

# Livestock Policy Analysis Brief No. 15

## The effects of price liberalisation on Kenyan peri-urban dairy

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When severe market shortages of dairy products occurred in Kenya in early 1992, the government decontrolled dairy prices and revoked the monopoly of the Kenya Co-operative Creameries (KCC) on sales of processed milk in urban areas. The general opinion among policy makers in Kenya then was that the price liberalisation would adversely affect the KCC. That the KCC has actually not lost its grip on the market is illustrated in this study of the impact of the 1992 policy reform on smallholder peri-urban dairy producers, using a Policy Analysis Matrix (PAM) approach.

### The dairy sector in Kenya

Smallholder peri-urban dairy production in Kenya has been one of the major success stories in sub-Saharan Africa. Due to rapid population growth, increased urbanisation and potential to use relatively intensive technology, the dairy industry has offered many smallholders higher income opportunities than other agricultural activities.

Most dairy processing and marketing in Kenya is controlled by the KCC, which handles 90% of all marketed processed milk and is the major buyer at farm level. The informal dairy market consists of direct sales of raw milk by producers or local traders to individual consumers, and of local sales of raw milk by peri-urban and rural co-operatives. It is estimated that of milk marketed by smallholders, about 60% is sold unprocessed to consumers through the informal market.

### Dairy policy

Government dairy policy has clearly been instrumental in successfully promoting dairy development in Kenya. The integration of grade dairy cattle into the smallholder subsector can be attributed to public support policies and activities, including providing veterinary services and developing infrastructure. The KCC has also contributed to smallholder dairy development by acting as a 'buyer of last resort' to producers when alternative markets were undeveloped.

The KCC was granted a monopoly on processed milk sales to urban areas in 1962 and effectively controlled domestic, export and import trade in dairy products for about three decades. Until 1992, both dairy pricing and marketing policy fell under the official, but nominal, control of a regulatory agency, the Kenya Dairy Board (KDB). The effectiveness of the KDB, however, was overshadowed by its dependence on the KCC for license revenues.

During the 1980s, input prices paid by dairy producers increased at a greater rate than the KDB controlled farm-level milk prices. At the same time, raw milk prices on the informal market rose relative to KCC prices. By the early 1990s, this situation had led to producer disincentives to supply milk to the KCC. Consequently, milk supplies were diverted to the higher priced informal market, and by early 1992 severe

shortages of dairy products had developed in the formal market.

With a view of stimulating supply, the Kenyan government announced the decontrol of dairy prices and the lifting of the KCC monopoly on processed milk sales in May 1992. The KCC subsequently raised its producer prices and its prices to retailers. The result of these price changes was an immediate increase in milk supply to the KCC, and a reappearance of processed milk and dairy products on retail shelves. The policy change also increased the activity of small private milk processors and informal raw milk traders in the market, the informal traders incorrectly perceiving the policy liberalisation (which did not apply to raw milk sales) as tacit acceptance of raw milk sales in urban areas.

## **Application of the Policy Analysis Matrix (PAM)**

### **Methodology and data**

The simple manner in which it presents overlapping and contradictory policy effects is one of the major attractions of the Policy Analysis Matrix (PAM). The PAM provides a systematic framework to identify patterns of incentives for economic agents under relevant technological alternatives at each level of the commodity marketing chain. At each level and for each technology the PAM compares private with social prices, the social prices being potentially available in an open market. Besides analysing policy effects on private profitability, the PAM also examines the relative social optimality of alternative economic activities, thus incorporating the protection coefficient approach commonly used in price policy studies. Further, since the PAM evaluates each level of a commodity marketing chain, comparisons can be made between farm and post-farm welfare changes.

The PAM budget data used in the current study are derived from surveys carried out in several regions of the Kenyan highlands, from 1988 to 1990, by the Research and Training in Agricultural Policy Analysis Project (RTAPAP) of Egerton University (Kenya), in collaboration with Stanford University and the University of Arizona. Representative farms were characterised for three milk production technologies: semi-zero, zero and open grazing. These budget data were updated by the authors to reflect the prices and policy environment of 1992.

A case study of representative smallholder peri-urban dairy producers in the densely populated Nyeri District, located some 200 km north of Nairobi, was used in the analysis. Dairy production in Nyeri takes the form of zero or semi-zero grazing. The zero-grazing farms differ from semi-zero grazing farms by the absence of pasture and by higher levels of input use. In the open grazing farms, found in some areas, milk yields are much lower than in the zero and semi-zero systems. Because informal sales opportunities are limited, most milk in Nyeri District is sold to co-operatives, which in turn sell to individuals and institutions, including the KCC which sells to the Nairobi market. Milk from open grazing farms is mostly sold to dairy co-operatives which sell to the KCC; some of this milk finds its way to the local informal market.

### **Analytical results**

The PAM was applied to the updated farm budgets, using private and social values of pre- and post-decontrol revenues, costs and profits for the three dairy production systems. In all cases, the largest divergence between private and social values occurred under revenues. Farm level results further showed that, because of the increase in producer prices, the private profits of producers per tonne of milk increased by 77 to 215%, depending on the production technology considered.

However, KCC controlled milk prices, held below import-parity levels, had a negative impact on producer social revenues and profits, both before and after the price decontrol. As a result, both private value producer profits and revenues were lower than their social value equivalents. In light of these results, it is not surprising that by early 1992, producers were increasingly diverting milk sales to the informal market where higher prices could be obtained and that widespread milk shortages were experienced in urban areas.

PAM budgets calculated for post-farm milk handling, processing and packaging show that the largest policy impact results from higher wholesale prices. The price liberalisation increased post-farm costs, but raised revenues by a greater amount. The policy shift brought revenues and profits in the dairy system nearly in line with social cost values. However, incentives in the form of producer profits remained lower than optimal, while post-farm activities earned greater than socially optimal profits.

System indicators like private and domestic resource cost ratios, nominal and effective protection coefficients, and overall system and producer subsidy or tax ratios, further substantiate the above findings. Producer returns under the new policy still fall short of opportunities represented by milk import parity prices. The price decontrol has not led to market-efficient prices because of market failure which can be attributed to the continued dominance of the KCC in the formal liquid milk market and its ability to hold producer prices below import parity and informal market levels.

### **Some policy implications**

According to the PAM results based on the Nyeri case study, the 1992 price policy reform, removed only about 20–30% of the negative policy effects of producer price controls. Producer profits and welfare were improved by the policy change, but producer disincentives still exist.

While these are case study results, Nyeri District is representative of high potential dairy zones around Nairobi, and as such the results can be considered indicative of the impact of the policy change on the Kenyan dairy industry as a whole. Accepting this, it is clear that the dairy market in Kenya remains non-competitive, and that a single large dairy processor, the KCC, supported at higher than socially optimal level, continues to be the biggest beneficiary of the policy change.

The continuing market power wielded by the KCC after the policy change appears to have enabled it to exert monopsony (a market where there is one buyer and many sellers) power in influencing producer prices and to extract non-competitive rents from producers and consumers alike. Indeed, under either export or import parity valuation, the KCC was found to have taxed producers before and after the price decontrol.

The difficulty of breaking down such a powerful monopoly through price policy alone is evident. But field observations a year after the liberalisation confirm the prevalence of continued distortions in Kenya's dairy market identified by the PAM analysis. Important barriers to entry remain for small processors, and non-price factors like market dominance, political power, licenses, regulations and credit restrictions hinder dairy development despite positive improvements in price policies.

It is thus necessary that structural change be encouraged by policy actions and other supportive interventions. Barriers to entry will have to be removed to increase competition and reinforce the positive effects of recent policy liberalisation. Regulatory changes also have to be formalised and carried out systematically, especially with regard to access to credit by small-scale processors. Initiatives need to be continued to encourage secondary processors and other marketers. The ability of Kenya to realise its potential in dairy production rests not only on price decontrol but also on the ability of secondary

processors and marketers to alter the structure of the Kenyan dairy market.

For further information on this issue see: Staal S. and Shapiro B.I. 1994. The effects of recent price liberalization on Kenyan peri-urban dairy: A case study using the Policy Analysis Matrix approach. *Food Policy* 19(6):533-549.