**Dairy development and dairy marketing in sub-Saharan Africa**
Some preliminary indicators of policy impacts*

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**Summary**

OVER THE PAST TWO DECADES, sub-Saharan Africa experienced relatively low growth rates in the production of dairy products compared with the average for all developing countries. Total consumption of dairy products grew relatively much faster during the same period. However, available data suggest that the consumption of goat and sheep milk declined in East Africa between 1963 and 1980 and that of camel's milk stagnated. Only the consumption of cow's milk increased fairly rapidly in the whole of sub-Saharan Africa over the last two decades.

During the 1970s the population of sub-Saharan Africa grew at a rate of 2.9% per annum. Over the same period dairy production grew at a rate of about 1.9% per annum, while the consumption of dairy products increased at a rate of 2.1% per annum.

The trade deficit in dairy products in sub-Saharan Africa increased alarmingly over the last two decades: while in 1963 the dairy trade deficit for the region was about US$ 39 million, the figure had risen to about US$ 81 million by 1970 and to US$ 575 million by 1980. The major components of the imports were milk and butter and to a lesser extent cheese.

The systems of dairy development and dairy marketing in most countries of sub-Saharan Africa have one common feature: the dairy economy is dominated by a relatively underdeveloped dairy marketing subsystem in the traditional livestock subsector. Most countries in the region have both a formal dairy marketing subsystem, which caters primarily for urban milk supplies, and an informal marketing subsystem, which operates especially in the rural areas. There is some evidence that the informal marketing subsystems tend to be low-cost operations and that they are in a position to pay higher prices to producers.

With milk production in sub-Saharan Africa being well below the effective demand for milk and milk products, the region will continue to depend on dairy imports to close the dairy deficit in the foreseeable future. Measures to improve the marketing infrastructure in order to facilitate the distribution of recombined fluid milk derived mainly from imported milk powder and butter oil, will also be needed. The need to link rural and urban areas in a more efficient milk distribution network must therefore receive top priority.

Most food policies in developing countries, and especially those in sub-Saharan Africa, appear to be aimed at providing cheap food to urban populations. A strategy of dairy development through the creation of producer incentives, with producer prices and price controls as the main policy instruments, is limited chiefly by the need to strike a balance between the producer price and the retail price. The pricing problem appears to be at the core of programmes for improving dairy development and dairy marketing.
Governments are often sensitive to the level of food prices, particularly for the urban poor. Variations in the quality of the products offered for sale, whereby consumer prices are differentiated, could help achieve certain nutritional objectives. For instance, the introduction of 'toned' (more expensive) and 'double-toned' (less expensive) liquid milk in India has made it possible to sell pasteurized milk to both higher-income and lower-income groups in the metropolitan areas. Generally, sub-Saharan Africa could learn from the experience of dairy development in India, where petty milk traders have been integrated into the overall milk collection and distribution system, thus creating a complementary rather than a competitive relationship in the operations of the country's dairy industry.

Introduction

Sub-Saharan Africa is a food-deficit region, with dairy products being particularly in short supply. It is therefore appropriate to assess the importance of the livestock sector of the region in terms of its contribution to food production. Sub-Saharan Africa's food production per caput is generally below the world average, except in the case of non-cereal staple food crops. Even though sub-Saharan Africa contains about 8% of the world's human population, the region produces only about 4% and slightly over 1% of the world's meat and milk respectively (Addis Anteneh, 1984). Projections of food production and effective demand in sub-Saharan Africa for the year 2000 indicate a staggering food deficit, particularly in the major livestock products (meat, eggs and milk). The deficit in the case of milk is projected to be over 10 million tonnes of whole milk equivalents by the year 2000, a deficit which can be reduced only if the growth in milk production during the 1980s and 1990s far surpasses that of the last two decades (Paulino and Yeung, 1981).

The existing and the projected food production and food balance situation in sub-Saharan Africa calls for a concerted and intensified effort to accelerate the rate of development of agricultural economies if the region is to avert a major food crisis. Milk constitutes a significant proportion of livestock food products in the region, and dairy development will continue to play an important part in bridging the food gap in sub-Saharan Africa.

The development of dairy production must be accompanied by developments in marketing infrastructure to ensure that dairy products reach as many people as possible, especially those in urban areas. The purpose of this paper is to examine the marketing of domestically produced dairy products, including imported but locally reconstituted whole milk powder and recombined skimmed milk powder and butter oil. The paper also briefly examines trends in the imports of other dairy products over the last two decades. The aim is to assess what impacts various dairy development and dairy marketing policies by governments have had on the production and consumption of dairy products in sub-Saharan Africa. An understanding of these policy impacts can help in the formulation of more appropriate policies for future dairy development in the region.

Trends in dairy production

Over the past two decades, sub-Saharan Africa experienced relatively low growth rates in the production of dairy products compared with the average for all developing countries. For instance, taking liquid milk as the major dairy product, it is found that the rate of growth in world milk production for the period 1963–1980 was about 1.7% per annum. During the same period, the annual growth rates in milk production in developing countries and sub-Saharan Africa were 2.9% and 1.6% respectively (Table 1). Although most of the growth in dairy production during
the 1970s occurred in developing countries and in Eastern Europe and the U.S.S.R., the other developed countries accounted for about 45% of the world dairy production by the late 1970s. The share for Eastern Europe and the U.S.S.R. was about 31% of world milk production and that for developing countries about 24%. These percentages are not expected to change significantly during the 1980s (FAO, 1978).


<table>
<thead>
<tr>
<th>Region</th>
<th>Average annual growth rate (%)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liquid whole cow's milk</td>
<td>Dried whole cow's milk</td>
<td>Cheese</td>
<td>Butter and ghee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>'63–70</td>
<td>'70–80</td>
<td>'63–70</td>
<td>'70–80</td>
<td>'63–70</td>
<td>'70–80</td>
<td>'63–70</td>
</tr>
<tr>
<td>World</td>
<td>1.8</td>
<td>1.6</td>
<td>7.8</td>
<td>5.4</td>
<td>1.1</td>
<td>4.0</td>
<td>0.9</td>
</tr>
<tr>
<td>All developing countries</td>
<td>3.2</td>
<td>3.1</td>
<td>19.4</td>
<td>5.8</td>
<td>-9.8</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>1.6</td>
<td>1.3</td>
<td>29.8</td>
<td>-3.4</td>
<td>18.5</td>
<td>0.2</td>
<td>1.6</td>
</tr>
<tr>
<td>East Africa</td>
<td>1.9</td>
<td>1.3</td>
<td>23.6</td>
<td>-5.0</td>
<td>10.6</td>
<td>3.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Central Africa</td>
<td>-1.1</td>
<td>1.6</td>
<td>0</td>
<td>0</td>
<td>37.2</td>
<td>3.0</td>
<td>0.3</td>
</tr>
<tr>
<td>West Africa</td>
<td>2.8</td>
<td>1.6</td>
<td>n.a</td>
<td>-1.6</td>
<td>30.1</td>
<td>0.7</td>
<td>6.6</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>-0.5</td>
<td>0.7</td>
<td>0</td>
<td>0</td>
<td>27.4</td>
<td>-0.3</td>
<td>0.4</td>
</tr>
</tbody>
</table>

n.a. = not applicable (since value at base period was zero).  
Source: Calculations based on data compiled from *FAO production yearbooks* (1973; 1981) by the author.

Production of such products as dried, evaporated and condensed milk generally reflects production of sufficient amounts of liquid whole milk. Table 1 indicates a generally declining rate of growth in the production of milk products other than liquid whole milk in sub-Saharan Africa, a situation which reflects the increasing scarcity of liquid milk to satisfy the increased demand in most parts of the region during the past two decades, particularly during the 1970s. For instance, in the late 1960s and early 1970s Kenya was able to produce substantial amounts of dried whole cow's milk and evaporated and condensed milk, but by the end of 1970s the country had to import dried skimmed milk and butter oil for recombination in order to satisfy the local market demand for fluid milk.

**Subregional production**

Dairy production statistics for the various subregions of sub-Saharan Africa indicate that the production of liquid whole milk from small ruminants expanded more rapidly than cow's milk production over the past two decades. However, data on the production (and consumption) of milk from smallstock are notoriously unreliable and cannot be used with any confidence, while data on the production of camel's milk are not normally available (Table 2).

**Table 2. Milk production in sub-Saharan Africa by ruminant livestock species, 1975.**
Ruminant livestock species | 1975 milk Production (1000 t) | % of total production
---|---|---
Camels\(^a\) | 2 200 | 23.6
Cattle | 5 627 | 60.3
Sheep and goats | 1 507 | 16.1
Total | 9 334 | 100.0

\(^a\) Estimates based on yield of 200 kg milk per head.
Source: Adapted from Jahnke (1982).

The production of liquid whole cow's milk has made some significant but not adequate gains since the 1960s, the changes in absolute values over the period from 1963 to 1980 being 30% for East Africa, 9% for central Africa, 42% for West Africa, and 13% for southern Africa. The overall change in the absolute amount of cow's milk produced in sub-Saharan Africa as a whole was 27% over the same period. Sheep milk production made the highest gain in terms of expansion in production, particularly in East Africa, followed by central and southern Africa.

In terms of total liquid milk production East Africa produced nearly three times as much milk as West Africa, the next largest subregional producer, over the last two decades (Table 3). Central Africa and southern Africa recorded negative growth rates in liquid milk production during the 1960s. During the 1970s these two subregions made only a moderate recovery in liquid milk production compared with the performance of the rest of sub-Saharan Africa over the same period (Tables 1 and 3).


<table>
<thead>
<tr>
<th>Region (no. of countries)</th>
<th>Source of Milk</th>
<th>Production (1000 t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Africa (9)</td>
<td>Cows</td>
<td>2 787</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
<td>551</td>
</tr>
<tr>
<td>Central Africa (8)</td>
<td>Cows</td>
<td>261</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
<td>13</td>
</tr>
<tr>
<td>West Africa (16)</td>
<td>Cows</td>
<td>784</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
<td>302</td>
</tr>
<tr>
<td>Southern Africa (11)</td>
<td>Cows</td>
<td>606</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
<td>13</td>
</tr>
<tr>
<td>Sub-Saharan Africa (44)</td>
<td>Cows</td>
<td>4 438</td>
</tr>
<tr>
<td></td>
<td>Sheep</td>
<td>192</td>
</tr>
<tr>
<td></td>
<td>Goats</td>
<td>879</td>
</tr>
</tbody>
</table>
Trends in consumption

Available data suggest that the consumption of goat and sheep milk declined in East Africa between 1963 and 1980. The consumption of camel's milk, which is relatively more important in the arid and semiarid areas, especially in Ethiopia and Somalia, also stagnated during the same period. However, the consumption of cow's milk increased fairly rapidly, especially in Nigeria, over the last two decades.

The consumption of dairy products (expressed in whole milk equivalents) in sub-Saharan Africa grew at the rate of about 2.1 % per annum over the last two decades. However, some countries in the region experienced relatively low consumption growth rates (e.g. Kenya) while others (e.g. Nigeria) experienced relatively high rates over the same period (Table 4). In fact, Nigeria recorded a growth rate in the consumption of dairy products which was about three times that for sub-Saharan Africa as a whole during the 1961–1977 period.

Table 4. Consumption of milk for countries and country groups in sub-Saharan Africa, 1963 and 1977.

<table>
<thead>
<tr>
<th>Region, country or country groups</th>
<th>Milk consumption** (1000 t/year)</th>
<th>% growth rate in consumption (1963–1975)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1963e</td>
<td>1975d</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>5 183.0</td>
<td>6 661.8</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>658.3</td>
<td>780.2</td>
</tr>
<tr>
<td>Kenya</td>
<td>723.1</td>
<td>701.0</td>
</tr>
<tr>
<td>Madagascar</td>
<td>47.7</td>
<td>49.8</td>
</tr>
<tr>
<td>Nigeria</td>
<td>320.0</td>
<td>691.6</td>
</tr>
<tr>
<td>Somalia</td>
<td>570.8</td>
<td>705.9</td>
</tr>
<tr>
<td>Tanzania</td>
<td>590.2</td>
<td>753.4</td>
</tr>
<tr>
<td>Uganda</td>
<td>256.7</td>
<td>362.8</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>223.8</td>
<td>268.1</td>
</tr>
<tr>
<td>Sahel group*</td>
<td>921.1</td>
<td>1 058.1</td>
</tr>
<tr>
<td>Other countries</td>
<td>871.4</td>
<td>1 291.0</td>
</tr>
</tbody>
</table>

* Includes cow's sheep, goat and camel milk and milk products in whole milk equivalents.
** Refers to total domestic use.
* 1963 figures are averages of the years 1961–65.
* 1975 figures are averages of the years 1973–77.
* Includes Chad, Gambia, Mali, Mauritania, Niger, Senegal and Upper Volta.
Source: Adapted from Paulino and Yeung (1981) with some calculations by the author.
Uses

Most of the milk (both locally produced and imported) in sub-Saharan Africa is used as human food, but some is probably used as feed for livestock although data on this are hard to find. The use of milk for non-food purposes in sub-Saharan Africa apparently declined over the last two decades, a factor which can be attributed to the declining per caput milk production and the fact that the food market for dairy products tends to be satisfied first before any surplus milk and milk products can be diverted to non-food uses. The fact that dairy products in sub-Saharan Africa are used primarily as human food implies that any shortages in dairy products in the region may affect adversely the nutrition of the people of the region. Generally, the proportion of milk and milk products that is used for food in sub-Saharan Africa appears to have remained relatively stable (at about 90% of all milk and milk products) over the last two decades (Paulino and Yeung, 1981).

Growth rates

During the 1970s the population of sub-Saharan Africa grew at the rate of about 2.9% per annum. Over the same period, dairy production grew at the rate of 1.9% per annum while the consumption of dairy products grew at the rate of 2.1% per annum. It is therefore not surprising that the imports of dairy products into sub-Saharan Africa grew relatively rapidly during the last decade (Table 5).

**Table 5. Growth rates in exports and imports of dairy products, sub-Saharan Africa, 1970–1980.**

<table>
<thead>
<tr>
<th>Product</th>
<th>Average annual growth rate (%)</th>
<th>Exports</th>
<th>Imports</th>
<th>Net imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh liquid milk</td>
<td>15.2</td>
<td>11.1</td>
<td>26.4</td>
<td></td>
</tr>
<tr>
<td>Dried milk (skimmed whole)</td>
<td>19.5</td>
<td>13.9</td>
<td>14.5</td>
<td></td>
</tr>
<tr>
<td>Evaporated and condensed milk</td>
<td>8.5</td>
<td>8.6</td>
<td>8.9</td>
<td></td>
</tr>
<tr>
<td>Cheese and curd</td>
<td>37.0</td>
<td>2.5</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Butter and ghee</td>
<td>19.4</td>
<td>8.2</td>
<td>10.7</td>
<td></td>
</tr>
</tbody>
</table>


The consumption of fresh milk increased slightly in all four subregions of sub-Saharan Africa during the 1970s. Consumption of fresh liquid milk increased most in central Africa and least in southern Africa, with the East and West African subregions each recording an average annual growth rate of 1.4%. Consumption of dried milk (dried skimmed milk, buttermilk and whole cow's milk) recorded the highest increase during the 1970s. The subregional range of growth rates in the consumption of dried milk during the 1970s was from 7.9% per annum (for southern Africa) to 15.9% per annum (for East Africa), while the average for sub-Saharan Africa was 13.5% per annum.
**Demand and imports**

Massive imports of dried skimmed milk into sub-Saharan Africa during the 1970s reflected the growing demand for dairy products in the region. Dried skimmed milk is normally recombined with appropriate amounts of butter oil in order to produce liquid milk; in sub-Saharan Africa such milk has primarily been distributed through urban fluid-milk markets. Hence the consumption of butter and ghee (which includes imported butter oil) also showed a significant growth during the 1970s for most subregions of sub-Saharan Africa. However, the consumption of cheese and curd in the region declined during the same period, with East Africa being the only subregion where a significant growth in the consumption of these dairy products occurred. The growth rate in the consumption of cheese and curd in West Africa during the 1970s was close to zero, while the rates for central and southern Africa were negative. Consequently, the consumption of cheese and curd in sub-Saharan Africa as a whole did not increase at all during the 1970s.

The aggregate demand for dairy products in sub-Saharan Africa is increasing, with the overall growth rate in the consumption of milk and milk products being estimated to be about 2.1% per annum (Table 4). This trend is expected to persist in the foreseeable future, and it is estimated that the deficit in dairy products in sub-Saharan Africa will be about 60% of effective demand by the year 2000 (Paulino and Yeung, 1981).

The income elasticity of demand for milk in developing countries generally lies between zero and one. However, one can expect large variations in the value of this parameter between countries, depending on the differences in the levels of disposable income per caput. In 1975 the income elasticity of demand for milk in sub-Saharan Africa was estimated to be about 0.8, but the range in the value of this parameter in the subregions varied from 0.5 for the Sahel group of countries in West Africa to 1.1 for central Africa (Table 6). Since the income elasticity of demand in most of the countries of the region is positive and close to one, the effective demand for milk in the region can be expected to continue to increase as individual countries progress towards higher income levels.

**Table 6. Income elasticities of demand for milk in subregions and selected countries of sub-Saharan Africa based on projections for the period 1975 to 2000.**

<table>
<thead>
<tr>
<th>Region/country</th>
<th>Income elasticity of demand for milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Africa</td>
<td></td>
</tr>
<tr>
<td>Sahel</td>
<td>0.53</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1.20</td>
</tr>
<tr>
<td>Other countries</td>
<td>1.23</td>
</tr>
<tr>
<td>Central Africa</td>
<td>1.09</td>
</tr>
<tr>
<td>East Africa</td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td>0.90</td>
</tr>
<tr>
<td>Other countries</td>
<td>0.77</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>0.95</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Source: Adapted from Jahnke (1982).
Trends in prices

International prices for dairy products can be viewed as the composite of FOB prices of the major dairy-exporting countries of the world. As far as dairy importing countries are concerned, the prices at which they obtain the imports of dairy products must include the costs of insurance and freight (CIF) in addition to the FOB prices at the port from which shipments are made. Hence the CIF prices differ between importing countries.

1. FOB = free on board, which refers to prices payable at the port from which shipments of exports are made.

The farm price support programmes for dairy production in Western Europe and North America have led to a situation whereby the production of milk has saturated the commercial outlets, leading to the stockpiling of dairy products, primarily in the form of dried skimmed milk and butter oil. Such stockpiles reached record levels in the mid-1970s. A major consequence of the stockpiling of dairy products in developed countries was the lowering of prices in international dairy trade during the 1970s, except for two relatively short periods during the first half of the decade (FAO, 1978). The situation has not improved much since the 1970s as both the EEC and North America continue to support milk producer prices.

Marketing subsystems and prices

As a net dairy-import region, sub-Saharan Africa would be expected to benefit from the depressed international prices for dairy products. However, a survey of internal dairy product prices in various countries within the region revealed that the range of milk prices in sub-Saharan Africa is much wider than that on the world market (ILCA, 1979). Most countries in sub-Saharan Africa have both a formal dairy marketing subsystem (the official channel), which caters primarily for urban milk supplies, and an informal (traditional) marketing subsystem. Government-controlled prices operate in the formal marketing subsystem while prices in the traditional or informal marketing subsystem are generally characteristic of a ‘free marketing system’ and usually tend to be much higher than the official prices.

With most countries in sub-Saharan Africa being net importers of dairy products, and with the formal and informal marketing subsystems operating at the same time in each country, one can deduce that there are basically three sets of prices for dairy products in each country:

- The official producer and consumer prices;
- The traditional market prices, which operate mainly in rural areas and which often are both producer and consumer prices (as producers will often sell directly to consumers); and
- The CIF prices— the prices at which imports are secured.

The three sets of prices can differ substantially both within and between countries, and the greatest variations may be expected to occur in the prices prevailing in the traditional marketing subsystem.

Generally, there is a greater stability of prices in the official dairy marketing subsystem within any country. This situation arises out of the concern by governments to keep dairy produce prices low in order to ensure that the urban population can get their requirements cheaply. Even
though the data necessary for a systematic analysis and comparison of the marketing margins and prices in the official and the traditional marketing subsystems are lacking, it is well known that the traditional market prices are more unstable and that they are usually above the official market prices.

A survey of dairy prices by ILCA suggests that the ratio between the traditional and official market prices can fluctuate between 1:1 and 3:1 in certain areas of West Africa, e.g. Ghana and Nigeria, and between 3:2 and 2:1 in Sudan, Mali and Tanzania. A comparison of local and world market prices for dairy products also suggests that there is greater variability in local market prices, and that the local prices can be as high as two to three times the world market prices. Market prices for milk and other dairy products increased much faster in sub-Saharan Africa than in the rest of the world during the late 1960s and the 1970s (ILCA,1979).

Generally, there is a lack of data on prices which would facilitate a systematic appraisal of differences in prices and trading margins between the official and the traditional marketing subsystems of sub-Saharan Africa. This situation also hinders a meaningful analysis of the trends in real prices for dairy products in the region. However, one issue appears to be clear: African governments have been slow in responding to changing cost structures in dairy production by revising official prices to keep in line with the prices in informal or traditional markets. One hypothesis, which should be examined, is that the traditional market prices are more competitive and that they reflect actual market conditions. These prices should thus be taken into account in the decision-making process if the development of the dairy industries of sub-Saharan Africa is to be accelerated.

Given the scarcity and limitations of the available data on the operation and performance of both the official and traditional dairy marketing subsystems, country-specific case studies should be undertaken to appraise the performance of the different markets. There is no doubt that the governments of sub-Saharan Africa are now faced by relatively low CIF prices for dairy products, and the idea of cheap dairy imports, which can facilitate cheap social programmes to feed the undernourished groups within the society, is attractive. However, the impact of the differentials in domestic and world market dairy prices and cheap dairy imports on the development of the local dairy industry in the different countries of the region is still uncertain.

**Trends in trade**

The trade deficit in dairy products in sub-Saharan Africa grew alarmingly over the past two decades. In 1963 the dairy trade deficit for the region was about US$ 39 million, but the figure had risen to about US$ 81 million by 1970 and US$ 575 million by 1980. Inflation is estimated to account for no more than 33% of this increase, so that at least 67% of the increase is attributable to the increased imports of dairy products into the region (Addis Anteneh, 1984).

**Subregional imports**

Absolute amounts of dairy imports into sub-Saharan Africa grew relatively faster during the 1970s. The major components of these dairy imports were milk (mainly as dried milk) and butter, with smaller amounts of cheese. During the same period, the West African subregion became the largest importer of dairy products in the region, its share of dairy imports being about 60% by the late 1970s. The large increases in dairy imports into the West African subregion are attributed to the fast growth of dairy imports into Nigeria during the 1970s. The volume of dairy imports into Nigeria was about 33% of the total volume of dairy imports into the
West African subregion during this decade. By 1980 dairy imports had become the single most important item among Nigeria's imports (FMOA/GRNC, 1981).

Cost and volume of imports

The cost of dairy imports into sub-Saharan Africa grew from about US$ 41 million in 1960 to about US$ 104 million in 1970 and US$ 705 million in 1980. In 1980 the imports of milk alone accounted for about 88% of the value of all dairy imports into the region. Except for West Africa, where the major components of dairy imports were evaporated and condensed milk, the bulk of the dairy imports into sub-Saharan Africa consisted of dried milk during the 1970s.

There was a trade deficit in dairy products for all subregions of sub-Saharan Africa in 1980. However, the volume of dairy imports varied from country to country during the 1970s. The volume of imports may be an indicator of a country's ability to finance imports, which in turn may reflect a generally good economic performance. Therefore, the level of dairy imports in some countries of sub-Saharan Africa may be low simply because they have not been able to finance dairy imports. For instance, the relatively fast growth in the volume of dairy imports into Nigeria is associated with the strength of Nigeria's external account and its ability to finance all food imports, particularly during the latter part of the 1970s when Nigeria's economy benefitted from the oil boom.

Dairy development and marketing policies

The systems of dairy development and dairy marketing in most countries of sub-Saharan Africa exhibit one common feature: the dairy economy is dominated by a relatively underdeveloped dairy marketing subsystem in the traditional livestock subsector. The more developed or modern dairy marketing subsystem is relatively small in terms of the amount of dairy produce that it receives from local production for processing and distribution. For example even in Kenya, which has a relatively better organised dairy industry than most other countries of sub-Saharan Africa, the formal dairy marketing subsystem handles only about 25% of the estimated total milk production in the country.

The traditional livestock subsector is dominated by indigenous livestock breeds, while the modern subsector often has improved livestock breeds, either exotic or crossbred animals. Production in the traditional subsector is geared toward self-sufficiency for family consumption, and only surplus milk production over immediate family requirements is sold, often as sour milk or processed milk products (butter, ghee or cheese). Such sales are effected primarily through a rural interhousehold marketing system or through trading in rural villages or local trading centres. Production and marketing in the modern subsector reflect attempts to organise the dairy industry along the lines of commercial dairying in developed countries.

Marketing and producer incentives

Improvements in the production system call for complementary improvements in the marketing system in order to ensure that there are sufficient outlets for producers' milk and milk products. Official producer prices, which are subject to government control, must also be fixed at levels that ensure adequate financial returns to producers. Therefore, government policies should not only focus on the installation of a modern marketing infrastructure (to facilitate milk collection,
processing and distribution), but must also ensure that the official producer prices will encourage investments in the dairy industry.

**Marketing systems**

There is some evidence that traditional marketing systems tend to be low-cost operations, and that they are in a position to pay higher prices to producers. Often, modern marketing systems cannot compete with traditional marketing systems for raw milk supplies, especially if the official prices are fixed and not reviewed regularly. For instance, the Bujumbura dairy plant in Burundi is said to face stiff competition from milk traders, and the plant is often forced to seek out raw milk supplies from distant rural areas, while the producers in the peri-urban areas supply their milk to the traders who are able to pay more. Such a situation, of course, increases the plant operating costs.

**Future needs**

With milk production in sub-Saharan Africa being well below the effective demand for milk and milk products, the region will continue to depend on imports to close the dairy deficit in the foreseeable future. Most countries will thus continue to import dried milk and butter oil in order to supply recombined fluid milk, particularly in the urban areas. Measures to improve the marketing infrastructure in order to facilitate the distribution of recombined fluid milk will also be needed. In this regard the linking of rural and urban areas in a more efficient milk distribution network must receive top priority.

**Policy options and impact**

Few countries in sub-Saharan Africa appear to have well documented, national dairy development and marketing policies, quite apart from overall food policies. However, an indication of what these policies are can often be derived from the broad statements in the national development plans and/or government sessional papers on development prospects and problems. Meaningful policy analysis is often hampered by lack of data or documentation.

The term 'policy' can be defined in various ways. For analytical purposes one can consider policy as referring to any set of actions through which a given societal situation is to be changed to one that corresponds better to a society's goal (Jahnke and Kirschke, 1983). However, for the purposes of the discussions in this paper the term 'policy' will be defined simply as a 'set of government decisions, often embodied in legislation, taken at a national level and which usually apply to a country as a whole rather than to one part of it'.

**Policy objectives**

The possible ways in which governments can influence the dairy marketing system are listed below. The choice of any specific measure will depend on the policy objectives being pursued and the targets of the objectives.

*Policy objectives associated with dairy marketing are:*

- To provide higher prices to producers;
- To provide more stable prices to producers;
To secure reliable milk supplies for urban areas at reasonable prices;
To reduce marketing costs;
To improve hygiene and quality of products;
To ensure minimum nutrition levels to certain groups of the population through the implementation of programmes for easy and cheap access to milk;
To raise and channel investment funds into dairy production by using profits made from the resale of concessional imports or food aid; and
To provide convenient services to the consumer at prices he can afford and is willing to pay.

Ways of achieving objectives are:

- Setting up of monopoly/monopsony private (e.g. cooperatives) or parastatal organisations in order to:
  - secure economies of scale;
  - operate monopsonistic/monopolistic trading practices;
  - achieve improvements in hygiene/quality of products by direct government action through controlled parastatal corporations.
- Licensing and inspecting of competing traders to ensure minimum hygiene and quality standards as stipulated in law (or rules and regulations that govern trade in dairy products);
- Provision of subsidies to producers and/or consumers;
- Encouraging competition by easing access to information, skills and capital;
- Provision of processing and storage facilities (e.g. for butter), constructed at government expense, to private traders at cost or at subsidised prices; and
- Use of milk-buying chains to distribute dairy production inputs.

Given the problem of obtaining well documented accounts of dairy development and marketing policies, the following discussion draws heavily on mission reports made by the ISCDD of the FAO for a number of countries in sub-Saharan Africa and on an interim report of an FAO expert consultation on 'Agricultural price policies'³.

3. The consultations were held in Rome, Italy, from 29 November to 2 December 1983; final report not yet published.

Existing policies

Most governments in sub-Saharan Africa follow policies aiming at the development of local dairy production, even where the potential for such development would appear to be relatively low. In many countries, dairy development is geared to higher levels of self-sufficiency in dairy products. Dairy imports make up a high proportion of the total food imports of many countries in sub-Saharan Africa. It is therefore not surprising that the aim of dairy development and marketing policies in these countries is import substitution. Implicit in the instruments used to implement dairy development and marketing policies is the need to improve rural standards of living, since dairying is expected to generate income to smallholders, create employment in the rural sector, and provide highly nutritious dietary ingredients.
Unlike the policies pursued in most developed countries, especially those of Western Europe and North America where the agricultural policies are principally geared to the support of farm prices and the stabilisation of producer income, most food policies in developing countries, and especially in sub-Saharan Africa, aim at providing cheap food to urban populations. This situation leads to policy conflicts. On the one hand, African governments wish to create producer incentives through attractive producer prices in order to promote local food production. On the other hand, the same governments wish to appease the urban populations by ensuring that food is available at reasonably low prices.

A strategy of dairy development through the creation of producer incentives, with producer prices and price controls as the main policy instruments, is limited chiefly by the need to strike a balance between the producer price and the retail price. Consumers must ultimately pay for the cost of the products they buy, unless governments are in a position to support farm prices and subsidise consumption. More often than not, governments in developing countries have found food subsidies too costly and have formally declared their intent not to subsidise agriculture. However, many governments still try to pursue a pricing policy to promote local food production while keeping prices of food for urban consumers low, a strategy which in practice often tends to keep producer prices depressed.

Cheap imports

The availability of cheap food imports and food aid, for instance from the EEC, the United States and the World Food Programme (WFP), has often made food imports an attractive alternative to the intensification of local food production, especially in the face of increasing domestic demand. This situation seems to have permeated the dairy industry of sub-Saharan Africa, as the WFP and the EEC have made it particularly easy for many countries to establish modern dairy-processing facilities in major urban areas to recombine dried milk and butter oil. Such dairy recombination materials have often been imported as food aid (from the WFP) or as ‘imports at concessionary rates’ (from the EEC).

There are serious risks in establishing modern dairy plants in urban areas just because cheap imports of dried milk and butter oil for recombination can be secured to keep the plants operating. Modern dairy plants entail heavy investment, and they should be installed only if there are good prospects of obtaining raw material for processing from local sources in the medium- or long-term future. A steady flow of imported material can not always be guaranteed. This situation may have crippled Madagascar’s one dairy plant in the mid-1970s. Recent tendencies in most countries of sub-Saharan Africa to depend heavily on cheap dairy imports could easily lead to a situation whereby local dairy production and dairy marketing development projects in rural areas are no longer given priority.

It should be noted here, however, that WFP food aid in dairy products is usually geared to the support of the recipient country’s efforts in local dairy development; yet a number of countries have failed to use the WFP commodities to achieve that objective. There is a need to identify what went wrong in such instances and see whether more appropriate policies could have led to success in the development of local dairy industries.

Policy choices

Countries and subregions differ substantially in terms of their potential for dairy production, a factor that is primarily attributable to geoclimatic as well as biotechnical conditions. Hence there
may be no one policy instrument which will prove successful in stimulating dairy development under different productive potential conditions. Dairy development objectives may be similar in most of the countries of sub-Saharan Africa, but policy instruments to achieve these objectives must be based on the potential of individual countries for dairy production.

Under the general policy of local dairy production and marketing development, countries in sub-Saharan Africa have adopted a range of policy measures to achieve that policy objective. These measures have included the establishment of public agencies (parastatals) that are given monopoly powers to control dairy trade, imposition of restrictive and protectionist trade practices, and the encouragement of relatively free trade (a more or less \textit{laissez faire} trade policy).

**The case of Kenya**

Effects of different policy measures or instruments on dairy development in sub-Saharan Africa may be expected to differ between countries. Hence detailed policy analysis must be relegated to country-specific case studies. However, we should mention briefly here the experiences in Kenya where dairy development and marketing policies appear to have had some success. The broad objectives of Kenya's latest dairy development and marketing policies are embedded within the framework of the objectives of Kenya's national food policy, which are:

- To maintain a position of broad self-sufficiency in basic foodstuffs;
- To ensure a reasonable degree of food security in all regions of the country; and
- To ensure that every citizen has access to a nutritionally balanced diet, through improvements in the marketing infrastructure and the distributive process, and through social welfare programmes.


Kenya's dairy development policies are to be implemented through a combination of the promotion of increased rural production of milk and improvements in the dairy marketing system. With smallholder dairy farmers now being the main milk producers (accounting for nearly 90% of total production) in Kenya, dairy development programmes aim to strengthen smallholder milk production through the provision of artificial insemination (AI) and veterinary and extension services. Through a pricing policy, dairy producers are guaranteed a price review once a year to ensure that the prices they get for their products reflect changing cost structure and are sufficiently remunerative to encourage increased dairy production. Consumer prices for milk and milk products are also adjusted simultaneously to reflect changes in milk producer prices, which ensures the economic viability of milk processing and marketing institutions. Failure to reconcile the two prices can have damaging effects. For instance in the mid-1970s, a 6-month delay in the adjustment of consumer prices of dairy products, after the milk producer price had been increased, adversely affected the operation and profitability of the Kenya Cooperative Creameries Ltd (KCC), the main dairy processing and marketing corporation in Kenya.

The Government of Kenya also encourages the development of regional cooperative dairies which are expected to enhance improvements in dairy marketing. Promotion of stall-feeding (zero-grazing) systems in areas of high potential and high population densities is also seen as a means of sustaining the growth in dairy production.
Despite the progress that Kenya made during the 1970s in dairy development, the country has also had problems similar to most other countries in sub-Saharan Africa. After the Government of Kenya inaugurated the school milk scheme (SMS) in May 1979, the country experienced a severe drought during the following season, and production of all major agricultural commodities declined substantially. Any carry-over stocks were depleted rapidly. With shortages of basic foods, it was difficult to maintain the new SMS, and local milk supplies had to be supplemented through imports of milk powder and butter oil, which were recombined and distributed as liquid milk. Towards the end of 1983, the KCC claimed that Kenya was producing more raw milk than could be disposed of on the local market. However, the same dairy marketing corporation was quoted as stating that consumers would have to put up with reconstituted fluid milk effective April 1984 until such a time when raw milk supplies, which have been adversely affected by the dry weather, are forthcoming from the producers (Kenya Times, April 6, 1984).

The experiences dairy development in Kenya show how the vagaries of weather can throw a market that was relatively stable out of balance. Of course the extra demand for milk created through the SMS in 1979 further aggravated the situation. The question that faces planners is what to do in order to cope with such unforeseen circumstances. Kenya was able to cope with the situation through emergency imports of dairy products (dried skimmed milk and butter oil), but can this always be a viable solution to such a situation? The answer to this question must be sought through country-specific case studies, since the answer has to be based on the dairy production potential and other socioeconomic conditions in individual countries.

**Conclusions**

The pricing problem appears to be at the core of programmes for improving dairy development and dairy marketing. Prices determine the attractiveness of investments in dairying. Yet many developing countries appear to encourage dairy development and dairy marketing along the lines which make modern dairy plants high-cost operations, and this tends to erode the potentially high prices that could be paid to producers in the face of a government policy not to allow urban milk consumer prices to exceed certain upper limits. In the face of these problems, many governments in developing countries have found it easier to ban the sales of raw milk (thus attempting to eradicate the more competitive traditional marketing system) in order to protect supplies of milk to the modern dairy plants. However, this line of attack raises some fundamental questions which are the subject of policy analysis. For instance, does the ban on raw milk sales solve the milk marketing problems of developing countries? What other options are available? Should the private/traditional marketing channel be free to compete along with or complement the activities of the official marketing channel, and under what conditions?

Regardless of the complexity of policy-related problems, one of the major goals in development is the improvement of efficiency and productivity. If there are significant seasonal supply fluctuations and differences in product quality, then a price which does not reflect supply variations or which does not give a premium for quality differences can hardly be expected to enhance investments in the industry.

Modern dairy plants often view milk producers as suppliers of raw material, which should be procured at prices as low as possible, and little meaningful contacts or interactions exist between the milk processors (modern dairy plants) and the milk producers. This kind of sentiment has often been voiced by the critics of the KCC in Kenya. Such critics have included individual milk producers, politicians and observers. Apart from the need to consider ways of reducing costs, for instance through simpler dairy processing and packaging methods and
paying more to the producers for their milk, the dairy plants must actively involve producers and be involved themselves in the collection of milk in the rural areas. If possible, producer price differentials based on differences in quantities of milk delivered by a given client (i.e. quantity premiums) could be considered. Such quantity premiums would probably encourage large group or cooperative participation in dairy marketing, and the move might even stimulate large-scale dairying.

Governments are often sensitive to the level of food prices, particularly for the urban poor. Rather than perpetually depress producer prices in order to ensure cheap food supplies to the urban dwellers, such alternatives as variations in the quality of products offered for sale, whereby consumer prices are differentiated, could help achieve certain nutritional objectives. For example, the introduction of 'toned' (more expensive) and 'double-toned' (less expensive) liquid milk in India has made it possible to sell pasteurised milk to both higher-income and lower-income groups in the metropolitan areas of India. In fact the model of dairy development in India has met with such success that it is considered worthwhile to try and evaluate the model and assess it for its applicability to the countries of sub-Saharan Africa (see Brumby and Gryseels, p.2 of this ILCA Bulletin). In particular, the Indian dairy industry has been able to integrate the petty milk traders into the overall milk collection and distribution system, thus creating a complementary rather than competitive relationship in the operations of the dairy industry.

References


