



4. The Animal Disease Act

5. The Animal Welfare Act

The consultation process has been quite long and raised concerns among stakeholders about the slow pace of policy reforms within the sector.

In short, while the dairy policy environment has evolved in the last ten years, particularly towards less public sector control of and participation in markets, aspects of the regulations that impact the dairy sub-sector have not kept up with changes in policy. Partly as a consequence, some of the regulations contradictory to the new policy direction are not enforced. Others are not enforced due to lack of resources.

While less direct government participation in the dairy industry has reduced public sector influence, existing legislature and regulations still impact on industrial development and structure. This is also true for other developing countries where regulations and taxes rank first among the top four items identified as imposing the most serious constraints to enterprise development (Pfeffermann 2001). Broad macro-economic factors such as gross domestic product growth and foreign direct investment flows have been found to be positively associated with predictability of changes in laws and legislation and negatively associated with constraints imposed by taxes and regulations. The regulatory environment in the overall economy or sector development is thus crucial, and applies equally to the dairy industry, one of the most important sub-sectors of Kenya's rural economy.

The following sections will address these policies and regulations, attempt to clarify where and how contradictory policies occur, and describe their implementation.



Dairy production



Introduction

Milk production is an important economic activity in Kenya and the country has been able to generally achieve self-sufficiency in its dairy requirements. Records show that annual domestic milk production more than doubled from 1 billion litres in 1980 to 2.4 billion litres in 1997 (FAO 2002). Since then, it is officially estimated that production has stagnated altogether despite the fact that the country is considered to have a potential to produce up to 4 billion litres/year (GOK 1997a), implying a gap of 1.6 billion litres between actual and potential output.

However, strong evidence is emerging that in the absence of a livestock census since 1969, these estimates may significantly understate actual milk production (Waithaka et al. 2002 (Western); Staal et al, 1998 (Central)) so that the gap may not be nearly as large as earlier thought to be. Nevertheless, the continued failure to realise more of the productive potential has been attributed to underfeeding of dairy cattle, poor breeding services, ineffective disease control services and lack of access to credit. In some areas, poor access to output markets contribute to low incentive to increase production, and so low demand for the above inputs. Low input use in those cases is not necessarily due to the unavailability of input services.



Underfeeding prevents cattle in smallholdings from realising a greater share of their genetic potential. Omore et al. (1999) attribute the low milk yields of between 5 and 8 kg/cow per day to under-nutrition. The main technical constraints to adequate cattle feeding include: poor quality and low quantity of available feeds and inadequate mineral supplementation. For breeding, the technical constraints relate to long calving intervals that sometimes stretch up to 600 days (Omore et al. 1999), although this is sometimes a deliberate farmer strategy to reduce risks and prolong cash flow (Tanner et al. 1998). Indeed, it is important to note that low cash input production strategies, including minimal concentrate feeding, may be very appropriate for small farmers with limited credit resources and great aversion to risk, or those with adequate land resources such as in parts of Rift Valley² (Kaguongo et al. 1997)

These constraints to the industry's ability to perform and produce milk exist against a background of increasing demand arising mainly from growing population and increased urbanisation.

Further, these constraints are considered to be partly associated with the inability of policies and responsible institutions to serve the interest of farmers. The main policy issues discussed under production are those related to industrial cattle feeds, animal health, artificial insemination, credit and dairy equipment.

Cattle feeds

Where intensive production systems are appropriate, as in many parts of the Kenya highlands, an important determinant of the growth of the livestock sector is the availability of high quality livestock feeds. Feed cost accounts for over 40% of dairy production costs in highly intensive dairy systems (Staal et al. 2003b).

The livestock feeds industry is regulated through the 'Fertilisers and Animal Foodstuffs Act Chapter 345, 1963' (revised 1977) and the 'Standards Act Chapter 496, 1977' (revised in 1981). Kenya is currently in the process of developing and formulating legislation and policies that deal explicitly with the livestock feeds sector. As part of the recently instituted countrywide economic reforms, the market for feeds has been liberalised and the feed prices decontrolled (GOK 1997b). The policy on cattle feeds is not yet finalised and a series of stakeholder consultative workshops have been planned to discuss the draft Animal Feeds Bill. The private sector has always handled the supply and distribution of livestock feeds. The co-operative societies have also been involved with supply of livestock feed and their involvement is more critical in those rural areas where manufacturers and their distributors may not be attracted.

However, concerns over the quality of cattle feeds have persisted. Farmers often attribute variable milk quantities and quality to variations

² In one of the most successful dairy industries in the world, that of New Zealand, low input production strategies are employed involving no use of concentrate feeding, resulting in very low costs of production. Their cattle do not achieve yields anywhere close to their genetic potential, yet this is not regarded as a constraint.



in feed quality. From the perspective of the dairy producer, quality of feed may be as important as cost. Variable and unreliable quality will increase risks and costs, and reduce farmers' willingness to use intensive production strategies. Variable quality may also affect smallholder farmers more severely than others. In such conditions, large producers who can invest in their own feed ration formulation may be able to gain a competitive edge over smallholders, who must rely on market supply of feeds of variable quality.

The quality problem is partially affected by low supply of the necessary ingredients, especially those that are not locally available, such as oilseed cakes and meals, meat and bone meal, fishmeal, finer mineral elements, vitamins and amino acids. Maize may at times be in shortage because of competition for human food. Many feed manufacturers are therefore faced with a shortage of raw material. Whilst this may partly explain the utilisation of only 30-65% of installed capacity, low demand for concentrate feeds from farmers, because of cost, low-input production strategies, and lack of output markets for milk, would also explain this under-utilisation of capacity. The capacity for oil seed production (60 thousand tonnes) is only about 30% utilised (MoALD 2000b). Imported feed ingredients are exposed to unpredictable foreign exchange rate changes that might impose additional costs on importers. However, the government has waived duty on such imports, except for a 3% tax on imports of pure forms of minerals and vitamins, subject to millers making a specific request to the Ministry of Finance.

However, it is not clear to what extent variable and low feed quality is simply the result of poor oversight and regulation, rather than problems in availability of ingredients. Poor enforcement of regulations allows opportunities for feed manufacturers to reduce quality standards in times of high ingredient cost or limited availability.

The manufactured feeds industry

The manufactured livestock feed industry has registered a very rapid growth over the past three decades. In 1970, for example, there were only 10 feed millers. Following price decontrol of feeds and liberalisation of feed distribution in 1989, a large number of feed processors entered the market. Currently, about 70 cattle feed millers produce various kinds of mainly concentrate feeds of high energy and protein density. Most of the feed millers are located in major urban centres, half of them being in Nairobi, suggesting that availability of infrastructure (electricity, water, railways etc.) as well as availability of raw materials from other processing firms such as oil seed cake millers or fish meal processors may be major determinants of location (Mbugua 1999). The distribution of millers by province is: 35 millers in Nairobi, 10 in Central, 1 in Eastern, 6 in Coast, 19 in Rift Valley, 1 in Nyanza and 1 in Western. All these have a combined installed capacity of 600 thousand tonnes per year against utilised capacity of about 390 thousand tonnes. Cattle feeds account for about 40% of this utilised capacity.

The leading feed millers are: Unga Feeds Ltd (with branches in Nakuru and Nairobi), Milling



Corporation of Kenya, Muus, Belfast Millers, Merchant Manufacturers, Kitale Industries, ABC, Ideal Manufacturers and Atta Ltd.

From the public interest point of view, the role of cattle feed manufacturers is mainly to make the feeds available to the farmers at affordable prices, at the right time and importantly, to ensure consistent quality in conformity with set standards. They are expected to be:

- efficient in their manufacturing, keeping pace with new technologies and world feed standards and
- able to translate their efficiency into competitive prices, and promote proper use of cattle feeds within the dairy industry.



The regulatory framework for cattle feeds market

The cattle feeds market is regulated by the MoLFD and the Kenya Bureau of Standards (KEBS) that is also responsible for setting the quality standards for all products sold in or imported into Kenya.³ These standards are supposed to be reviewed every five years or as need may arise. However, standards of cattle feeds have not changed for a long time due to inadequate resources at KBS to conduct regular and comprehensive reviews. To enforce standards for cattle feeds, KEBS officials are mandated to conduct unannounced audit visits, and draw and take samples for analyses. Any serious breaches of the quality standards can be penalised as prescribed by the Kenya Standards Act (cap 496). However, enforcement of these standards by KEBS is weak due either to lack of incentives or capacity.⁴

Feed millers are registered as companies by the Registrar of Companies through the Companies Act Cap (486) and licensed by the respective Local Authorities. All together, 78 millers have been registered and licensed to operate in Kenya, six of which have recently closed down.

The government has only recently developed a policy for the feed sector and a proposed Animal Feeds Bill is currently undergoing stakeholder consultation (Chabeda 2001). Policies that currently affect cattle feeds such as decontrolled prices and liberalised marketing were implemented as part of the economy-wide Structural Adjustment Programmes.

³. See *The Standards Act, Chapter 5, for details on Standards setting.*

⁴. See *The Standards Act, Chapter 5, for the capacity of KEBS to enforce Standards.*



After farmers raised concern about the quality of various farm inputs, the MoALD responded in 1996 by appointing a team to act as inspectors for various farm inputs such as fertiliser and cattle feeds. The team whose task was to ensure that the inputs met the prescribed minimum quality standards included all District Livestock Production Officers (DLPOs) and other senior ministry officials. To date, the team has not been activated and some of the members have since left government service. This leaves the quality assurance function to be performed on behalf of government by KEBS, which is constrained, in the opinion of many stakeholders including farmers and feed manufacturers, by lack of capacity or will to regulate the feed sector. Veterinarians are gazetted feed inspectors, but are rarely active in this capacity. Lack of policy and a specific regulator, as well as lack of capacity to regulate, is believed to have created an environment that makes it possible for some manufacturers to occasionally supply substandard feeds.

Animal health services

Efficient and reliable animal health services constitute an essential ingredient to livestock development. Animal health services were for a long time been provided almost solely by the Department of Veterinary Services (DVS), which was established in 1903 to provide disease control and research services. After the country attained political independence, large European-owned farms were requisitioned, sub-divided and allocated to small-scale African farmers along with the grade cattle therein. The new government initiated animal health programmes

to support smallholder farmers by offering them services at highly subsidised rates. The government filled the shortfall in service provision by hiring expatriate veterinarians and at the same time intensified local manpower training (ITDG 2000).

By early 1980s, budgetary pressures started imposing a constraint on provision of quality services by the DVS. The proportion of personnel emoluments increased steadily at the expense of operational expenditure. In fiscal year 1980/81, personnel emoluments comprised 52 and 66% of the recurrent budget of the Ministry of Livestock Development and Ministry of Agriculture, respectively, and by fiscal year 1988/89, the proportions were 77 and 79%. Personnel emoluments had absorbed potential operation and maintenance funds (Peterson 1991). By early 1980s, the quality of the animal health services had started to deteriorate as the rapid expansion of public sector veterinary staff, at the expense of funding for means of support and operating costs forced drastic cutbacks in field operations. Staff became office-bound and their morale plummeted as has been observed in many African countries (de Haan and Bekure 1991). Reforms were inevitable.

Following recommendations in the Sessional Paper No. 1 of 1986 (GOK 1986), the government started to move gradually from subsidised services to increased cost sharing and eventually full cost recovery and privatisation of some veterinary services. So far, clinical services, AI, management of dips, and production and distribution of drugs and vaccines have been privatised. Other services were left within the



public domain, including disease surveillance, veterinary quarantines, quality control of drugs and vaccines, food inspection, livestock and livestock product inspection, export and import control; disease control planning and control strategies, and national projects. A third category of services was to be shared between the public and the private sector, including contracting of vaccinations to the private sector under supervision of the government, vector control, research and extension, routing and checkpoint inspection in livestock marketing, and provision of laboratory services. In areas where private veterinary services have not developed, the government continues to offer services. Some farmers indicated that this is done on recovery basis. Duties on livestock drugs have also been waived to encourage usage.

Privatisation of clinical and breeding services

The leading participants in the privatisation of clinical veterinary services include the government, the Kenya Veterinary Association (KVA) and donors. With funding from the European Union (EU), the government and the KVA started the Kenya Veterinary Association Privatisation Scheme (KVAPS) to implement the privatisation of veterinary service in 1994. The overall objective of the KVAPS is 'to provide an improved delivery of animal health care services to the livestock farmers in Kenya', (KVAPS 2002), with the specific objectives being:

- improving the quality and availability of animal health services through the setting up of more private practices in rural high and medium potential areas of Kenya

- reducing unemployment of graduate veterinarians through the establishment of owner-managed veterinary practices and
- reducing budgetary pressure on the government in provision of veterinary services through the privatisation process, thus allowing the government to concentrate on surveillance and control of the major epidemic diseases and other core functions.

In line with these objectives KVAPS provides the following services:

- financial support
- training support
- monitoring and counselling support
- liaison with NGOs and industry
- collaboration with the DVS and Kenya Veterinary Board (KVB)
- a new role that KVAPS will get into in the year 2003 is advocacy with government and the wider public on issues of livestock concern that particularly affect the privatisation of veterinary services.

According to KVAPS, out of an estimated 1875 qualified veterinarians operating in Kenya in 2001, only about 200 are in private practice. The rest have taken up employment in the civil service or in private companies or in NGOs, are students or are deceased. The KVB, however, reports that of approximately 1400 registered veterinarians operating in Kenya, only 500 have retained their names in the register for veterinarians, and a slightly lower number of between 150 and 180 veterinarians are engaged in private practice.



TABLE 1. Distribution of veterinary practitioners in Kenya.

Field	Numbers	%
Government	560	30
University and research	145	8
Pharmaceuticals	300	16
Private practice	200	11
NGOs	15	1
Foreign students	200	11
Vets abroad	20	1
Deceased/others	435	23
Total	1875	101

Source: KVAPS (2002).

With the EU funds, a loan guarantee fund was set up in Barclays bank to assist with start-up capital for practising veterinarians who had joined the scheme. The scheme assists veterinarians with training in business management skills and processes loans to deserving applicants. The participating bank disburses the loans at a subsidised rate of 3% above the prevailing base lending rate, currently 15%.

Progress with privatisation of veterinary services

KVAPS has extended its services to 25 districts in Kenya. By 2002, only 59 veterinarians had participated in the scheme of which 33 were start-ups while 25 received expansion loans. The scheme has also supported private vets who are working in the ASAL areas in conjunction with NGOs (KVAPS 2002).

This rather slow progress can be attributed to the following factors:

- The state of the economy and its adverse effects on the farmers' ability to afford proper animal health care
- Legislative issues, such as the Pharmacy and Poisons Act, that prohibits qualified veterinarians from engaging in drug sales, thereby reducing the viability of veterinary practice (see Section 3.3.2)
- Competition from government veterinarians who use public resources (e.g. vehicles and drugs) for their own private practice, and hence undercut private practitioners
- Lack of training in business management skills for veterinarians
- The lengthy process to access the loans - the process takes an average of three months
- Applicants are required to provide acceptable collateral to the bank to cover at least 50% of the loan, a demand that many potential applicants find prohibitive.

In contrast, the number of agro-vets and dukas supplying animal health products has expanded rapidly over the years. While these private ventures are not constrained by some of the factors affecting professional suppliers of animal health services, this expansion suggests that a demand for animal health services does exist, and that the problem lies within the institution of private veterinary practice.

Regulatory framework for delivery of animal health services

Concern with the deterioration in efficiency of delivery of veterinary prompted the DVS to review the animal health policies and strategies



needed to enhance the contribution of the livestock sub-sector to the national economy. The resulting draft policy paper defines numerous policy and strategy directions that are considered important for dairy development.

When the draft policy becomes operational and is implemented, it will be expected to contribute to resolving a number of outstanding issues constraining livestock production and efficient delivery of veterinary services to the clients, including:

- the high cost of services and inputs
- low level of awareness of benefits of animal health care
- poor returns from livestock enterprises
- inadequate supplies of veterinary inputs
- inadequate storage facilities for drugs and vaccines in district veterinary offices
- cattle rustling in the ASALs
- resolving disease outbreaks from domestic and wildlife interactions
- breach of quarantine regulations
- large-scale outbreak of otherwise controllable diseases
- inadequate feeds and supplementation
- disappearing indigenous information base and ethno-veterinary practices and
- limited public awareness of the existing policies.

The proposed strategies cover services in the following areas:

- animal breeding
- animal disease and pest control

- veterinary laboratory and quality control
- animal welfare
- planning and management of veterinary projects
- veterinary training
- veterinary public health
- animal identification and
- regulation of veterinary services

The preconditions considered necessary for success in achieving the stated policies and strategies are:

- commitment and willingness by government to adopt and implement the proposed policies and strategies
- commitment by all stakeholders to provide the necessary support, by playing the roles specified in the proposal
- availability and access to markets for the anticipated increased livestock, livestock products and by-products and
- governments in the region will support border harmonisation and conflict-management meetings.

The time frame for the vision to be attained is 10 years. The policy paper is clear that regular monitoring and evaluation will be necessary to establish whether the policies and strategies require adjustment. The future of the livestock industry and by extension the welfare of targeted beneficiaries lies in careful implementation of the strategies proposed.

Currently, there are over 16 Acts of Parliament, which affect the veterinary profession. Two of these have a major impact on the profession,



namely, the Veterinary Surgeons Act (Cap 366) and the Pharmacy and Poisons Act (Cap 244).

Veterinary surgeons Act (Cap 366) and the Kenya Veterinary Board

The Kenya Veterinary Board (KVB), established in 1953 by the Veterinary Surgeons Act, registers veterinary surgeons. KVB has a membership of eight, composed of four elected by professional veterinarians, two nominated by the minister in charge of livestock development and two ex-officio members: the Director of Veterinary Services and the Dean of the University of Nairobi Faculty of Veterinary Medicine. The Minister nominates the chairman of the Board.

As the regulatory body, the main functions of the KVB are:

- arbitrates in disputes involving veterinarians
- takes disciplinary measures where necessary
- examines veterinarians holding qualifications obtained outside Kenya
- registers veterinarians and license them and
- supervises veterinarians in practice.

Registration and licensing of veterinarians

Upon qualification with a bachelor's degree from a recognised university, veterinarians are supposed to submit a formal application to the KVB for registration. In their application they are required to indicate the type of clinic they wish to operate, i.e. whether veterinary clinic, animal hospital, or ambulatory service. They are also required to indicate whether there are other veterinarians operating within the same locality.

The Board then conducts inspections of the premises and if satisfied that they conform to the requirements of the Act, the applicant gets registered, upon payment of a registration fee of Kenya shillings (Kshs) 500 (in 2002, US\$ 1 ≈ Kshs 78.75). Subsequently, the veterinarian is required to pay an annual retainer fee of Kshs 500 in order to keep his/her name in the register. There is also an annual practice license fee of Kshs 5000.

The Veterinary Surgeons Act prohibits anyone to practice veterinary medicine unless he/she is registered and licensed by the Board. The minimum qualification for registration has been specified under section 4(1) (a) as a degree in veterinary science of a university approved by the Board or (b) a degree in veterinary science of any other university approved by the Board. Diploma and certificate holders in animal health do not qualify for registration or licensing and can only practice under the supervision of a registered and licensed veterinary surgeon.

The Pharmacy and Poisons Act states in section 19 (1) that 'No person other than a registered pharmacist shall, except as provided for in Sections 21 and 22 - (a) carry on either on his own behalf or on behalf of another, the business of a pharmacist; and (b) in the course of trade or business, prepare, mix, compound, or dispense a drug except under the immediate supervision of a registered pharmacist'. This effectively prohibits all veterinary surgeons from stocking large quantities of drugs unless a registered pharmacist is in direct control of the premises where the drugs are stocked and sold. This requirement can seriously curtail the profitability of any veterinary practice.



Effectiveness of the KVB in supervision of practising veterinarians

Given the extent of regulatory restrictions imposed on veterinary practice, the capacity of the regulatory bodies to enforce the restrictions effectively is of major importance. Regulatory bodies like the KVB should have adequate human and physical resources to enforce these laws. The entire staff of the KVB is comprised of an executive officer, administrative secretary and an office assistant/clerk. KVB has a head office, but no resources such as transport for field operations. With such limited staff and facilities, KVB has a very limited field presence and its ability to carry out its supervisory and regulatory functions is severely constrained.

Thus the lack of supervision of veterinarians has led to numerous cases of illegal practice in animal health. Firstly, it has created room for government veterinarians to engage unofficially in private practice using public resources.⁵ Many public sector workers on payroll use public

resources and time to supplement their income by carrying out private work thereby offering unfair competition to wholly private service providers (Lewis 2000). Secondly, veterinarians do actually stock veterinary drugs, contrary to the provisions of the Pharmacy and Poisons Act. Further, the majority of the shops selling livestock drugs are owned and/or are manned by individuals without any qualification in animal health (Table 2).

However, enforcement of the regulations is apparently very limited: when shop owners in Njoro were asked what they regarded as threats to the longevity of their business, none stated law enforcement officers as a threat, and did not seem to view enforcement of laws as a risk to their enterprise. This simply underlines the low levels of enforcement.

Table 3 illustrates further evidence that the laws have not been effective in prohibiting some categories of individuals from providing animal

TABLE 2. Classification and licensing of shops supplying veterinary pharmaceuticals.

Location	Agrovet (non vet)	Agrovet Vet	Agrovet AHA*	Pharmacist	Total	License displayed	Licensed (%)
Njoro Division	15	4	1	3	23	12	51
Bahati Division	26	2	7	1	36	18	50
Bungoma Municipality	7	0	0	8	15	12	80
Kimilili Division	9	0	1	2	12	9	75
Webuye Division	2	0	0	7	9	9	100

*AHA = Animal Health Assistant.
Source: Lewis (2000).

⁵ It is not clear if the DVS condones this practice but the department certainly seems unable to prevent the use of public resources for private practice



TABLE 3. Effects of Veterinary Surgeons and Pharmacy and Poisons Acts on delivery of veterinary services in high potential areas and ASALS.

Legal issues	Effect on service delivery in high potential areas	Effect on service delivery in ASALS
<p>Veterinary surgeons Act, Cap 366</p> <ul style="list-style-type: none"> ● Only registered veterinary surgeons establish veterinary practices ● Certificate and diploma holders in animal health not registered to establish veterinary practice ● Community based animal health workers not recognised <p>The Pharmacy and Poisons Act Cap, 244</p> <ul style="list-style-type: none"> ● Veterinarians cannot carry out business of veterinary drugs stockists ● Veterinary personnel not in drugs inspectorate service 	<ul style="list-style-type: none"> ● Trained vets available to establish vet practices and offer services ● Government vets available and providing services ● Certificate and diploma holders trained and are carrying out illegal practices (providing services) ● Certificate and diploma holders in government services are providing services ● Number negligible ● Insignificant effect on service delivery ● Operation of private veterinary practices limited and therefore services delivery is equally affected ● Sale of drugs monopolised by pharmacists who have little respect for ethical practices in dispensing these drugs ● Inadequate control of drugs ● Vet drugs in the hands of non-professional and hence poor services in many cases 	<ul style="list-style-type: none"> ● Number of vets trained is insignificant. No provision of services through private veterinary practices ● Few government vets; thin service on the ground ● A few certificate and diploma holders trained but working with NGOs ● Few certificate and diploma holders in government sector-provision of limited services ● Limited number available, but providing services illegally ● Potential to train more exists if recognised by law ● Supply and usage of veterinary drugs out of control ● Many vet drugs in the hands of pastoralists resulting in poor and rudimentary services delivery

Source: Kajume (1999, cited in ITDG (2000)).



health services, and summarises the legal framework governing veterinary practice, and its effects on delivery of veterinary services in both high potential areas where dairy production predominates, and in semi-arid and arid areas (ASALS). It shows that diploma and certificate holders are actively involved in veterinary practice. Again, in spite of the legislation, those selling veterinary drugs include non-veterinarians without any basic or relevant training, and potentially traders selling fake drugs.

The overall result is that there is much practice in animal health services that is illegal under existing law, but may be meeting much of the demand. There are many agro-vets, dukas and other shops stocking and selling livestock drugs, including those owned by individuals not trained in animal health, as described above. In a recent study, Kenya Agricultural Research Institute (KARI) scientists estimated that these outlets provide over 80% of animal health services to farmers. This implies potential abuse of drugs by laymen and unqualified practitioners, which may contribute to development of drug resistance and may have implications for drug residues in milk and meat. However, it must be acknowledged that in many places, farmers have few, if any, alternative sources of animal health services and information.

There may therefore be a need to revisit the two Acts in order to create a conducive environment to enable more effective provision of services in animal health, in a manner and at a cost that serves small farmers on which the dairy industry depends. Potential steps could include:

- reviewing the Pharmacy and Poisons Act to officially allow veterinarians to stock and sell drugs
- identifying mechanisms to encourage veterinary drug manufacturers to work together with other professionals in animal health to ensure that only competent personnel handle drugs. Many stakeholders consider that even diploma and certificate holders should be able to dispense some drugs under some form of supervision by qualified veterinarians. Such changes could result in getting more trained persons in to the drug dispensing business
- allowing para-veterinarians, including diploma or certificate holders or those trained for shorter duration, to practice legally. In connection with this, some 6000 Community Animal Health Workers have been trained in Kenya, as part of various projects. Whilst working predominantly in ASALs, they could possibly play a role in services to smallholder dairy producers. In addition, ethnoveterinary practitioners or 'local experts' as they are sometimes known, are widely used for primary animal health care. Their role is often underplayed, and should be considered, if they can provide relevant and quality services.

A proposed revision of livestock sector laws is currently being considered, following a review by DVS and KVB which looked at many of these issues (see Section 1.3).

Breeding services

The main policy issues in artificial insemination (AI) services relate to the proposed



harmonisation of breed improvement services and the development of self-sustaining breeding services.

Delivery of breeding services

Following the establishment of Kenya Stud-Book (KSB) in 1920s, other breeding and recording services have been introduced that play a role in dairy genetic improvement. These are the Central Artificial Insemination Station (CAIS), Dairy Recording Services of Kenya (DRSK) and the Livestock Recording Centre (LRC).

The KSB is mandated to carry out all official ancestry registrations and upgrading schemes of all animals. The CAIS was set up in 1946 to produce semen from breeding value proven bulls mainly to be distributed through the Kenya National Artificial Insemination Service (KNAIS). The DRSK, formerly known as Kenya Milk Records (KMR), is meant to promote dairy farm milk recording and performance evaluation. It carries out all official milk recording and butter fat testing, and makes the records available to CAIS for contract mating schemes through sires, which can be acquired nationally. The LRC was set up as a section of the Animal Production Department at MoLFD. Its objective was to promote farm recording of livestock, especially cattle, activities and performance evaluation; it mostly analyses data from the DRSK so that results can be used effectively in breeding programmes.

The Departments of Veterinary and Livestock Production have been in charge of these services in the past but farmers under the Agricultural Society of Kenya manage the DRSK and the KSB. They were financially constrained, not well co-

ordinated and unable to deliver effective breeding services. A proposed solution was to group them together under one organisation charged with the responsibility of developing a self-sustaining breeding programme (GOK 1993; GOK 1994a) to be financed through cess collected from dairy farmers and income from services rendered. The proposed new organisation is the Kenya Livestock Breeders Organisation (KLBO). It is supposed to exist as a private and voluntary organisation that would ensure the supply of improved breeds to farmers on a commercial basis and would look into dairy productivity issues, including the role of new technologies like embryo transfer.

Implementation of harmonised breeding services

To implement the policy, a task force chaired by the Director, Department of Veterinary Services (DVS) was constituted in 1996. The task force has since completed its work and a report is ready but has not been released officially for implementation. This initiative to harmonise breeding services has therefore not been implemented. The slow pace of implementation could emanate from lack of clear guidance as to which arm of the Ministry should take the lead in this task. For example, although breeding is a production function, falling under the Department of Livestock Production, it is the DVS that convened the implementation task force.

Impacts of liberalisation of breeding services

The decline in publicly provided AI services through KNAIS left a gap in AI input services, which has been difficult to fill. The main complaint relates to the high cost of these



services. Though lack of adequate competition from AI input service providers may be a factor in this, the cost of importation of semen and embryos also seems to play a major role, despite the waiver of duty on the inputs. Importation requirements contributing to the high costs are: the bureaucracy and long waiting period required to acquire an import permit (average 3 months); charge per straw (Kshs 20); import declaration form (Kshs 5000); clearance charges by CAIS (Kshs 1000); fees (2.75% per invoice).

The resultant minimum landed cost of semen comes to about Kshs 100 (US\$ 1.30) per straw (although this varies depending on the bull the semen is selected from), while additional costs raise the cost per service to a range of Kshs 600 to 4500 per service for top quality semen.⁶ Additional costs that contribute to these figures include services rendered by CAIS in clearing and testing semen in its laboratories for diseases before it can be approved and released to the importer.

These costs are considered too high for the majority of smallholder farmers, and most prefer to use cheaper local semen provided by KNAIS, or bull service. While producers generally seem to consider that KNAIS offers poor services due to perceived but undocumented high failure rates, using bull service is a poorer choice given the potential risks associated with in-breeding and venereal diseases, as well as long-term degradation of the genetic potential of the herd. The result is that dairy cattle in many instances seem to be getting increasingly smaller (Kilungo

and Mghenyi 2001) and with lower yields, although undernutrition may be an important factor contributing to this (see Section 2.1). On the other hand, some suggest that poor recording practices in AI among small farmers is also contributing to in-breeding in some cases.

Privatisation of artificial insemination services

Though an AI service was introduced in Kenya as early as 1935, followed by the establishment of CAIS in 1946, the use of AI among smallholders was only accelerated after independence. Though expensive to operate given the high funding subsidies from donors, the motorised AI delivery service by KNAIS was considered successful in improving dairy genetics of many smallholder dairy farmers. With the introduction of structural adjustment programmes, as recommended by the GOK and multilateral donors (GOK 1986), a process of gradual increases in user charges, moving steadily towards eventual privatisation was started. However, these services declined at a faster rate than the capacity of private service providers to fill the gap. The main policy thrust since then has been to encourage private veterinarians and inseminators to provide the service. In areas where the service is still relatively new, the government has tried to continue to provide the service but with emphasis on increased cost sharing and eventual withdrawal. In the long term, the government plans to retain only supervisory and advisory roles.

⁶ Dr N. Makoni of American Breeders Service (ABS), personal communication.



Private AI service providers

According to the DVS, there are about 300 private individuals, co-operative societies and veterinary clinics currently providing AI services in the country. Geographically, these are distributed as shown in Table 4. The Table indicates that the majority of private AI service providers also happen to be those areas with high dairy cattle density suggesting that market concentration is critical to the efficient provision of private AI services (Omore et al. 1999).

TABLE 4. Distribution of private AI practitioners by province.

Province	No.
Central	161
Eastern	35
Rift Valley	79
Western	9
Nyanza	5
Coast	7
Nairobi	6

Source: DVS (2001)

Implementation of private AI services

In 1991, the Government undertook a study with the objective of building self-sustaining AI systems and evaluated various options where beneficiaries were increasingly paying for their maintenance (GOK 1993). The proposed AI delivery options include promotion of:

- AI services in areas not currently served
- establishment of own-farm AI services for medium- and large-scale farms, and provision of the service to neighbouring farms

- contracting AI services where private inseminators are contracted by the government in some areas and
- co-operative AI services where dairy co-operatives run the service for members.

Indications are that the intended implementation of the policy change, to allow a seamless transfer of AI services into private hands, did not occur resulting in significant inadequacies in the provision of AI services. By mid-1993, only four co-operative societies and 14 private practitioners were operating their own schemes besides some 95 farmers who provided services to neighbouring farms. In 1997, there were 113 thousand inseminations by private inseminators. On the other hand, the number of inseminations by KNAIS registered a big drop from 542 thousand in 1979 to only 60 thousand in 1997. Indications are that the number of private inseminations has also declined since 1997 given the 2000 records of only 80 thousand inseminations provided by both public and private AI service providers. It should be noted however, that in post-liberalisation era, the role of co-operatives in AI service provision has increased tremendously. A number of stakeholders feel that with many unreported inseminations the numbers given above are inconclusive and largely under represent the reality.

Other reforms are being implemented through training of inseminators and supervision of practising inseminators. The MoLFD developed a training curriculum for institutions with the capacity to train inseminators. The curriculum provides the following requirements for training:



- (i) Certificate holders (e.g. certificate from AHITI) or higher qualification holders take four weeks
- (ii) 'O' level applicants without animal health training take eight weeks
- (iii) Those with lower than 'O' level education, but who have worked with animals and have a demonstrable understanding of animal health (e.g. farmers) may qualify for an eight-week training.

In addition, institutions offering training are required to provide practical training using live cows. Consequently, inseminators trained in institutions that do not have farms may never be recognised and are unlikely to be issued with a Government certificate or license.

The curriculum has been made available to all institutions that can train inseminators. Organisations such as the American Breeders Service (ABS), that provide breeding services, have started training inseminators although their graduates do not qualify for government certificates and licenses on the grounds of perceived incapability to provide adequate practical training. However, a number of inseminators with training from such institutions seem to perform quite well in the field.

The government continues to train inseminators on a cost-recovery basis. Upon successful completion of the course, they qualify for a certificate on payment of a license fee of Kshs 1000 to the DVS. Once licensed, practising inseminators are supervised by the DVS through field veterinary officers. The supervision is

however hampered by lack of adequate operational resources.

Dairy cattle breeders

The main pedigree breeds in Kenya are Friesian, Brown Swiss, Ayrshire, Guernsey and Jersey. Only Kilifi Plantations and Mukumu Farm breed the Brown Swiss and Guernsey, respectively. The rest are bred in a number of large farms. Going by the number of breeders, Holstein-Friesian is by far the most popular breed (22 registered breeders) followed by Jersey (9) and Ayrshire (8).

The dairy cattle breeders are responsible for ensuring that the industry gets quality dairy stock that will produce milk efficiently. They promote a variety of exotic and local species. Their role also includes promotion of the use of high quality breeding stock, lobbying for the interests of the industry and contributing to dairy sub-sector policy development. In practice, however, smallholders generally view the few breeders as an elite group not easily accessible to them.

Agricultural credit services

Through agricultural credit, farmers are able to acquire more goods and services than would otherwise be the case given their limited resources. The policy to improve flow of credit to farmers has included:

- increasing the minimum lending by commercial banks to agriculture from 17 to 20% of their deposit liabilities



- a proposal in the 1997-2001 National Development Plan to establish an Agricultural Development Bank (ADB) as a subsidiary of Agricultural Finance Corporation (AFC) to serve as an additional vehicle to finance agriculture activities (GOK 1997c).

These goals were never realised. Commercial banks have generally not met the suggested minimum lending to agricultural investments, the ADB did not get off the ground, and the AFC itself collapsed due to apparent poor management and political interference. Other constraints to increasing access to credit included requirements for collateral that many borrowers do not have, high interest rates and grace periods that do not correspond to the gestation period in dairy enterprise investments.

It is also important to note that over the period since 1997, the government has increasingly adopted policies or issued statements that discourage direct involvement in commercial institutions, and a move to establish or expand parastatal agricultural banks will be seen as a step backwards. Re-establishing AFC or reviving the idea of the ADB as originally conceived would therefore appear to be contrary to other policies of the government. Currently, small-scale farmers who access credit mainly do so through small- and medium-scale enterprises lending institutions, co-operatives or self help groups. The increasing role of micro-credit lending institutions and demand for their services deserves further discussion.

Small-scale lending institutions

Institutions willing to lend to small-scale enterprises at favourable terms have emerged

and are expanding their activities. Their favourable lending terms include willingness to lend small amounts, low interest rates and the non-requirement for collateral. One of the most successful in this category of lenders is the K-Rep Bank. The Bank provides various types of loans to individual and group customers. For example, it has different terms for different categories of borrowers such as retail and group based customers. K-Rep headquarters is located in Kawangware, a high-density population area where incomes are relatively low. The Bank also has 5 upcountry branches and 21 sub-branches and plans are underway to expand and open up two further branches in Nairobi.

Other banks providing similar services include Faulu Kenya, Kenya Women Finance Trust, and NGOs such as Care Kenya and Plan International. Most stakeholders consider that further institutional innovation in micro-finance provision is still required.

Other common sources of savings and loans are 'Merry-Go-Round' groups, Rotating Savings and Credit Organizations (ROSCAS) that provide savings and credit facilities through rotational systems where the members contribute periodically a certain amount, which is given to each member in a cyclical pattern.

Co-operatives have also continued to play a critical role in micro finance within the dairy industry. Dairy co-operatives are increasingly linking their marketing activities to provision of input services although this form of input credit mainly occurs in Central Province especially Kiambu (Omore et al. 1999)



Summary of main issues in milk production

Cattle feeds

The main issues and constraints relating to the supply of cattle feed are:

- costs that are perceived to be too high by farmers
- shortage of key feeds and key ingredients
- variable and/or low quality of cattle feeds and ingredients used in feed formulation
- uneven distribution of feed millers
- lack of a clear policy guideline and effective regulation to ensure the supply of standardised quality feeds
- decline in production of drought resistant crops and unavailability of fodder and pasture seed material including legumes
- inadequate services such as extension, research, and market information
- inadequate appropriate technological know-how in forage management and storage.

These constraints have clearly adversely affected the markets for cattle feeds, going by the low demand and under-utilised processing capacity.

Animal breeding services

The main issues and constraints emerging in provision of breeding services are:

- the as-yet unimplemented policy to harmonise breeding activities
- non-recognition by the government of inseminators trained by the private sector,

despite their increasing role in AI service provision

- perceived high failure rates in AI services provided by KNAIS
- high costs of private AI services
- decline in AI service use and increasing reliance on unproven bull service by many smallholder farmers and
- ineffective supervision of AI service providers by the DVS.

Animal health services

The main issues relating to animal health services include:

- weak supervision under the Pharmacy and Poisons Act is the restrictions under the Act that prohibit veterinarians from stocking veterinary drugs
- exclusion of veterinarians as drugs inspectors under this Act has also limited the capacity to control the use of veterinary drugs thereby potentially contributing to their misuse
- prohibition of certificate and diploma holders from private practice by the Veterinary Surgeons Act. This prohibition is considered by some stakeholders to unnecessarily deny the para-veterinarians opportunity to contribute to private veterinary service provision and to fill the gap in demand for such services in many areas
- weak supervision by KVB of practising veterinarians owing to inadequate capacity and resources.



It is however noted that these contentious issues under the two Acts have been included under the Livestock Sector Policy and Legislation Review by the DVS and the KVB as described in Section 1.3.3.

Some stakeholders consider competition to private veterinary practitioners from vets on public payroll unfair. Whereas this has a disincentive effect on private veterinarians, experience from some countries indicates that there may be some benefits, as well in filling the service gap. In relation to this, some private veterinary practitioners have demanded the removal of public vets whose work can be contracted out to them, as is the practice in many parts of the world. Further analysis is needed to provide some insight and guidelines on public vs. private roles in animal health service delivery in dairy-producing areas.

Access to credit input

The main issues in access to credit are:

- non-implementation of intended government interventions to make credit easily available
- slow growth of private micro-finance institutions
- prohibitive collateral requirements
- lengthy loan application procedures and
- inappropriate forms of credit and high interest rates.



Milk collection, processing and marketing



Introduction

Most milk in Kenya is produced and consumed in the highly populated central and western parts of the country. Map 1 shows the milk surplus and deficit areas. As milk production occurs in the countryside away from the urban consumption centres, the ability to deliver milk quickly and at minimal cost and spoilage to the urban market is of utmost importance to the dairy farmer (DANIDA 1991). The farmers' major concern in milk marketing is, therefore, the development of marketing channels that minimise losses and maximise returns.

Milk collection

In the rural areas farmers resort to a wide range of transport means including hired vehicles, matatus, bicycles, carts and even donkeys. In many cases, they deliver the milk on foot over long distances of up to 10 km or more to a collection point, cooling plant, co-operative society, processing factory or directly to consumers.

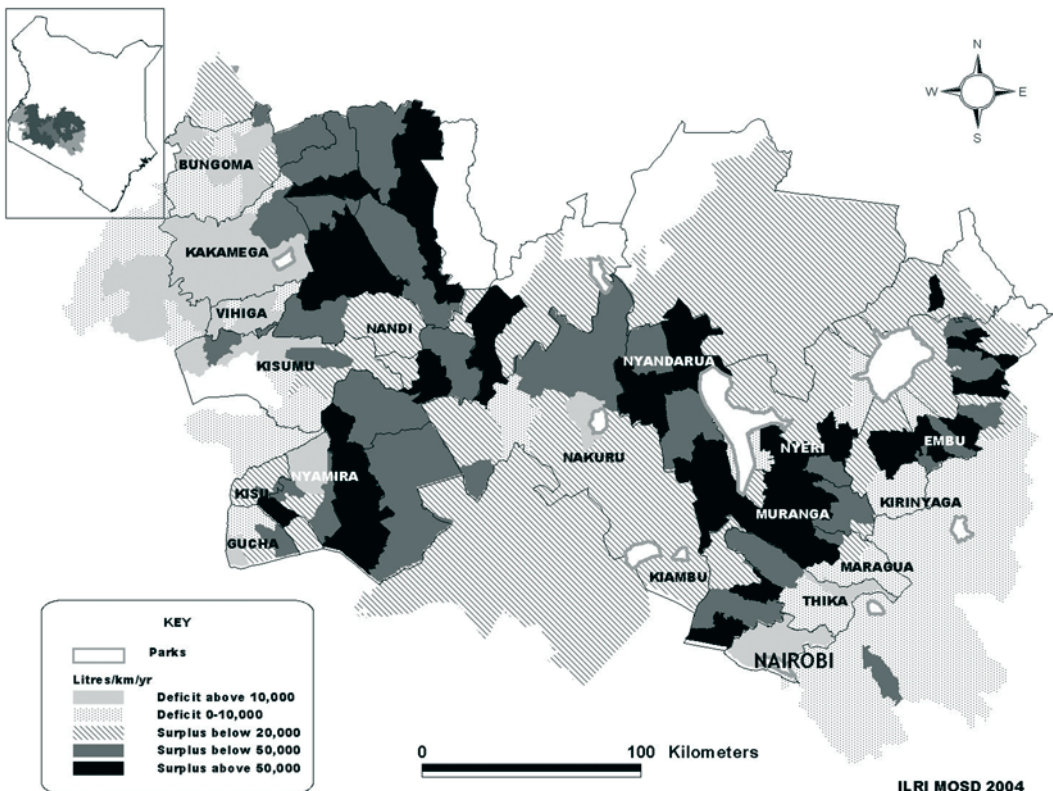
The constraints imposed by the technical characteristics of milk determine the nature of the entire milk collection and delivery infrastructure, including road quality, length of the milk collection routes, and location of milk collection centres and cooling facilities.



It is inevitable that infrastructure plays a critical role in milk collection. The perishable nature of milk imposes the need for adequate and clean water for cleaning equipment such as milk cans, while the long distance (often on rough roads) to the collection centres, cooling plants and processing factories creates the need for sound feeder road network that is also well maintained. Similarly, the requirement for cooling milk in the rural areas particularly the evening milk requires availability of electricity to run the cooling equipment and machinery, in the absence of which only morning milk is typically collected. Milk coolers are important in ensuring that milk quality is maintained between the time of

collection and final processing, but may not be viable in many areas due to power supply, maintenance requirements, or simply economics. It is estimated that there are over 70 milk coolers in Kenya including 11 major cooling plants belonging to KCC, most of which are not utilised or under-utilised. Dairy co-operative societies own a further 60 milk coolers that were supplied by the Kenya Rural Dairy Development Project (RDDP) between 1980 and 1989 (DANIDA 1991). Most of these milk coolers, however, are non-operational either because they are uneconomical or they have not been properly maintained (Makhapila, personal communication). In the recent past, private milk

MAP 1. Milk surplus and deficit areas in Kenya.



Source: ILRI-MOSD(2003)



processors have been setting up additional coolers in strategic locations. Before market liberalisation, elaborate procedures for setting up milk coolers had to be followed, including reference to the District Development Committee. But now these have largely been lifted.

Role of dairy co-operatives in milk collection

Dairy co-operative societies are registered under Section 11 of the Co-operative Societies Act Cap (490). In addition, the KDB issues various categories of license to dairy co-operative societies depending on the predominant activity and products sold. Some are licensed as milk bars while others are licensed as producers or mini-dairies.

Over the years, the co-operative movement has played an important role in agricultural production and marketing. They have been particularly instrumental in the main milk surplus areas of Central Kenya (Map 1) in collection, bulking and sale of farmers' milk, either to processors or local consumers. Through bulking, the co-operatives have been able to reduce the cost of milk marketing and have thus realised higher returns for farmers, but perhaps more importantly, provide a stable and reliable outlet for milk. Currently, it is estimated that over 200 dairy co-operatives and self-help groups are actively engaged in milk marketing.

Development and maintenance of roads

Feeder roads play a key role in the efficiency of milk collection. The overall responsibility for development and maintenance of rural access roads lies with the government. The Kenya Roads Board (KRB) has been established to

oversee the development, rehabilitation and maintenance of all roads including the feeder roads in the country, on behalf of the Government, and acts through various agencies.

Although the District Development Committee (DDC) is responsible for overall development within the district, most of its development programmes are prepared by and implemented through its various sub-committees. The District Roads Committee (DRC) is directly responsible for road development within a district. The DRC prepares and, subject to DDC approval, implements the district's road development programme. The Roads Department at the Ministry of Public Works has the responsibility to provide the DRC with personnel and equipment to execute works until such a time that the DRCs are able to procure similar services. Local authorities are responsible for feeder roads in their jurisdiction but are required to pass their programmes through the DRCs.

The Government is responsible for funding the development of feeder roads both through the exchequer and funds from donors. It has been estimated that over 90% of road construction is financed through donor support, with maintenance of the roads on completion (including machinery and equipment) being the responsibility of the Government. However, allocations from the exchequer for road maintenance are only 2-5% of the actual requirements of the Ministry of Public Works. The result is that most roads whose surface was once classified as bitumen or gravel have now worn out and are in worse condition than many earth roads. The cess collected from milk sales is not used for maintenance of feeder roads,



unlike the case for cess charged for cash crops such as tea and coffee.

In a number of cases, failure by government to meet project objectives and methods of implementation has led to disruption in donor funding for roads development and maintenance. For example, feeder roads in Eastern Province were intended to be maintained with funding from the EU using low-cost labour-intensive methods that offered the potential for employment generation and poverty reduction. However, at implementation stage, the government chose to engage a contractor instead of using local labour. This led to a suspension of funding for the project.

Milk processing and marketing

The history of milk processing in Kenya dates back to 1920s when the first creamery of the Kenya Co-operative Creameries (KCC) was opened at Naivasha. With active post-independence Government support KCC rapidly expanded to become the nation's foremost milk processor with 11 milk processing plants and another 11 milk cooling plants, and with a combined installed capacity in excess of 1 million litres per day by the 1980s. Although there were other smaller milk processors⁷ operating in the country KCC was, until 1992, the dominant milk processing company in Kenya.

Following the liberalisation of dairy processing and marketing in 1992, a number of significant developments have taken place in milk

marketing. Currently, there are over 45 registered milk processors, up from only 15 in 1992. Of these, the most prominent ones are: Brookside Dairies, Spin Knit Dairies Ltd, Limuru Milk Processors, Meru Central Farmers Union, Kilifi Plantations, Premier Dairies Ltd, Aberdare Creameries Ltd and Delamare Estates. These major processors have formed a lobbying group known as the Kenya Dairy Processors Association (KDPA) in conjunction with Tetrapak Ltd. Of the registered processors, only about half are currently in operation, and more recently, there has been a trend towards consolidation in milk processing. The four leading processors (Brookside, Spin Knit, Premier and Meru) had some 80% of market share in 2001. Of these, two (Brookside and Spin Knit) had 65% of market share between them (Karanja 2002). Although the active milk processors produce a wide range of products including yoghurt and long-life milk in many flavours, fresh milk is still the predominant product. However, on average, the milk processors are operating at only 26% of capacity and their sales account for only some 12% of fresh milk sales in the urban centres. The main reason for this is the low demand for pasteurised milk, mainly due to relatively high price compared to the price of raw milk (SDP 2003a)

The collapse of Kenya Cooperative Creameries

Prior to 1992, KCC used to receive the bulk of its milk from dairy co-operative societies and individual farmers. At the onset of liberalisation in 1992, some 318 dairy co-operatives and 27,527

⁷. Kitinda (Bungoma), Meru Central (Meru), Kilifi Plantations (Kilifi) plus numerous small-scale processors of dairy products such as cheese, yoghurt etc.



individual dairy farmers were supplying it with milk. By 1996, this had dropped to 205 dairy co-operatives and 21,765 farmers (Table 5). This drop was due to reduced deliveries by farmers who, frustrated by late and irregular payments, found more attractive outlets through informal traders (Owango et al. 1998). Currently, only one of KCC's 11 processing factories and two of its milk coolers are in operation.

TABLE 5. KCC membership trend (1992 - 96).

Year	Dairy co-operatives	Dairy farmers
1992	318	27,527
1993	283	26,732
1994	282	28,888
1995	256	25,991
1996	205	21,765

Source: KCC (1996).

Attempts to revive KCC through a newly incorporated company named 'KCC 2000', in which farmers bought shares, have not yet had noticeable effect.

Effects of policy on farmer-processor linkages

The positive developments in private milk processing indicate that the pre-reform policy environment, typified by interventions and controls by the regulatory authorities, had depressed the market. The changes in milk processing coincided with major changes in dairy co-operative societies. Significantly, the liberalisation of the co-operative sector and the review of the Co-operative Societies Act

accorded dairy co-operatives more autonomy to pursue economic interest of the members (GOK 1997a). Instead of selling milk to KCC and other private processors, most co-operative societies opted to sell their milk directly to the traders/middlemen, milk bars or consumers, who paid more for the milk. This has been shown to be because of high consumer preference for raw milk, which is seen to be more wholesome, have a better taste and is better priced. Even dairy farmers, frustrated by years of delayed and poor payment by the processors took advantage of the liberalised marketing environment and opted to sell in the alternative raw milk markets. These farmers actually consider the alternative markets to be more reliable and pay higher prices, although they too are often subject to risk of non-payment. In addition, low per capita income⁸ levels have contributed to depression of effective demand for high-cost packaged dairy products.

Following liberalisation of the dairy markets, the bond between farmers and their co-operative societies, and that between the societies and the processors were weakened considerably. Increasing numbers of farmers started diverting their milk away from the co-operative society and selling directly to consumers in the immediate neighbourhood, particularly schools, hotels, restaurants and shops. This has had the effect of reduced milk intake by the co-operative societies. The co-operative societies themselves also took advantage of the liberalised market, and started selling the bulk of their milk directly to consumers in the local townships, sometimes

⁸. Approximately 14 million Kenyans are currently unemployed and some 57% of its population are living below the poverty line, on income of less than US\$ 1 a day.



going as far as Nairobi, the main market for the majority of the processors.

The liberalisation of the industry had another effect: co-operative societies and other middlemen began to pay higher prices to farmers. This was attributable to the increased competition from raw milk vendors and direct sales. Owango et al. (1998) have demonstrated that real milk prices in the formal sector increased dramatically between 1992 and 1995 especially in districts like Kiambu where raw milk markets were highly developed.

The diversion of milk into the raw milk market by farmers and co-operative societies has denied the processors both the raw milk and the market for their finished products, especially during dry periods. Many of the processors operating around Nairobi are currently having to source raw milk from as far as Bomet, Nakuru, Eldoret and Nyeri. This has had the overall effect of increasing their milk collection and product distribution costs, a situation exacerbated by the poor state of roads. Many processors realise very low intakes in the dry season. On the other hand, during the wet season, the low demand for pasteurised milk limits the quantity that may be processed. Together, these factors contribute to the low capacity utilisation levels, which often average no more than 30%, and to the low overall share of only 12% of marketed milk. Significantly, consolidation in milk processing is continuing,⁹ while 18 factories that previously processed milk are either closed or have reduced their operations to milk cooling only (Table 6). Most of the 'failed' processors blame incomplete investment information for their failure.

⁹. Brookside and Ilara Dairies recently merged.

Taxation

Apart from registration and licence fees, there are direct taxes that processors pay. These are a major cause of concern to them, especially because most informal milk traders who compete with them do not pay these taxes. These are Value Added Tax (VAT) and Cess fees.

VAT is charged on a number of dairy processing inputs such as packaging material for ultra-high temperature treated (UHT) milk, fuel, and certain equipment. It is also charged on dairy

TABLE 6. Share of regulated and unregulated markets for dairy products consumed by sampled households in Coast Province.

Milk product	Market share(%) (Regulated)	Market share (%) (Unregulated)
Raw	<1	99
Pasteurised	99	1
Fermented	98	2
Powdered	100	-
UHT	100	-

Source: Staal and Mullins (1996).

products such as fermented milk (maziwa lala), cheeses, yoghurt and butter. Up to 1997, the dairy industry was zero-rated for VAT which meant that if over the same period the total amount of VAT paid on inputs by a processor exceeded the VAT collected from output sales, then the processor could claim the difference as tax refund. On the other hand, the processors would have to remit the difference of VAT if they collected more from sales than they paid on inputs. However, from 1997, the status changed and the dairy sector became exempt from



payment of VAT. This means that processors cannot recover the VAT paid on inputs from the VAT received on sales. The processors object to this status and are lobbying for a reversal to the former position when they were zero-rated. In addition to VAT, milk processors, milk bars, traders and co-operatives pay cess. Cess-payers expect the KDB to use the cess to repair and maintain feeder roads and promote activities and products of the processors. Many processors also expect cess to be used to remove the untaxed itinerant traders from the market. However, those traders currently not paying cess represent an important potential source of revenue for the development of the industry, if mechanisms can be worked out to collect it.

Effects of infrastructure on milk processors

Besides poor roads discussed earlier, other infrastructure critical to processors are water and electricity. Water is needed not only for cleaning the equipment but also for normal processing operations while electricity is critical for nearly all the operations of a milk processing plant. Problems are often encountered in availability of adequate quantities of clean water and 24 hour supply of electricity, mainly due to excess demand in most urban areas and poor maintenance of existing systems. Kenya has a high cost and unreliable power sector that contributes to the high cost of milk processing.

Most milk processors currently operating in Kenya are compelled to source their raw milk requirements from more distant places as the immediate milk shed area is increasingly being dominated by the itinerant trader. The leading milk producing areas also happen to be relatively

high rainfall areas. Given the poor conditions of the roads, incidents of breakdown by milk collection vehicles tend to increase in the rainy season, when milk production also reaches its peak. During these seasons, route coverage for milk collection tends to be low, implying that not all the milk intended for sale can be collected from farms. At other times, the milk collection vehicles take too long to reach the factory. In such instances, milk fails the quality test when delivered at the factory, and is rejected. In the event that the farmer had been paid for the milk, this represents a direct loss to the processor. If they had not paid for the milk, as is often the case, the milk is returned to the producer.

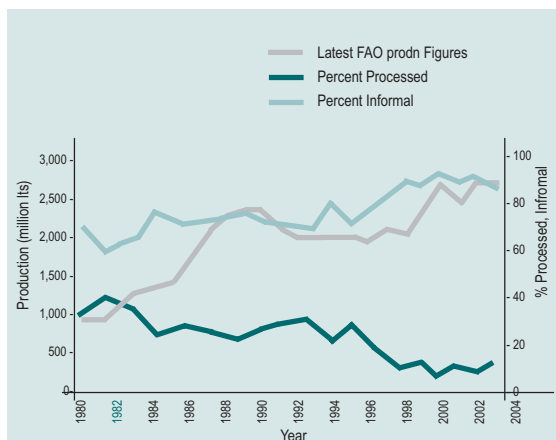
Raw milk markets

The most significant post-liberalisation development in milk marketing is the rapid growth of the raw milk sales in urban areas. Prior to the deregulation of milk markets, sales of raw milk were restricted to the rural areas that were largely unregulated. In that period, the regulatory authorities ensured that urban areas were inaccessible to the sellers of raw milk (Staal and Mullins 1996, Table 6).

Over time, the share of processed milk in the urban markets has declined while that of raw milk has increased (Figure 1). Omore et al. (2004) estimated that raw milk accounts for 86% of the fresh milk market and that processed milk accounts for about 14%.

The rapid growth of raw milk markets has been attributed to: a) preference for raw milk by consumers (mainly due to lower cost and taste), and b) the relative higher price paid to producers



FIGURE 1. Processed Vs Informal, trends for 1980-2003.

Source: FAO (2002).

by informal milk market agents (SDP, 2003a). Figure 2 illustrates the different channels of the liquid milk market that currently exist, and their relative shares of the market. Following are brief descriptions of specific cadres of informal milk market agents and the institutional environment in which they operate.

Milk bars

According to the KDB, there are more than 300 licensed milk bars currently operating in major towns in Kenya and jointly selling more than 150 thousand litres of milk per day. A further 500 or more are believed to be operating without licences, as they do not meet the minimum requirements for licensing by the KDB. Nairobi city alone accounts for more than 120 milk bars selling more than 60 thousand litres per day. Unlike unlicensed raw milk sellers, licensed milk bars pay a monthly cess to the KDB.

In most cases, the milk bars are operated in premises that have utilities such as water and electricity. The unpasteurised milk is sold

alongside snacks such as sweets and cookies. The milk bars often conduct some tests to the raw milk to ascertain quality before accepting it, including organoleptic (sight and smell) tests, 'clot-on-boiling' tests and the use of lactometers to test for adulteration (Omore et al. 2002). Virtually, all milk bars in the urban areas operate in or near the middle- to low-income residential areas. In Nairobi, for example, most milk bars are to be found in Kibera, Kayole, Githurai, Kawangware and Kariobangi.

There have been recent moves by the KDB to encourage milk bars to sell only bulked pasteurised milk from processors, or milk that has been batch pasteurised at the premises. This effort has not been successful, mainly because the increased cost of pasteurised milk does not match consumer-demand.

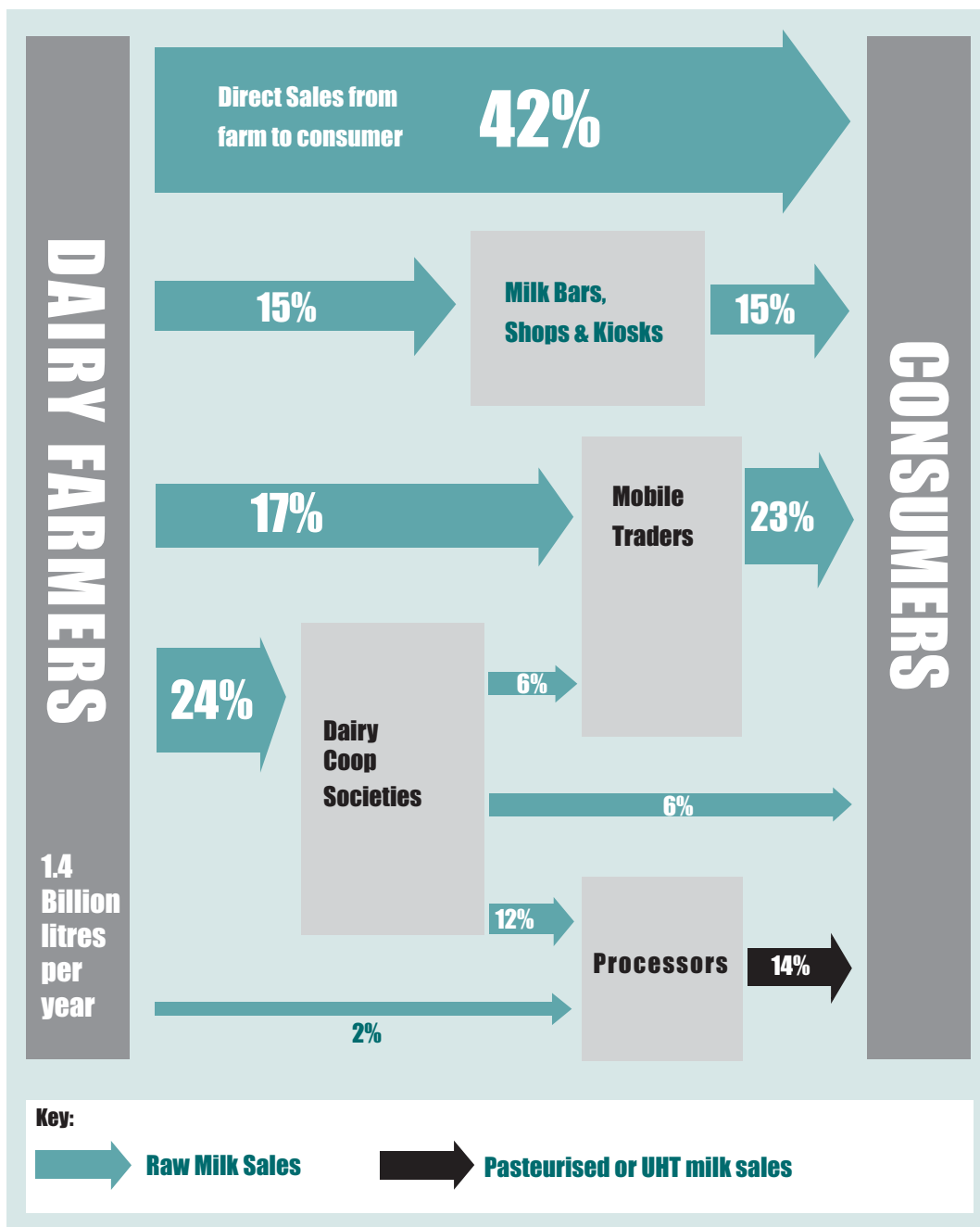
During the survey for this review, only a few milk bars were found to have registered their businesses with the Registrar of Companies. Others were operating without registration certificates, this caused some problems with KDB and municipal officials, who are reported to demand 'protection fees' or bribes from them.



A typical milk bar in Kenya



FIGURE 2. How milk gets from farmers to consumers: Percentage of raw and processed milk going through the different market channels.



Note:
 1.4 Billion litres of milk marketed annually represents 55% of on-farm production. The remaining 45% is either fed to calves or consumed on farm





A mobile milk trader from Thika

Middlemen and itinerant milk traders

Middlemen and itinerant milk traders play an important intermediary role in milk collection from farms to the market. Many middlemen have established a network of milk collection routes and collection centres along the rural feeder roads where farmers converge with their milk. Although many of the middlemen have permits to deliver milk to processors or dairy co-operatives, some divert and sell some of the milk in the raw milk market. Itinerant traders, who are usually unlicensed, retail the milk directly to consumers in urban areas.

Shops/kiosks

Many shops sell raw milk without a license, besides sales of packed and pasteurised milk. The sale of raw milk by shops or kiosks mainly occurs in low-income urban residential areas, or in rural market centres where they form a major

outlet for sales of milk from dairy farmers. No cess or licenses are normally paid in these circumstances unless the volumes involved are high.

Impact of milk imports and exports

Kenya has been self-sufficient in dairy requirements in the past and has not experienced significant importation of dairy products except during years of extreme drought. Whenever importation has occurred as during drought years, dairy products have been allowed free of duty and VAT. Recently, the importation of milk powder for reconstituting milk has been blamed for the inability of farmers to sell their milk and for low producer prices. However, an examination of the trade figures indicates that the volume of trade is apparently insufficient to make an impact on the domestic price. The net imports of milk powder have been consistently less than 1% of domestic milk production since 1992 (Table 7).

Imports of these products during non-drought years have been treated differently through duty impositions. As a member of World Trade Organization (WTO), Kenya is committed to the WTO principles that underpin free trade. Although in principle dairy products are imported free of taxes, anti-dumping measures impose applicable import duty and VAT at 35 and 18% respectively. Figures obtained from the Kenya Dairy Board (KDB) and the Food and Agriculture Organization of the United Nations (FAO) show that a large number of local dairy processors import small quantities of milk powder regularly, presumably to use in processed products such as yoghurt that may



TABLE 7. Kenya milk powder imports and exports, 1992-2001.

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Imports Qty (t)	2719	1891	2319	585	98	863	2,694	2,695	1,632	1572
Exports Qty (t)	3690	3123	1919	1104	600	629	277	195	342	609
Net dry milk imports converted to milk equivalent (t)	-9710	-12,320	4000	-5190	-5020	2340	24,170	25,000	12,900	9630
As an absolute percentage (%) of total domestic milk production	0.42	0.55	0.18	0.22	0.21	0.09	1.00	1.01	0.54	0.49

Source: FAO (2002).

require the addition of powder, although they may also be reconstituting into liquid milk. The duty on such imports was raised by almost 100% (from 35 to 60%) in early 2002 in response to a fall in the milk prices paid to farmers in some parts of Kenya. These price falls were widely regarded to have been the result of increased imports. However, as shown in Table 7, imports actually fell during the period leading up to the farm milk price decreases, and so were unlikely to have been the cause. The price falls were likely to have been driven by sustained rains in many areas during December 2001 to February 2002, normally a dry period, and thus over-supply. (Domestic production rose by 10 million litres over this period (FAO 2002) Economic stagnation may also be limiting demand, contributing to the same effect. The increase in duty is thus unlikely to have any significant effect on farm-gate prices.

A comparison of the farm gate prices/production costs in Kenya with the minimum

TABLE 8. Competitiveness of domestic milk production (Kshs/kg).

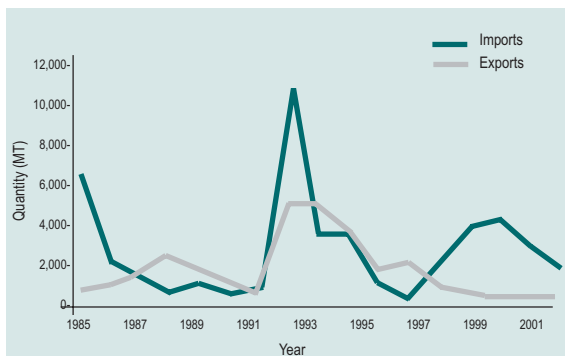
Country	Kenya (three different districts)			Imports
	Kiambu	Nakuru	Nyandarua	
District/source of milk				CIF (import) price of tinned milk per kg
Total cost	17.2	13.28	11.93	20.91*
Producer price	17.63	15.19	14.3	NA

* Lowest import prices between 1994 and 1999 were in 1998 at Kshs 20.91.
Source: Kenyan production costs (Staal et al. 2003b), CIF price of milk imports statistical abstracts, GOK (2000).

C.I.F. costs of milk/cream over a 6-year period shows that imports of milk for reconstitution cannot compete effectively with locally produced milk (Table 8). In 1998 when C.I.F. prices were least at Kshs 20.91, this was still considerably higher than the highest production cost figures (Kiambu, Kshs 17.63). Additional costs of transportation, reconstitution and marketing would make the imports even more uncompetitive.



FIGURE 3. Comparison of imports and exports of dairy products (1985-2000).



Source: FAO (2002).

Figure 3 (based on quantities of exports and imports over a 16 year period) shows that the country is always importing and exporting at the same time. This is a common phenomenon with various commodities and across different countries, often due to differences in quality and segmented markets. Between 1991 and 1995, both imports and exports increased significantly while remaining a tiny proportion of production. This may be because of imports being re-exported elsewhere with added value, such as to land-locked countries in the interior. Significantly, the period over 2001-02 shows a steady decline in milk imports contrary to public perceptions about rising imports during the same period.

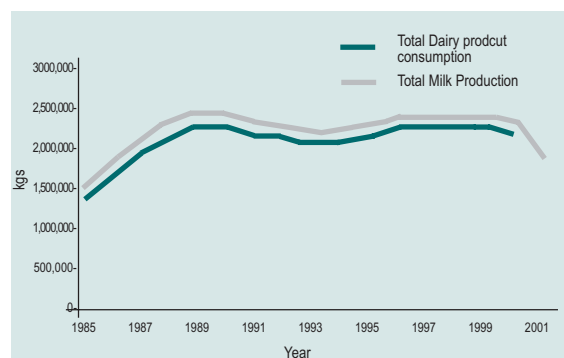
Figure 4 compares milk production and consumption figures over a 15-year period, and indicates that Kenya potentially has surplus milk production capacity. If, as indicated earlier, production is actually higher than officially reported, this surplus may be even greater. Thus the role of policy would be to ensure that private and co-operative dairy processors and market

agents are free to develop efficient distributive mechanisms and processing capabilities to ensure that the domestic demand is met by domestic production and the surplus exported. It should be recognised, however, that the milk quality standards required by international markets are very high, and exports from Kenya may be constrained by poor quality control, even at the farm level.

The regulatory framework for milk markets

As described in the first section, many of Kenya's regulatory legislation and implementing institutions were put in place in the pre-independence era and have undergone few significant reviews since then, even though major economic policies have been revised to reflect a more liberalised economic environment. As a result, a considerable gap exists between the written policy and the existing regulatory framework for governing many agricultural commodities, including dairy.

FIGURE 4. Production vs. consumption of dairy products in Kenya (1985-2001).



Source: FAO (2002).



The current Dairy Industry Act

Regulation of the Dairy Industry in Kenya falls under the Dairy Industry Act (DIA) (Chapter 336), which was first enacted in 1958 and last revised in 1984. Until milk market liberalisation in 1992 and the collapse of KCC shortly thereafter, formal marketing of milk in Kenya was effectively controlled and regulated by the government through the KDB, as established in the DIA. The Act authorises the KDB as both a regulatory and development-promoting institution for the industry and its written functions have included, inter alia:

- organising and developing efficient production,¹⁰ marketing, distribution and supply of dairy produce
- improving the quality of dairy produce
- promoting market research and private sector competition and
- generally to ensure, either by itself or in association with any government department or local authority, the adoption of regulatory measures and practices designed to promote greater efficiency in the dairy industry and to protect public health.

The DIA has been revised three times since 1958 (in 1962, 1972, and 1984) and is currently undergoing another revision. Already a draft DIA Bill has been prepared (see Section 3.2). In exercising its powers and in performing its functions, the KDB is expected to seek the guidance of the minister in whose portfolio the dairy industry falls. In Section 19 of the Act, the responsible minister is empowered to make far-reaching regulations with regard to the

management of the industry. Although some sections of the Act have already been outdated by policy changes, a number of the regulations continue to negatively impact the performance and growth of current and emerging milk markets. Such regulations relate to the mode of charging and payment of cess, the licensing of milk traders and milk transportation. There are also concerns regarding the manner in which inspectorate activities to enforce compliance are carried out.

Cess on retailed milk

A volume-based tax or cess is charged on retailed milk. Currently, the Board charges Kshs 0.20 per litre of milk handled and failure to comply may result in a higher penalty. This means any trader who sells milk to another trader is not liable to pay cess. Given the predominance of informal sales of milk to consumers, most milk remains un-cessed, even though anecdotal evidence from SDP suggests that informal traders are more than willing to pay cess in return for licenses to market milk freely without harassment. At the same time, double payment of cess occurs due to poor logistics and information as well as trader ignorance. For example, a middleman would pay cess for the milk delivered to a processor, who would also be charged the same rate of cess fees.

Licensing of retailers

Licenses are supposed to be issued to traders with acceptable premises before they may sell milk. Acceptable premises are defined to include fixed or mobile premises such as 'bicycles or other motorised vehicle utilised for storage,

¹⁰. DIA seems to make reference to 'production' to include 'production of processed milk' in some instances.



distribution or sale of licensed produce'. However, there are no official provisions for licensing of retailers dealing in raw milk in 'Scheduled areas'. So, licenses are only issued on the basis of possessing a fixed trading premise, thereby excluding most mobile hawkers that use bicycles. This requirement, though not based on the DIA, is enforced because it is considered by the KDB to be consistent with the Public Health Act regulation for sale of foods.

However, recent research findings have shown that despite the existence of potential hazards in raw milk, public health risks are far less of a concern than traditionally portrayed (Omore et al. 2002). Given this finding and recognition of the major role played by informal milk markets in Kenya, both the draft Dairy Development Policy of 2000, now explicitly provide institutional guidelines supportive of the small-scale production and marketing of milk. The SDP is currently contributing to the required next steps to look at institutional mechanisms required to realise the changes already recognised as desirable by the new Dairy Development Policy. The options being explored include how to practically improve raw milk hygiene and reduce milk wastage. The KDB has also responded by forming a Dairy Public Health Committee that incorporates representatives from public sector key players and industrial processors to consider the options to improve milk quality and advise the KDB appropriately.

Milk composition regulations

These prohibit sale of milk that contains less than 3.25% butterfat and 8.5% solids non-fat, and impose a fine of Kshs 10 thousand or up to one

year's imprisonment, or both as penalty for breach of these regulations.

Milk transportation regulations

These prohibit anyone to carry milk except with a permit issued by the KDB. Again, a breach of these regulations is penalised by a Kshs 10 thousand fine or up to one years' imprisonment or both.

Inspectors' regulations

Not only do these regulations authorise the Board to appoint any person to be an inspector, but they also state that: 'all police officers shall be inspectors for the purposes of these regulations' with the powers (a) to enter the land, premises or place, or (b) to stop the vehicle, bicycle, pack animal or person and inter alia, seize, remove or detain any dairy produce if an offence is suspected. Currently, the inspectorate function at KDB is implemented through its own officers with the assistance of the police.

Regulation of milk processors

Processors are registered under Sections 15, 16, and 17 of the Companies Act Cap 486 and the procedure for setting up a milk processing plant is very similar to those applying for milk coolers.

Besides the milk quality controls described above, the KEBS also specifies the methods of analysis to be followed during processing. These methods are specific for each dairy product and the Bureau has the authority to enforce these standards by prosecution if necessary. The KEBS standards are similar, and in some ways more rigorous, than the public health standards, so that in satisfying the KEBS' requirements, the



dairy industry also satisfies the public health requirements.

Envisaged changes in the Draft Dairy Industry Bill (2000)

Following the liberalisation of the dairy industry in 1992, the need to revise the policy and regulatory environment was realised. The outcomes are the draft Dairy Development Policy and the draft Dairy Bill (2000). Below is a summary and discussion of the changes envisaged under the proposed new policy and regulatory environment.

Composition of KDB

The draft bill increases the size of the board from 12 to 17 members. Whereas the present Act gives the minister in charge of livestock powers to appoint board members as nominated by the Central Agriculture Board (CAB), the new Act allows registered producers to elect board members at annual general meetings through delegates. The proposed new board members would occupy their positions for a three-year term before another election is held as opposed to the current system where members are replaced on a rotational basis. The new board is likely to be more producer-friendly since the draft Bill provides that each province must be represented by at least one farmer, elected from among five delegates from each district during annual general meetings. The proposed Act however, does not make provisions for important stakeholders such as traders or consumer groups to sit on the Board. Given the current predominance of the informal market, it can be argued that the majority of dairy

marketing stakeholders would remain unrepresented.

Regulatory powers of KDB

Though the minister in-charge would still have powers under the proposed new Bill to make subsidiary legislation for carrying out the purposes and mandate of the Act on advice from the KDB, the scope of what the minister may do is more limited. The draft Bill, as opposed to the current law, would not allow any regulations to uphold monopolistic practices to be made regarding price control, terms for contracts of trade in dairy products, distribution of dairy produce and marketing channels. It is not clear what would happen if the minister for one reason or the other refused to make certain regulations or made others without reference to the Board.

Registration and licensing of producers and processors

One contentious proposal under the Bill is the requirement for registration of all producers and processors, mainly to ensure payment of cess, licensing and to facilitate election of delegates. It suggests that it would be an offence to produce and/or process milk for sale without Kenya Dairy Board registration. Whereas the registration of processors can be easily achieved, it is not clear how this can be practically achieved for the hundreds of thousands of small-scale producers. The penalty for giving incorrect registration particulars or for failing to register has been raised from Kshs 2000 to a maximum of Kshs 4000.



Changes affecting other functions of the Kenya Dairy Board

Whereas the current law vests plenty of power in the Board, it does not expound adequately on its specific functions as they relate to development of the industry. The new draft Bill is more specific and has broadened the mandate of the KDB in this area considerably. The proposed new KDB would therefore not only regulate the industry but is also envisaged as a catalyst for dairy development. Its proposed functions under both its regulatory and development mandates would include:

- advising the government on policy issues related to the dairy industry
- promoting and supporting research, extension and training in the dairy industry
- establishing and maintaining an up to date data bank on the dairy industry using information from within and without the country
- rendering advice and technical assistance to milk processors and breeders
- facilitating the provision of technical advice and training on processing technologies, milk testing equipment, and milk collection centres
- advising on technology and production issues related to improving the quality of dairy products
- advising the government on aspects deemed to be in need of legislative attention within the dairy industry, including consumer protection and the sale of raw milk
- collecting, analysing and disseminating information and statistics on the number of dairy animals, herd structure, yields, milk production, and the costs thereof, and the market, both local and external, for milk and dairy products
- making regulations governing appropriate quality standards for milk and dairy products; including suitable packing material and containers for milk and other dairy products, in collaboration with other relevant institutions
- advising government on national strategic reserves for dairy products
- facilitating development of efficient production, marketing, distribution and supply of dairy products required by different classes of consumers
- promoting and supporting dairy education programmes, courses, seminars, workshops, visits, tours and agricultural shows
- promoting local and export markets and monitor imports of dairy products
- supporting the activities of the Central Artificial Insemination Services or any other related services as the board may consider necessary for the improvement of breeding services
- establishing a licensing committee for the purposes of licensing all dealers in milk produce and dairy products, in collaboration with other relevant institutions
- advising the minister generally on the regulations and the purposes of the act.



These functions are intended to contribute to the overall policy objectives summarised in Section 1.3.2.

Governance, finance and administration of KDB

More specific provisions are made in the proposed Act to ensure proper management, regular meetings and increased accountability in the new Board. In general, sweeping powers given to the minister by the current Act are to be curtailed and instead vested in the KDB.

One of the key changes is that whereas accounts are currently audited by an external accountant appointed by the minister, the new Board would, in consultation with the Controller and Auditor-General, appoint an external auditor to scrutinise the accounts. The Board would also be required to prepare annual budgets and engage in investment activities. Overall, the new law will in effect increase fiscal discipline and general accountability.

Effectiveness of the KDB

At the head office of the KDB, the secretariat of the current Board functions through three departments, namely, Technical and Information Services, Personnel and Administration, and Finance. The Technical and Information Services department is responsible for the Board's inspectorate activities, quality assurance and information.

Market inspection is a field-oriented service whose effectiveness requires not only well-trained and motivated officers but also a strong fleet of reliable vehicles to facilitate effective field presence and market coverage. It is also

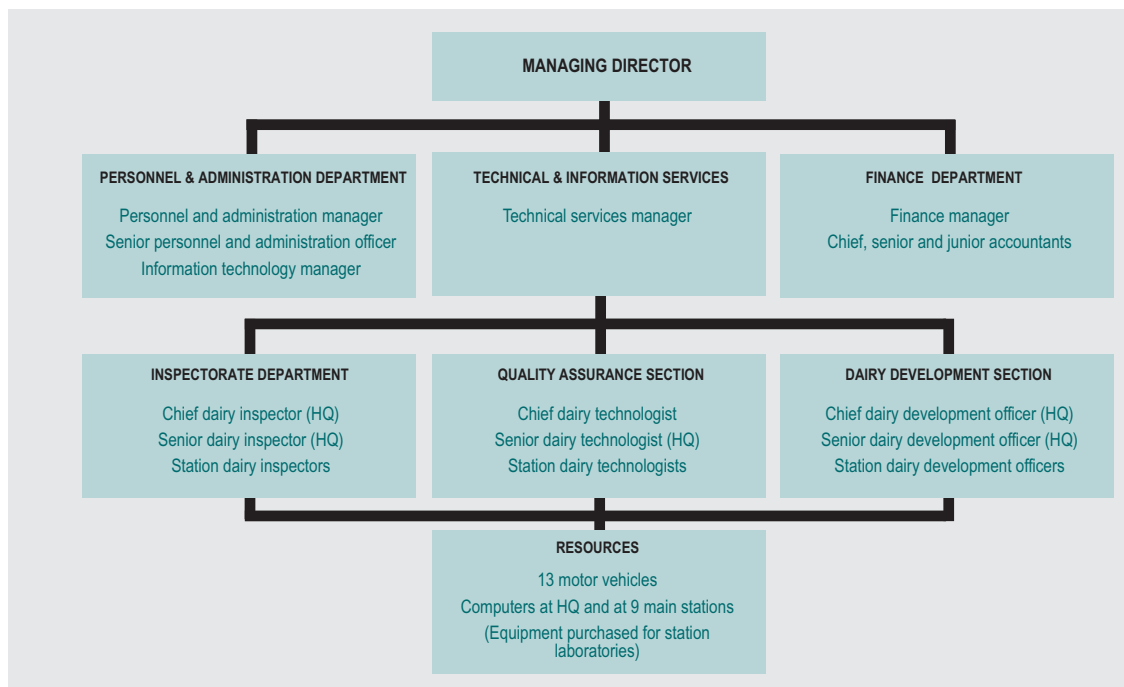
necessary that random samples are frequently taken and tested by the quality assurance officers in order to keep track of the quality trends of milk in the market. This will necessitate that the KDB, through its quality assurance function, sets up and maintains efficient and well-equipped laboratory services in all its stations, to provide back up services to the inspectorate function.

There has recently been a process of restructuring and reforming the KDB that partly address some of the proposals in the draft Bill. This was carried out under a project being funded and jointly implemented with the Food and Agriculture Organization of the United Nations (FAO). The project's objective was to restructure and commercialise KDB into a modern, cost-efficient, self-reliant body that meets consumer needs by promoting sustainable development of a dynamic industry. The restructuring process, which commenced in November 2001, was completed in 2003. The expected specific outcomes from the restructuring process include:

1. A new organisational and staffing structure for KDB in tune with its new role of delivering services and information to producers, processors, market intermediaries and consumers as well as stimulating the sustainable development of the industry.
2. A set of clear and easily understood standards developed for the dairy industry, including raw milk sales backed by upgraded laboratory testing facilities at KDB and six key regional field stations.
3. Training and sensitisation of stakeholders on the change process at KDB from a mainly



FIGURE 5. Resources at KDB.



government-controlled body to a commercially-oriented, stakeholder-accountable institution that promotes good milk hygiene, and better production, collection, processing and marketing practices.

4. Consumer awareness campaigns regarding new industrial structure and standards, safety and nutrition.
5. A five-year strategic plan, including a detailed business plan, staff development and training programme, and a plan on developing a strategic milk reserve system.

Resources at KDB Head Office

Following the FAO-supported restructuring, KDB report significant changes have occurred

in their staffing and resources. The current KDB operational structure is shown in Figure 5. Under the Managing Director are three managers heading the Financial, Administrative and Technical departments. As of April 2004, 16 graduate-level staff were employed, although positions of Chief Dairy Inspector, Chief Dairy Technologist and Chief Dairy Development Officer were all vacant. Some graduate staff manage the main KDB stations, while the others are divisional or sectional heads at headquarters. Mobility and effectiveness were previously severely impaired by lack of equipment, including motor vehicles. KDB report that officers now have access to some motorised transport¹¹, while computer equipment has been installed at headquarters and main field stations. A website has been developed along with a

¹¹. Each of the 9 main stations has a vehicle while the head office which supervises the operations of the stations is served by 4 vehicles.



computerised 'data centre', with the aim of enabling better access to information for stakeholders.

KDB field stations

In addition to the head office in Nairobi, the KDB maintains 15 stations across the country. The 9 main stations are Nairobi, Mombasa, Nakuru, Kericho, Meru, Eldoret, Kisumu, Kakamega and Nyeri. Sub-stations are located at Kitale, Kisii, Narok, Embu, Naivasha and Voi.

Quality assurance services currently depend on portable tests carried by inspectors. However KDB report that plans are advancing for each main station to be equipped with a laboratory, with most equipment already purchased. All the main stations now have a motor vehicle and a computer.

The station manager at each main station is a dairy inspector, with full powers of a prosecutor, and some stations have an additional inspector. A dairy technologist and in some cases a dairy development officer are also based at each main station. Five inspectors serve Nairobi, the largest milk market in Kenya. KDB report that all the inspectors have at least a certificate-level qualification from the Dairy Training Institute.¹²

The effectiveness of KDB operations was previously constrained by lack of human and physical resources. It remains to be seen to what extent the recent investment in personnel, vehicles, computers and laboratory equipment improves this effectiveness, and is able to be sustained over the long term.

Standards Act

Through this law the government established the Kenya Bureau of Standards (KEBS), which ensures that standards are set and adhered to by both producers and middlemen to safeguard consumer interests. A Kenya Standard is a precise and authoritative statement of the criteria necessary to ensure that a material, product or procedure is fit for the purpose intended. To assist in developing standards relevant to the dairy industry, KEBS has a technical committee dealing with dairy products. KEBS is also the officially-designated WTO-Technical Barriers to Trade (TBT) National Enquiry Point (NEP) for Kenya. Kenya's NEP is bound by the WTO-TBT Agreement to regularly notify the WTO Secretariat of all proposed government regulations, conformity assessment procedures and standards-related trade information that might significantly affect international trade. The Secretariat disseminates the notifications to all WTO members. Other prescribed functions of KEBS include training and promotion of standards. KEBS has specified methods of analysis to be followed for various products and has powers to enforce these standards including prosecution.

Setting and adapting standards

The procedure for setting quality standards for dairy products involves the Technical Committee (TC), Industry Standards Committee (ISC) and National Standards Committee (NSC). The TC is composed of 12 stakeholders who include representatives from the MoLFD, the KDB, the Chief Public Health Officer from the

¹². *The Dairy Management course lasts one year.*



Box 1. Codex Alimentarius Commission

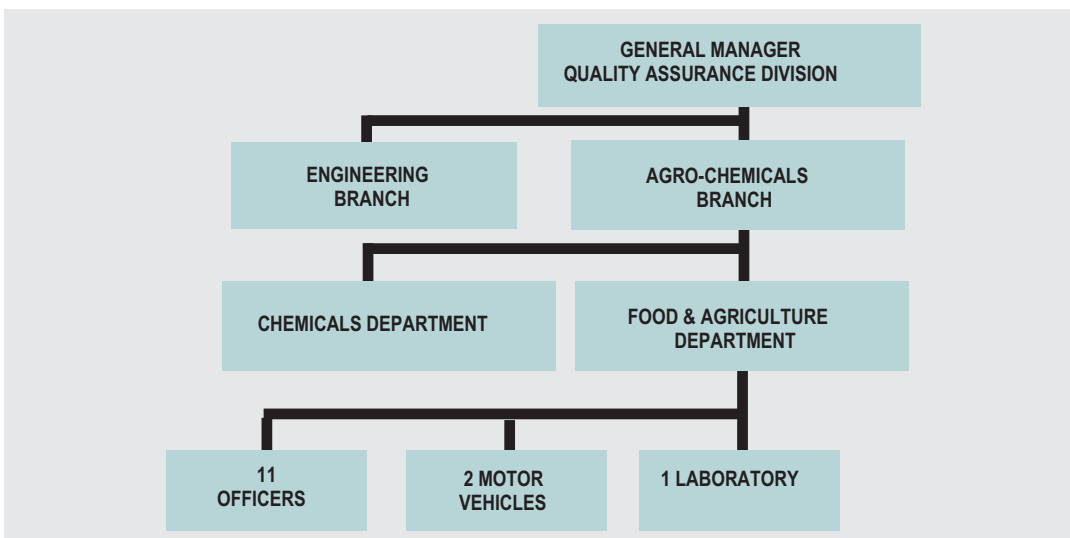
The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting co-ordination of all food standards work undertaken by international governmental and non-governmental organisations.

The Codex Alimentarius, or the food code, has become the seminal global reference point for consumers, food producers and processors, national food control agencies and the international food trade. The code has had an enormous impact on the thinking of food producers and processors as well as on the awareness of the end users—the consumers. Its influence extends to every continent, and its contribution to the protection of public health and fair practices in the food trade is immeasurable.

Ministry of Health (MOH), two dairy processors, a consumers' organisation (that become dormant since their inclusion) and some corporate consumers. The procedure involves a number of stages. It begins once there is an expressed need for new standards or change in standards for any product. Subsequent stages are as follows:

1. Justification for new standards is prepared and presented for consideration by the TC
2. Draft standards are prepared and presented for consideration by the TC, which involve a series of TC meetings
3. Draft standards are sent to local and international experts for review, results of which are further discussed by the TC
4. The draft standards are sent for balloting by technical committee members
5. The draft standards are presented to the ISC for deliberation

FIGURE 6. Resources at relevant departments at KEBS Hqs.



6. The proposed standards are sent to the NSC
7. The proposed standards are published in the Kenya Gazette
8. Legal notice is issued formalising the new standards.

The current standards for milk (Section 140 of Food, Drugs and Chemical Substances Act) that were established in 1978 and last revised in 1992 are specified as follows: 'Milk or whole milk shall be the normal mammary secretion free from colostrums, obtained from the mammary glands of a healthy cow and shall (a) contain no added water or preservative or any other substances; and, (b) conform to the following composition: (i) not less than 3.25% butterfat; and (ii) not less than 8.5% non-fat milk solids'. In addition to the Kenya Standard Specification for Unprocessed (raw) Whole Milk (KS 05-10), KEBS has also developed specific Standard for Pasteurised Liquid Milk (KS 05-30).

Standards are reviewed at least once every five years or as need arises. In some cases, Kenya has adopted and sometimes adapted standards from other countries. In all these actions, the various standards committees are guided by the international standards set by the Codex Alimentarius (CA) committee (Box 1).

The Codex Alimentarius system presents a unique opportunity for all countries to join the international community in formulating and harmonising food standards and ensuring their global implementation. However, in common with other developing countries, the relevant bodies in Kenya may have limited ability to influence decisions on international standards,

Box 2. HACCP, ISO 9000 and ISO 14000

HACCP

The Hazard Analysis and Critical Control Point, or HACCP is a relatively new state-of-the-art approach to food safety that is gaining currency and international acceptance. HACCP, for example, has been endorsed by the Codex Alimentarius Commission (the international food standard-setting organisation), and is being used increasingly in the dairy industry to identify and eliminate hazards to food safety before they become critical.

ISO 9000 and ISO 14000

The International Organization for Standardization (ISO), started in 1947, is a worldwide federation of national standards bodies from more than 140 countries, one from each country, including the Kenya Bureau of Standards. The mission of ISO is to promote the development of standardisation and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing co-operation in the spheres of intellectual, scientific, technological and economic activity. ISO's work results in international agreements that are published as International Standards.

ISO 9000 and ISO 14000 families are among ISO's most widely known and successful standards ever. ISO 9000 has become an international reference for quality requirements in business-to-business dealings, and ISO 14000 looks set to achieve at least as much, if not more, in helping organisations to meet their environmental challenges.

ISO 9000 is concerned with 'quality management'. This means what the organisation does to enhance customer satisfaction by meeting customer and applicable regulatory requirements and continually to improve its performance in this regard. ISO 14000 is primarily concerned with 'environmental management'. This means what the organisation does to minimise harmful effects on the environment caused by its activities, and continually to improve its environmental performance.



even when they may act against the interests of the national industry.

Standards enforcement at KEBS

At the Head Office of KEBS in Nairobi, the standards enforcement is implemented through the Quality Assurance Division. The dairy industry falls under the Food and Agriculture Department of the Agro-Chemicals Branch (Figure 6). As in the case of the KDB, enforcement of the standards requires a strong team of well-trained and highly motivated officers facilitated with transport to monitor field activities. Currently, in 2002, the Food and Agriculture Department has 11 technical officers including the head of department to implement and enforce standards for the entire food and agriculture sectors in Nairobi and to supervise the enforcement of standards in the field. The department has only two motor vehicles, making the effectiveness of standards enforcement questionable.

KEBS has additional offices and laboratories in Mombasa and Kisumu. Though they also have offices at stations at Eldoret, Busia, Malaba, Isebania and Namanga, they lack laboratory services.

Other activities undertaken at KEBS include:

- Awarding KEBS diamond mark of quality to products that attain high quality standards over time
- Import inspection for all imported goods
- Responding to consumer complaints
- Consultancy on quality standards and

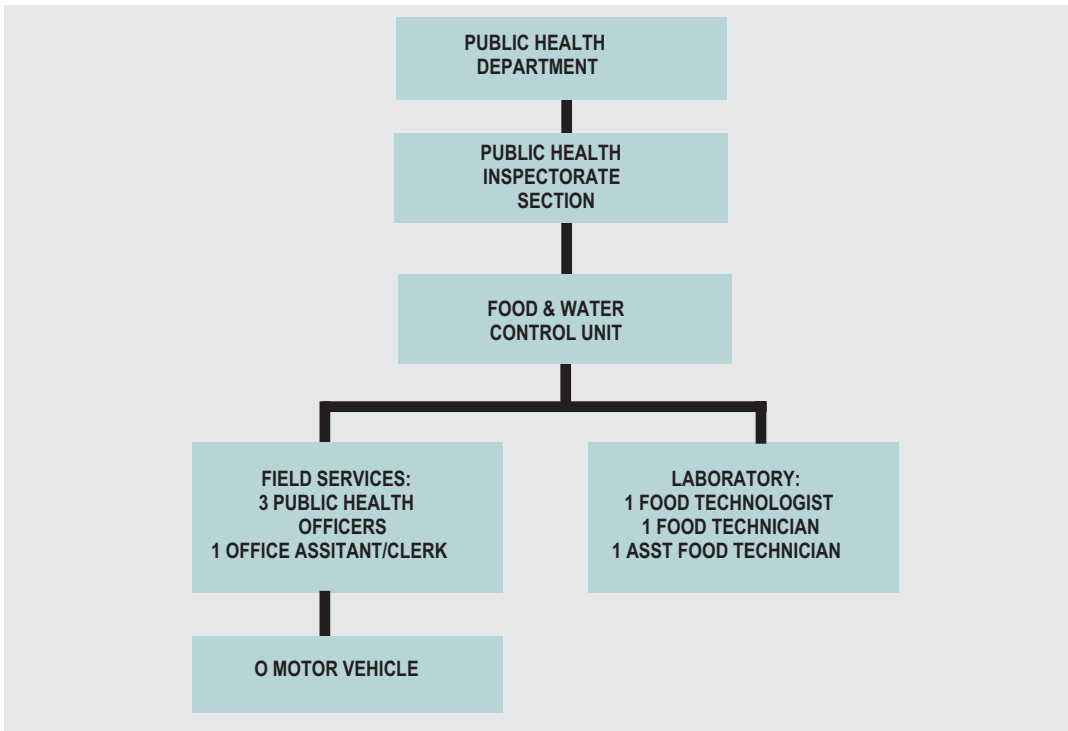
- Systems certification and training. KEBS also assists with implementation of HACCP, ISO 9000 and ISO 14000 (Box 2)

The Public Health Act and the Foods, Drugs and Chemical Substances Act

The Public Health Act is meant to ensure that commodities offered for sale are hygienic and of good quality. It also supposed to ensure that personnel handling foods are medically certified and the premises meet the requisite health and construction regulations. This is done through regular inspection of public places by health inspectors to ensure compliance. This includes premises (such as market places) and equipment (such as milk cans). This Public Health Act has provided, under Section 3, for the creation of the central Board of Health with membership consisting of the Director of Medical Services, a sanitary engineer and six others, three of whom are required to be medical practitioners. Public health assurance of foods is a function performed by the public health departments of the Ministry of Health (MOH) and of various local authorities.

Besides relying on the Public Health Act, relevant institutions also rely on the Foods, Drugs and Chemical Substances Act (Cap 254) that contains additional standards for food items. This Act has provisions to ensure that producers and other businessmen do not contaminate food products, including milk, with harmful substances. It is this Act that requires all food products to be labelled adequately indicating all ingredients and preservatives that constitute the product. The KDB relies on the requirements of this Act in some of their



FIGURE 7. Resources for Quality Assurance at Nairobi City Council

regulatory functions. This Act also provides for the establishment of the Public Health (Standards) Board with membership composed of the Director of Medical Services, the Chief Public Health Officer (MOH), one member with special knowledge of the food packing industry, one member representing municipalities, one member representing the Pharmaceutical Society of Kenya, one member representing the National Assembly and four members representing the Government.

Enforcement by Ministry of Health

The Ministry of Health enforces public health regulations through the office of the Chief Public Health Officer who has over 4000 officers

(mostly public health certificate holders) distributed across the country and available at location, divisional, district and provincial levels. Currently, a programme is underway to upgrade them up to diploma and degree levels. Although empowered by the Act to prosecute cases relating to public health, more than half of the districts in Kenya do not, currently, have public health officers. In addition to staff, the department lacks adequate transport, operational funds and equipment.

Enforcement by local authorities

Section 201 of the Local Government Act (Cap 265) empowers the various councils through their public health by-laws to regulate milk



markets based on the provisions of the Public Health Act and the Foods, Drugs and Chemical Substances Act. There is however little activity to enforce these Acts by the local authorities and there is need to strengthen the capacity of the relevant departments to perform the duty. The example of the capacity of the relevant department of the Nairobi City Council to perform this duty is given below to illustrate the effectiveness of local authorities in enforcing these acts.

Enforcement by Nairobi City Council

The Food and Water Control Unit of the Public Health Inspectorate Section of the Public Health Department enforces all public health regulations within Nairobi. This unit has a staff of seven officers including three public health officers, one food technologist, one food technician, one assistant food technician and one attendant/clerk. Figure 7 illustrates that the department does not own motorised transport and this raises questions about its capacity to enforce the regulations.

Other relevant Acts

Factories Act Cap 514

This Act deals mainly with regulations regarding the health, safety and welfare of workers at their place of work and other general requirements. The Act has specifications covering design, construction materials, inspection, cleanliness, and ventilation among other requirements for factories, including dairy.

Weights and Measures Act

Through this Act the government ensures that the machines and equipment used for weighing and measuring milk are correct and accurate. The Act requires regular checking and adjusting of these machines. Every year officers of the Ministry of Commerce and Industry go round the country checking the accuracy of these machines. There is a further requirement that consumers be issued with receipts indicating the size, quantity and price so that complaints are easily verifiable.

Licensing Act

Before any business can be allowed to operate in Kenya it must have a license. The aim is to regulate the number of businesses in a particular line and curtail illegal activity while promoting professionalism at the same time by licensing only competent persons into particular lines of business.

The Environmental Management Act

Before any dairy industry is set up, for instance a processing factory, it is now legally required that an Environmental Impact Assessment (EIA) be done to determine the possible impacts. These include air, water and sound pollution.

Regulations regarding use of the Lactoperoxidase System for Milk Preservation (LPS)

Growth in production and demand of milk in Kenya has not been complemented by proportional growth in cooling and refrigeration facilities for the preservation of milk. As a result



increasing quantities of milk is exposed to risk of spoilage.

The Lactoperoxidase Preservation System (LPS) is an appropriate way to preserve milk where cooling is impractical (Codex 1991). Contrary to widespread misconception, the LP system is not a chemical preservation method but rather a natural biological system inherent in milk. Lactoperoxidase occurs naturally in raw milk as an antibacterial and is usually active for only 2 hours after milking. The LP system had been tested since 1970 and was accorded a Global Codex Alimentarius approval in 1991.

The scope for use of LPS in Kenya is likely to be considerable in areas of low density of milk production, which leads to morning-only milk collection. In such circumstances, farmer groups may need LPS for overnight preservation before delivery to cooling centres the following day. LPS may also come in handy in remote areas far from cooling centres. By adopting LPS, farmers can gain up to 20 hours before milk spoilage.

A recent meeting held in May 2002, of the Global Lactoperoxidase Programme Group of Experts reaffirmed the safety and usefulness of the method. There was consensus on the need to repeal or revise the clauses in the Codex rules that restrict wider adoption of the system; the main one being the clause that restricts trade in LPS treated milk. Of particular importance from a policy standpoint in Kenya is a proposal by the meeting to revise the requirement that LPS treated milk 'must be pasteurised in pasteurisation plants' with the need for 'heat treatment at 72 degrees for 15 seconds or any higher temperature such as boiling'. This would

allow wider usage of LPS especially by the informal milk traders who have no pasteurisation capability. There is need to promote the use of this safe method of milk preservation and to discourage the illegal and widespread use of alternative methods such as Hydrogen Peroxide (H₂O₂), Sodium Hydroxide (NaOH), Sodium Bicarbonate (NaHCO₃) and some antibiotics.

Currently, the SDP is conducting research into the feasibility of LPS usage in Kenya in terms of market opportunities, economic viability and how it can fit within the institutions that need to manage it.

International trade environment and its implications to the local dairy industry

The WTO is the only global international organisation dealing with the rules of trade between nations. The emergence of the WTO has resulted in a multilateral trading system, complete with negotiated agreements that are ratified by the parliaments of most of the world's trading nations. Kenya is a founding member and signatory to the WTO whose agreements are legally binding. Though Kenya's involvement in international trade in dairy products is minimal at the moment as documented in Section 3.5, these international agreements will become increasingly important depending on whether Kenya becomes a significant net importer or exporter of dairy products in the future.



Agreement on Agriculture (AoA)

The agreement on agriculture is significant because it brought agriculture into the mainstream of international trade rules. The importance and policy implication of this agreement include:

- 1) The AoA provides a framework for long-term reform of agricultural trade policies over the years. In brief, the Kenyan dairy industry will be exposed to more international competition from imports while at the same time finding it easier to export even into non-traditional external markets.
- 2) Strengthened rules governing agriculture enshrined in the AoA lead to predictability and stability of importing and exporting countries alike. Planned export market penetrations will not be frustrated by sudden tariffication or slapping of unfair non-tariff barriers. The dairy industry now has the opportunity of making projections based on clear rules of trade and this therefore makes planning more effective.
- 3) Under this agreement there will be less use of trade-distorting domestic support policies to maintain rural economy.
- 4) Increased market access through the tariffication of non-tariff barriers and their subsequent reduction. According to the WTO, the new rule for market access is 'tariffs only'. Before the Uruguay Round Agreements (URA), quotas, bans, border controls and other non-tariff measures restricted many agricultural product imports. These were replaced by tariffs that

offer essentially the same level of protection. Tariffs resulting from this process of tariffication were subsequently to be reduced by an average of 36% in the case of developed countries over a 6-year period and 24% over a 10-year period for developing countries. Today tariffs are the major means of agricultural protection. During the Uruguay Round Kenya opted to bind all its agricultural tariff lines at 100% (on average though, the applied tariffs for all agricultural products is about 20%). This means that while the recent increase of dairy tariffs to 60% flies in the face of the principle of increased market access it does not contravene Kenya's WTO obligations. It nevertheless contravenes the more stringent Common Market for East and Southern Africa (COMESA) and East African countries (EAC) trade regulations and can invite retaliatory sanctions on dairy and other products.

The Agreement on Sanitary and Phytosanitary Standards (SPS)

The URA also introduced new rules on Sanitary and Phytosanitary measures (SPS). During the Uruguay Round negotiations there was concern that governments would start using unreasonable sanitary and plant and animal health requirements as trade barriers after the elimination of quotas on agricultural goods. So all such measures were brought under a new rule, the SPS.

The most important aspect of the SPS is that it is an umbrella agreement, which recognises the government's rights to restrict trade in order to



protect the health of its citizens. However according to the SPS a government cannot restrict trade or maintain a restriction against available scientific evidence. The SPS also allows for bilateral agreements.

In order to harmonise sanitary and phytosanitary measures governments are encouraged to peg their requirements to international standards. The implication for dairy is that any slackening of standards may provide the excuse for a debilitating and unilateral ban on exports. Exporters, policymakers as well as other stakeholders in the dairy sector should pre-empt this by commencing a gradual modernisation of facilities to ensure compliance and in particular consider the provisions of the two international bodies, namely,

- The FAO/WHO Codex Alimentarius Committee on Milk and Milk Products
- The International Office of Epizootics-(Office International des Epizooties, OIE) for animal health.

The Agreement on Technical Barriers to Trade (TBT)

The TBT is similar to the SPS; only the TBT covers all technical regulations, voluntary standards and conformity assessment procedures. The TBT is defined according to the kind of measure it covers while the SPS is defined according to the objective of the measure. The TBT seeks to ensure that technical regulations and standards, including packaging, marking and labelling requirements and procedures for assessing conformity with technical regulations and

standards do not create unnecessary obstacles to international trade. The key principles of the TBT agreement include non-discrimination, avoidance of unnecessary obstacles to trade, harmonisation and transparency. In this regard, it is noteworthy that the Kenya Bureau of Standards has established linkages with the WTO on technical matters.

Stakeholders in milk collection, processing and marketing

From the above description, it is clear that the main stakeholders in milk collection, processing and marketing are many. They include farmers, dairy co-operative societies, milk bars, middlemen, itinerant traders, shops/kiosks, processors and suppliers of their inputs (e.g. Tetrapak), government regulators, the government department and agencies responsible for development and maintenance of roads, international development partners and consumers. The main role of consumers or their organisations is to exert pressure on the market and public regulators to respond to their demands through ensuring quality products and competitive prices.

Summary of main issues in milk markets

The main technical issues in milk collection include:

- The poor state of rural access roads, and inadequate and poor management of funding for maintenance of the roads
- Seasonality in milk supply



- Low demand for pasteurised milk
- Multiple and double taxation of formal traders who complain that their informal unlicensed competitors do not pay the same taxes
- Lack of market information for investment and input/output markets
- Lack of training in milk quality control of some market participants.

On trade, it is clear that undue importance is being given to milk powder imports whereas the reasons for fluctuating milk prices lie elsewhere.

It is clear that an elaborate regulatory framework does exist for the dairy markets but there is a major gap in their implementation and updating to harmonise them with stated policy. In many cases, the framework consists of legislation that has not been revised several years following policy changes. The laws are, therefore, out of touch with the more recent developments in the industry and are seen not to cater for the interests of the majority of the industry participants. The legislation should therefore be reviewed to provide clear guidelines for licensing and regulation of the various participants in the different dairy markets. There should also be some ex ante analysis of the likely impact of proposed changes to regulations. Such analysis should be wide-ranging. For example, it should include aspects such as the benefits of milk consumption for child development and human health afforded by wide access to cheap milk in the informal markets, together with issues of how to ensure milk quality and minimal disease risk in such.

The laws have also created regulatory agencies that are largely dysfunctional due to inadequate resources, and the impact of the regulations is therefore limited due to constraints faced in their implementation. For example, it is clear that the KDB has historically not always upheld the provisions of the DIA and all the Acts that deal with the sale of fresh milk. The suggested law review will therefore need to consider evidence as to why the current policy and law is not enforced effectively, even when it is appropriate. The apparently inconsistent treatment meted out by the licensing authorities to various parties dealing in similar products is a pointer to the arbitrariness with which the licensing procedures are implemented. This arbitrariness is already beginning to manifest itself in the conflict currently brewing in the milk market where the licensed and tax paying milk bars are agitating for the removal of those that are unlicensed and untaxed. This conflict situation is developing against a background where the antagonists milk bars, co-operative societies, traders as well as the farmers are all dealing in a similar product, raw milk. Lasting harmony would be encouraged by consistent implementation of licensing procedures.

Experiences in many sectors and in many countries suggest that effective regulation is not likely to be achieved solely by providing resources to public bodies. This is because of systems that provide too few positive incentives, too many perverse incentives, and institutional culture in both the regulators and the regulated, which is hostile to policy implementation. There is the potential for much regulation to be determined, financed and enforced by the



stakeholders in the industry itself, especially traders and processors. This may include quality assurance schemes, quality marks and awards. Where such self-regulation may be effective, owing to incentives for the participants, this should be considered, and, where appropriate, statutory bodies like KBS and KDB involved in partnership with industry stakeholders. The roles of the statutory public bodies in the setting and enforcing regulations should be re-considered with a view to encouraging self-regulation.

The void created by the weaknesses of KDB, KEBS and the Public Health authorities is increasingly filled by other law enforcement agencies. The Police, being inspectors under the DIA, are the authorities most cited by raw milk traders as the regulators of the dairy markets. The involvement of the police in regulation of milk markets is strongly resented by these traders who consider them not to possess the necessary training and facilities to be able to determine the quality of milk. Traders therefore view the police more as forces of 'harassment' rather than enforcers of milk quality laws. This method of enforcing the Acts needs to be re-examined.



Conclusions



This report presents a review of the policy environment for the dairy industry in Kenya. The overall objective of the study was to identify and document components of the policy environment concerning dairy input and output markets, relevant stakeholders and their roles, the regulatory environment and factors constraining the implementation of those policies. The results were presented in three sections dealing with milk production, milk markets, and the institutional environment for the dairy industry.

Key points emerging from the review

- A supportive policy environment is needed to aid the development of Kenya's dairy industry, which contributes significantly to employment, public health, and the overall economy of the nation.
- However, certain policy issues need to be urgently addressed, including the pace of review of policy and legislation, the appropriate enforcement of regulation, the development of institutional capacity, and widened stakeholder representation.
- Specific policy priorities relate to provision of veterinary services (particularly health and breeding services for cattle), access to credit, and road infrastructure improvement.



- Current policy and legislation initiatives need to take full account of broader national goals (such as the creation of employment and poverty reduction) and the reality of systems presently operating in the dairy sector

The issues emerging from the review can be grouped into two sets: those dealing with the official policy and legislative environment, and those relating to the services and infrastructure supporting the dairy industry.

The policy and legislative environment

In the official policy and legislative environment, current important policy-related issues include:

Pace of policy revision. The Dairy Development Policy was first formulated in 1993 to guide the industry through the liberalization process initiated the previous year. The policy was updated in 1997 and revised, after wide stakeholder consultation, in 2000, when it was accompanied by a draft Dairy Bill, which is yet to be enacted. The process has been slowed by frequent structural changes at ministry level.¹³ While this change process drags on, conflicts in regulation and implementation of dairy policies continue to dog the sector.

Regulatory consistency. Since market liberalization in 1992 informal milk sales have grown in prominence, but most informal traders

are not licensed. Licensing is pegged on possessing fixed trading premises, thus excluding most itinerant traders. Although this requirement is not based on the Dairy Industry Act, it is enforced by the Kenya Dairy Board (KDB) under the Public Health Act (Cap. 242). This situation exists despite research showing little difference in the quality of milk samples collected from unlicensed itinerant traders and licensed fixed vendors. Many traders have indicated their willingness to pay cess in return for licensing and the security of legal status.

Institutional capacity to enforce regulations. The general lack of capacity to enforce dairy industry regulation, and the implications for the dairy enterprise, is exemplified by current concern over the variable and often poor quality of livestock foods. Liberalization of the feed market has allowed many processors to penetrate the market, supplying the concentrate cattle feeds which, in intensive dairy production systems, account for over 40 percent of costs. However, the Kenya Bureau of Standards lacks the resources and capacity to adequately monitor feed quality, creating loopholes for some feed manufacturers to reduce quality standards, especially when certain feed ingredients (such as oilseed cakes) are scarce.

Stakeholder representation. A significant number of stakeholders in the dairy industry have little or no effective voice in decision making, particularly smallholder producers, and

¹³ A Ministry of Livestock Development was created from the Ministry of Agriculture in 1979. The two were merged in 1983, split again in 1986, merged in 1992, and split again in 2003.



raw milk traders in the informal market and their customers. However, if the interests of all stakeholders are to be addressed, effective representation, whether on the Kenya Dairy Board, or in other stakeholder associations, is crucial. In this respect, the increasing role played by cooperatives in milk production and marketing may provide a pathway by which the voice of small enterprises might be heard.

The infrastructure and services environment

Operators providing services at each stage of the production, distribution, processing, and marketing chain are affected by policy-related issues:

Provision of health services. Health provision has been hampered by slow privatization of veterinary services. Eight years after the setting up of the Kenya Veterinary Association Privatization Scheme (KVAPS) in 1995 to assist this process, only 13 percent of registered veterinarians are engaged in private practice. Current legislation is not encouraging: the Veterinary Surgeons Act (Cap. 366) prohibits animal health certificate or diploma holders from practising veterinary medicine—a degree is the minimum requirement. In addition, the Pharmacy and Poisons Act (Cap. 244) prohibits veterinarians from engaging in drug sales, reducing the viability of private veterinary practice. The market gap has been filled by a large increase in the number of agro-vet shops (often manned by unqualified staff) supplying animal health products, introducing potential danger of drug misuse and abuse.

Provision of breeding services. Breeding services, including artificial insemination (AI), have also not developed as hoped since privatisation. There are only 300 private AI service providers to date (entry restrictions include non-recognition by the government of inseminators trained by the private sector), and the cost of imported semen is high. The alternatives for smallholders are not attractive—bull service, with the associated risks of inbreeding and disease, or the local semen provided by the Kenya National Artificial Insemination Services (KNAIS), which is perceived to have a high failure rate. Since there are many institutions playing different roles in dairy genetic improvement it was proposed in 1993 to group them together under a Kenya Livestock Breeders Organization charged with the responsibility of developing a self-sustaining breeding programme. Current licensing regulations continue to create entry restrictions to addition private service providers.

Access to credit. Lack of access to credit is one of the major constraints facing small-scale farmers. Formal institutions often require collateral that many borrowers may not have, and charge high interest rates. Microfinance institutions that can meet the needs of small-scale entrepreneurs at relatively favourable terms are still thin on the ground. Policy reforms were proposed in 1997 to establish an Agricultural Development Bank (ADB) as a subsidiary of the Agricultural Finance Corporation (AFC), and to get commercial banks to increase their minimum lending to agriculture from 17 to 20 percent of their deposit liabilities. Although these are yet to be achieved, AFC is on the rebound with new funding and



management this year after near collapse from mismanagement and political interference.

Market accessibility. Given the high perishability of fresh milk, an efficient collection, processing, and marketing system is crucial to the overall viability and profitability of commercial dairying. Feeder roads play a key role in the efficiency of milk collection. However, many roads have been inadequately maintained and are in poor condition. The cess collected from milk sales is not used for maintenance of feeder roads, unlike the case for cess charged for cash crops such as tea and coffee. The Kenya Roads Board (KRB) has been established to oversee the development of the road infrastructure, acting through various agencies.

Recommendations

This review of current policy issues and their implications highlights certain priorities, and suggests some recommendations:

- There is an urgent need for a quick review of the policies and regulations that are not in tandem with broader national goals (e.g., creation of employment) and the economic reality of the day.
- Harmonization of the different acts that affect the dairy sector is required to reduce existing conflicts.
- Private service provision should be encouraged with appropriate policies to fill gaps created by the liberalization process. Where that is not possible, sustainable alternatives should be sought, such as the introduction of cost sharing, or the training

and equipping of community-based service providers. Accomplishing this may require revisiting licensing regulations for private service providers.

- Institutions charged with the implementation of stated policies and regulations should be made effective by provision of adequate resources and capacity. Where appropriate, institutions should explore alternative systems, such as self-regulation and partnership with the private sector.
- Full representation of all stakeholders on key bodies which influence policy would help ensure that the process of policy reform fully reflects the economic realities currently operating in the dairy sector.



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