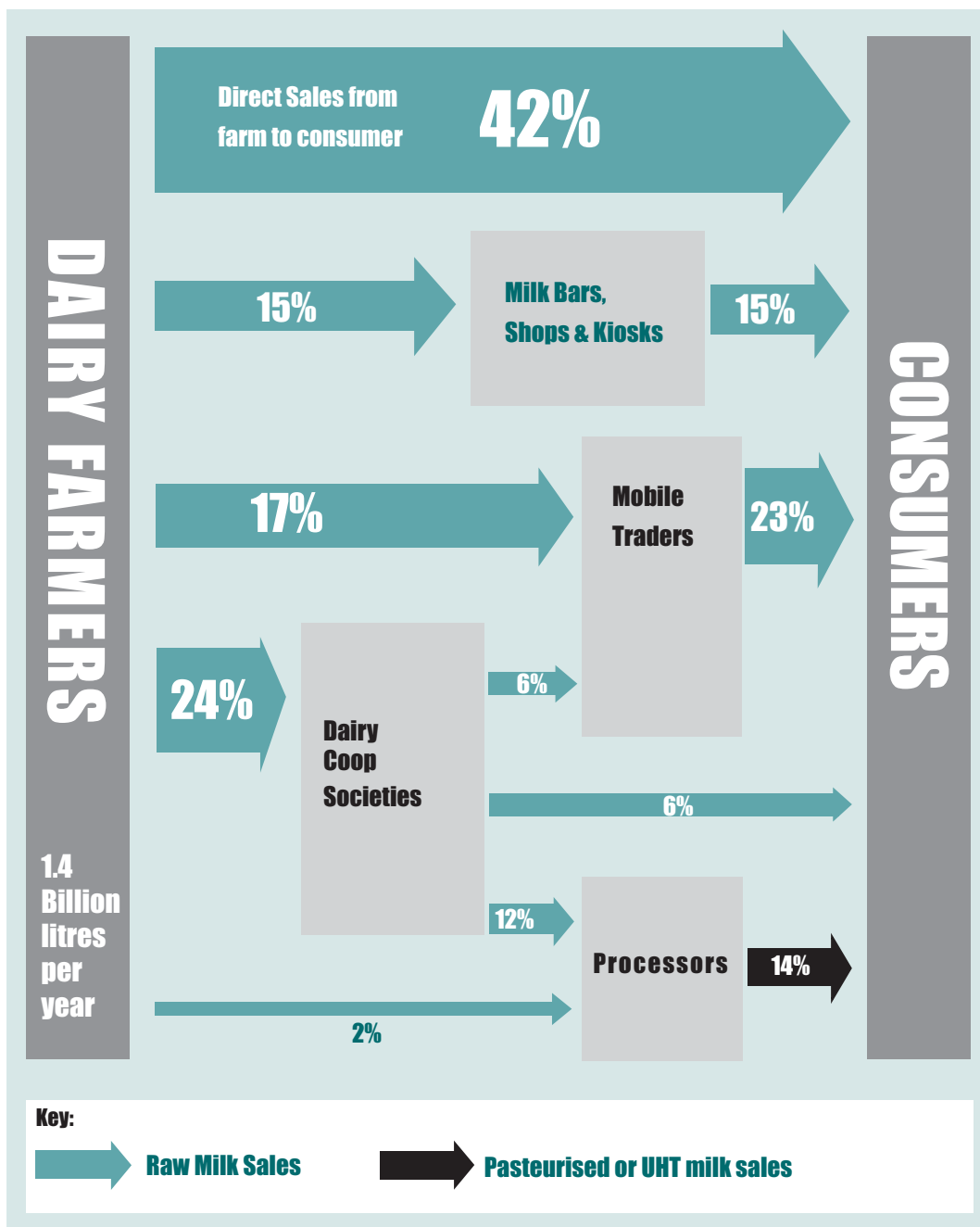


FIGURE 2. How milk gets from farmers to consumers: Percentage of raw and processed milk going through the different market channels.



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).

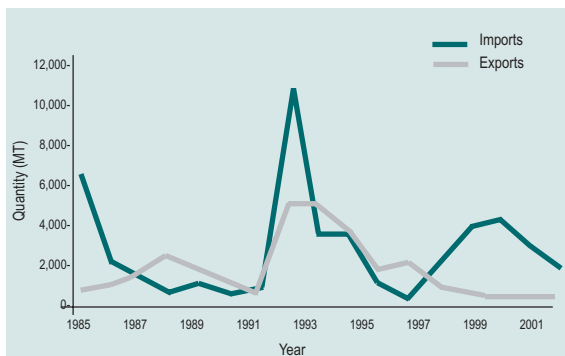
Country	Kenya (three different districts)			Imports
	Kiambu	Nakuru	Nyandarua	
District/source of milk				CIF (import) price of tinned milk per kg
Total cost	17.2	13.28	11.93	20.91*
Producer price	17.63	15.19	14.3	NA

* 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.

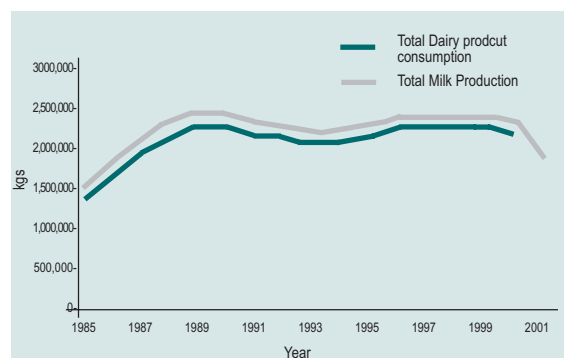
Figure 4 compares milk production and consumption figures over a 15-year period, and indicates that Kenya potentially has surplus milk production capacity. If, as indicated earlier, production is actually higher than officially reported, this surplus may be even greater. Thus the role of policy would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

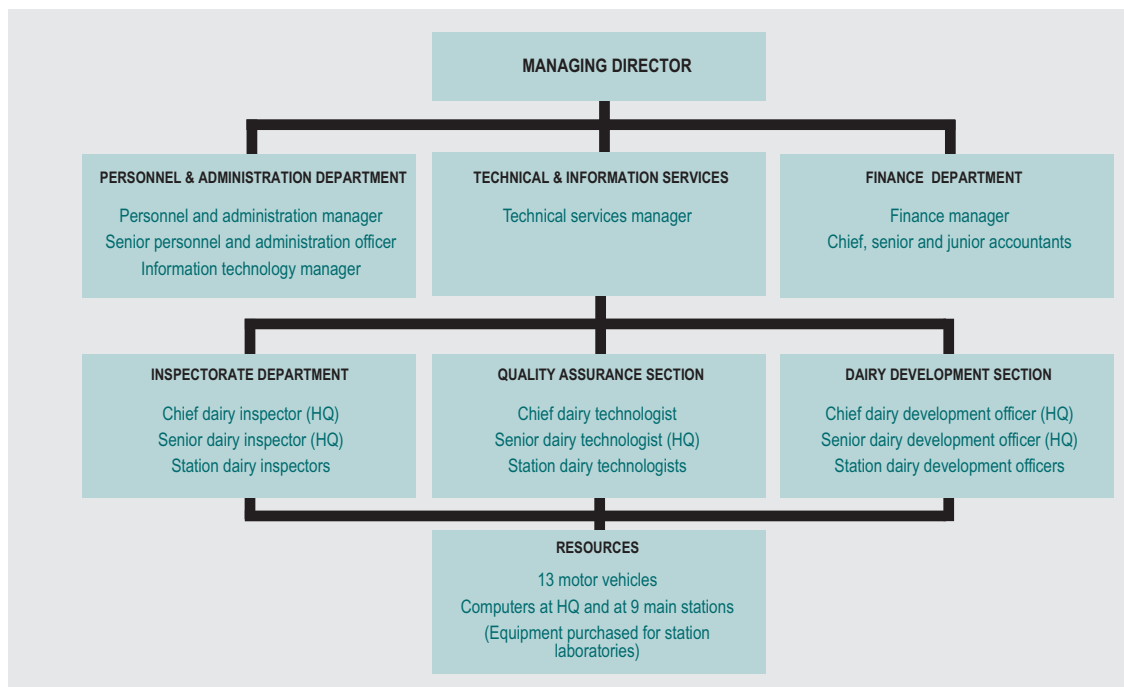
necessary that random samples are frequently taken and tested by the quality assurance officers in order to keep track of the quality trends of milk in the market. This will necessitate that the KDB, through its quality assurance function, sets up and maintains efficient and well-equipped laboratory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

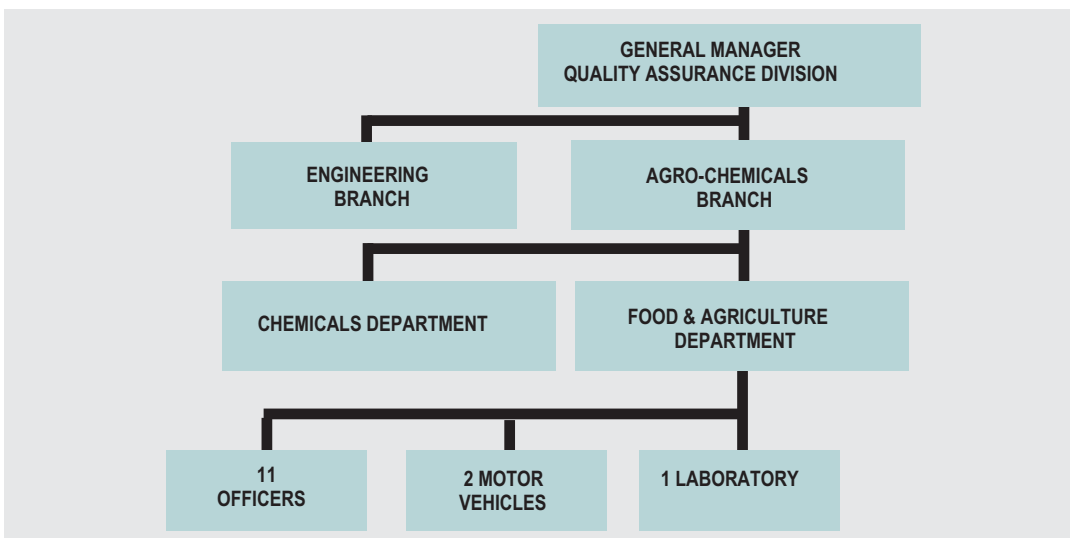
The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices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

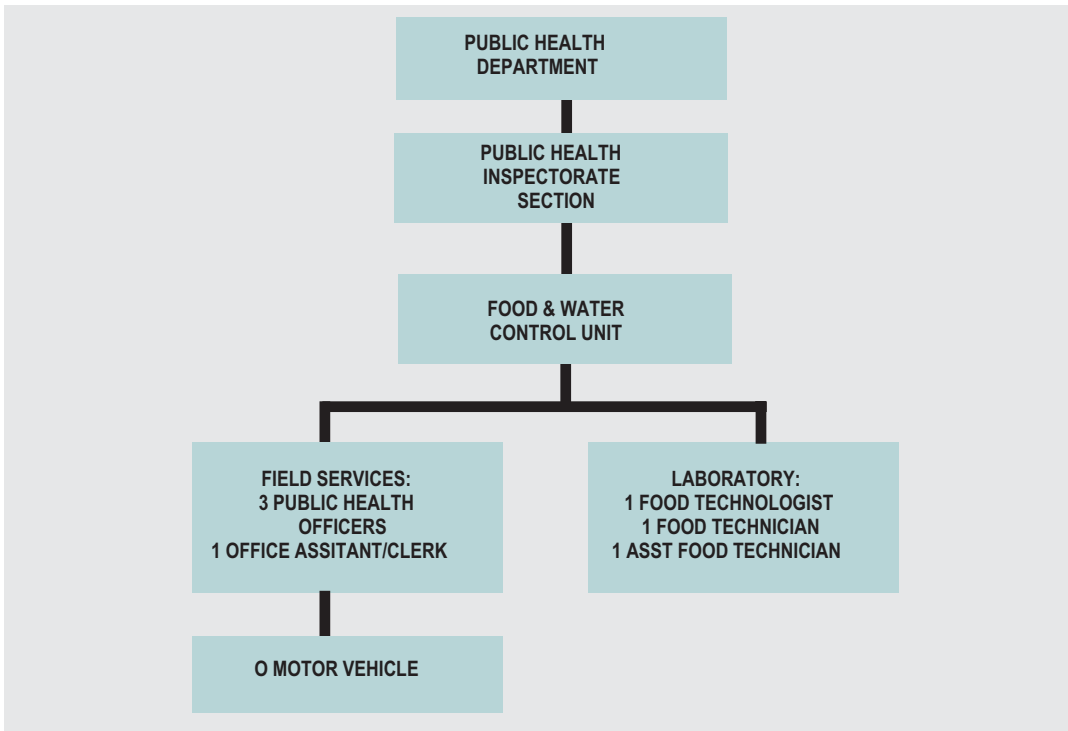
- Systems certification and training. KEBS also assists with implementation of HACCP, ISO 9000 and ISO 14000 (Box 2)

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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