Working Document

WP 5

Study report on consumer preferences for milk and dairy products in the city of Bobo-Dioulasso






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1 Introduction

Broadly speaking, the livestock sector in Southern countries is experiencing unprecedented growth (Corniaux et al., 2005).

According to OECD and FAO forecasts for the period 2017-2026, dairy consumption in developing countries is set to increase as a result of rising incomes and population growth, as well as the worldwide standardisation of eating habits.

As a result, per capita consumption is expected to rise from 20.2 kg in 2014-16 to 21.4 kg in 2026 in developed countries, and from 10.9 kg to 13.2 kg in developing countries. However, developing countries will see regional disparities, with fresh dairy products still by far the most widely consumed. By contrast, consumers in developed countries tend to favour processed products (OECD/FAO, 2017).

In Burkina Faso, milk production averages 110 litres per 180-day lactation per cow, compared with 6,000 kg/year/cow in Europe. Low milk productivity is due to the use of extensive, traditional farming methods, but also to the limited genetic potential of the animals. To meet urban demand, the country relies on large-scale imports, resulting in significant foreign currency losses (Palé, 2006).

The local dairy sector has enjoyed some momentum with the emergence of several mini-dairies after more than a decade of government action. However, local dairy production and processing units are now struggling in the face of competition from dairy products imported from industrialised countries, mainly the European Union. The constraints facing the local industry are partly due to insufficient knowledge of the milk and dairy products market, knowledge that would enable decision-makers to take action in order to help local dairy products win back urban markets (Ouedraogo and Doanio, 2007).

It is therefore clear that milk imports not only compete with local milk, but also and more importantly represent a loss of earnings for poorer nations. In view of this, it is necessary to determine how people choose which type of milk to consume. In other words, we need to understand the rationale behind individual and/or collective choices to consume milk and its by-products. This was the guiding principle behind this study, the objectives and results of which are set out below.

The study on milk consumption in Bobo-Dioulasso sought to:

- Identify consumer preferences between milk powder and local milk;
- Identify consumer preferences for dairy products made from milk powder or local milk;
- Analyse what drives consumers' rationales and choices.

2 Methodology

In order to characterise milk consumption preferences, we used a mixed approach, i.e. both quantitative and qualitative. A questionnaire was sent to consumers and a category-based interview guide was issued

to retail outlet managers and milk and dairy product distributors. Retail outlets were identified from a directory provided by Bobo-Dioulasso's Dairy Innovation Platform, and the distributors surveyed were those working with these outlets. Consumers, on the other hand, were approached directly at the point of sale. Quantitative data was therefore collected using Kobocollect and interviews were recorded and transcribed. In total, we surveyed 103 consumers, conducted 19 interviews at points of sale and 14 with dairy distributors.

3 Results

3.1 Socio-demographic features of the consumer population studied

3.1.1 Gender breakdown

The sample of surveyed consumers consists of 103 individuals in total, with a greater proportion of women (54%) than men (46%), as shown in Figure 1. The fact that women are heavily represented in the dairy sector (virtually throughout the entire value chain) may explain this high percentage. There is also a widespread popular belief that milk and its by-products are actually consumed by women.

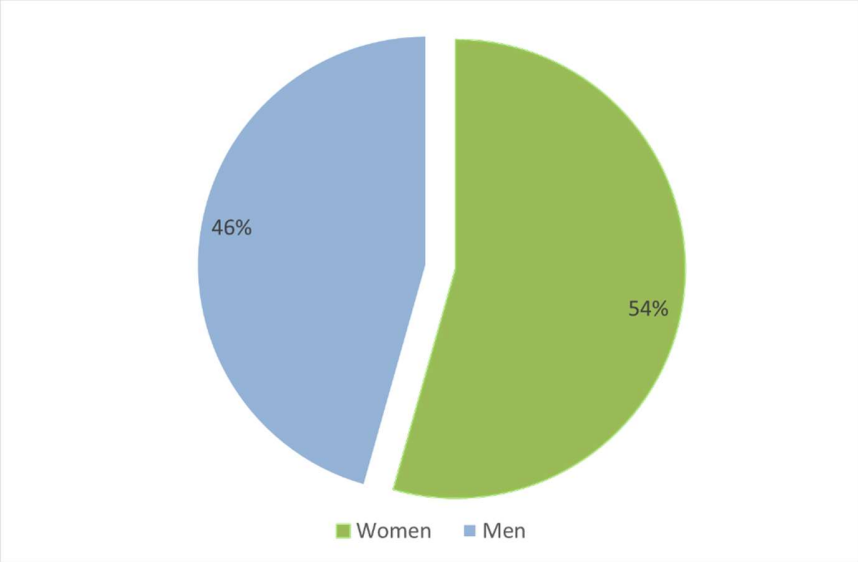

Figure 1: Gender breakdown of surveyed consumers

3.1.2 Age distribution

Figure 2 shows the statistical distribution of respondents by age group. The minimum age appears to be 18 and the maximum age is estimated to be 65. The most represented age group is 18-24, which corresponds to the modal class of this statistical distribution. Young people (under 35s) are well represented (39%), although the proportion of adults is higher. The other notable aspect of this distribution is that the higher the age group, the lower the proportion of respondents, with the exception of the 45-54 age group.

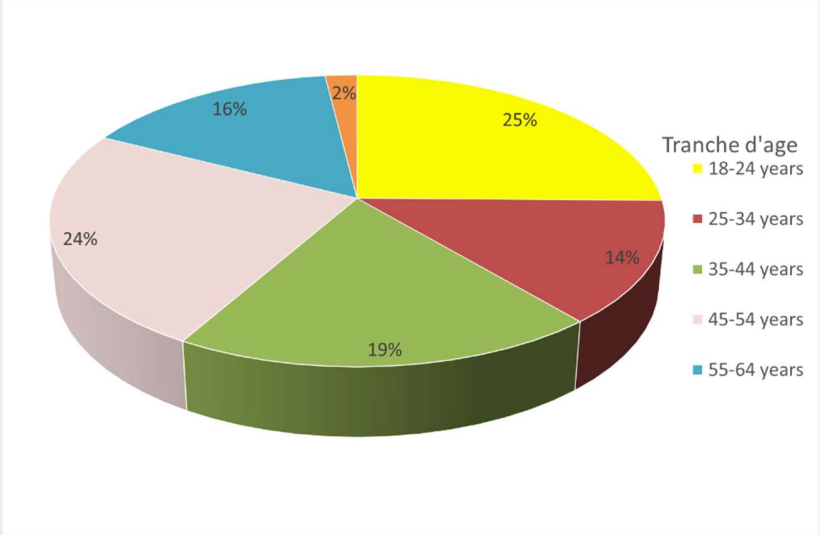

Figure 2: Age distribution of surveyed consumers

3.1.3 Distribution by living area

The survey was conducted in the Bobo-Dioulasso urban area and covered 16 of the city's 33 districts. However, the number of respondents varies from one district to another. Figure 3 shows that more than half of the survey population live in four districts (18%, 14%, 11% and 10% respectively for districts 17, 22, 11 and 6).

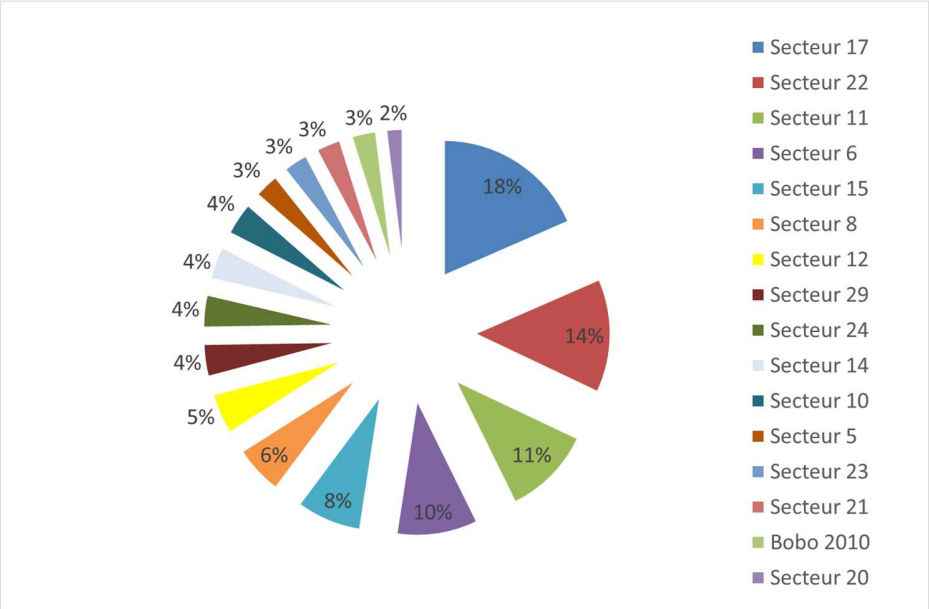

Figure 3: Distribution of surveyed consumers by district in Bobo Dioulasso

3.2 Knowledge and consumption of dairy products

3.2.1 Knowledge of the various dairy products

A wide variety of dairy products are available on the market in Bobo-Dioulasso, ranging from fresh milk to speciality yoghurts, pasteurised fresh milk, plain yoghurt, cheese, cream, gapal (a drink made from millet and yoghurt), butter and more. While some seem familiar, the names of other dairy products are unknown to some of the surveyed consumers. The survey results show that three dairy products are widely known by the population of the study area: fresh pasteurised milk, yoghurt and dèguè (a drink made from sour/fermented milk and lumps of millet or couscous semolina), with a recognition rate of 96%, 96% and 95% respectively among respondents.

Dairy products such as gapal, butter, cream and cheese rank second, familiar to 89%, 82%, 70% and 66% of respondents respectively. By contrast, the third group, which includes little-known dairy products, is much smaller (mentioned by less than 1/4 of respondents) and consists of the different varieties of yoghurt (kinkeliba yoghurt, moringa yoghurt, néré yoghurt and unsweetened yoghurt), as well as sour milk and milk drink (very light yoghurt). These figures reflect the level of consumer awareness of dairy products, but also the diversity of dairy products on offer at retail outlets in different parts of the city. The histogram in Figure 4 gives further indication as to the respondents' knowledge of the different varieties of milk products available in Bobo-Dioulasso.

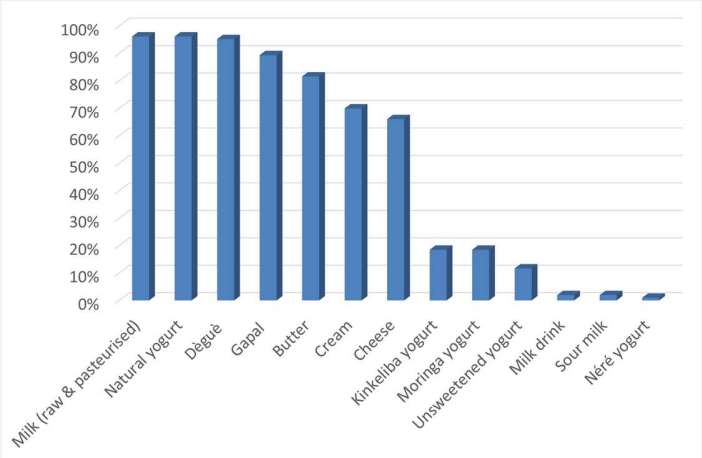

Figure 4: Level of consumer knowledge of the various dairy products available in Bobo-Dioulasso's dairy production area

The fact that products such as yoghurt, dèguè and gapal are known to virtually all consumers is mainly due to their prevalence in the retail outlets surveyed for this study. However, despite its limited availability at retail outlets, pasteurised raw milk remains a widely known dairy product among consumers due to its deeply rooted cultural identity in some communities and its highly nutritional values promoted in schools. Out of nineteen (19) outlets surveyed, only seven (7) regularly sell fresh milk. This scarcity of pasteurised fresh milk seems to have been ongoing since at least 2018, as reported in a benchmark study conducted

that year on the dairy industry, which listed 31 DPUs, only 12 of which regularly supplied dairy products made from fresh cow's milk (Duteurtre and Vidal, 2018).

3.2.2 Dairy consumption preferences

The study results show a clear consumer preference for plain yoghurt (25%) and its variants (unsweetened yoghurt, kinkeliba yoghurt and moringa yoghurt). Pasteurised fresh milk ranks second (22%), followed by gapal (16%) and dèguè (15%). The least consumed products are butter, sour milk, cheese and milk drink. Consumer awareness of these products as well as their availability on the market play a role in shaping these preferences. However, other factors of a subjective nature also affect these preferences. According to information gathered from the outlet managers interviewed, the fact that yoghurt can be enjoyed with other hearty foods such as bread and cakes is a key factor in its appeal. In other words, customers make a rational choice. Similarly, interviewees repeatedly point out that the advantage with gapal is that it can act as a substitute for a main course. As for pasteurised fresh milk, its preference lies in the fact that it is derived exclusively from the processing of local milk. Yoghurt, described here as the most widely consumed dairy product, can be made from local milk or imported milk powder. It should be pointed out that in terms of consumer preference, dairy products made from local milk are more popular than those made from imported milk powder. Nearly all of the interviews showed that consumers prefer products made from local milk, but may switch to those made from milk powder due to price considerations. Yet Mamine et al (2018, pp. 50) state that: "*price is no longer the only quality indicator guiding consumers' purchasing decisions*". We must therefore consider that the most consumed product does not necessarily reflect customer preference. Underlying factors such as price and availability can cloud the reality of consumer preference. On this issue, Albarka Yaourt, which resorts to milk powder for its processing operations, explains that *"Local milk is not available, which is why we don't process it".*

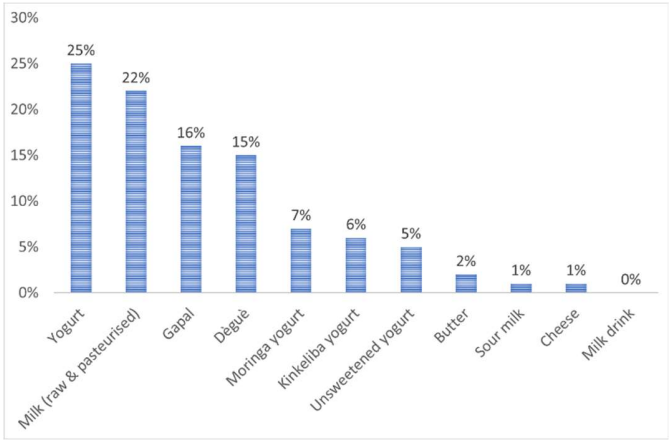

Figure 5: Consumer preferences for the various dairy products available in Bobo Dioulasso

3.2.3 Dairy consumption preferences by gender and age

In terms of gender (Figure 6), women have a strong preference for yoghurt (28% of women), while men tend to prefer fresh milk (29%). However, this distinction no longer applies when the different types of yoghurt are combined with plain yoghurt, in which case both men and women prefer yoghurt.

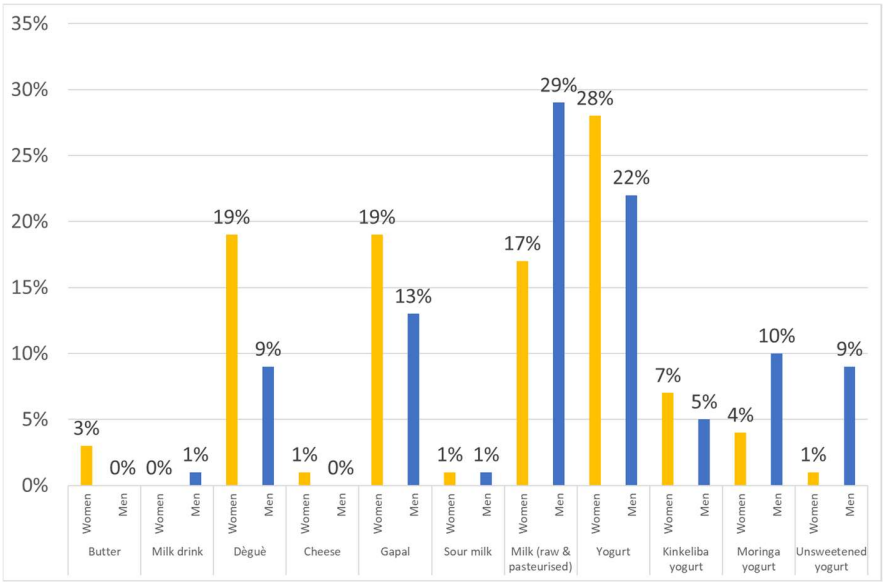

Figure 6: Dairy consumption preferences by gender in Bobo-Dioulasso's dairy production area

In terms of age (Figure 7), young people (under 35s) tend to favour plain yoghurt, while adults prefer pasteurised fresh milk. This difference may be due to health concerns. After a certain age, the extent of chronic health conditions such as diabetes does indeed prevent adults from consuming a number of milk-derived products. However, when combining yoghurt variants with plain yoghurt, young people and adults alike prefer yoghurt, followed by pasteurised fresh milk.

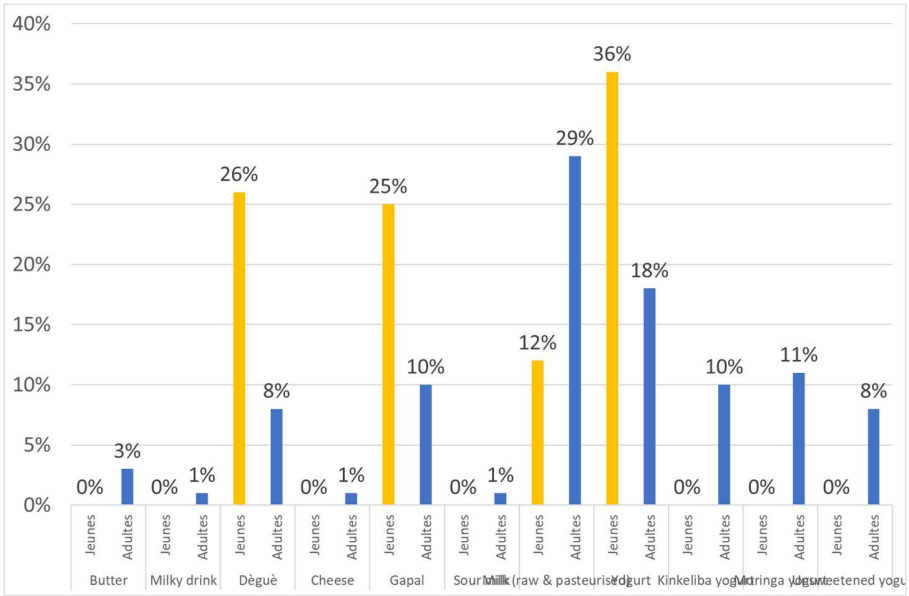

Figure 7: Dairy consumption preferences by age in Bobo-Dioulasso's dairy production area

3.2.4 Dairy consumption dynamics

Figure 8 shows that 50% of dairy consumers adopted this dietary habit less than 5 years ago. Dairy consumption is growing in line with socio-economic trends. Milk consumption is increasingly becoming part of the eating habits of Bobo Dioulasso's city dwellers, a trend that seems to have tripled over the last ten (10) years. It is worth noting that this pattern seems to coincide with urbanisation and the resulting changes in eating habits. Although milk is a long-established food product, milk by-products are a fairly recent consumer option, fuelled by the development of the agri-food industry. This renewed interest in dairy consumption could also reverse a long-standing trend, dating from 2010 to 2016, which was in theory in decline nationwide (Vias Franck, 2018).

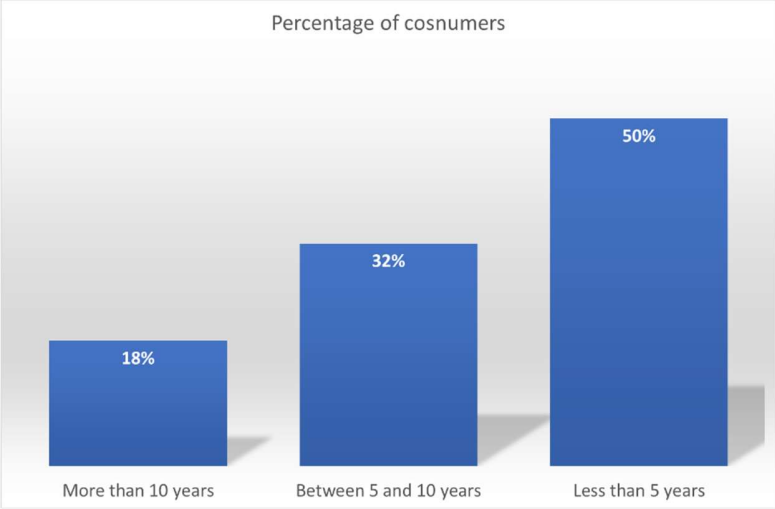

Figure 8: Dairy consumer trends in the study area

3.2.5 Rationale for dairy product consumption

In Bobo-Dioulasso, dairy consumption is a personal choice for most of the respondents (78%), based on their freedom to consume any food product (Figure 9). For other respondents (22%), dairy consumption is a dietary habit that has developed and become part of their diet. These eating habits are mainly rooted in cultural/ethnic traditions (30%) as well as being based on proximity to production, processing or sales points (24%). The study by Corniaux et al (2005) carried out in Mali showed that, from an ethnic point of view, "*pastoral populations, such as the Fulani and Songhai, consume a lot of milk, i.e. 89 and 60 kg/year/person respectively. Conversely, the Bozos, Mossis and Bobos consume little (9, 20 and 21 kg/year/person)*".

According to a number of retail outlet managers, local milk is still in short supply on the whole, if not quite scarce, while milk powder is flooding the market. This latter type of milk reaches consumers via a variety of international sources (from Europe and elsewhere). This growing abundance of milk powder has an impact on dairy consumption in Bobo Dioulasso's dairy production area. Consequently, the decision to consume dairy products on the basis of personal choice, as expressed by a significant proportion of respondents, should be treated with caution.

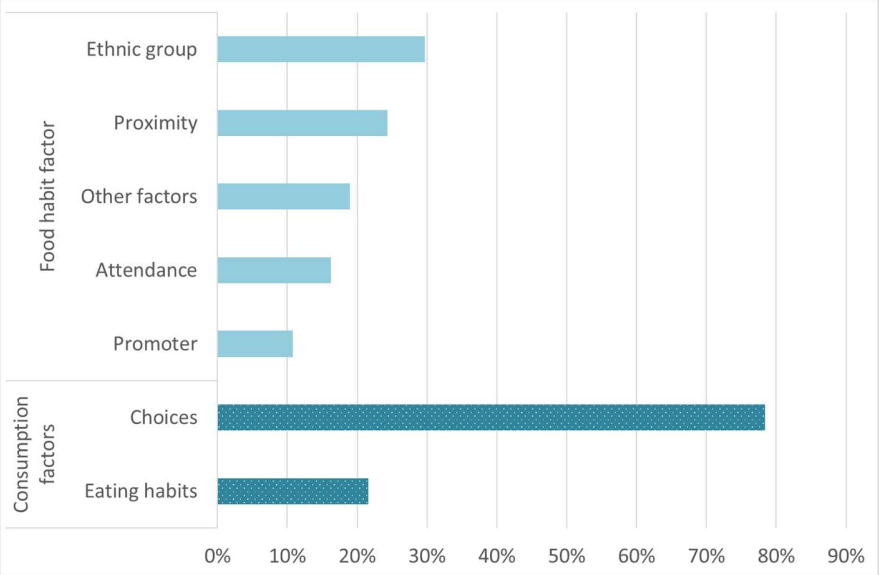

Figure 9: Key factors in the routine consumption of dairy products in the study area

3.2.6 Dairy product consumption drivers

Table 1 lists the various drivers behind dairy product consumption among respondents. The main driver for consumers is the positive impact of dairy products on health (46%). The second driver is the energising effect of dairy products as a body performance booster (20%). This is echoed by another group of consumers who describe milk as a complete food and therefore as highly nutritious (19%).

Table 1: Dairy consumption drivers

Dairy consumption choice factors	Factor frequency
Dairy products are good for your health	46%
Dairy products boost your body's performance	20%
Milk is a complete and highly nutritious food	19%
Milk adds a good flavour	8%
Dairy products improve your digestion	7%

3.3 Dairy product supply sources for consumers

In traditional pastoralist families, milk was mainly farmed by women, who derived most of their income from it. With the organisation of a milk collection system aimed at supplying Dairy Processing Units in some of the major towns such as Banfora, Bobo-Dioulasso and Ouagadougou, some farmers in these systems chose to farm a core group of dairy cattle. These are lactating cows which, among other things,

do not travel with the rest of the herd, and whose milk is processed for self-consumption and sale (Sodré, 2022).

The local dairy industry in Burkina Faso used short distribution channels, often consisting of direct sales from producers to rural consumers. A more formal channel quickly developed, based on collection from dairies. However, it only targets a relatively narrow niche market, and only carries a limited range of processed products. These dairies are located around towns or small urban centres where their production is sold locally.

Our interviews show that most of the retail outlets are supplied by Milk Collection Centres (MCCs) from Yegueresso, Satiri and Bama. Some have their own delivery personnel. This reflects the organisation of Bobo Dioulasso's collection system.

3.3.1 Categories of dairy product distributors serving consumers

Milk and dairy product distribution in Burkina Faso follows a conventional pattern, involving a number of links in the marketing chain: wholesale, semi-wholesale, retail and micro-retail, via shops, kiosks, cafeterias, markets and street vendors, before finally landing on the consumer's plate.

This survey identified a total of 6 categories of dairy product distributors in the Bobo-Dioulasso study area. The largest distributors stand out in the dairy marketing chain. These are mainly grocery stores, shops and kiosks, as well as Dairy Processing Units (DPUs), which cater for 42%, 31% and 19% of consumers respectively (Figure 10). Consumers' other sources of supply of dairy products are producers, independent collectors and wholesalers.

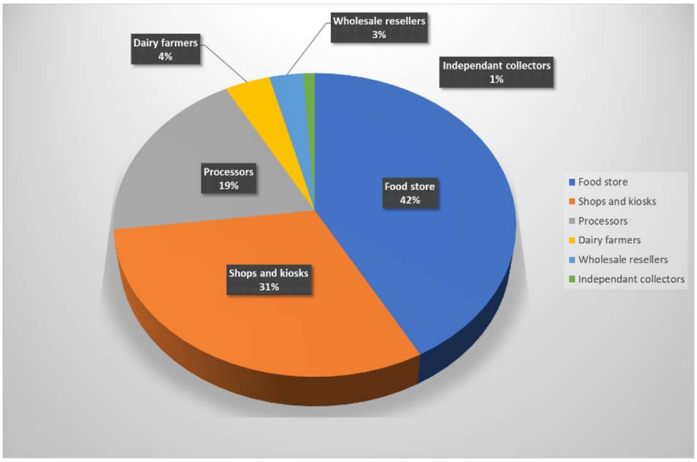

Figure 10: Breakdown of dairy distributors in Bobo-Dioulasso

3.3.2 Quality of dairy products from distributors

The majority of consumers interviewed reported consuming dairy products of good (49%) to very good (30%) quality (Figure 11). As well as consumers, most retail outlet managers and distributors were satisfied

with the quality of their product. However, a number of complaints were noted in the interviews, and were linked to the erratic nature of the supply chain (irregular supplies, cold chain disruptions, superficial quality control) which sometimes affects the quality of local milk. On the issue of dairy product quality, the manager of "*Bonheur Yaourt*" deplored the fact that *"local milk supplies are frequently late, which means that we often lose a large quantity of the milk delivered to us. The products we process are all delivered, so we don't suffer from too many poor sales. Customers like the taste, but some find the price too high".* These supply chain dysfunctions often have an impact on the quality of the milk supplied, and this contrasts with recent studies carried out in other places, which show a much more fluid and efficient local supply chain in similar economic contexts (small atomised production units) (Aubron, 2016).

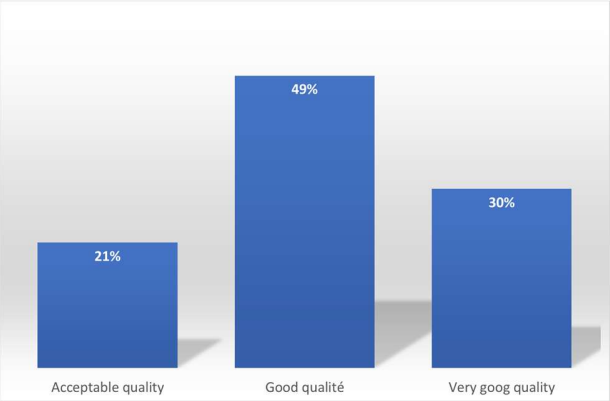

Figure 11: Consumer appreciation of dairy product quality

The same trends can be observed regardless of the nature of the supplier, with the exception of dairy products supplied by independent collectors (Table 2).

Table 2: Consumer appreciation of dairy product quality by distributor type

	Acceptable quality	Good quality	Very good quality	Total
Supplier producer (n = 6)	17%	**67%**	17%	100%
Independent collector (n = 2)	50%	50%	0%	100%
Processors (n = 33)	9%	**55%**	**36%**	100%
Wholesalers-retailers (n = 6)	17%	17%	**67%**	100%
Shops and kiosks (n = 33)	15%	**53%**	**32%**	100%
Grocery stores (n = 72)	24%	**56%**	21%	100%

3.3.3 Choosing a specific dairy product distributor and reasons for doing so

A fairly large proportion of the consumers surveyed (43%) select one or more specific distributors to meet their dairy product needs. When making this choice, consumers highlight a number of criteria, most

importantly health quality (28% of consumers), hygiene (22%) and locally sourced processed milk (Figure 12).

In addition, the selection of specific distributors is sometimes linked to product storage conditions, a search for a particular organoleptic quality in the product or a search for a better price (Figure 12). Interviews with retail outlets show that price is an important factor in the choice of suppliers. Although consumer preference is more heavily weighted towards dairy products made from local milk, according to comments gathered from distributors, an excessively high price can lead consumers to switch to another supplier.

Figure 12: Proportion of consumers using a specific dairy distributor and distributor selection criteria

3.3.4 Influence of proximity on consumers' choice of distributors

While the above factors have been taken into account to a large extent in the selection criteria used by some consumers when choosing a specific dairy distributor, it is also important to mention the proximity between distributors and consumers as an additional factor (Figure 13). The survey revealed that almost half (46%) of dairy product consumers lived in the vicinity of their specific distributors (less than 500 metres away). Some dairy consumers (29%) do, however, buy from specific distributors located much further away (more than 1 km). The relevance of data relating to the influence of proximity to the point of sale on the choice of a specific distributor is somewhat relative, as many consumers are still prepared to travel long distances to meet their own preference criteria.

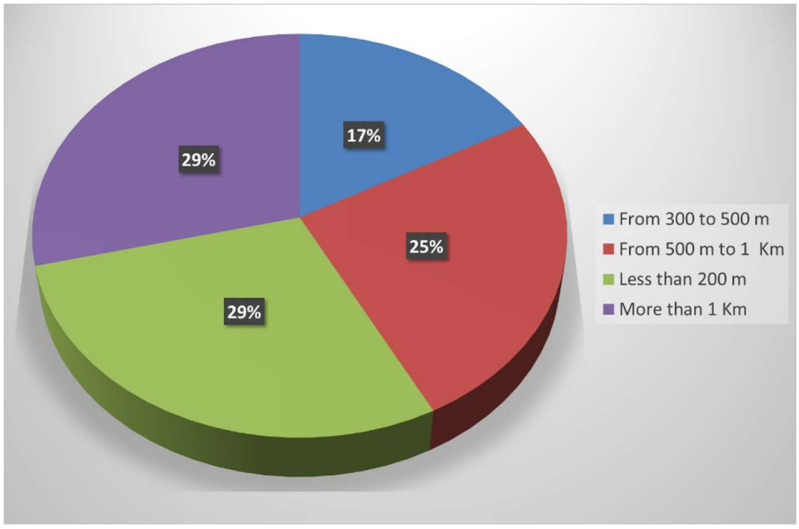

Figure 13: Distance between consumers and points of purchase for dairy products

3.4 Dairy consumption factors and criteria

3.4.1 Choice of dairy product brands

The survey identified around ten brands of dairy products preferentially consumed in the study area. The question was multiple choice, with a maximum of two choices ranked in order. In order of preference, the top brands targeted by consumers are Dia Yaourt and Shalom, which account for 20% and 15% of consumers respectively (Figure 14, yellow chart). Apart from these two leading brands, consumers secondary preference goes to Pabré Yaourt, Bon Yaourt (17% of consumers) and Koumba Lait (11% of consumers) (Figure 14, orange chart). In terms of coverage, these five brands are well established in more than 4 districts of the city. While the other brands attract more consumers in some areas, they remain highly localised, covering no more than two districts of the study area.

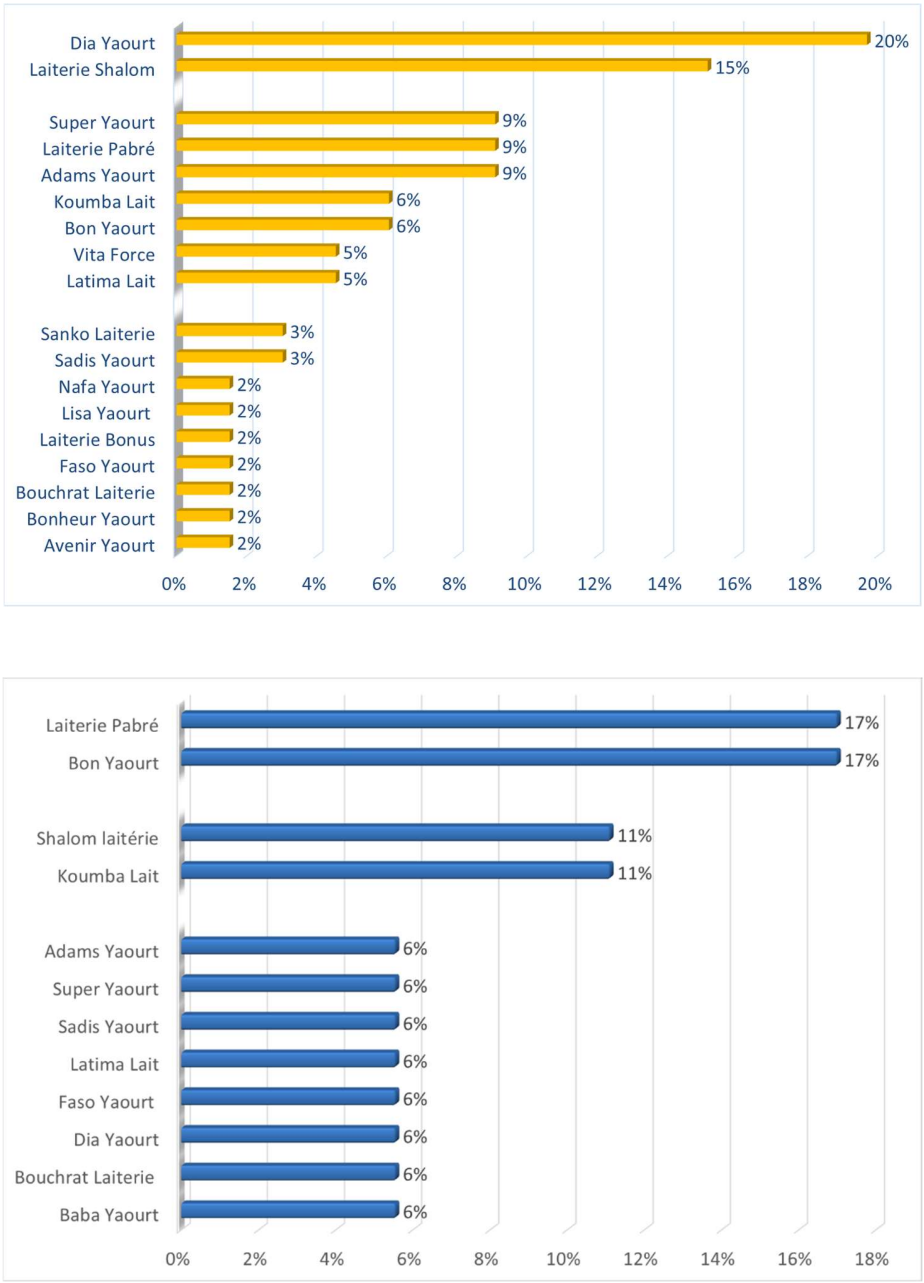

Figure 14: Preferred (Top/H list) and second choice (Bottom/H list) dairy brands in the study area

Consumers' preference for specific dairy brands is mainly driven by their search for:

- Dairy products made from local milk;
- Products available on the market;

- A pleasant taste;
- Guaranteed hygiene;
- Highly nutritious products;
- Healthy/properly stored products;
- Good quality products.

3.4.2 Consumers' ability and means of recognising dairy raw materials

Today, local production is booming and the products on offer include traditional dairy products made in villages (raw milk, skimmed sour milk, butter and butter oil or ghee), products from small-scale and semi-industrial dairies (pot yoghurt, sour milk in sachets or bottles, pasteurised milk and cheese) and imported dairy products (milk powder, condensed milk, sweetened or unsweetened condensed milk, yoghurt, butter, cheese). In town, the market is dominated by imported dairy products. Retail outlet managers confirm the coexistence of these two types of milk. Some products such as yoghurt, gapal and dèguè can be made from either of these types of milk.

Figure 15 shows the extent to which consumers can identify the type of milk used in products they consume (local milk or imported milk powder). It emerges that most consumers (77%) are able to identify the raw material used in dairy products.

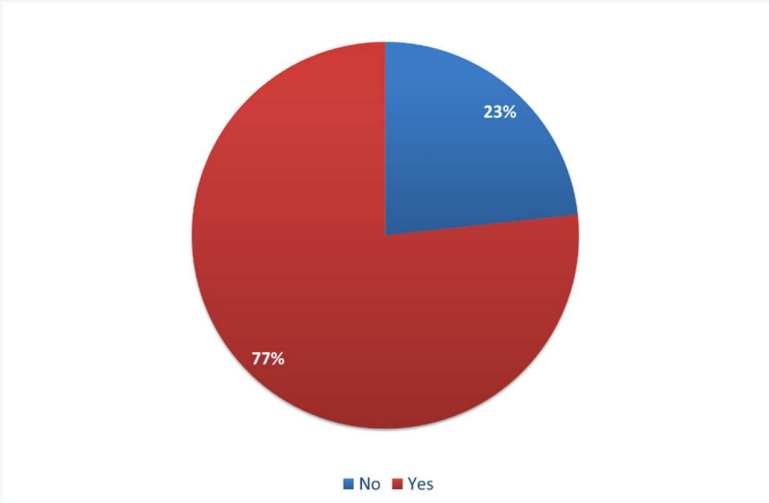

Figure 15: Proportion of consumers able to identify the raw material in their dairy products

To identify the origin of these dairy products, consumers tend to use a number of sensory criteria (Figure 16). The most important ones are the product's taste (47% of respondents) and smell (23%). The overall appearance of the dairy product (clarity, texture, etc.) is another criterion mentioned by 17% of consumers. As a last resort, consumers refer to the label on the product's packaging to establish its origin, or simply ask the retailer. Figure 16 gives an overall picture of the different ways in which they can identify the raw materials used in dairy products.

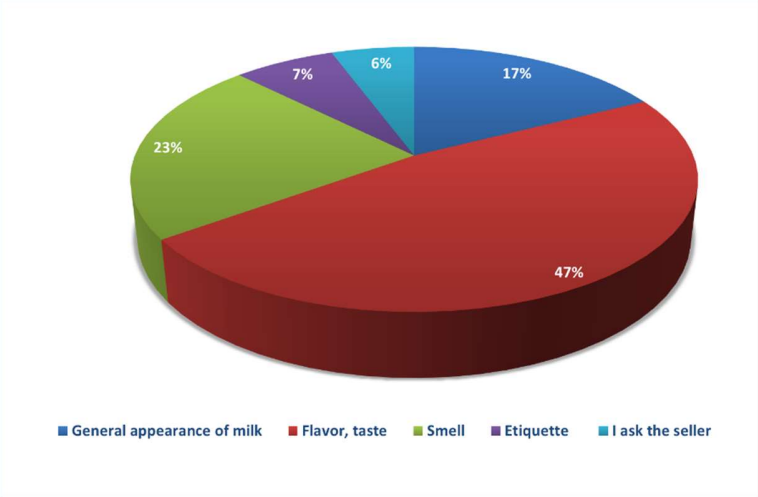

Figure 16: Ways of identifying dairy raw materials (fresh local milk or milk powder)

3.4.3 Dairy consumption preferences by raw material

Local milk-based products on offer include traditional manufactured dairy products (raw milk, skimmed sour milk, butter and butter oil or ghee) and products from small-scale and semi-industrial dairies (pot yoghurt, sour milk in sachets or bottles, pasteurised milk and cheese). Imported dairy products consist mainly of milk powder, condensed milk, sweetened or unsweetened condensed milk, yoghurt, butter and cheese. Although many studies point to a flood of imported dairy products (Hamadou and Sanon, 2005; Gouin et al., 2006) in urban markets, the survey population seems to be more interested in dairy products made from local milk. Figure 17 reveals an almost unanimous preference among respondents for dairy products made from local milk. A distributor of 'Diama lait' products said: *"We are satisfied with the quality of the products, but local milk is expensive and availability on the ground is insufficient. Customers always praise the quality of our products."* The results show that 91% of dairy consumers would rather consume products made from local milk. However, this theoretical preference could be masking the reality of consumption. Consumers acknowledge that dairy products made from local milk offer more nutritional and health benefits. But its unavailability and unaffordability can create a gap between personal preferences and market reality. This is what Bornstein (1989) suggests in his food science studies. He notes the effect of familiarity on preferences and explores the affective and cognitive mechanisms that could explain this link between familiarity and preference, while leaving room for new product uptake mechanisms (Ton Nu, 1993). For Steenkamp (1996), individual food choices are conditioned by three types of factors (food properties, physiological effects and sensory perceptions), individual factors (biological, psychological and socio-demographic) and, lastly, environmental factors (cultural, economic and marketing). Arrault et al (1998) note that taste is a rising value among manufacturers seeking to boost sales, not least because its control is a key driver of repeat purchases (Teil, 1995).

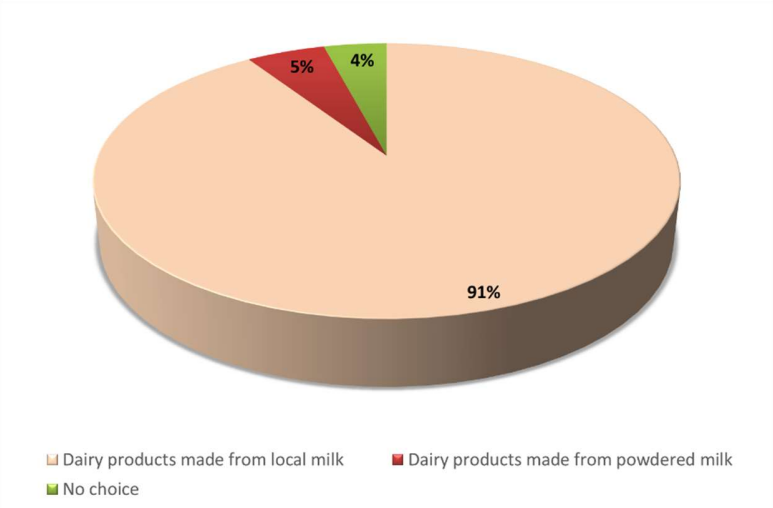

Figure 17: Dairy consumption preferences by raw material (local fresh milk, milk powder)

The main reasons given by respondents for choosing dairy products made from local milk were as follows:

- Consumers can be assured of the quality and pleasant taste of local products;
- The advice promoting consumption of locally-produced natural products is being followed;
- Local milk is highly nutritious and its consumption offers health benefits;
- Knowing where these products' raw materials come from is key.

Some consumers may choose to consume dairy products made from imported milk because of financial constraints or local milk intolerance. They argue that imported dairy products are cheaper and more competitive on the market than local dairy products. In addition, intolerance to local dairy products was cited as a reason for limiting consumption of products made with local milk.

Table 3: Summary of consumers' reasons for choosing dairy products according to their raw material (fresh local milk, milk powder)

Raw material	Criteria or specific reasons
Local fresh milk	Complete food Healthy Pleasant taste Better quality Recommended product Natural product
Imported milk powder	Affordable Local milk intolerance (nausea, bad smell)

3.4.4 Consumer knowledge of dairy raw materials

Figure 18 describes consumers' awareness of the raw materials used to produce their dairy products, with a distinction between those made from local milk and those made from imported milk powder. According to data from consumer surveys, more than half of respondents (61%) say that the dairy products they consume come from both local cow's milk and imported milk powder, while 34% only mention local cow's milk. However, a minority (5%) state that they only consume dairy products made exclusively from imported milk powder. Ultimately, this study finds that as well as being able to identify the source of dairy products, consumers prefer the milk they are used to consuming, i.e. local milk.

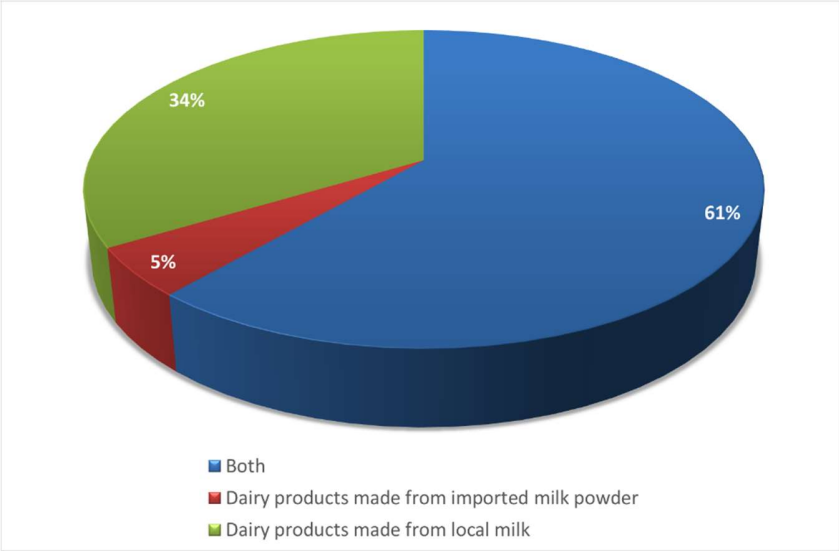

Figure 18: Consumers' ability to identify the basic raw material in their dairy products

3.4.5 Frequency and level of consumption of dairy products made from local milk

Based on a combination of factors, Figure 19 shows the frequency and level of consumption of dairy products made from local milk (referred to here as 'local dairy products'). Looking at the figures from the study, local dairy products are consumed daily by around a third of the consumers surveyed (29%). This category of consumers is joined by the largest group of respondents, those who consume local dairy products more than once a week (62%). Lastly, only 9% consume local dairy products on a fairly small scale (once a week).

Looking at specific local dairy products, yoghurt and pasteurised raw milk are the most widely consumed products made from local milk (29% and 26% of respondents respectively). Next come moderately consumed dairy products made from local milk, with dèguè and gapal accounting for 17% and 15% respectively. Lastly, consumption of local milk-based dairy products such as cheese, cream, butter and others remains low, accounting for just 13% of consumers among those surveyed.

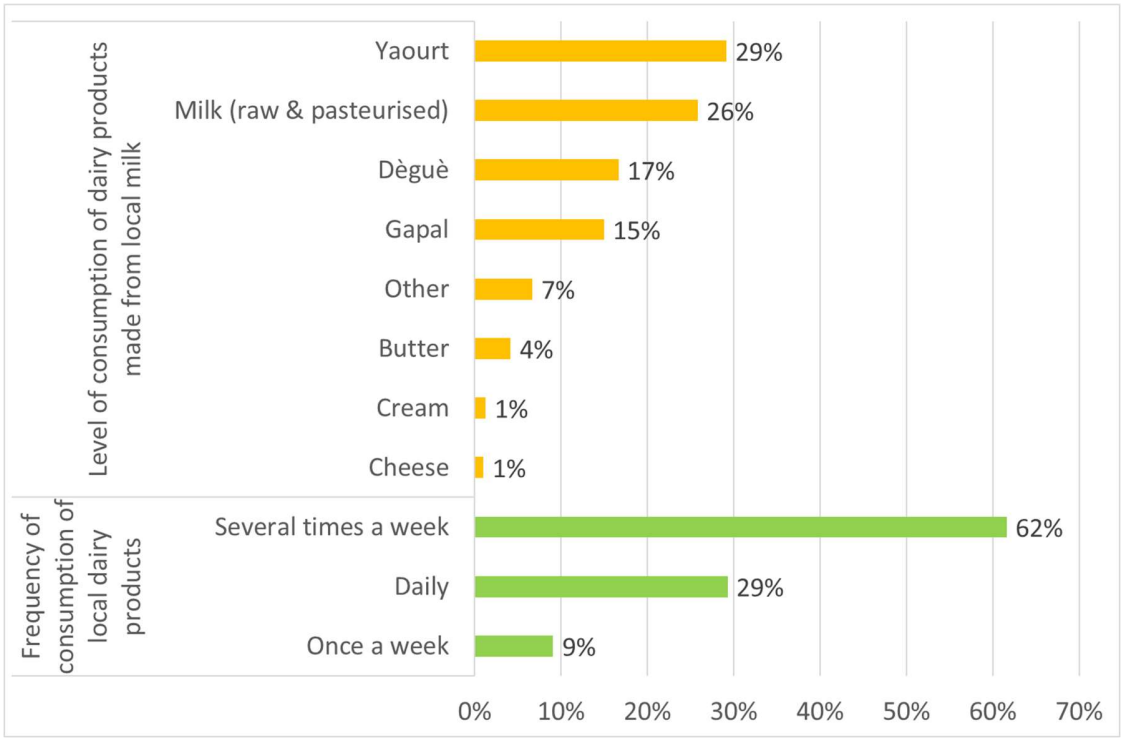

Figure 19: Consumption frequency of products made from local milk

3.4.6 Consumption drivers for local milk-based products

A number of organoleptic and economic factors influence consumer choices for local dairy products in Bobo-Dioulasso. Particular attention has long been paid to the quality of these products, which contributes to enhancing their market value as well as consumer satisfaction. This may explain why quality is identified as the main consumption driver for local milk-based dairy products (43%). Quality is linked to the natural character of the local milk used in the production of dairy products. In addition, for these locally made products, consumers have easy access to information about the milk used, the manufacturing process and the composition of the finished products, giving them greater confidence in the quality of local dairy products.

Secondly, local dairy product consumption choices are driven by taste preference (28%). A study carried out on tasting preferences for two dairy products (yoghurt) made from local milk and imported milk revealed that consumers preferred local dairy products to products made from imported milk (Table filière lait / Iprolait, 2019). However, improvements are needed, especially in terms of packaging, as uninformed consumers always tend to go for the most attractive presentation.

Lastly, local dairy product consumption is considered by many consumers to be a substantial boost to local production (12%). Besides these key consumption drivers for local milk-based dairy products, other minor factors include the price of local milk (9%), environmental concerns (2%) and other unidentified factors.

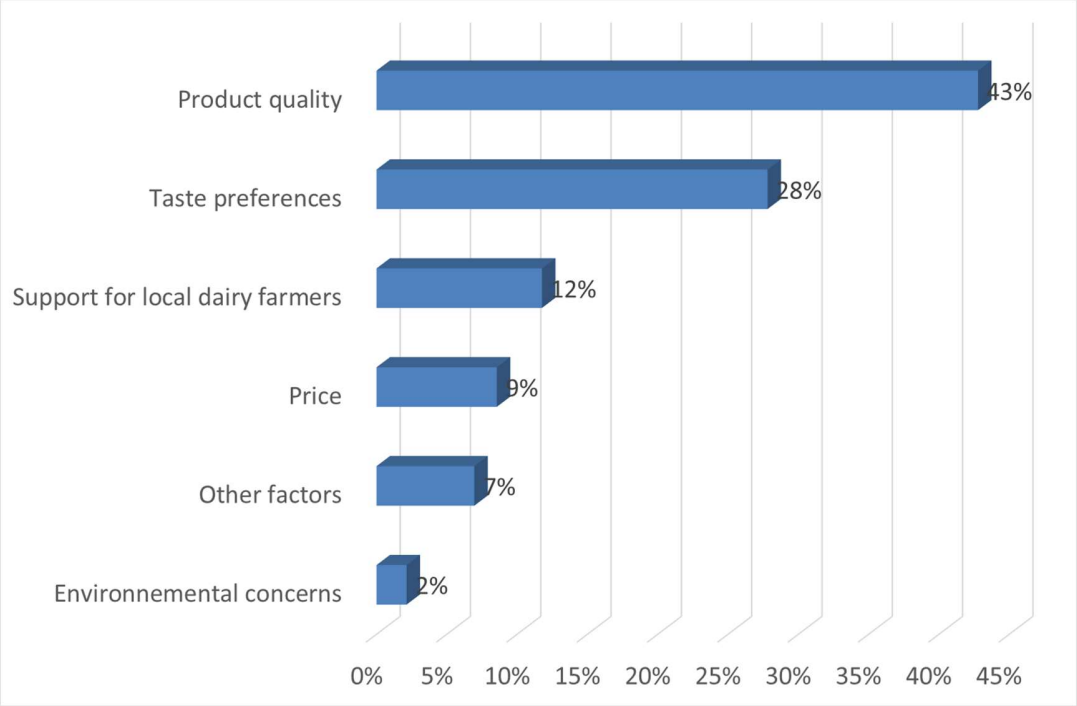

Figure 20: Key consumption drivers for local milk-based products

3.5 Frequency and level of consumption of products made from imported milk powder

Dairy products made from milk powder account for an increasingly large proportion of food consumption, especially in urban areas and particularly in Bobo Dioulasso. The survey results show that 75% of respondents consume milk powder several times a week, and 12% daily. As for other dairy products made from milk powder, 42% of respondents stated that they consumed this type of yoghurt on a daily basis, 28% gapal and dèguè, and 1% pasteurised fresh milk and cream (Figure 21).

This shows that dairy products made from imported milk powder are increasingly being sold and consumed.

These dairy product consumption patterns, regardless of the raw material used (fresh local milk or milk powder), are not a recent phenomenon, as a study carried out on the dairy value chain in Bobo Dioulasso revealed virtually the same trends (Duteurtre and Vidal, 2018).

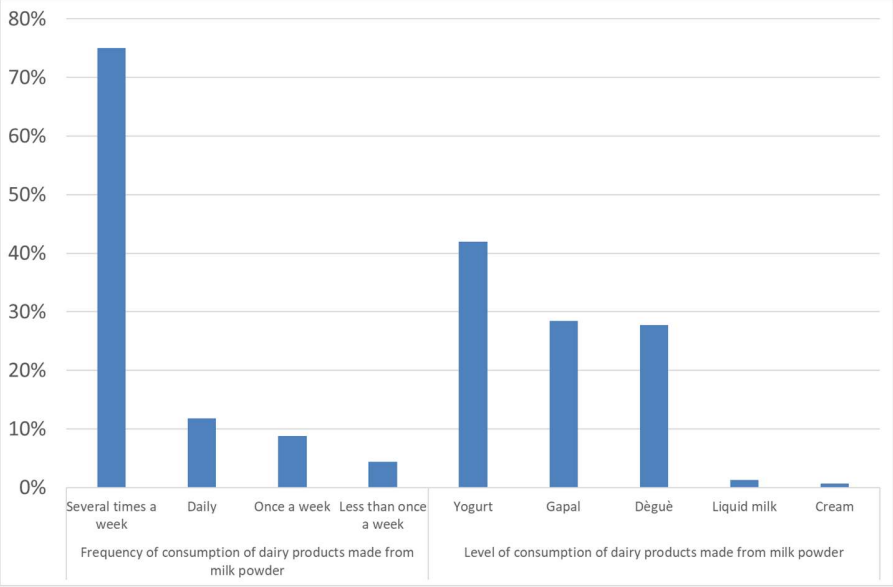

Figure 21: Frequency and level of consumption of dairy products made from milk powder

3.5.1 Consumption drivers for products made from imported milk powder

A number of factors influence consumer choices for dairy products made from milk powder (Figure 22). The most significant ones are taste preferences (38%), price (24%) and product quality (19%). There are also other unspecified factors (17%) and environmental concerns (2%).

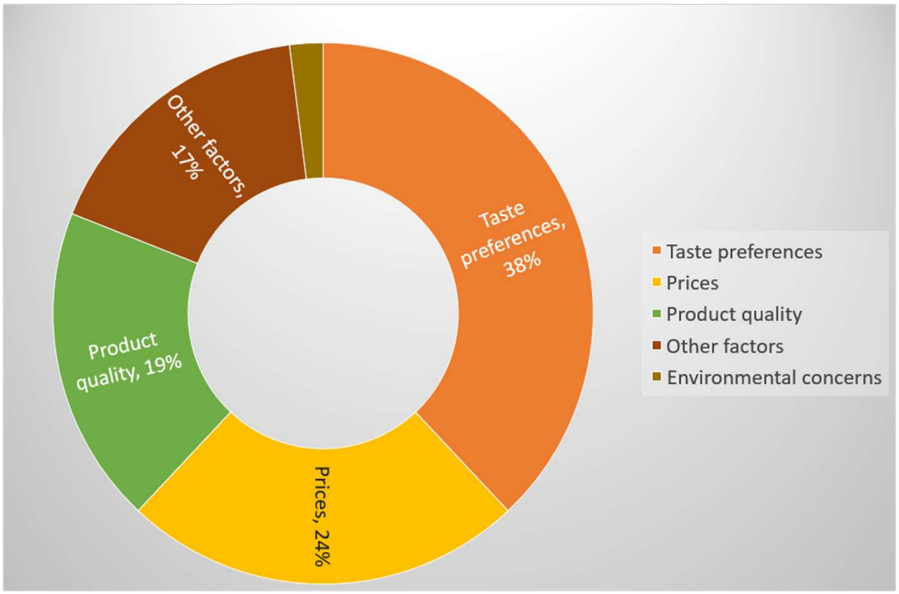

Figure 22: Consumption drivers for products made from imported milk powder

3.5.2 Special considerations and contraindications related to dairy product consumption

Most consumers (87%) do not raise any particular concerns about the consumption of dairy products. A minority of respondents (8%) did, however, mention intolerances to products made from local cow's milk, and 5% said they had dietary concerns about milk powder.

Among retail outlet managers and distributors, concerns were raised about the increasing unavailability of local milk, despite the popularity of local milk-based products with consumers. In addition, milk consumption varies from season to season. As one distributor interviewed put it, *"In the cooler months, the market is a little slow, but we manage to sell, although not in the quantities seen a couple of months ago in the hot season"*.

The unavailability of local milk has an impact on dairy processing units (DPUs). This has led some DPUs, which specialise in local milk processing, to resort to using milk powder during critical periods when local milk is in desperately short supply (hot dry season) in order to ensure business continuity.

Surveys also show that the dairy industry is faced with the problem of milk and dairy product preservation. This is what emerges from the comments made by Avenir yaourt, which blames retailers in the following terms: *"Some shopkeepers and grocery store managers fail to store our products properly. This often results in losses, but admittedly this is fairly rare. ... And product preservation in some outlets leaves a lot to be desired."* When these shortcomings are compounded by recurring power cuts, large quantities of products become unfit for consumption.

Furthermore, communication and exposure of local dairy products are insufficient to counter the flood, onto the local market, of imported milk powder-based products displaying ambiguous signs and labels regarding the origin of the raw material.

Under-equipped DPUs and milk production problems (cow feed, etc.) hamper the promotion of local milk in the urban and peri-urban area of Bobo-Dioulasso.

Lastly, other equally important concerns were raised during discussions with industry stakeholders. In particular, high prices and supply delays for local milk were often cited by respondents as major issues. The high cost of local milk is driving consumers towards imported milk, while supply delays are causing huge losses to stakeholders.

Table 4: Consumer concerns about dairy products made from local milk or imported milk powder

Concerns	Number of cases	Proportion
Local cow's milk intolerance	5	8%
Dietary concerns about milk powder	3	5%
None	53	87%
Total	61	100%

3.5.2.1 Consumer information channels about dairy products

In this section, the study helped to identify the channels through which respondents seek information on dairy products. The main sources of information used by respondents are labels, followed by word of mouth and online research (Figure 23).

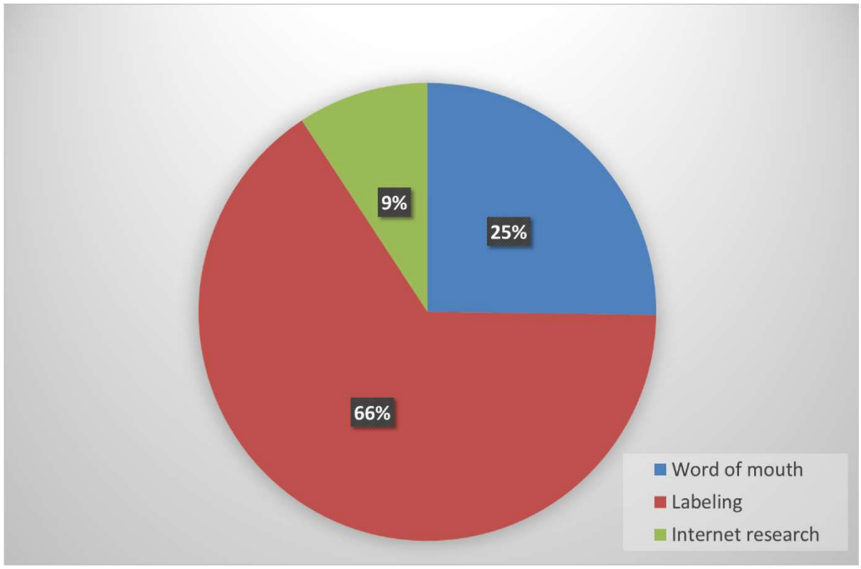

Figure 23: Consumer sources of information on dairy products

Respondents get most of their information from labels (66%), followed by word of mouth (25%) and online research (9%). The high proportion of respondents getting this type of information through labels and online research suggests a higher level of education.

Furthermore, this information enables consumers to exercise caution when it comes to consuming dairy products by giving them access to a variety of signs enabling them to identify out-of-date products and thus prevent food poisoning. This analysis is consistent with the findings of Mamine et al (2018) in their study carried out in Souk Ahras, Algeria: *"In no way can consumers assess the difference in nutritional content (whole, partly skimmed, skimmed, cow's or goat's milk, blended, watered milk, etc.). They either rely on 'research' in the case of industrial products (instructions and standard labels), or on 'belief' and trust in the case of unlabelled traditional products (no details on composition)".*

3.5.2.2 Estimated consumer spending on dairy products

Figure 24 shows the level of daily expenditure by some of the consumers interviewed according to dairy product source. Out of 44 consumers who answered this question about estimated expenditure on dairy products, 11 said they spent between FCFA 5,000 and 7,500 per day, while 10 others said they spent between FCFA 8,000 and 12,500 per day. The highest daily expenditure (between FCFA 15,000 and 20,000/day) was cited by 5 consumers. This significant expenditure is mostly allocated to the purchase of local milk-based dairy products. The average consumer spends between FCFA 2,500 and 3,500 (6

consumers) and between FCFA 1,000 and 2,000 (5 consumers). Only 1 consumer reported spending between FCFA 5,000 and 7,500 on imported milk powder-based products.

Dairy consumption is closely linked to household income, as shown by a similar study carried out in Mali by Corniaux et *al.* (2005, p. 8). According to this study, each household spends an average of FCFA 155,000 a year on milk. However, these overall figures mask significant differences. For example, annual milk consumption varies considerably according to monthly household income, amounting to around 270 kg for a monthly income of less than FCFA 50,000, 570 kg for an income between FCFA 50,000 and 100,000, and 700 kg for an income in excess of FCFA 100,000.

Unlike in rural areas where household incomes are low, in urban areas, where average household income is higher, consumption of dairy products increases as long as they remain affordable (thanks, in particular, to simple and therefore inexpensive packaging), are easy to store (without refrigerators), are available in small units and are sold at outlets used by the majority of the population, i.e. through the informal sector.

Urbanisation is seen as a driver for milk and dairy product consumption. This is because urbanisation is generally recognised as being associated with an increase in income, which in turn leads to an increase in milk and dairy product consumption. Similarly, in Sikasso, consumption of local products is higher on the outskirts and along main roads, while consumption of milk powder rises as you get closer to the city centre (Corniaux et al., 2005, p. 13).

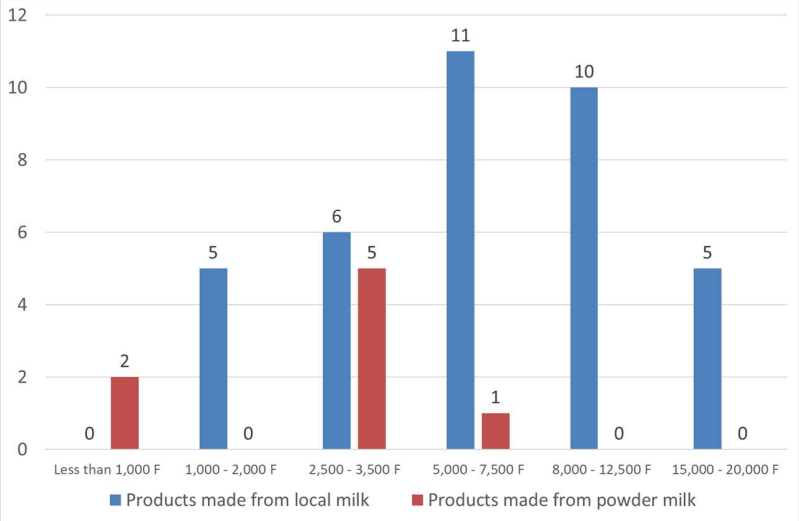

Figure 24: Estimated daily expenditure on dairy products by households surveyed

4 Suggestions and recommendations on dairy product promotion and consumption in Bobo-Dioulasso

The issue of cow feed has emerged as an important factor in improving the productivity of dairy cows for the majority of local dairy industry stakeholders in Bobo Dioulasso's dairy production area. Hence the

importance of subsidising livestock feed, as one Koumba Yaourt distributor commented: *"Farmers need to be supported in their work, i.e. they need to be provided with or helped to produce livestock feed so that we can have plenty of milk. Then, frameworks will need to be established to promote the economic and health benefits of local milk"*.

For DPUs, processing equipment remains a major concern. A large number of DPU managers and retailers have clearly called for adequate support in this area, coupled with a firm dairy policy involving a greater number of promotional events for local milk.

In other words, government support for local dairy industry stakeholders will need to improve. This support will enable stakeholders to prioritise local milk, provided that the availability of the basic product is guaranteed and that production costs are kept under control.

In Bobo-Dioulasso's dairy production area, considerable support has already been provided by research institutions (INERA, IRSAT, CIRDES, CIRAD and Nazi Boni University in particular). However, managers of the DPUs surveyed suggest that this support should be maintained and strengthened through forage production training courses for dairy farmers.

Here is a summary of suggestions and recommendations for improving the consumption of local milk-based dairy products:

- Boosting local milk production by supporting Milk Collection Centres (MCCs) in producing livestock feed and promoting quality forage;
- Helping farmers acquire grazing land to feed their cows;
- Subsidising DPUs by providing equipment, especially rolling stock, to ensure products are delivered in good conditions;
- Providing appropriate equipment (processing, transport and preservation equipment for milk and dairy products);
- Providing grants for equipment and working capital;
- Organising events and fairs to promote dairy products.

5 Conclusion

In Burkina Faso, the dairy production industry has been the focus of a great deal of research and development work. However, in most cases, the issue has been viewed as a simple process of substituting local production for imports, overlooking the fact that the value chain is a complete entity, i.e. a series of links from upstream production to final consumption.

This study's main aim was to determine the rationales behind consumer preferences in Bobo-Dioulasso between products made from fresh local milk and those made from imported milk powder. Data collected shows that a number of factors are involved. These include product availability, cost, accessibility, quality, taste, environmental concerns and support for local products. It also appears that dairy products, without distinction, are routinely consumed. They form an integral part of people's eating habits, although some are more popular than others.

Despite these strengths, the dairy industry is facing significant challenges in terms of health, preservation, visibility (insufficient promotion) and scarcity of local milk. Suitable solutions must therefore be found to address these concerns with a view to increasing local milk consumption.

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