
APPENDIX 2: POLICIES

STUDY TO IDENTIFY VIABLE BUSINESS PROPOSITIONS FOR THE DAIRY INDUSTRY TARGETING LOWER INCOME CONSUMERS



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ACRONYMS AND ABBREVIATIONS

ASDS	Agricultural Sector Development Strategy
BoP	Base of the Pyramid
CDF	Constituency Development Funds
COMESA	Common Market for Eastern and Southern Africa
DHBDSM	Dairy Hub Business Development Service Model
DIP	Deeper in the Pyramid
DMP	Dairy Master Plan
DTA	Dairy Traders Association
EAC	East African Community
ESF	Economic Stimulus Funds
FNSP	Food and Nutrition Security Policy
GAIN	Global Alliance for Improved Nutrition
GMP	Good Manufacturing Practice
KCC	Kenya Cooperative Creameries
KDB	Kenya Dairy Board
KDPA	Kenya Dairy Processors Association
KEBS	Kenya Bureau of Standards
KMDP	Kenya Market-led Dairy Programme
KNFFA	Kenya National Food Fortification Alliance
LATF	Local Authority Transfer Funds
LDP	Liquid Dairy Product
MDGs	Millennium Development Goals
MoCD	Ministry of Cooperative Development
MoLD	Ministry of Livestock Development (1)
MoA	Ministry of Agriculture (1)
MoALF	Ministry of Agriculture, Livestock and Fisheries
MoPHS	Ministry of Public Health and Sanitation
PSI	Population Services International
SDP	Small Holder Dairy Programme
ToR	Terms of Reference
TPDI	Tetra Pak Dairy Index
VAT	Value-Added Tax
WHO	World Health Organisation

(1) Please note that after this report was prepared the Ministry of Livestock Development and the Ministry of Agriculture merged into the Ministry of Agriculture, Livestock and Fisheries

1. INTRODUCTION AND METHODOLOGY

The research into the policy environment of the BoP was handled by the marketing manager in a dairy related industry. The author has taken leave to conduct the research for this study. A potential conflict of interest is present. Such a conflict of interest is unavoidable in a market led dairy programme that aims to closely involve the commercial stakeholders in the sector and to tap into their knowledge and expertise.

Section 5.1 of the ToR of the total study covers the policy and the regulatory environment. The task is to review the current government policies, both fiscal and regulatory, to identify what impact they have for industry investments in processed milk (products) targeting the BoP. In addition, the purpose is to identify the relevance, strengths and weaknesses of the existing policies. It combines desk research and key informant interviews.

DESK RESEARCH

- Collection and review of the relevant materials on existing policies, both fiscal and regulatory. Assess to what extent these policies offer incentives or disincentives for industry investments in processed milk (products) targeting the BoP;
- Assess and identify what impact these policies have for industry investments in processed milk (products) targeting the BoP;
- Identify the relevance, strengths and weaknesses of the policies for industry investment in processed milk (products) targeting the BoP;
- Identify/assess to which extent (if and how) the Ministry of Health pro-actively promotes awareness of nutrition and food safety amongst the BoP target group, in particular related to dairy products;
- Describe and analyze the policies related to food fortification, both fiscal (VAT or zero rated) and regulatory;
- Identify and describe the mandate and effectiveness of national forums that advice government on food fortification.

KEY INFORMANT INTERVIEWS

Key informant interviews through face to face and telephone interviews were carried out with key Government policy makers and dairy stakeholders as follows:

KENYA DAIRY BOARD (KDB)

- Discuss the policies and strategies of the Kenya Dairy Board (KDB) that are aimed at enhancing access to safe milk products for lower income groups or BoP.
- Discuss the current government policies, fiscal and regulatory to identify what impact if any they have for industry investments in processed milk (products) targeting the BoP.

KENYA DAIRY PROCESSORS ASSOCIATION (KDPA)

- Describe and analyze the policies, strategies and initiatives of the Kenya Dairy Processors Association to expand the market for processed milk and milk products towards the BoP, including the generic milk campaign.

- Discuss the policies, strategies and initiatives aimed at expanding the market for processed milk and milk products by KDPA towards the BoP, including the generic milk campaign; Discuss their effectiveness, impact, strengths and weaknesses.
- Discuss the policies, strategies and initiatives by KDB aimed at expanding the market for processed milk and milk products towards BoP. Discuss their impact and effectiveness.

DAIRY TRADERS ASSOCIATION (DTA)

- Assess the functioning and effectiveness of the associations' policies and strategies.

MINISTRY OF HEALTH (MOH)

- Identify and analyze the policies related to food and milk fortification, both fiscal and regulatory (VAT or Zero rated) to identify their strengths and weaknesses.
- Identify the national forums that advice governments on food fortification: who, where and their mandates.
- Explore the variety and scope of public awareness campaigns conducted so far by the Ministry to promote public awareness of nutrition and food safety amongst BoP target group related to dairy products.

PROCESSORS: NKCC AND GITHUNGURI

- Assess the effectiveness and impact of the policies, strategies and initiatives aimed at expanding the market for processed milk and milk products towards the BoP, including the generic milk campaign.

SELECTED FORMAL PROCESSORS AND TECHNOLOGY PROVIDERS

- Observe and describe the specific products, technologies and models employed and provided by processors and technology providers that have targeted products and business models to reach BoP with processed milk and other milk products.

2. THE KENYAN DAIRY SECTOR

Source: Industry Lobby Paper on Amendments to VAT Bill, 2012

Kenya has one of the largest dairy industries in sub-Saharan Africa with an estimated milk production of 5 billion litres in 2012. Developments in the industry span over a period of 90 years and have undergone various evolutionary stages. Up to 1992, the dairy industry in Kenya was under government control, which provided policy guidelines, set the prices, determined the players in the industry and set the market rules, among other things.

Presently, the dairy industry is regulated by the Kenya Dairy Board (KDB), established under Section 4 of the Dairy Industry Act, Cap. 336 enacted by Parliament in 1958. The mandate of the KDB is to develop, promote and regulate the dairy industry in the country. This mandate requires them to provide adequate support to formalise and strengthen the dairy sector in the country. In the last 8 years, the dairy industry has seen some positive developments, thanks in part to the activities of the KDB. The industry has now grown to over 30 active registered processors and many cooperative societies.

The Kenyan dairy industry has also been a major contributor to the growth of the economy and the contribution has grown over the years. The dairy industry has registered significant growth both in terms of milk production and value addition, with milk production increasing from a low 2.8 billion litres in 2003 annually to 5.2 billion litres in 2011 while processed milk has increased from 193.2 million litres to 550 million litres over the same period. The industry contributes over 4.5% to the GDP and has created a significant number of formal and skilled jobs across the value chain. The industry is also a source of livelihood to close to 1 million rural smallholder farmers with on average 2-3 cows.

3. BACKGROUND TO THE BOTTOM OF THE PYRAMID CONSUMERS

Kenya has a relatively high per capita consumption of milk compared to other African countries, estimated at about 115 litres/year. However, this is still below the WHO recommended per capita consumption of 200 litres. Most of this milk is consumed unprocessed. About 50-60% of the milk produced is marketed out of which 70-80% is sold through the informal market mainly in raw form. Most of this unprocessed milk is currently being consumed by lower income groups (Base of the Pyramid) many of whom live in the urban areas in the slums in and around major cities of Kenya. The remaining 20-30 % of marketed milk is processed and sold through formal channels.

In Kenya it is estimated that 68 % of the consumers live in the lower income groups, social class C1, C2 and D. This presents a big opportunity for the dairy industry. And due to the growing food safety awareness, a part of these consumers develop preferences for processed milk and milk products. There is also growing pressure from various stakeholders to enforce laws that forbid the selling of raw milk in urban areas, amongst others due to the accompanying health hazards that go with the consumption of raw milk. These consumers shop in the traditional trade outlets called *dukas* and *kiosks* and often get paid on a daily basis. They have limited incomes and focus on providing the best for their kids, often reducing other expenses before compromising on basic nutritional food such as milk. Reaching these consumers means a couple of things:

- Managing costs across the value chain, increasing productivity and efficiency in the supply chain, provide access to raw materials in an affordable manner, more affordable processing and packaging solutions, decentralizing production plants near the markets.
- Cracking the traditional trade or business models to make dairy products available in as many outlets as possible.
- Determining the right price point and creating products to meet that price point, e.g. introducing more affordable ingredients, such as soya and other vegetable proteins and using alternatives to whole milk, such as whey, lactic acid or dairy formulas using powdered milk. The size of the package is also important. For example in Asia, the average package size is less than half of that in Kenya (less than 200ml versus approximately 400ml).

According to the Tetra Pak Dairy Index released in 2012, these consumers are expected to change their consumption habits, as they climb the economic ladder in thriving developing markets to join the more prosperous middle class. In view of this, there is need to enhance accessibility of processed milk to this segment of the market.

4. THE EXTENT GOVERNMENT POLICIES OFFER INCENTIVES FOR INVESTMENT IN PROCESSED MILK

4.1 THE KENYA DAIRY MASTER PLAN (DMP)

GENERAL

The Kenya Dairy Master Plan (DMP) (2010) outlines how the government wants to reverse the poverty, hunger and unemployment problems through transformation and revitalization of the dairy subsector. Although it was first developed in 1991/1992, it was never implemented following the changing economic environment particularly the liberalization of milk marketing in May 1992. At that time there was only one main processor, the KCC.

The DMP is consistent with the new vision and mission of the Kenyan government development goals as stipulated in the Kenya Vision 2030, Millennium Development Goals (MDGs), Ministry of Livestock National Strategic Plan 2008-2012 and the Agricultural Sector Development Strategy (ASDS) 2010-2020. The DMP has strategies which were envisaged to increase the dairy enterprise, make it market oriented, stimulate value addition and use modern technologies to creating synergies at all levels.

A master plan is a strategic policy document that indicates the general framework for planning the development of a sector, sub-sector or a region. It provides the necessary framework to guide the progressive development of future investments. It also gives some level of certainty and predictability for possible interventions and investments in the short, medium and long-term scenarios. A master plan gives direction for positive changes, indicates how much and what kind of interventions are possible in terms of policy, programmes or projects.

The Kenyan milk marketing system is characterised by low compliance with safety and quality standards, diffuse market structure consisting of many small-scale market agents, low value products limited in diversity and weak participation of producer in policy formulation.

- In its “Action plan one”, the DMP has the objective of enabling milk producers and traders to improve competitiveness and profits in milk enterprises.
- In “Action plan two”, it stipulates a number of objectives that include: enhancing efficiency in milk collection and transportation system; reducing post-harvest milk losses along the value addition chain; increasing milk value addition and branding; expanding domestic milk consumption; and exporting more milk and milk products to regional and global markets.
- “Action plan three” of the DMP has three objectives: to review and harmonise policies, regulations and control; design enabling policy and regulation frameworks; and expand export markets for milk and milk products.
- Finally, “Action plan four” includes the objective of improving security to encourage investments in the dairy industry in Kenya.

ENABLING PRODUCERS & TRADERS IMPROVE COMPETITIVENESS & PROFITS IN MILK ENTERPRISES

The DMP (2010) recognises that for the realization of investment in milk processing, a competitive milk value chain is necessary. Thus, the DMP outlines policy statements to this end.

These are outlined in Table 1. More details on investments for a competitive milk value chain are presented in Appendix I at the end of this report. Cooperatives need to be assisted to adopt the Dairy Hub Business Development Service Model (DHBDSM) in low market access milk producing areas. This is seen as leading to investments in chilling plants, agro-vets and financial services that lead to increased milk volumes for processing. Furthermore, establishment and revitalization of vocational training facilities and outreach programmes are envisaged to spread dissemination of milk processing innovations.

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Assist Cooperative Societies to adopt Dairy Hub Business Development Service models in low market access milk producing areas	MoCD, MoLD, NGO, KDB
2	Invest economic stimulus funds (ESF), Constituency Development Funds (CDF) and Local Authority Transfer Funds (LATIF) in rural infrastructure to generate off-farm remunerative options	MoCD, MoLD, NGO, KDB, Farmer groups, Coops
3	Lobby processors to introduce premium pricing for milk quality	MoCD, MoLD, NGO, KDB, Farmer groups, Coops
4	Establish, revitalise and strengthen vocational training facilities for competitive dairy production and trade	MoCD, MoLD, NGO, KDB
5	Introduce outreach training programmes to spread dissemination of innovations	Farmer groups, Coops, Colleges, KARI, Universities

TABLE 1: POLICY STATEMENTS THAT ENABLE A COMPETITIVE MILK VALUE CHAIN (SOURCE: EXCERPTS FROM THE DMP, 2010)

ENHANCING EFFICIENCY IN MILK COLLECTION AND TRANSPORTATION SYSTEM

The DMP (2010) recognises that an effective and efficient milk collection and transportation system enhances the quality and quantity of milk for processing. In this regard, it outlines several policy statements that, if implemented will go a long way in achieving a vibrant milk value chain. The policy pronouncements include promotion of farmer groups and cooperatives to ease milk collection; introduction of standard safety and quality tests; and investment of devolved funds in rural infrastructure to attract private sector milk collection and transportation (Table 2)

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Revitalise dormant milk co-operative societies	MoLD, KDB, MoCD, Farmer groups, Coops, NGO
2	Promote formation of farmer groups and Co-operative societies to ease logistics in milk collection from smallholder farms	MoLD, KDB, MoCD, Farmer groups, Coops, NGO

3	Scale up adoption of Dairy Hub Business Development Services Centres in milk producing areas with low market access	MoLD, KDB, MoCD, Farmer groups, Coops, NGOs
4	Introduce standard milk safety and quality tests and certification	KDB, KEBS
5	Invest economic stimulus funds (ESF), Constituency Development Funds (CDF) and Local Authority Transfer funds (LATIF) in rural infrastructure to attract private investment in milk collection and transportation facilities	MoA, MoCD, MoLD, KDB, Farmer groups, Coops, NGO
6	Offer regular training in safety and quality requirements in milk collection and transportation	MoLD, KDB, KEBS, Universities, Colleges, groups, Coops, NGOs
7	Enforce registration and compliance with safety and quality requirements in milk collection and transportation	KDB, KEBS

TABLE 2: POLICIES THAT ENHANCE MILK COLLECTION AND TRANSPORTATION (DMP, 2010)

REDUCING POST HARVEST MILK LOSSES ALONG THE VALUE CHAIN

Reduction of milk post-harvest losses has a bearing on the investments in the milk processing. The DMP provides for regular and mandatory training on Good Manufacturing Practice (GMP) for small and large scale processors. Also, the encouragement of processors to attain ISO certification and the implementation of payment based on quality (Table 3), have a bearing on investments in milk processing.

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Launch regular mandatory training on Good Manufacturing Practice (GMP) for small and large scale processors, milk collection and transportation providers	KDB
2	Popularise the application of code of hygienic practice in milk production, handling, and distribution, industry regulatory services, milk and milk products standards	MoLD, KDB, Universities, Colleges, farmer groups, Coops
3	Promote and encourage processors to attain ISO certification	KDB, MoLD, KEBS
4	Implement payment based on quality and wholesomeness of milk as incentive to produce safe and pure milk	KDB, MoLD, Processors, MoCD

TABLE 3: POLICIES ON POST HARVEST LOSSES AND INVESTMENT IN MILK PROCESSING (SOURCE: EXCERPTS FROM THE DMP, 2010)

INCREASING MILK VALUE ADDITION AND BRANDING

The Kenyan Government policies offer incentives for investment in processed milk by pronouncing the following: milk and milk product festivals to promote consumption; expanding training of small processors on milk value addition; and establishment of efficient manufacturing plants to process surplus milk in wet season, among others (Table 4).

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Facilitate both small and large processing on basis of compliance with safety and quality, GMP and certification requirements	KDB, MoLD, MoCD
2	Introduce standard milk safety and quality tests and certification	KDB, MoLD, KEBS, Processors
3	Invest Economic Stimulus Funds (ESF), Constituency Development Funds (CDF) and Local Authority Transfer Funds (LATIF) in rural infrastructure to attract private investment in milk processing facilities	MoA, MoCD, MoLD, KDB, Farmer groups, Coops, NGO
4	Establish efficient milk manufacturing plants for processing surplus milk in wet season into long life and high value products	Processors
5	Expand training of small processors on milk value addition and a range of high value products	MoCD, MoLD, KDB, Farmer groups, Coops, NGO
6	Introduce milk and milk product festivals similar to those cheese festivals ESADA organises to promote consumption	MoCD, MoLD, KDB, Farmer groups, Coops, NGO

TABLE 4: MILK VALUE ADDITION AND PROCESSING POLICIES. SOURCE: EXCERPTS FROM THE DMP, 2010

EXPANDING DOMESTIC MILK CONSUMPTION

Kenyan per capita milk consumption is estimated at 115 litres, which is projected to increase to 220 litres by 2030 due to envisaged better incomes and better marketing. It stipulates that stakeholders will be committed to expanding domestic milk consumption. This shall be achieved by running promotional milk consumption campaigns, popularizing of low cost packages and pouches for pasteurised milk, and diversifying the milk product range (Table 5).

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Run promotional milk consumption campaigns	MoCD, MoLD, KDB, Farmer groups, Coops, NGO, Processors
2	Popularise use of low cost packages and pouches for packaging of pasteurised milk	MoCD, MoLD, KDB, Farmer groups, Coops, NGOs, Processors
3	Diversify product range	Processors
4	Advocate for inclusion of milk supply in public and NGO food security programmes in vulnerable areas through public-private partnership contractual arrangements	MoCD, MoLD, KDB, Farmer groups, Coops, NGO

TABLE 5: POLICIES EXPANDING DOMESTIC MILK CONSUMPTION (SOURCE: EXCERPTS FROM THE DMP)

EXPORTING MORE MILK AND MILK PRODUCTS IN THE REGIONAL AND GLOBAL MARKETS

The DMP (2010) commits to expanding milk processing capacities in high milk producing areas with low market access; and re-orient milk processing towards long-life and high value dairy products (Table 5). Although these are good pronouncements in terms of promoting investment in milk processing, these do not necessarily imply that the BoP is targeted. Today long life and “high value” dairy products are expensive and hence perceived to target the high income groups at the expense of the BoP.

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Expand milk processing capacities in low market access high milk producing areas	MoCD, MoLD, KDB, Farmer groups, Coops, NGO
2	To re-orient milk processing towards long life and high value dairy products	KDB, Processors, Farmer groups, Coops
3	Engage high level policy negotiations to open regional market for Kenyan milk and milk products	MoCD, MoLD, KDB
4	Launch regular mandatory training on Good Manufacturing Practice (GMP) for small and large scale processors, milk collection and transportation providers	MoCD, MoLD, KDB
5	Popularise the application of code of hygienic practice in milk production, handling, and distribution, industry regulatory services, milk and milk products standards	MoLD, KDB

TABLE 6: POLICIES TARGETING PROCESSING FOR THE REGIONAL AND GLOBAL MARKETS (SOURCE: EXCERPTS FROM THE DMP, 2010)

REVIEW, HARMONISE AND DESIGN POLICIES, REGULATIONS AND CONTROL

The policy and regulatory framework under which the dairy value chain operates is critical as an incentive or disincentive to investments in milk processing. There are good policy statements (intents) pronounced in the DMP (Table 6), but implementation is not time bound. Although the DMP specifies the “revision and strengthening of new policies” and “development of policies to guard against monopolistic and oligopolistic tendencies” progress is not documented. Other regulatory policy statements include raising of funds to support training in dairy value chain skills and accreditation of institutions with technical skills to offer training.

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Revise and strengthen new policies for delivery system: Veterinary Surgeon Act CAP 366, Cattle cleansing Act CAP 358, Pharmacy and Poisons Act CAP244	MoLD
2	Establish stakeholder driven ethics/standards committee	All stakeholders
3	Formalise field practice by Community Animal Health Workers on common simple attendance cases	MoLD
4	Raise funding to support regular tailor made training for filling skills needed in the dairy value chain	KDB
5	Accredit and contract institutions with the technical capacity to offer training on the gap skills	KDB, MoLD, MoCD, KEBS
6	Engage public and private organisations with capacity on special dairy technical skills in outreach programmes to dairy value chain operators	KDB, MoLD, MoCD, KEBS
7	Develop policies to guard against monopolistic and oligopolistic tendencies	KDB, MoLD, MoCD, Farmer groups, Processors, Coops
8	Enhance research funding through formalised public and private sector partnerships	KDB, MoLD, MoCD, Farmer groups, Processors, Coops

TABLE 7: POLICY REVIEWS AND DESIGNS THAT ENABLE INVESTMENTS IN MILK PROCESSING. SOURCE: EXCERPTS FROM THE DMP, 2010

IMPROVING SECURITY TO ENCOURAGE INVESTMENTS IN THE DAIRY INDUSTRY IN KENYA

Finally, one other important parameter that enables investments in the milk processing industry is security. This is identified by the DMP and provides for policy statements to address this. These include popularization of community policing by all stakeholders, establishment of police posts in high-insecurity areas, and development of rural infrastructure for meaningful off-farm remuneration (Table 8).

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Invest Economic Stimulus Funds (ESF), Constituency Development Funds (CDF) and Local Authority Transfer Funds (LATF) in rural infrastructure to generate off-farm remunerative options	MoLD, Moa, Farmer groups, Coops
2	Invest economic stimulus funds (ESF), Constituency Development Funds (CDF) and Local Authority Transfer funds (LATIF) in building police posts where insecurity is high	MoLD, Moa, Farmer groups, Coops
3	Popularise in community policing	All stakeholders

TABLE 8: SECURITY POLICIES THAT ENCOURAGE INVESTMENTS IN MILK PROCESSING. SOURCE: EXCERPTS FROM THE DMP, 2010

CONCLUSION: THE KENYA DAIRY MASTER PLAN (DMP)

According to the DMP (2010), national development goals have a high priority on transforming dairy production and trading into a sustainable and globally competitive dairy value chain for wealth creation and high quality life and in compliance with requirements for high standards of public and environmental health. The national development goal priority for dairy value chain operators, among others, is production of quality and safe products.

The DMP (2010) is a good and detailed strategic policy document that gives the general framework for planning the development of the Kenyan dairy Industry. However most of the policies are generic and do not describe any specific policy or legislation to promote investments in production and marketing of processed milk for the BoP. But rather they are aimed at enhancing productivity, efficiency, quality and cost reductions across the value chain.

These policies if implemented well should lead to lower price of raw material (milk) and reduction of added costs in the supply chain (collection, bulking, chilling, transport, processing, packaging and marketing) and this would eventually lead to lower consumer prices of processed milk which one of the key success factors for targeting BoP.

4.2 THE DAIRY POLICY 2006

The Dairy Policy (2006) is a culmination of various consultations among stakeholders convened to review the dairy policy launched in 1993. It addresses the challenges and shortcomings arising from the liberalization policies affected by the government in the 1990s.

The Dairy Industry Policy covers key issues relating to quality control and standards, consumer safety, consumption, promotion of local dairy products and exports. The overarching goal of this policy is to improve the standards of living of Kenyans by ensuring food security, increasing dairy farmers' real incomes and raising dairy productivity. Specific objectives of the policy relevant to BoP include:

- To increase domestic consumption of milk and milk products
- To contribute to food and nutrition security
- To improve the productivity and competitiveness of Kenya's dairy and dairy products
- To re-orient milk processing toward long life dairy products

The following are the challenges and policy interventions relevant to the BoP segment as stipulated in The Dairy Policy (2006).

MILK MARKETING AND VALUE ADDITION/MILK COOLING AND GRADING

The Dairy Policy (2006) identifies milk marketing and value addition as a key policy issue that requires attention. It notes that due to inadequate milk preservation facilities and absence of electric power, the dairy industry experiences milk spoilage especially of the evening milk.

As such, this policy document proposes a draft of policy statements such as the speeding up of rural electrification programmes in milk producing enclaves; exploration of viability of alternative sources of energy such as solar, wind, mini hydro plants and organic fuels; reduction of electricity tariffs for reduced cost of milk cooling; and promotion of investment in cold chain infrastructure by marketing cooperatives and private investors through provision of incentives (Table 9)

POLICY ISSUE	THE PROBLEM	POLICY CONSTRAINT	PROPOSED POLICY INTERVENTION
Milk cooling and grading	Milk spoilage especially the evening milk	<ul style="list-style-type: none"> i. Inadequate milk preservation facilities ii. Absence of electric power i. Electric power tariffs too high ii. Use of unapproved chemical agents to preserve milk iii. Quality insensitive price mechanism 	<ul style="list-style-type: none"> i. Speed up rural electrification programmes in milk producing enclaves ii. Explore viability of alternative sources of energy such as solar, wind, mini hydro plants and organic fuels. iii. Reduce electricity tariffs for reduced cost of milk cooling iv. Promote investment in cold chain infrastructure by marketing cooperatives, private investors through providing incentives v. Research alternative methods of milk preservation for groups of small-scale farmers in areas where cooling is not feasible vi. Encourage processors to appropriately reward milk quality by applying a quality sensitive pricing mechanism

TABLE 9: INVESTMENT POLICY ON MILK COOLING AND GRADING (SOURCE: DAIRY POLICY, 2006)

MILK PROCESSING AND PACKAGING POLICY

The Dairy Policy (2006) observes that milk processing is bedevilled by low demand of pasteurised products and low production of long-life products. It therefore proposes tax incentives on new investments; VAT zero rating of inputs in liquid milk processing, support of investment in long-life milk products and cost effective processing and packaging methods (Table 10).

POLICY ISSUE	THE PROBLEM	POLICY CONSTRAINT	PROPOSED POLICY INTERVENTION
Milk Processing	Unstable processing sector	<ul style="list-style-type: none"> i. Low production of long-life products to aid rural and regional markets penetration; ii. Processors operating at less than the installed capacity; iii. Low demand for pasteurised milk 	<ul style="list-style-type: none"> i. Cooperatives and private sector operators to continue to benefit from tax incentives on new investments; ii. Zero rating of inputs in liquid milk processing with regard to value added tax; iii. Support investment in long-life milk products; iv. Encourage milk processors to engage in milk collection in the rural areas; v. Encourage producer price differentials based on differences in quantities of milk delivered to stimulate large-scale dairying

POLICY ISSUE	THE PROBLEM	POLICY CONSTRAINT	PROPOSED POLICY INTERVENTION
Milk packaging	Unhygienic, environment unfriendly packaging materials	<ul style="list-style-type: none"> i. Packaging raising cost of milk ii. Shift from packaging to unpackaged milk 	<ul style="list-style-type: none"> i. Promotion of the development and adoption of cost effective milk packaging that is of acceptable standards and addresses health concerns ii. Discourage use of packaging materials that are environmentally unfriendly iii. Encourage local initiatives that use locally available materials in milk packaging

TABLE 10: MILK PROCESSING POLICY (SOURCE: DAIRY POLICY, 2006)

MILK CONSUMPTION POLICY

The Dairy Policy (2006) identifies the problem of discrepancies in milk consumption between rural and urban populations across different income groups. This, it suggests, can be alleviated by promotion of whole milk consumption, increased awareness of nutritional and health benefits of milk consumption and encouraging the production of a diversified range of milk and milk products that meet a wide range of consumer tastes and preferences (Table 11).

POLICY ISSUE	THE PROBLEM	POLICY CONSTRAINT	PROPOSED POLICY INTERVENTION
Consumption	Discrepancies in milk consumption between rural and urban populations and across different income groups	<ul style="list-style-type: none"> i. Promote increased per capita milk consumption among all income groups and in all areas 	<ul style="list-style-type: none"> i. Increase awareness of the nutritional and health benefits of milk consumption ii. Promote whole milk consumption iii. Encourage a diversified range of milk and milk products production that meet the wide array of consumer tastes and preferences

TABLE 11: MILK CONSUMPTION POLICY (SOURCE: DAIRY POLICY, 2006)

QUALITY CONTROL AND ASSURANCE

The Dairy Policy (2006) identifies milk testing and quality control as an essential component for the successful development of a competitive dairy industry value chain.

It points out the fact that hygiene and quality standards assurance for dairy products handled through the informal marketing channels has been elusive. Plus the high cost of milk testing equipment, inadequate skills on the use of the equipment, lack of milk management capacity and institutional gaps present a major hindrance to quality control and assurance (Table 12).

POLICY ISSUE	THE PROBLEM	POLICY CONSTRAINT	PROPOSED POLICY INTERVENTION
Quality Control and Assurance	Hygiene and quality standards of milk handled by informal marketing channels not guaranteed	<ul style="list-style-type: none"> i. High cost of milk testing equipment ii. Inadequate skills on the use of the equipment iii. Lack of milk quality management capacity iv. Institutional gaps 	<ul style="list-style-type: none"> i. Support dairy processors and manufacturers to put in place quality testing and assurance systems ii. Provision of incentives for milk testing equipment procurement and installation iii. Stakeholder sensitisation on the importance of safe use of antibiotics and other veterinary drugs at farm level iv. Training on milk testing and operation of testing equipment v. Strict enforcement of quality standards both for raw milk and dairy products.

TABLE 12: QUALITY CONTROL AND ASSURANCE POLICY (SOURCE: DAIRY POLICY, 2006)

INFORMAL MILK MARKETING

The informal market handles about 56% of marketed milk. Most of the consumers are in the BoP segment, mostly in urban areas. This is a major proportion of marketed milk and represents an appreciable employment opportunity. However, the manner in which the product is handled often raises public health concerns. Additionally, there is low investment in safe milk handling skills, equipment and adherence to standards. While it is essential to promote free trade in the industry, maintenance of basic standards to safeguard consumer health and allow for a level playing ground is paramount.

POLICY ISSUE	THE PROBLEM	POLICY CONSTRAINT	PROPOSED POLICY INTERVENTION
Informal Milk Marketing	Consumer health risk	<ul style="list-style-type: none"> i. Expensive pasteurised milk ii. Job creation 	<ul style="list-style-type: none"> i. Facilitate the transformation of informal milk trade towards the formalization of the small enterprise sub-sector in the industry ii. Development of low cost and appropriate technologies for small investors iii. Invest in and support training programmes on safe milk handling iv. Work with stakeholders to improve the standards of milk processing in the informal sector v. Institute public education campaigns on the merits of consuming properly handled raw milk vi. Facilitate compliance to standards by the informal milk traders through provision of incentives for improved milk handling vii. Establish a supportive milk dealer certification system

TABLE 13: INFORMAL MILK MARKETING POLICY. SOURCE: DAIRY POLICY, 2006

4.3 THE DAIRY INDUSTRY ACT (2012): CAP 336, LAWS OF KENYA

The Dairy Industry Act (2012) is an Act of Parliament to provide for the improvement and control of the dairy industry and its products. Section 17, Subsection 1(a) stipulates that the functions of the Kenya Dairy Board (KDB) is to organise, regulate and develop the efficient production, marketing, distribution and supply of dairy produce, having regard to the various types of dairy produce required by different classes of consumers. Subsection 1(e) states that the Board shall permit the greatest possible degree of private enterprise in the production, processing and sale of dairy produce, consistent with the efficiency of the producer and the interest of other producers and of consumers.

Part VI of the bill provides for the registration of producers, distributors, and processors. Section 17(1)(a) stipulates that no person shall buy, process, sell, export, import or otherwise deal in or otherwise transact any business in dairy produce unless he or she is the holder of a current licence thereto authorizing him/her, issued, in its discretion, by the Kenya Dairy Board.

Section 17(1)(b) states that no person shall transport or have in his/her possession any dairy produce unless licensed to do any of the things specified in paragraph (a) of this subsection or is acting in the course of his/her employment as the servant or agent of such person.

Generally, the Act mandates the KDB to regulate the dairy industry and provides for prospective dealers to seek licences for dealing in milk and milk products. Once dealers have the required licences they are free to operate (buy, sell, process, import, export, transport) or transact in any dairy produce business.

Despite these provisions, KDB is perceived by the industry stakeholders as failing to push accessibility of processed milk to the Base of the Pyramid (BoP). KDB is not seen to be enforcing the existing legislation which prohibits sale of unprocessed milk in the main urban centres. The licensing of milk bars without enforcing milk quality standards, compromises food safety and is seen to be promoting consumption of unprocessed milk amongst the BoP consumers.

5. EXTENT THE MINISTRY OF HEALTH PROMOTES AWARENESS ON NUTRITION AND FOOD SAFETY

The Draft Sessional Paper (2011) on Food and Nutrition Security Policy (FNSP) ensures safe, high quality food by creating public awareness on relevant issues, and by setting, promoting and enforcing appropriate guidelines, standards and regulatory framework. Various government bodies are responsible for food safety and quality, which are governed by no less than 20 legislative acts. Coordination of activities and harmonizing the regulatory and institutional framework is therefore essential.

The government's policy objective on nutrition improvement is to achieve good nutrition for optimum health of all Kenyans. Other objectives are enhancing food access; providing special nutrition interventions for specific vulnerable groups; and creating awareness to provision of nutritious foods to all family members and especially children.

The Kenyan government seeks to have all Kenyans knowledgeable about basic nutrition required to live a healthy life, with clear and substantive roles for relevant government ministries, the media and other key stakeholders. Further, it seeks to build capacity and ensure the availability of quality and timely food and nutrition security data, information and analysis for better formulation and management of integrated food and nutrition.

Through the legal notice number 62 of 2012 (Food, Drugs and Chemical Substances-Food Labeling, Additives and Standards), the Minister for the MoPHS made regulations on food labeling, additives and standards in 2012. In this notice, "*food fortification*" means addition of nutrients to bridge the dietary deficiency in a food article. "*Food enrichment*" means addition of nutrients to replace nutrients lost during processing or addition of nutrients to enhance existing nutrients in a food article.

Regulations 249, 253 and 258 were amended to provide for the quantities of nutrients in fortified wheat flour, dry milled maize, vegetable fats and oils. However, these did not cater for fortified milk and milk products. Thus, the regulation states that where no specifications are set, the specifications of the *Codex Alimentarius* Commission shall apply. These are jointly established by the Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO).

5.1 DESCRIPTION AND ANALYSIS OF FISCAL AND REGULATORY FOOD AND MILK FORTIFICATION POLICIES

According to the Ministry of Public Health and Sanitation (MoPHS), food fortification is the addition of specific micronutrients (vitamins and minerals) to commonly consumed foods during processing. The vitamins and minerals include vitamins A, B, C, D, E and K while minerals include Iron, Iodine and Zinc.

In Kenya, the fortified foods include maize flour, wheat flour, vegetable oil, sugar and salt. Vitamin A is added to fats, oils and sugar. A combination of folic acid, Iron, Zinc, vitamins B-6, B-12, Niacin and vitamin A is added to maize and wheat flour. Iodine is added to salt. Food fortification standards have been developed by the Kenya Bureau of Standards (KEBS); these will be used by all industries (<http://www.publichealth.go.ke/food-fortification>).

The Kenya MoPHS, Population Services International (PSI) and the Global Alliance for Improved Nutrition (GAIN) have launched a 5-year partnership with industry that will reach 27 million Kenyans with nutritionally fortified wheat flour, vegetable oil and maize meal. This followed the passing of mandatory food fortification legislation in Kenya (<http://www.psikenya.org>).

5.2 MANDATE AND EFFECTIVENESS OF NATIONAL FOOD FORTIFICATION FORUMS

Some of the food fortification institutions and forums include the Ministry of Public Health and Sanitation (MoPHS), Kenya Bureau of Standards (KEBS), Population Services International (PSI) and the Global Alliance for Improved Nutrition (GAIN), the Ministry of Agriculture and the Ministry of Livestock Development. The latter two have recently been merged into the Ministry of Agriculture, Livestock and Fisheries (MoALF).

In the Kenyan context, however, food fortification is still at its infancy. This subject has just been boosted by the mandatory legislation that directs food processors to fortify foodstuffs to enable adequate supply of essential nutrients to the consumers.

Despite this, fortification is yet to take root since only a few products (maize and wheat) have guidelines on nutrient quantities that should be added. Milk is not one of these products. This calls for revitalization of these institutions and forums so that they can develop guidelines on food fortification for other products, including milk.

It is also not very clear what the tax implication would be on food fortification of liquid milk, pasteurised milk and long life milk and whether it would attract VAT on the total product, or if only the minerals/vitamins would attract VAT (or not). It is worth noting that at the time of this study, Sameer under the Daima brand has already launched fortified whole and low fat milk and according to them, they are not paying VAT on it.

6. CAPACITY OF KDB POLICIES AND STRATEGIES TO ENABLE MILK ACCESS TO BOP

In order to address the strategic concerns for the dairy industry, Kenya Dairy Board in its current strategic plan (2012-2017) has established the following objectives:

- Improve the quality of Kenyan dairy produce
- Open up dairying in non-traditional areas.
- Develop the capacity for service delivery and stakeholder support.
- Provision of timely and accurate dairy information
- Improve the financial sustainability of the Board
- Enhance consumption of milk and milk products
- Stabilise milk production and
- Enhance the corporate image of the Board

The strategic plan also highlights some strategic concerns that the Board is addressing in the period under review, these are:

- Cases of non-compliance to regulatory and quality standards of dairy produce along the value chain
- Inability to fully meet the increased demand for services by industry stakeholders
- Limited ability to provide reliable and accurate dairy information
- Insufficient financial resources
- Low consumption of milk and milk products
- Uneven milk production
- Poor perception of public institutions
- Low uptake of dairy technologies on non-traditional dairying areas.

The strategic plan also recognises the internal and external challenges that KDB faces in trying to implement the strategic plan.

THE INTERNAL CHALLENGES

- Inadequate financial resources to match with industry requirements
- Inadequate staffing levels hindering effective service delivery
- Inadequate working tools including a regulatory laboratory for effective product quality surveillance and inspection
- Inadequate management information systems to facilitate collection, processing and dissemination of information for decision making and planning.

EXTERNAL CHALLENGES

- Growing demand for diversified, timely and accurate information on dairy
- Erratic milk production tied to the rain patterns which destabilises the milk collection, processing and marketing systems. The stakeholders are looking upon the Board to provide optimal solutions to mitigate such scenarios in future

- Increasing competition from non-dairy beverages which threatens future growth of the industry
- Low per capita consumption of milk and milk products
- Non-compliance to regulatory and quality standards along the dairy value chain which has potential to negatively impact on public health and market access especially in the international markets
- A large informal sector dealing in raw milk sales and which has limited compliance to milk handling and hygienic standards
- Increasing costs for fuel and electricity which increase the costs of dairy production, processing and marketing
- Inconsistency in the supply and quality of feeds, forages and fodder
- Low adoption of new and emerging technologies which affects efforts to improve productivity and quality in the industry.

The KDB strategic plan (2012- 2017) clearly articulates a long-term perspective for KDB's policies and strategies but, unfortunately, fails to clearly highlight those that are aimed at driving processed milk accessibility to BoP. The strategies seem generic only on promoting consumption of milk and milk products but do not specify whether it is for processed milk and milk products. However there are some critical areas which if fully addressed by KDB can help drive accessibility of processed milk and milk products to BoP:

- KDB must be seen to be providing a level playing field for both formal and informal sectors through its fiscal policies. Maintaining a level playing field is considered as a critical responsibility of government to prevent market distortion and to guarantee a conducive enabling environment for private sector investments.
- KDB should fully enforce the existing legislations. This will be seen to be a progressing move for the industry and will attract the necessary investment to the industry.
- The government through KDB must be seen to be actively promoting food safety in its policies. Therefore, it must also be seen to actively promote the consumption of processed milk and milk products amongst the BoP consumers. This is critical from a public health perspective.

7. POLICIES, STRATEGIES AND INITIATIVES OF THE KDPA

The Kenya Dairy Processors Association was formed as a result of the poor state of the dairy industry after the liberalization of 1992. The association was registered as a limited liability company in 1996 and the principal objective is to act as a forum for the development and promotion of an efficient, organised and professionally managed dairy industry in Kenya.

However the activities of KDPA started going down in 2001 until 2010 when the association was revived again to deal with the milk glut which severely constrained the processing and marketing capacities of the Kenyan processors

The association is open to all parties involved in the processing and marketing of dairy products in Kenya and currently there are seven active members, New KCC, Brookside, Githunguri, Happy Cow, Buzeki, Sameer and Meru Central. The association also works in partnership with Tetra Pak, Land O' Lakes and ESADA. The specific objectives are:

- Create a forum for dialogue and strengthen linkages between milk producers, processors and government in order to promote reforms beneficial to the industry
- Lobby government/regulatory authorities on taxation policy, quality standards, import tariffs and other concessions to ensure transparency and equity among players in the industry
- To enter into strategic partnerships with other organisations for mutual benefit and for the advancement of the Kenyan dairy industry
- Organise seminars, workshops, exhibitions and awareness events for all members, producers and consumers
- Promote consumption of processed milk
- Secure adequate supply of raw milk to members
- Advise and assist members on the establishment, organisation and management of dairy farms, milk processing plants, milk marketing, transportation and selling of milk products in Kenya and outside
- In conjunction with relevant regulatory authorities, set up and enforce internal quality standards for raw and finished milk products and the processing of such products
- Promote regional trade and international linkages
- Source and attract funds for the development of the dairy industry
- Promote research and development in the dairy industry
- Seek improvement in the support services and infrastructure for the dairy industry

One of the key KDPA strategies is to promote consumption and marketing of milk and milk products in the country and beyond. In this regard the association has developed and commenced a 3 year milk consumption campaign. The Generic Milk Consumption Campaign was launched in 2012. It is meant to create public awareness on the importance of increased consumption of milk and other dairy products. The event was organised by the Kenya Dairy Processor Association (KDPA) and co-funded by Land O' Lakes.

The processors have also invested in dairy technologies and cheaper materials with a view to making processed milk and milk products more affordable. They have also invested in the distribution resources and infrastructure to reach the lower end of the market, like in the slums. However, the consumption of processed milk is still quite low, estimated at about 20%¹. More needs to be done to penetrate the untapped BoP segment. KDPA members say that they still face a lot of challenges:

¹ Exact numbers on the share between raw milk and processed milk, as well as formal versus informal market sizes are not available. It is the nature of informal markets to be difficult to measure, especially in a context where even the numbers on formal markets are subject to industry and government stakes. However, it is undisputed that most milk is sold and consumed raw.

- Accessibility to raw milk is still a challenge, for example in Q1 & 2 of 2012, some of the members experienced a milk intake drop of up to 50%
- Selling of raw milk, especially in the big cities like Nairobi, is impacting the demand for processed milk
- VAT introduction, especially on value added products
- Poor infrastructure in some parts of the country affecting collection of milk from small scale farmers
- Cost of inputs for the farmers affecting production volumes and costs
- Undeveloped cooling facilities affecting the quality of the raw milk
- Poor enforcement of legislation by KDB and the government for example on milk hawking.
- Insufficient market for processed dairy products

8. STAKEHOLDERS' DISCUSSION PAPER AND OTHER REPORTS (2012)

TAX ENVIRONMENT

In 2012, the Industry came together and set out various issues arising out of the proposed VAT bill. The draft bill proposes to charge VAT at 16% on all dairy inputs, dairy machinery, milk and milk products. With regards to milk and milk products, introducing VAT will have the following implications:

- Processed milk and milk products will become more expensive as the VAT will be passed onto the consumers in form of high consumer prices which means the lower income groups will not have access to good quality products leading to higher consumption of unprocessed milk and milk products.
- It undermines the notion of level playing field as the same will not be applied to raw milk in the informal market. This will aggravate an already distorted market as the informal raw milk sector does not pay income tax, cess, levies and other costs that are imposed on the formal sector
- This will also discourage the formal sector and encourage the value chain actors to channel milk through the informal sector
- (At the time of the final revision of this report, a parliamentary committee proposed to keep processed milk VAT exempt, but to explicitly not extend this exemption to raw milk, since hawking raw milk would be prohibited by the Dairy Act).

LACK OF ACCESS TO CAPITAL

Most of the dairy farmers do not have proper access to capital to finance the initial set up of dairy farms, milk hubs and milk processing plants. This limits their production capacity and hence reduces the total income that they can derive from the dairy industry. It is also important to note that the main challenges facing the dairy industry is lack of robust support mechanism from the government that can enable them access capital for set up and operations. This lack of capital is especially urgent for those setting up smaller farms without a significant asset base to secure their loans.

LACK OF ACCESS TO TRAINING

DTI in Naivasha is the national dairy training institute. DTI as a government institute has not been able to keep pace with the dynamic dairy industry. Hence it does not have the capacity to deliver the type and numbers of skilled labor force that is required by the sector. There is need to have a training institute that is commercially-oriented and private sector driven and can drive best practice and standards in the industry across the value chain. An example for such an institute from another sector is the Utalii College; it helped to drive good standards in the hospitality industry. In addition, the Kenya dairy industry lacks a clear set of regulations that govern the sector regarding acceptable and enforceable practice on operations and equipment, across the chain. The Dairy Regulations that were prepared by the Kenya Dairy Board in 2009 with the assistance of Land O' Lakes, are yet to be gazetted.

INADEQUATE MILK PROCESSING CAPACITY

The dairy industry has been facing the challenge of fluctuation in milk production with the country producing surplus milk within the period of July to November while there is milk scarcity in January to April. During the period of surplus milk production, the inadequate milk processing capacity becomes evident as farmers drain milk. Kenya Dairy Board has been encouraging processors to invest in long life milk processing machines such as powder milk and UHT plants. These efforts have borne fruits with new UHT plants coming up such as in Meru Central, Githunguri, Buzeki and Sameer. Brookside Dairy Ltd is also constructing a new milk powder plant that is expected to be operational in 2013.

However, the industry is confronted with seasonality in milk supply from farmers, resulting in exchanging patterns of over-supply of markets in the glut season, alternated by rationing of milk and milk products (and price hikes) in the dry-season. This has gone to the extent that in 2012 Kenya was a net importer of milk products (notably milk powder) from Uganda. It has led to fluctuating milk producer and consumer prices and inability to adequately service export markets, a scenario that is not conducive for a sustainable dairy development.

Fluctuating milk prices mean that consumers at the Base of the Pyramid will not consistently consume milk, or at least not of consistent quality. As milk shortages are translated into significant price increases, milk becomes either compromised (stretched with water) or too expensive to consume in otherwise normal quantities. Deepening the UHT market towards the BoP might alleviate some of the quality issues, if not the cost issue.

QUALITY COMPLIANCE

The quality of Kenyan raw milk has been a challenge to the dairy industry. This is particularly so due to the unique nature of milk production in the country which is dominated by small scale milk producers. As a result, Kenyan milk has been denied access to some regional markets such as Zambia.

Kenya Dairy Board has been encouraging milk producer groups to invest in milk cooling tanks to improve on raw milk quality. As a result, the number of milk cooling plants has increased from less than 100 cooling plants in 2003 to 218 cooling plants in 2011. Milk quality has improved significantly in those areas where the cooling plants have been installed. However, as a country,

we are still far in achieving the desired cooling infrastructure. The tax on cooling tanks will therefore be a further disincentive to farmer groups to invest, and pose a serious challenge to compliance to international standards on milk quality.

The implication for the BoP consumer is that the milk quality is sub-standard as cooling chains are regularly broken, especially in the small farm to consumer segment.

SMALL HOLDER DAIRY PROJECT (2003)

The Small Holder Dairy Project (SDP) published a Research & Development report on policies in the dairy sector (Muriuki et al. 2003). Despite its age, the report repeats and summarises many of the insights above, documenting their persistence.

The SDP R&D Report notes that, apart from registration and licence fees, there are direct taxes that processors pay. These are a major cause of concern to them, especially because most informal milk traders who compete with them do not pay these taxes. These are Value Added Tax (VAT) and cess fees. VAT is charged on a number of dairy processing inputs such as packaging material for ultra-high temperature treated (UHT) milk, fuel, and certain equipment. It is also charged on dairy products such as fermented milk (maziwa lala), cheeses, yoghurt and butter.

Up to 1997, the dairy industry was zero-rated for VAT which meant that if over the same period the total amount of VAT paid on inputs by a processor exceeded the VAT collected from output sales, then the processor could claim the difference as tax refund. On the other hand, the processors would have to remit the difference of VAT if they collected more from sales than they paid on inputs. However, from 1997, the status changed and the dairy sector became exempt from payment of VAT. This means that processors cannot recover the VAT paid on inputs from the VAT received on sales. The processors object to this status and are lobbying for a reversal to the former position when they were zero-rated. In addition to VAT, milk processors, milk bars, traders and co-operatives pay cess. Cess-payers expect the KDB to use the cess to repair and maintain feeder roads and promote activities and products of the processors. Many processors also expect cess to be used to remove the untaxed itinerant traders from the market. However, those traders currently not paying cess represent an important potential source of revenue for the development of the industry, if mechanisms can be worked out to collect it.

There have been proposals to use the cess for training or to raise capital for investment, but so far this has not taken place. The BoP consumer is affected by these inefficiencies in the same way that all other consumers are affected: high prices due to inefficient markets and lack of quality.

Water is needed not only for cleaning the equipment but also for normal processing operations while electricity is critical for nearly all the operations of a milk processing plant. Problems are often encountered in availability of adequate quantities of clean water and 24 hour supply of electricity, mainly due to excess demand in most urban areas and poor maintenance of existing systems. Kenya has a high cost and unreliable power sector that contributes to the high cost of milk processing. Most milk processors currently operating in Kenya are compelled to source their raw milk requirements from more distant places as the immediate milk shed area is increasingly being dominated by the itinerant trader.

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

This lack of infrastructure does affect the 'poorer' segment of the milk chain more than the richer segment. One of the consequences of the poor infrastructure and the subsequent loss if milk is that the raw milk sector and the shorter, but less hygienic value chains do become more attractive for producers to avoid rejection at the factory gates. Consumers therefore find a larger supply of sub-standard milk.

9. FUNCTIONING, POLICIES AND STRATEGIES OF THE DTA

The Dairy Traders Association (DTA) was registered in March 2008 and represents the interests of milk producers and traders. At the time of the study, the membership was claimed to be 4,500 with a target of 15,000 by the end of 2013. The membership is composed of both farmers and traders but some play a multi-role along the milk value chain.

Members are licensed by KDB and expected to conform to laid down regulations for the premises, code of conduct, defined standards for containers and preservation, they must undergo training on hygiene and milk handling across the value chain, must have the required licensing and certification and more and more emphasis on value addition, ghee, yoghurt, mala and cheese.

The organisation was established to support small milk traders and producers in promotion of milk consumption and reduce poverty in Kenya. According to Mr. Wachira, the Secretary of the Association, this is expressed in their slogan "*Twajivunia Maziwa Yetu*", a Swahili expression meaning "*We are Proud of our Milk*". The other objective is to provide milk to low income earners at an affordable price.

92% of producers are small scale farmers marketing a large portion of their milk through the informal channels (door to door deliveries, milk bars and milk shops). The association claims to sell wholesome milk at affordable prices.

The association has plans to establish a *Maziwa* SACCO where members can save to enable them raise capital for improvement, modernization and expansion of their milk businesses, among other benefits to the members. There were 10 branches countrywide at the time of the survey (South Rift, Kisumu, Naivasha, Nairobi West, Nairobi Central, Nairobi North, Eldoret, Nakuru, Kirinyaga and Embu) and 10 more branches are in the pipeline.

According to Mr. Wachira, the duties and levies that the DTA pays includes a monthly cess of 40 cents per litre and annual costs that include movement permit (KShs. 1,000/= paid to KDB & City Council), licensing fee of KShs. 4,000, and Public Health permit of KShs. 3,000. The strategies and future plans for DTA include:

- Training of all their members on quality standards along the value chain especially on milk handling, transportation and hygiene
- Publicity; milk campaign, milk handling across the value chain, programmes to educate people and capacity building
- Establishment of localised and affordable cooling and pasteurization units, locally produced 'Jua Kali' to drive affordability.

DTA is aware of the fiscal and regulatory policies for the raw milk market, but implementation of these policies remains a challenge. KDB does not have the capacity to implement these policies because there are too few inspectors on the ground. On the other hand strict implementation also is political sensitive, as it is not immediately of benefit to the many smallholder and traders that market their (raw) milk through this channel, and to the BoP consumers that are not able to buy processed milk at the current price level.

DTA believes its current milk marketing strategies are already geared towards BoP, by selling affordable milk in the slums of Nairobi. They are open to discussions of converting their members to sell processed milk but the key success factor still remains affordability.

10. Conclusions

This section of the study has been concerned with the policy framework for the dairy sector, and whether it is conducive for triggering or facilitating investments by processors in products and distribution models that aim to enhance access to safe and nutritious processed milk and milk products for the lower income groups. It may then be safe to conclude (based on the inventory and analysis above) that:

- Generally, Kenyan government policies attempt to provide a conducive environment for the production of safe milk and milk products by emphasizing amongst others on GMP, provision of electricity, improving the road network, zero rating of dairy equipment, re-orientation of milk processing towards long life and value added products, and so on.
- However, the policies could have more recognition for the lack of level playing field between the raw milk and processed milk sub-sectors, putting the latter at a disadvantage. This could be addressed by curbing the raw milk market or by giving more tax reductions to the processors to bring their costs down (e.g. water, electricity, VAT on added value products, and so on).
- In addition, the policies lack in providing incentives for investment in processed milk and milk products for the BoP. For example, VAT exemption or reduction on all UHT and Extended Shelf Life products like liquid milk, yoghurts, mala and cheese would benefit the BoP, as the

BoP distributors and consumers usually cannot cool the products. VAT exemption (or reduction) for small units (200 ml and below) and fortified milk (-products) could also be an option to facilitate reaching the BoP and trigger investments.

- Through the MoPH, the government's policy objective is to achieve good nutrition for optimum health of all Kenyans, enhance food access, provide special nutrition interventions for specific vulnerable groups, and create awareness in provision of nutritious foods to all family members and especially children. Although policy and regulatory guidelines on food fortification are in their infancy, there are standards for fortification of maize flour, wheat flour, vegetable oil, sugar and salt. Consequently, there are no guidelines for fortification of milk and milk products. This delays or withholds investment of the industry in enriched and fortified milk products.

11. Recommendations

From the foregoing - and with special reference to targeting the BoP - the following are the proposed recommendations:

1. To allow for proper and effective planning and implementation of the policies, the industry must invest in keeping the right data, which are then updated on a regular basis as opposed to relying on estimates. This includes having a census of the number and breeds of dairy cows, farmers, annual production of raw milk, farm inputs, impact of seasonality on raw milk production, incremental volume during the flush season and the drop rate during the dry season.
2. In-order to reach the BoP segment, the products must be affordable at a good price point. To achieve this one observation is that the costs across the value chain must be reduced and the benefit of this passed onto the final consumer. There are many ways to achieving this as listed below:
 - Providing incentives to all investments across the value chain (including marketing and distribution) through zero rating all the inputs in dairy and dairy products will help to bring down the costs.
 - The government can offer tax breaks and improve infrastructure (roads, railways, electricity, water and ports).
 - The cold chain distribution of pasteurised dairy products is expensive, unreliable and limits the industry from capturing the full BoP potential. The government must incentivise investments in (all) UHT products and reduce or nullify VAT in UHT and ESL products.
 - Security is key especially in the slums where the BoP consumers live. Today most of these places are controlled by gangs. This limits the daily distribution of fresh products, including processed dairy products, into these regions.
 - Zero rate value added milk products are key to drive differentiation and value in the industry (e.g. yoghurts, mala, flavoured UHT/ESL milk and even cheese).

3. The government through the Ministry of Health must support the generic milk campaign by the industry. This is essential to drive good nutrition. There is still the misconception that packed milk contains preservatives; loose milk is more nutritious; and boiling loose milk kills all germs and toxins. To counter these misconceptions the Ministry of Health, together with the dairy industry must conduct a series of educational seminars for students, schoolchildren and housewives about milk and food safety. The processors must also leverage on the same message with their brands.
4. Availability of raw material has an impact on all the dynamics across the value. There is need to have a strategic plan for managing seasonality in the industry which has a huge impact on the milk availability and fluctuating milk prices throughout the year. The changing consumer prices mean that the BoP may not afford processed milk prices during shortage of raw milk. Consider promoting the zero grazing farming system as opposed to open grazing, hand in hand with promoting commercial mechanised fodder production and supply chains of high energy and protein rich crops.
5. There is also need for establishing and driving best practice in the industry across the value chain. The Dairy Regulations referred to above could lay a strong fundament for best practice operations of value chain actors. But equally important is a modern and well equipped dairy training institute that will capacitate value chain actors with qualified personnel, to drive good standards in the industry. This is the only way that Kenya will secure a sustainable dairy sector. Quality standards are essential to driving processed milk amongst the BoP and will discourage them from consuming unprocessed milk.
6. The other observation is that what the BoP consumers choose today influences what they buy tomorrow; and also that this segment will be the middle class of tomorrow as they move up the ladder. And so the products must be safe, hygienic attractive, offering quality, convenience and value, particularly for kids who are the next generation of dairy consumers.
7. Harmonization of the regulatory and institutional framework is essential. Consider setting up a body to oversee the implementation of all the legislation in the industry. This could be set up, for example, along the lines of the Tourism Trust Fund.
8. Quality compliance. There must be very clear parameters for rewarding quality compliance and penalizing non-compliance across the value chain. This must be enforced through different methods and at different levels for example, provide tax concessions for processors who achieve targets, good price for farmers who maintain the quality standards, cancellation of licences. The consumer association should also be strengthened by the government to put pressure on the industry.
9. Milk hawking should be limited to rural areas only and banned from urban areas:
 - Consider taxing the hawkers like the formal processors.

- Enforce quality standards on the hawkers and milk bars.
- Enforce the legislation against milk hawking in the urban areas.
- The industry together with the Ministry of Health should educate the public against the consumption of unprocessed milk.

10. Dairy processors need to drive innovation in the sector:

- Consider decentralizing and setting up smaller processing units nearer the market or source of raw material so as to reduce the cost of transportation and hence make the products more affordable for the BoP.
- They need to come up with innovative affordable products to reach the BoP market. Package size plays a key role in driving the right price point. In Asia for example, offering products in smaller packages such as 70 ml, 100 ml and 125 ml, has been the route to offer good quality, convenient products. This approach enables top brands to reach consumers with limited incomes and daily budget struggles. The same is also being used by other multinationals like Unilever, Nestle, Ketepa that target BoP segment with smaller packs for food products ranging from 5, 10, 15 and 20 grams. This is commonly referred to as the '*kadogo*' economy.
- Affordable dairy alternatives and value added products. One such product in Pakistan is affordable tea creamers, which has a huge potential among DiP consumers as drinking milk with tea accounts for 64% of total milk consumption in Kenya. Other products include long life yoghurts, custards, flavoured milk etc.
- Distribution is another area that requires innovation and investment to be able to reach the BoP. Today the route to market for dairy products in Kenya is quite long and expensive. By reducing this, the margins will be reduced and the products will be more affordable. For example in Brazil and India, distributors hire local housewives to sell their products door-to-door. Today in Kenya some of these methods are being applied but only for unprocessed milk like the door to door delivery.

11. The technology providers for packaging and processing must explore simple, low cost and low capacity packaging and processing solutions to drive affordability of processed milk to BoP consumers. In addition the market for more affordable manual operated milk dispensing systems for schools, institutions, HORECA can be explored, as is the case for setting up branded franchise-systems for milk bars selling loose and packed processed milk and milk products.

12. Coupled with the above, the government, through the Kenya Bureau of Standards (KEBS) should provide more guidelines on fortification of milk and milk products so that these can guide prospective processors to produce innovative products for the BoP.

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APPENDICES

APPENDIX I: INVESTMENT POLICIES FOR IMPROVED COMPETITIVENESS OF THE MILK VALUE CHAIN

NO	POLICY STATEMENT (ACTION PLAN)	BY WHOM
1	Up-scale and out-scale successful models of Dairy Business Development Services in the value chain	MoCD, , MoLD, NGO, KDB, Farmer groups, Coops
2	Facilitate expansion in medium and large scale commercial milk production for economies of scale	MoCD, MoLD, NGO, KDB
3	Assist Cooperative Societies to adopt Dairy Hub Business Development Service models in low market access milk producing areas	MoCD, MoLD, NGO, KDB
4	Train milk producers and traders on safety and quality milk requirements	MoLD, NGO, KDB, Colleges, KARI Universities, NGO, Farmer groups,
5	Facilitate entrepreneurial knowledge and business linkages by dairy value chain operators	All dairy value chain actors,
6	Invest economic stimulus funds (ESF), Constituency Development Funds (CDF) and Local Authority Transfer funds (LATIF) in rural infrastructure to generate off-farm remunerative options	MoCD, , MoLD, NGO, KDB, Farmer groups, Coops
7	Support off-farm investments that will raise rural wages to subsequently remove some producers and traders out of subsistence livelihood dairy production and trade	MoCD, MoLD, NGO, KDB, Farmer groups, Coops
8	Lobby processors to introduce premium pricing for milk quality	MoCD, , MoLD, NGO, KDB, Farmer groups, Coops
9	Publicise safety and quality requirements in milk and milk products	MoCD, , MoLD, NGO, KDB, Farmer groups, Coops, Colleges, KARI, Universities,
10	Establish, revitalise and strengthen vocational training facilities for competitive dairy production and trade	MoCD, MoLD, NGO, KDB,
11	Introduce outreach training programmes to spread dissemination of innovations	Farmer groups, Coops, Colleges, KARI, Universities,

Source: DMP, 2010

APPENDIX II: EXCERPTS OF THE DAIRY POLICY, 2006: INVESTMENT POLICIES FOR PROCESSED MILK

POLICY ISSUE	THE PROBLEM	POLICY CONSTRAINT	PROPOSED POLICY INTERVENTION
Milk collection	Unpredictable and unsystematic milk collection	<ul style="list-style-type: none"> i. Lack of responsible institutions ii. Expensive and undependable dispute resolution mechanism iii. Poor infrastructure iv. Uncollected evening milk 	<ul style="list-style-type: none"> i. Revival of milk marketing cooperative societies and motivate dairy farmer groups formation ii. Facilitate marketing cooperative societies and dairy farmer groups to set up rural milk collection centres iii. Promote business practices, contracts, contracts enforcement and low cost and dependable dispute resolution mechanisms to ensure collected milk is paid for. iv. Regular feeder roads maintenance
Milk packaging	Unhygienic and environment-unfriendly packaging materials	<ul style="list-style-type: none"> iii. Packaging raising cost of milk iv. Shift from packaged to unpackaged milk 	<ul style="list-style-type: none"> iv. Promotion of the development and adoption of cost effective milk packaging that is of acceptable standards and addresses health concerns v. Discourage use of packaging materials that are environmentally unfriendly vi. Encourage local initiatives that use locally available materials in milk packaging
Quality Control and Assurance	Hygiene and quality standards of milk handled by informal marketing channels not guaranteed	<ul style="list-style-type: none"> v. High cost of milk testing equipment vi. Inadequate skills on the use of the equipment vii. Lack of milk quality management capacity viii. Institutional gaps 	<ul style="list-style-type: none"> vi. Support dairy processors and manufacturers to put in place quality testing and assurance systems vii. Provision of incentives for milk testing equipment procurement and installation viii. Stakeholder sensitisation on the importance of safe use of antibiotics and other veterinary drugs at farm level ix. Training on milk testing and operation of testing equipment x. Strict enforcement of quality standards both for raw milk and dairy products.

Dairy Cooperatives	Collapsed cooperatives resulted in increased cost of milk marketing	<ul style="list-style-type: none"> i. Weak management capacities ii. Inadequate capital base iii. Low economies of scale iv. Inappropriate government involvement. 	<ul style="list-style-type: none"> i. Enforce the new management tenets embodied in the amended Co-operative societies Act of 2004 ii. Encourage partnerships between cooperatives and other private sector players especially processors iii. Promote bulk purchases of farm inputs by co-operatives to minimise costs and improve competitiveness iv. Formulate ways of protecting producers and producer organisations from the effects of collapsed firms
Informal Milk Marketing	Consumer health risk	<ul style="list-style-type: none"> iii. Expensive pasteurised milk iv. Job creation 	<ul style="list-style-type: none"> viii. Facilitate the transformation of informal milk trade towards the formalization of the small enterprise sub-sector in the industry ix. Development of low cost and appropriate technologies for small investors x. Invest in and support training programmes on safe milk handling xi. Work with stakeholders to improve the standards of milk processing in the informal sector xii. Institute public education campaigns on the merits of consuming properly handled raw milk xiii. Facilitate compliance to standards by the informal milk traders through provision of incentives for improved milk handling xiv. Establish a supportive milk dealer certification system

Imports and Exports	Need to expand milk products market while safeguard against dumping of sub-standard milk products	<ul style="list-style-type: none"> i. Competitiveness ii. Milk quality standards 	<ul style="list-style-type: none"> i. Promotion of export of dairy products in the regional and international markets, ii. Rationalise export and import of dairy products to account for production cycles, iii. Involve the dairy industry in regional and international trade negotiations iv. Gather, analyse and disseminate up-to-date market information to relevant stakeholders v. Promote production of quality milk products right from farm level vi. Imported dairy products quality standards will be enforced vii. Classify dairy products as sensitive according to WTO criteria
Dairy Business Environment	Lack of strong business ethics in dairying	<ul style="list-style-type: none"> i. Responsible business practices, contracts, contract enforcement and low cost dispute resolution mechanisms ii. Unpaid farmer milk deliveries iii. Weak regulatory institutions 	<ul style="list-style-type: none"> i. Guide the industry towards self-regulation path ii. Development of contractual norms, low cost dispute resolution mechanisms, and industry codes of practice iii. Facilitate the formation of a stakeholder driven ethical committee to handle arbitration issues in the industry iv. Facilitation of the organisation of interest groups along the value chain to improve performance in the sector <p>Support the setting up an industry umbrella association within the sector where stakeholders can dialogue and lobby</p>

Milk Strategic Reserves	Milk production seasonality	i. Smoothening milk supply throughout the year	<ul style="list-style-type: none"> i. Encourage processors to offer premium prices during dry seasons ii. Promote the processing of affordable long-life milk products iii. Include dairy products in strategic national food reserves
Dairy Information	Unavailability of dairy information	<ul style="list-style-type: none"> i. Inexistence of an information centre equipped with a data base facility ii. The existing data is not well coordination and the stakeholders are co-operative 	<ul style="list-style-type: none"> i. Government to implement the ICT and e-government policy ii. Government to facilitate the setting up of a dairy sector information centre