DAIRY VALUE CHAIN MAPPING & ANALYSIS

FINAL REPORT

CONTRACT NO: RLEEP/29/2012

27 MARCH, 2013
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<tr>
<td>ACF</td>
<td>Agricultural Commercialization Fund</td>
</tr>
<tr>
<td>CISANET</td>
<td>Civil Society Agricultural Network</td>
</tr>
<tr>
<td>CREMPA</td>
<td>Central Region Milk Producers Association</td>
</tr>
<tr>
<td>DAHLD</td>
<td>Department of Animal Health and Livestock Development</td>
</tr>
<tr>
<td>DAI</td>
<td>Development Alternatives Inc.</td>
</tr>
<tr>
<td>DC</td>
<td>District Commissioner</td>
</tr>
<tr>
<td>EPA</td>
<td>Extension Planning Area</td>
</tr>
<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>FIDP</td>
<td>Farm Income Diversification Programme</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GMP</td>
<td>Good Manufacturing Practices</td>
</tr>
<tr>
<td>HACCP</td>
<td>Hazard Analysis on Critical Control Points</td>
</tr>
<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
</tr>
<tr>
<td>INVC</td>
<td>Integrating Nutrition in Value Chains</td>
</tr>
<tr>
<td>MBG</td>
<td>Milk Bulking Group</td>
</tr>
<tr>
<td>MLC</td>
<td>M-Livestock Consultants</td>
</tr>
<tr>
<td>MMM</td>
<td>Malawi Milk Marketing</td>
</tr>
<tr>
<td>MMPA</td>
<td>Malawi Milk Producers Association</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Governmental Organizations</td>
</tr>
<tr>
<td>RLEEP</td>
<td>Rural Livelihood and Economic Empowerment Programme</td>
</tr>
<tr>
<td>SQF</td>
<td>Safe Quality Food</td>
</tr>
<tr>
<td>SSLLP</td>
<td>Small Scale Livestock &amp; Livelihood Programme</td>
</tr>
<tr>
<td>TQ</td>
<td>Total quality</td>
</tr>
<tr>
<td>TQM</td>
<td>Total Quality Management</td>
</tr>
<tr>
<td>UHT</td>
<td>Ultra Heat Temperature</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development.</td>
</tr>
<tr>
<td>Vet</td>
<td>Veterinary</td>
</tr>
</tbody>
</table>
1.0 EXECUTIVE SUMMARY

In 2013, M-Livestock Consultants (MLC) conducted a Nationwide Dairy Value Chain Mapping and Analysis aimed at facilitating decision making by Rural Livelihood and Economic Enhancement Programme (RLEEP) on dairy value chains promotion and support. The Agricultural Commercialization Fund (ACF) is a component of RLEEP whose goal is to sustainably improve the incomes of economically active poor rural households engaged in the production, processing and marketing of selected agricultural commodities (crops, livestock and fisheries) by advancing their integration with the emerging commercial sector. The objective of the Agricultural Commercialization Fund is to improve linkages of farmers to value chains by establishing more efficient production, transport, storage, processing and marketing systems for priority commodities, thereby expanding economic activity and employment. RLEEP is an IFAD funded programme.

The study identified that dairy production in Malawi is geographically suitable in all the three regions. Within the regions there are specific areas that have comparative advantages as regards climatic conditions, markets availability, processing opportunities and existence of dairy infrastructures. Generally, milk storage and handling at MBG level by the farmers have been a big challenge in maintaining milk quality and reducing milk wastage. Some processors that were studied closely, transport milk in unrefrigerated vans using milk churns containers while vendor use plastic buckets.

The study has shown that dairy is a viable commercial commodity for smallholder farmers who are currently making a gross margin or profit of about 57%. The gross margins of dairy smallholder processors, retailers, Commercial dairy processors and vendors of raw milk are 9%, 32%, 34% and 40% respectively. It was difficult to get information of other value chains actors like feed suppliers and veterinary suppliers as there were not directly engaged with farmers on regular basis. Milk vendors for processed milk do not keep records. Dairy value chain actors in Malawi are many including smallholder farmers, commercial farmers, donor community, NGOs, private companies and farmers associations and cooperatives. Commercial dairy processors are under-operating at between 35% and 70% of their capacities due to among others issues, limited volumes of milk supply from farmers. The industry is regulated by the Department of Animal Health and Livestock Development (DAHLD). Major problems in dairy through this study relate to technical, managerial, farmer organization, leadership, input supplies, processing, storage, quality control, marketing and consumption.

Opportunities in dairy exists in most of the milk bulking groups (MBGs) that have milk tanks, electricity connectivity, natural and home grown cattle feeds, MBGs that are very
close to urban markets with processing facilities and with good road network. Districts like Mchinji, Thyolo and Lilongwe are some of the great opportunities. Support towards rural based mini processing plants is another opportunity. Other opportunities for investment is on (a) Institutionalization of Milk Quality and Food Safety International and MBS Standards in all milk handling and processing points, Establishment of Malawi Dairy Advisory Committee as enacted by Milk and Milk Product Act (b) Supply of dairy heifers to farmers in Malawi and (c) support towards dairy actors including commercial processors like MDI and dairy promoting NGOs.

**Summary of Key Issues at Production and MBG levels.**

a. The need for building the dairy managerial capacity of farmers so that they have skills to look after their animals properly.

b. Linking farmers with service providers including feed suppliers, AI services, veterinary drug services and extension services.

c. Linking farmers through MBGs to markets by introducing new actors or transforming farmers to become effective on milk storage and rural mini dairy processing.

d. Training of farmers on governance focusing on group organization is very critical.

e. There is need for supply of dairy heifers to farmers to improve milk volume.

2. **INTRODUCTION**

**Purpose and objective of the report**
The main purpose of this report is to present a detailed analysis of the Malawian dairy subsector with an objective of facilitating the decision making process on dairy value chain in the country. The report critically analyses the dairy development situation among the smallholder farmers, processors, consumers, dairy promoting organizations including donors, Government Departments and NGOs. The report analyses and describes the dairy value chains within the MBGs, processing units, milk market points up to the consumer. The report provides relevant summaries of information on social networks- value chain actors; smallholder dairy social-economic benefits; gross margins analysis at various level and challenges and opportunities in the industry. The report has also suggested specific dairy value chain areas for new investments, improvements and promotion. Through the discussion in this report recommendations have been made at all level of the dairy value chain. The report has started with general overview of the importance of livestock subsector within the Malawi agriculture sector in Malawi.

**The Livestock Subsector and its Role**
Agriculture sector plays a significant role in the economy of the country. It employs about 80 percent of the workforce and accounting for almost 40 % of the gross domestic product (GDP). The smallholder sub-sector contributes more than 70 per cent with the estate sub-sector contributing less than 30 % to agricultural GDP. Smallholders grow
mainly subsistence food crops such as maize, cassava and legumes with tobacco, paprika and cotton grown as cash crops on customary held land, with average land holdings of 1.2 ha. Average size of land holding has been declining due to an annual population growth of 3%.

According to the revised and current Policy Document on Livestock in Malawi, livestock subsector remains a growing sector with potential to play a big role in the social economic development of Malawians especially the rural poor. The Livestock industry in Malawi contributes about 11% to the total Gross Domestic Product (GDP) and about 40% of the value of total agricultural products. Livestock provides food, income, manure, animal traction and social security. There are about 1.4 million farm families who own one or more of various livestock types. 15% of all the livestock owners are commercial and the rest are subsistence. Being a small country with high population density, livestock in Malaw provides an efficient way of transforming crop residues e.g. straws, groundnut haulms and crop by products into food or cash and using areas of grazing land unsuited for arable farming.

**History of Dairy Development**

The dairy industry was started by the Government through a parastatal called Malawi Milk Marketing (MMM). Farmers were organized into milk bulking groups (MBGs) for milk collection and act as centers for promoting improved livestock management. In 1985, under a structural adjustment programme, MMM was reorganized and a statutory body called Malawi Dairy Industries (MDI) took over the three MMM dairy plants and three dairy farms and given the mandate to operate on commercial lines. MDI had the overall purpose of multiplying dairy animals for the production of milk and the manufacturing, processing and distribution of milk products. In 1997 the three MDI factories and farms were privatized. In 1999, DAHLD developed the National Livestock Development Master Plan followed by a Department Strategic Plan in 2003. Livestock activities are implemented and regulated within the framework of these strategic documents apart from the Livestock Policy Document for Malawi. Following the commercialization and privatization of livestock services, there has been increased participation of non state actors in dairy from 2000. NGOs like Small Scale Livestock & Livelihood Programme (SSLLP), Heifer International, World Vision and many others have been in involved in procurement and placement of heifers, provision of extension services and capacity building of farmers.

The next section focuses on the methodology that was used to collect data and analyze the same.
3.0 METHODOLOGY

DATA COLLECTION

Primary Data:

The Research Team visited 6 Milk Bulking Groups (MBGS) for interviews to collected data. The 6 MBGs included Lumbadzi (Lilongwe), Bua (Mchinji), Lusangadzi (Mzuzu), Chikwina (Nkhostbay), Bvumbwe (Thyolo) and Blantyre City (Blantyre). These sites have been located on the Map below. The team targeted to conduct interviews with 25 farmers from each MBG who were milking. In some MBGs it was not possible to get all the 25 respondents due to limited number of farmers with cows in Milk. The team collected data on Gross Margins from some selected farmers. Focus Group Discussions formed a large part of data collection at MBG level. Key Informants at Extension Planning Areas and District Veterinary Office within the targeted MBGs were interviewed.

The team visited some organizations that are associated with promotion of dairy activities in all the three regions. Among these organizations were Processors, Dairy Farmer Associations, Academic Institutions, NGOs, Donors and Government Departments. In addition to this, the Research Team used electronic copies of questionnaires to collect data from other organizations.

Dairy Industry Development Platform Meeting

The team attended the January 2013 Dairy Industry Development Platform Meeting organized by CISANET and was hosted by MMPA in Lilongwe. During this meeting the draft report of this Dairy Value Chain Mapping was shared with the stakeholders to get their input to it. The CISANET meeting helped to shape the quality of this report.

Validation Workshop.

RLLEP and MLC jointly organized a Validation Workshop on the Dairy Value Chain Mapping and Analysis Report. It took place at Bridge View Hotel in Lilongwe. All key stakeholders(see annex) in dairy attended the workshop which was held on 21st February, 2013. The deliberation and recommendations made at the workshop helped to improve the presentation of this report. One key observation was that dairy has big potential and many opportunities for further development. Based on this workshop the recommendations have been broadened up to encourage all players to participate in the implementation of some activities outline in this report.
Desk Top Study

The Research Team was able to mobilize various reports, documents and research papers with very good and relevant data on dairy value chain as secondary data. The team reviewed literature produced from 2005 to 2012. These documents have been so useful to improve the quality and presentation of this report. Some of the literature used in this report included the following:

- 2005 Report, Livestock Sector Brief by Food and Agriculture Organization of the United Nations. FAO.
- 2012 Policy Document on Livestock in Malawi by DAHLID.
- December 2012, Dairy Value Chain Review: End of Market Assessment by INVC of USAID.

DATA ANALYSIS and LIMITATION

Following the data collection, a team of data analysts cleaned the data and used excel sheets for entry and further analyses. The team experienced some limitation in data analysis because it was observed that most of the respondents to this assignment, almost at all levels do not keep records of their transactions. Farmers do not keep proper records. Processors found it difficult to provide the team with financial records despite its importance in the value chain analysis. In some cases some people feared the team thinking it was an audit company. Let alone some organizations out of unknown fear could not provide the information on what exactly they are doing so that this analysis could enhance collaboration, partnership and synergism among dairy actors. The 18 days that was allocated to this assignment was too short considering the complexity of the dairy industry in Malawi. However, the team managed to get a fair representation of information across all areas of interest.
4.0 POTENTIAL SITES FOR DAIRY DEVELOPMENT IN MALAWI

Existing MBGs

Malawi has 51 MBGs, 22 under SHMPA, 20 under CREMPA and 9 under MDFA. However CREMPA has about 12 MBGs that are fully functional while the other MBGs are very small and still developing. SHMPA covers districts in the South like Blantyre, Chiradzulu, Zomba, Phalombe, Thyolo and Mulanje where dairy activities are concentrated. It has been estimated that 80% of the milk is produced by SHMPA in the South, 15% by CREMPA and 5% by MDFA. CREMPA members are in Lilongwe, Dowa, Salima, Ntchisi, Mchinji, Kasungu and Dedza. MDFA includes members from Mzuzu, Nkhatabay and Karonga.

New Potential Dairy Sites

MLC in agreement with CYE Consult identifies Misuku Hills and Nyika Plateaus as potential new sites for dairy because of their ideal ecological and climatic conditions and the introduction of UHT Milk on the market. This study considers Ntcheu district as having high economic potential for dairy development. Some parts of Ntcheu have ideal climatic condition and road infrastructures network for dairy. There are groups of people in the district that are interested in dairy farming. Processors from Lilongwe pass through Ntcheu to get raw milk from Blantyre.

It should be noted that dairy farming can be done anywhere in Malawi depending on a number of factors. Dairy can be promoted in hot and drought prone areas if there is good environmental modification, improved feed supply systems and efficient disease control programmes. The other limitation to have dairy activities done everywhere is the issue of marketing, electricity and road network and limited opportunities for dairy processing. Milk is a perishable product. There is need to maintain cold chain in order to preserve milk quality. In areas where there are no electricity and milk collection tanks, it becomes a very limiting factor for dairy development. If the purpose of placing dairy cows is for nutrition and not for commercial then most areas would qualify to have dairy animals. In which case, very few animals would be distributed to provide milk for consumption only.

Provided below is a Map showing all potential sites for dairy based on the ideal climatic condition and road networks. Following this section is a discussion on the dairy value chain in Malawi.
Figure 1: Dairy Potential Sites

- Lusangazi & Chikwina MBGs in MDFA
- Lumbadzi, Bua & Mwera Mkaka MBGs in CREMPA
- Ntcheu & Tsangano
- Bvumbwe & Blantyre City MBGs in SHMPA
- Misuku Hills & Vipya Plateau in Northern Region

Legend:
- Potential dairy areas
- Districts with dairy activities
- Visited MBGs
5.0 THE DAIRY VALUE CHAIN ANALYSIS

DAIRY VALUE CHAIN MAPPING

Figure 2 above shows the Dairy Value Chain Map that MLC developed during this study after considering the 2005 Kadale Consultant Map which was reviewed by CYE Consult in 2008 and also adopted in 2012 by INVC of USAID with some minor changes. This Map reflects the different changes that have taken place in the dairy value chain over the past years. It also gives a representative picture of the dynamics that have dominated the dairy industry in the recent times from milk production through processing of fluid milk to consumption within and outside the country. This dairy value chain map describes the...
linkages and steps from production of raw milk through processing to the end user, the consumer. It gives a clear picture on how milk flows from the farm to the consumer.

**DAIRY VALUE CHAIN ACTORS IN MALAWI**

**Potential Funders in dairy**
USAID, Heifer International- USA, Malawi Government, EU – FIDP, Oxfam GB and FICA

**Supply of Dairy Animals**
NGOs like SSLLP, Heifer International, Land O lakes, WVI,; Government projects like MASAF, LDF and DAHLD (Government farms and importation)

**Dairy farming**
Individual smallholder or commercial farmers, Smallholder farmers working as MBGs. Malawi has 51 MBGs. SHMPA has 22 MBGs which supplies 80% of the total milk in Malawi. CREMPA has 20 MBGs and supplies 15% of the milk while MDFA has 9 MBGs and produces 5% of the milk. Processors who also raise dairy animals for milk production. The likes of Katete Dairy Farm and Lilongwe Dairy

**Milk Quality and Storage:** MBGs

**Milk Buyers**
Processing companies like Dairi Board, Lilongwe Dairy, MDI and Suncrest; Vendors who buy raw milk from farmers and pasteurized milk from wholesales to sell to consumers in major towns and Consumers who buy either raw or pasteurized milk.

**Milk Processors**
Processing Commercial companies, Mini dairies – private (Katete Farm and Sable Farming), Mini dairies- Cooperatives/ Associations (Mwera Mkaka Dairy Society Cooperative, MDFA and Bvumbwe Cooperative which suspended its operations.

**Transportation of Milk**
- Milk is in most cases transported by the processors from the MBGs to their plants.
- Processors also distribute milk and milk products to major outlets including supermarkets, retail shops and their milk depots.
- In very rare cases do individual actors get involved in milk transport at any level.

**Feed Manufacturing**
Commercial Feed Companies (Asumi, Ndatani Premium Feeds, Proto Feed, AgriFeeds, CP Feed; Academic Institution like Bunda College and Individual persons including farmers themselves.

**Veterinary Drugs**
Private Shops like Lilongwe Livestock Centre, Vendors, MBG – CAHWs, and AVOs from Government

**Livestock Extension Service, Breeding Services, Animal Health Services**
DAHLD; MMPA, CREMPA, SHMPA and MDFA; NGOs: SSLPP, Heifer international Malawi and Land O Lakes; Individuals or Consultants; Mikolongwe Breeding Center; Animal Science Department at Bunda College.

**Dairy Training and Research**
Animal Science Depart at Bunda College; Government Research Stations (Chitedze and Bvumbwe); Land O Lakes ; Natural Resources College; SSLLP; Heifer International and Consultants
MILK PRODUCTION

At input level the dairy value chain map looks at physical and services that are critical to produce milk. Physical resources: heifers, bulls, semen straws, commercial dairy marsh, roughages, home- made feeds, vet drugs, milk churns and water. Heifers are the most important resource for dairy. Malawi has about 10,000 heads of dairy cows and 1,2 million Zebus that can be used to produce cross breeds. Malawi has limited number of dairy cows. Heifers are normally imported from South Africa to increase the population of dairy animals. Each in-calf pure heifer cost about US$2,300 (MK800,000) as landing cost while a locally sourced dairy cow is about MK350,000. The only challenge is that it is difficult to source dairy animals from within Malawi. SSLLP, Heifer International Malawi, Land O Lakes and DAHLD have played a big role in importing most of the pure Holsteins, Friesians and Jersey dairy cows the country has. Other NGOs like WVI promote distribution of crosses of dairy animals from within the country. The DAHLD has 3 cross breeding farms that promote production of crosses of Malawi Zebu and Pure dairy breeds. The crosses are also distributed to farmers in all the regions. However the number of cross breeds produced is always very low to meet the demand for the same.

All dairy animals are given to farmers on Pass on Gift (PoG) Scheme. This helps to enable farmers to access heifers which are very expensive and rare to find. At the same time many farmers benefits from original heifers through the passing on. Given below is an example of a successful PoG at Mwera Mkaka in Ntchisi District.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DONOR</th>
<th>POG BENEFICIARY</th>
<th># OF POG COWS GIVEN</th>
<th>TOTAL ANIMALS REALISED BY BENECIARIES BY 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>SSLLP</td>
<td>Christian Jere</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>2003</td>
<td>Christina Jere</td>
<td>Kambani Mtsuko</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2005</td>
<td>Kamabni Mtsuko</td>
<td>Elizabeth Watson</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2007</td>
<td>Elibeth Watison</td>
<td>Mr Sengani</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2011</td>
<td>Mr sengani</td>
<td>New farmer</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2013</td>
<td><strong>TOTAL ANIMALS FROM 1 COW</strong></td>
<td></td>
<td><strong>1</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

Table 1: Classic Example of PoG Concept in Mwera Mkaka, Ntchisi

SSLLP passed on 130 heifers to farmers from 2001. The day the team visited the site it had 326 dairy animals. Besides, SSLLP has transferred many animals from Mwera Mkaka to other MBG like Lumbadzi and Karonga under PoG. If all the 130 animals had performed the way the above cow to Christina has done Mwera Mkaka would have produced about over 3,000 dairy animals in 13 years.

Support Services: Artificial Insemination (AI), Animal Health Services, Electricity, and Extension Services. AI is very important service to ensure sustainability of the milk
production. There are different service providers of AI. The DAHLD through its Assistant Veterinary Officers (AVO), Village AI technicians and Private Companies like Semex provide AI services. Liquid Nitrogen is very critical in maintaining the semen straws cold chain. The cost of AI ranges from MK3,500 to K16,000 per service. Because of some AI challenges, most farmers especially in the South and some MBGs in Central and Northern Regions depend on use of bulls for natural services. Other services like treatment of animals, has largely been the DAHLD responsibility. However, in recent years, NGOs have promoted the concept of Community Animal Health Workers (CAHW) Programme which has assisted farmers to access basic health services for their Animals. The cost of treating animals ranges from MK400- MK4800 per treatment depending on the type of treatment.

Producers Profile

Raw Milk Production in Malawi is mostly done by Smallholder farmers working as MBGs. The farmers own between 1 to 3 cows. Some reports indicate that Malawi has between 5,000 to 7,500 smallholder dairy farmers. With no proper registration and recording system, it is difficult to know the exact number of farmers. There are individual commercial farmers that also keep dairy animals in excess of 100 cows. Some processors also raise dairy animals for milk production. Katete Dairy Farm and Lilongwe Dairy are some of the examples. 85% of the milk in Malawi is produced by smallholder farmers through their MBGs. Smallholder farmers with local Malawi Zebu also produce milk which hardly gets into the formal milk marketing system. The Dairy value Chain Map shows that most of the dairy inputs are used by commercial farmers. Smallholder farmers (MBGs) with pure and cross breeds use less input as they practice low input low output system of farming. Local Zebu farmers rarely use the available input to improve production. Milk production is very low due to low input low output approach by farmers.

<table>
<thead>
<tr>
<th>MBG</th>
<th>LITRE/COW/DAY</th>
<th>BREED PURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUSANGDZI</td>
<td>8.7</td>
<td>PURE</td>
</tr>
<tr>
<td>CHIKWINA</td>
<td>2.7</td>
<td>CROSSES</td>
</tr>
<tr>
<td>LUMBADZI</td>
<td>7.0</td>
<td>PURE</td>
</tr>
<tr>
<td>BUA (MLONYENI EPA)</td>
<td>15.1</td>
<td>PURE</td>
</tr>
<tr>
<td>BVUMBWE (THABWA EPA)</td>
<td>8.8</td>
<td>PURE/CROSS</td>
</tr>
<tr>
<td>BLANTYRE CITY</td>
<td>4.9</td>
<td>CROSS</td>
</tr>
</tbody>
</table>

Table 2: Average milk productivity
The Table above shows milk productivity at different MBGs. It should be noted that at the time of this study, most farmers were not feeding their animals any dairy marsh. Cows were on green grass only. At Bua MBG, few farmers were making their own home made...
dairy marsh to feed their animals. Pure dairy breeds have potential to produce up to 35 liters of milk per day if well managed.

The dairy value chain map shows that most of the milk from smallholder farmers is vended. At the time of this study milk vending was as follows for some sites:

<table>
<thead>
<tr>
<th>MILK BULKING GROUP</th>
<th>% OF VENDED MILK/LOCAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUSANGADZI</td>
<td>91</td>
</tr>
<tr>
<td>CHIKWINA</td>
<td>100 (does not bulk milk)</td>
</tr>
<tr>
<td>LUMBADZI</td>
<td>32</td>
</tr>
<tr>
<td>BUA</td>
<td>85</td>
</tr>
<tr>
<td>BVUMBWE</td>
<td>60</td>
</tr>
<tr>
<td>BLANTYRE CITY</td>
<td>70</td>
</tr>
<tr>
<td>MKAKA MWERA</td>
<td>70</td>
</tr>
</tbody>
</table>

Table 3: Volumes of milk vended or sold locally.

During this time, a small % of milk from Smallholder farmers was going into the formal milk marketing system through processors. All milk from commercial farmers was being processed at their mini dairies. Some smallholder farmers also own their own mini dairies that process some of their milk. The study also showed that all milk from local zebus was basically consumed locally through door to door selling and through vendors. Wastage of milk could have been one of the reasons that force some farmers into vending.

<table>
<thead>
<tr>
<th>MBG</th>
<th>MILK WASTED FROM MBG</th>
<th>MK VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumbadzi</td>
<td>17,100 liters</td>
<td>1,282,500</td>
</tr>
<tr>
<td>Bua</td>
<td>25,000 liters</td>
<td>1,875,000</td>
</tr>
<tr>
<td>Bvumbwe</td>
<td>24,000 kgs</td>
<td>1,920,000</td>
</tr>
<tr>
<td>Blantyre city</td>
<td>500 kgs</td>
<td>40,000</td>
</tr>
<tr>
<td>Mwera Mkaka</td>
<td>6,362 liters</td>
<td>477,150</td>
</tr>
</tbody>
</table>

Table 4: 12 Months Milk Wastage

One other finding during the study was that farmers waste their milk due to several reasons. Sometimes processors fail to collect milk on time until it sours. Unreliable ESCOM electricity with frequent blackouts, failure of generators and lack of fuel to run generators have all contributed to wastage of milk.
Major Challenges at Smallholder Levels

1. Farmers feel that low prices is the biggest challenge. Farmers aspirations on milk price is MK100 per liter at MBG. Processors are offering MK75 per liter.
2. Diseases such as Mastitis were a very serious problem. Most farmers that were visited complained of having their milk rejected at MBG hence increased vending and local selling.
3. Bank debts is another issue that has caused problems at some MBG. Farmers who got loans from banks appeared to have problems in repaying the loans. Because of this some members decided to run away with their milk by selling outside the MBG Tank to avoid repaying the loan.
4. Another big problem in most MBGs is Leadership and issues of accountability and transparance.
5. High cost of dairy marsh was reported as one of the limiting factor in provision of dairy marsh to their animals. The prevailing cost of feed was about MK60/kg. 1kg feed can produce 2kg of milk.
6. Delayed payment was captured as one of the big problems at farmers level. Farmers blamed processors. Most of the time the delay in collection of money from the processors was by the MBG leaders.
7. Long distances of travel with use of plastic containers contributed to the sourness of milk.
8. Unreliable market for milk was picked as an issue. Due to power failure as result of black outs, milk at the MBG is being wasted. Wastage of milk was very common in many MBGs

SWOT ANALYSIS AT PRODUCTION LEVEL

STRENGTHS

Smallholder /Producer

- Low cost and low input livestock management system where animals are adoptable to poor management.
- Reduced mortality rate of dairy cows where the animals that were born in Malawi are tolerant to local climatic and environmental conditions
- Positive attitude of farmers towards dairy farming as priority number one in their economic activities for their livelihoods.
- Areas of the country with suitable agro-climatic conditions close to urban consumers exist with further suitable areas still available for development.
- Over Fifty years of breed improvement means a good genetic pool of improved stock exists as crosses in the country.
Financing Institutions like USAID/DAI, IFAD/RLEEP, EU/FIDP, Presidential Initiative on Dairy that are willing to support dairy value chain programmes in the country.


Farmers that were trained have skills and knowledge on management of animals including feeding and good livestock husbandry techniques

Farmers with limited amount of land can become dairy farmers by practicing Zero Grazing or Cut and Carry System.

**MGBs**

- Existence of MBGs with good dairy infrastructure like tanks, electricity, water, standby generator and accessible roads.
- Availability of dairy cows to sustain the MBGs activities.
- Most MBGs have a good and active farmer membership base

**Weaknesses**

**Producers**

- Low input system does not take full advantage of crossbred cows and pure breeds
- Long calving intervals, slow herd growth, low milk yields and low animal husbandry skills and knowledge
- Poor animal environment, lack of proper cleaning procedures for milk utensils, lack of vet support services that have contributed to mastitis leading to sourness of milk and wastage.
- Low productivity of dairy cows due to poor animal husbandry techniques.
- Lack of farmers knowledge on milk pricing
- No payment made for milk solids and delayed payment.
- Farmer inability to keep books and records of the farming activities.
- Unreliable quality of concentrate feed
- Lack of reliable AI service
- Lack of various trainings for farmers especially PoG farmers to manage their animals properly.
- Farmers are not expanding the size of their dairy businesses
- Farmers’ participation in processing and storage of milk negatively affects their growth.
- Wastage of milk due to sourness and non collection of milk by some processors

**MGBs**

- Poor rural road system making milk collection difficult in the wet season
- Limited rural electrification resulting in the use of expensive diesel engines which are prone to breakdowns to operate cooling plants
- Lack of funds to employ good managers, trained staff and their own Extension personnel
- Lack of well capacitated farmer governance structures to manage farmers’ resources, financial services and to promote business hub model at the MBGs.
Opportunities

Producers
- Possibility of more intensive management of their dairy business
- Turning their small low input low output businesses into larger high input with increased profits businesses.
- Farmers can avoid going into storage and processing of milk to reduce their liability and losses in their business.
- Building capacity of farmers as entrepreneurs and with business oriented mindset.
- Promotion of Pass on Gift Schemes.
- Procurement and supply of dairy heifers.

MBGs
- Chance to turn the MGBs and their farmer associations into one stop inputs and supplies centers for their farmer members (Business Hub Model)
- There is room to find separate individuals entrepreneurs to handle tasks of buying and storage of milk.
- Rural mini dairies can be managed by private actors to allow farmers to concentrate on production activities.
- MBGs can be reorganized to reverse the problem of milk vending so as to increase milk volumes in the formal market.

Threats

Producers
- If no proper action on mastitis is taken, then more cows will develop chronic mastitis that will lead to loss of many cows as source of milk supply.
- Smallholders need to begin to put their dairy farming activities on a more sound business basis by investing in the animals and begin to expand the number of cows.
- Other labor demanding farming activity can threaten the success of dairy especially in tobacco growing areas.
- The high cost and scarcity of feeds is a big threat to milk production.

MBGs
- If the volume of milk collected does not increase the MGBs will not be able to pay for the services required by farmers to carry out dairy farming more efficiently.
- MBGs may loose formal markets with processors in future if the volume of milk collected by each centre does not increase due to excessive vending and low milk productivity
- Leadership crisis in many MBGs has threatened the survival of these MBGs.
• Lack of accountability and transparence has eroded farmers' trust in their leadership.

6.0 MILK PROCESSING AND MARKETING

Majority of smallholder dairy farmers sell their milk to MBG centers where there are milk cooling tanks. Selling prices are fixed by processors. The current prevailing price is MK75 per liter of raw milk as decided by processors. However, farmers feel that MK100/liter would be reasonable for them to maintain their farming business. Currently, farmers who are vending their milk and selling their milk locally get MK150 to MK250 per liter. Sometimes depending on demand and supply, farmers sell their milk as low as MK60/liter also. When milk is delivered at the MBG, it undergoes alcohol test and density determination using lactometer. Any milk that fails to meet the specified standards is rejected. When processors come to collect the milk they also test it for bacterial load. If the quality of milk is poor they also reject. Until the processor collects the milk, farmers continue to own their milk at the MBG centre.

There are three different types of processors namely Commercial Processors (Lilongwe Dairy, DairiBoard, MDI, and Suncrest), Mini dairies which are privately owned (Katete Dairy Farm and Sable Farming) and Mini Dairies managed by smallholder farmers themselves (Mwera Mkaka- Ntchisi, MDFA- Mzuzu and Bvumbwe-Thyolo). The privately owned mini dairies keep their own animals to supply milk for processing. The commercial processors depend on smallholder farmers for milk supply. Lilongwe dairy is exceptional in that it has its own animals to supplement milk supply from smallholder farmers. The mini dairies by smallholder farmers get milk from their members.

Processors from the South are able to operate at between 60 to 70% of their processing capacity. Commercial processors in Central Region operate at 35 to 40% of their maximum capacity. One major factor for this under utilization of these factories is limited supply of milk of required quality. Processors from Lilongwe travel to Thyolo and Blantyre to collect milk for processing in Lilongwe because farmers in Central Region are unable to produce enough milk. Historically, dairy farmers in Malawi have had markets for all their raw milk except for the current issues of pricing. Dairy farming is a potential commercial activity for Central Region where for a long time tobacco farmers have suffered from unreliable tobacco markets.
From 2001 to 2011, processing of milk has steadily increased from 4,000,000kg to 18,000,000kgs per year.

**GROSS PROFIT ANALYSIS FOR FLUID MILK**

Figure 3 above, shows the average levels of Gross Profit Margins by different Dairy Value Chain entrepreneurs which this study established. Some of the working calculations on
these margins been have included in the Annexes. The bottom one is a smallholder farmer who on average is getting 57% gross profit based on actual analysis. Gross margins range for smallholder farmers was 42% to 75% Gross Profits. The Smallholder Mini Processor gets about 9% Gross Margin. The rural dairy mini processor is also involved in distribution which makes operations very costly especially on transport. The Retailer gets 32% while a vendor on raw milk get about 40%. The processor is getting 34% when business is good. The challenge with this is that most of the entrepreneurs are very small in size. For example farmer’s profit margin may look big but because their milk volume is very small they do not seem to get much money. While the commercial processor can get all the milk from as many farmers as possible he can make good money. From this analysis dairy commodity provide economic benefits to all actors. Although farmers complain of low prices, they still make good profit margins. The only challenge with the farmers is low milk volumes.

**Challenges Affecting Milk Processing**

General Issues affecting Processing companies include high cost of operation due to increases in costs of utilities such as electricity. High transport cost for milk collection has also gone up. The effect of foreign currency scarcity, devaluation and flotation of the Malawi Kwacha has also affected the processing companies. Given below are the specific issues that affect the Commercial processors.

- Expecting too much from farmers but without proper capacity building/training. Farmers are not well trained on animal health and care. This negatively affects milk production due to increased deaths of animals hence reduction of the number of animals which is already not enough.

- Farmers also do lack civic education to make them graduate from taking dairy farming as a commercial business rather than a small business for just meeting their daily needs.

- Lack of sensitization to the public on consumption of milk and milk products. Consumption of milk in Malawi is too low. Many people still take milk as luxury and do not take it as product that is good for their health

- Higher prices for dairy feed for the cows. Farmers fail to afford the feed and hence low milk yield.

- Lack of electricity in some Milk Bulking Group Centers. The cost of cooling milk with diesel is higher than that of electricity hence farmers get little money. The profit margin for farmers would increase if electricity is used.
Community Managed Mini Dairies

One characterisitcs of Smallholder farmers managed Mini Daries is the issue of lack of sustainability. Mwera Mkaka Dairy Processing Unit is struggling on gross margin. Their 12 Months Profit and Loss Account show that they made 9% Gross profit and this is not Net profit. Chances are very high that the processing plant made losses. In addition to low gross margin these mini dairies fail to pay their members for the milk supplied. For example Mwera Mkaka had not been paying its members for 3 months because there was no money to pay them. Mwera Mkaka had suspended processing at one time for some months due to complex problems including leadership crisis. The other problem is inability to access MBS Licensing due to failure to meet the MBS standards. Farmers have problems in pricing their milk in most cases their milk is far below the market price.

Bvumbwe Cooperative also had a Mini Dairy where pasteurised milk was being processed. The plant could not been sustained until it was closed down due to among other issues quality and food safety standards. Leadership was also reported to be a problem. MDFA in the North is under going a similar experience with threats that it may close down any time. During the time this survey was running the entire leadership of MDFA processing was reported to have resigned.

Milk Production and Marketing : Import and Exports for Malawi

![Figure 5: Milk Production, Imports and Exports for Malawi.](image-url)
Between 2001 to 2004 Malawi was importing more milk (ME) than its production. From 2005 to 2010 the country started producing more milk. Meaningful export started in 2010 until now where Malawi exports about 14,000,000kg of UHT milk yearly accounting for about 7% of the total processed milk. One key observation in the dairy industry is the issue of quality and food safety. Milk Quality and Food Safety Standard are supposed to be regulated and monitored by MBS, City Assemblies and DAHL. MILK Quality analysis was beyond the scope of this study due to time limitation and terms of reference. The team did not conduct a detailed study on issues surrounding manufacturing practices, total quality assurances, HACCP, etc. However, it was very clear that monitoring and regulation of milk standards needs improvement. Mini Dairies like Mwera Mkaka have been in milk processing for over 5 years without MBS certification due to shortfalls in meeting some of the environmental quality standards for their premises. Bvumbwe Processing plant had challenges in maintaining hygiene standards. The Research Team observed that some of the Processors could not confidently demonstrate their HACCP Procedures for their factories. MBG centres had no HACCP Procedures in Place. It also came very clear that milk tests are limited. Apart from Alcohol and Lactometer Tests, there was no single MBG that showed commitment to conducting important tests like Delvotest for Antibiotics and Wode Analysis for disinfectants. Lack of these tests is a human health threat. However, DairiBoard Malawi is certified with SAZ ISO 22000: 2005, an Internationally Recognized Food Safety and Quality Management Systems. Currently DairiBoard is exporting UHT milk to Zimbambwe and Zambia with potential to open business opportunities in Mozambique. In line with issues of Milk Quality and Safety for human consumption, is the issue of raw milk vending. 32% to 91% of the raw milk is being vended unpasteurized in urban centres and cities which from food safety point of view is a big threat to human life. It is a challenge to entrust milk handling to vendors with no licences and any background in milk handling. The pictures shown above is a man who buys milk from farmers around Mphingu in Lilongwe and sells it door by door in Lilongwe City.

7.0 CONSUMPTION OF MILK IN MALAWI
Annual per Capita milk production in Malawi has continued to be very low (FAO of the United Nation, 2005). Malawi has the least milk per capita consumption of 4.5litres/person/year in Africa against Malawi desired per capita of 25 liters (Livestock Policy Document); Africa’s per capita of 80litres and WHO recommended intake of 200litres per person per year.
The Per Capita for 2007 and 2010 (7.5 and 9.0) appears to be on the higher side. There is an acknowledge that the source of this data had errors for those two years. 2011 Per Capita Consumption was about 5.5kg per person per year. The average per Capita Consumption is now around 4.97kg. Milk consumption among dairy farming communities is 1 to 2 litres per day per family of 5 members. In a year a family of 5 members is likely to take 300 to 600 liters of milk. This mean a Per Capita Consumption of 60 to 120 liters per person for families with dairy cows. The One Cow per Family under the Presidential Initiative on dairy can be of great impact on milk consumption in Malawi if implemented.

**Strengths**

**Processors**
- Availability of processors with capacity to process all raw milk produced by farmers
- Development of rural based dairy processing plants.
- Domestic milk products are cheaper than imports
- Strong and active dairy processors association
- Number of processors creates competitive environment in most regions of the country
- At present demand for liquid milk especially UHT cannot be fulfilled
- Installation of UHT processing machinery enables processors to sell long life milk in direct competition with powdered milk in rural areas and small towns without electricity.

**Consumers**
• Preference for domestically produced milk products
• Increasing wealth creating demand for milk products
• Need for improved nutrition through milk consumption.

**Weaknesses**

**Processors**
• Limited volumes of milk to meet the required demand
• Economic environment is not conducive to business investment due to high bank borrowing interest rates, weakening of Malawi kwacha Currency and High cost of fuel and transportation of milk.
• Increased competition of locally produced milk products with imported ones.
• Low milk quality due to high bacteria count
• Poor cold chains and distribution systems
• Low quality standards set by Malawi Bureau of Standards
• Limited access by processors to financial services such as soft loans to improve on technology and operations of dairy factories

**Consumer**
• Willingness to purchase untreated raw milk if it is more convenient to buy
• Low milk Per capita Consumption in Malawi
• Prefer to buy alternative milk products in smaller pack size

**Opportunities**

**Processors**
• There is an opportunity for processors to increase manufacturing of milk and milk products as they are now operating below their capacities due to limited volumes of milk supply.
• More aggressive marketing, smaller pack sizes and the use of vendors to make door to door sales can increase the amount of milk sold and drunk in the country.
• Identifying sources of funds for small shop owners to purchase refrigerators will assist to increase market penetration
• Supporting farmers with new technologies on storage of milk, processing and marketing of milk
• By paying price premiums for low bacterial count and increased fat content high quality product can be processed.

**Threats**
• The biggest threat in dairy is lack of Malawi Dairy Board to regulate some of the dairy activities as provided for in the Milk and Milk Product Act.
• Farmers loss of confidence and trust in their processors due to milk price issues and delays in payment or non-payment.
8.0 STAKEHOLDERS PROFILES
Department of Animal Health and Livestock Development (DAHLD)

The DAHLD have been implementing the National Livestock Development Programme for over 10 years. The Department has concentrated on cross breeding, PoG programmes, AI service delivery and monitoring of the dairy Industry. The major impact by the department in dairy include:

- Initiative of dairy industry in Malawi
- Establishment of most of the MBGs
- Organization of farmers in dairy into associations
- Milk quality improvement
- Increased processing capacity for milk.
- Development of the Policy Document on Livestock Development
- Review of Milk and Milk Act.
- Establishment of Liquid Nitrogen in all the 3 regions

DAHLD reported that MK300 million has been allocated for the development of dairy in Malawi on yearly basis. The Department looks forward to the Presidential Initiative on dairy. MK900 million has been allocated to the Presidential Initiative on Livestock and Special Crops in 2013 Annual Budget. Under this Initiative there is Presidential commitment to achieve “One Cow per Family” in Malawi.

DAHLD plans for the future as follows:

- Implementation of Presidential Initiative
- Procurement of more dairy cows

Challenges Faced by the Department

- Lack of collaboration and consultations between the Department and dairy actors
- Lack of capacity and efficiency of some processor
- Poor dairy management skills on the part of farmers
- Lack of binding contracts between farmers and processors
- Poor relationship between some processors in the Southern Region.

The Department position on how to change things for the better in dairy is as below:

i. Encourage Rural Mini Dairies
ii. Encourage development of large Dairy Cooperatives
iii. Joint Planning on dairy by all dairy actors.
As a nation there is need to have clear understanding of our smallholder dairy industry. Mini dairies have been there before the likes of Mwera Mkaka, Bvumbwe and MDFA. Bvumbwe folded. Mwera Mkaka is on and off. The mini plant has not been paying its farmers for the past 3 months. At some point it had closed for months. MDFA according to this research is likely to shut down if no improvement are made. Rural Mini dairies are great ideas because they offer competition with big processors on marketing. However, the big question is who manages the mini dairies?. Farmers in the view of the consultants are being pushed into areas that require extra skill and consistent technological investment.

Malawi Milk Producers Association (MMPA)

MMPA is an umbrella Association of CREMPA, MDFA and SHMPA where basically all dairy farmers become members and pay membership fee.

MMPA priority activities or programmes in Malawi

- Increase milk production.[Nationally as well as production per cow at farm level.]
- Increase number of Dairy cows in the country.
- Increase improved feeding practices to boost production.
- Increase the use of AI to enhance genetic gain of the cow population
- Training of farmers in meaningful and practical dairy knowledge.
- Lobby government for enabling regulations to promote the use of milk and milk products at an affordable price to all Malawians across the country
- Promote dairy farming as an important tool to alleviate poverty

MMPA Projects

- 4 year program with Flanders International Cooperation Agency [ending in 2013]
- 3 year program with USAID under the INVC program [starting in 2013] in 5 districts in the Central Region

Programmes Supported by MMPA

- Empowering of the regional Dairy Associations through separation of powers and supply of direct services to farmers such as AI, Animal health products and concentrated feeds
- Cross Breeding activities to increase number of dairy cows.
- Improved Training to farmers with the creation of the Katete Practical Training Centre
- Creation of a small processing Facility in the Northern Region, owned by the farmers.
- Development of a reliable Data base for Dairy activities in the country.
Lobbying the government on levies on the importation of Milk powder and VAT on milk and dairy equipment.
Importing of much needed Dairy Equipment.

**MMPA Future Plans**

- Cross Breeding activities to increase availability of Dairy cows to farmers.
- Quality feed [silage] production to boost production and fertility of the Dairy herd.
- Increase quality control at Collection Centre levels.
- License Collection Centers for the sale of milk directly to the public to ensure availability of milk to a much wider public at an affordable price.

**MMPA Impact on Smallholder Dairy Development in Malawi**

- The intervention of MMPA in AI service delivery has gone from ‘non-existent” in 2009 to country wide availability for semen and liquid nitrogen to sustain AI breeding.
- The lobbying activities have accomplished a levy on importation to protect local production and the abolition of VAT on Milk at consumer level.
- The Dairy Farmers Associations have developed a high level of efficiency and credibility and are now a major force in policy development and service delivery in the Dairy Industry.
- The training of farmers in Dairy Husbandry has helped to improve the performance of the Dairy sub-sector.

**Challenges faced by MMPA**

- Sustainability of the programs.
- Lack of actual Government support, more than “lip service”
- Coordination of activities between players in the value chain.
- Steep rising Cost of Production of a litre of milk
- 3% tax on milk at MBG level
- Tax on imported bull semen, which is suffocating the effort to breeding cows in the country

**MMPA Priorities to Improve Performance of the Dairy Sub-sector in Malawi**

- Comprehensive coordination of Projects and Programs.
- Improvement of feeding Practices [creation of Feed[fodder] Banks at MBG level]
- Aggressive farmer training.
- Funding of new technologies to boost farmer support.
Dairy is one commodity in Malawi that has limited number of NGOs that get involved in its promotion. Heifer International has been contributing to the development of dairy in Malawi in partnership with other organizations like BOTHAR of Ireland through SSLLP. The biggest challenge with most NGOs including WVI is what people have described as “dumping” of livestock to farmers. In most cases animals are given without proper training and preparation. Quality of dairy animals that have been supplied to farmers tend to be questionable. Dairy actors through the recent Dairy Industry Development Platform Meeting held on 29th Jan 2013, recommended for Government Regulatory Responsibility on procurement and placement of dairy cows to farmers. Lack of coordination between NGOs themselves on one hand and with Government on the other, on dairy activities has been a big challenge in the sector.

**Small Scale Livestock and Livelihood Programme (SSLLP)**

SSLLP is a local Malawian NGO that has been working with livestock farmers over the past 15 years. The NGO has been partnering with many international and local organizations to support farmers with dairy cows, skills and knowledge in dairy, livestock extension services, development of Community Animal Health Programmes, AI Services, establishment of MBGs across the country and Mwera Mkaka Dairy Society Cooperative Processing Plant in Ntchisi. In terms of dairy development in the recent times SSLLP has remained the biggest contributor of efforts to the industry technically.

With financial support from Flemish Government of Belgium through Flanders International Cooperation Agency (FICA), SSLLP is continuing with dairy projects in Karonga, Ntchisi, Lilongwe and Dowa on provision of livestock extension services. SSLLP is a Technical Advisor to the Technology and Dissemination Forum under ASWAp. SSLLP continues to provide technical support as a local partner to Heifer International Malawi.

**Heifer International Malawi (HIM)**

HIM established its offices in Malawi about 4 years ago in 2008. Since then HIM has been implementing the Malawi Smallholder Dairy Development (MSDD) Project and Mchinji Livestock Diversification (MLiD) Project in Mchinji. BUA MBG is a brain child of HIM. HIM is CISANET board Chair in Malawi. HIM has been working on dairy advocacy to lobby for more government support through CISANET towards the development of dairy in the country. Heifer International through its Zambia Office has been supporting Malawians with livestock interventions through SSLLP for over 10 years. Heifer International has been working in 13
countries in Africa. Pass on Gift (PoG) is the trade mark of Heifer International and the concept was originally founded and developed by Heifer during the second World War in 1944. Many organizations have adopted this concept which has shown to be an effective way of ending hunger and poverty among the poor. Heifer Value Based Model for Sustainable Development is another area of emphasis by HIM in sustaining community livestock initiatives. Heifer International Malawi was the implementation partner to the “One cow per Family” under Presidential Initiative on Poverty and Hunger Reduction at the time of this study.

MASAF DAIRY INITIATIVE

There was limitation in data collection on the MASAF Country Wide Dairy initiative. However, on the ground, in all the districts that the research Team travelled to, there were remnants of MASAF promoted dairy projects. The current situation on these projects in the rural areas provided learning grounds and rich experience on the impact of lack of collaboration, consultation, joint planning and wrong approach to dairy community development. All that the team observed was that most of the MASAF dairy groups had abandoned the dairy activities. Most animals were reported to have died. Farmers never seemed to have realised their objectives of owning cows and improve their household incomes. The only visible development of this project in the villages were outstanding and imposing cow sheds without animals in them. This project was massive but with wrong group approach on livestock ownership. The project appeared to have no sustainability plans. Many dairy actors including field veterinary staff from DAHLD confirmed to have not been consulted and fully involved in the MASAF project design and implementation strategies.

SWOT ANALYSIS FOR STAKEHOLDERS

Strength
- Existence of government machinery on livestock development
- Availability of guiding documents like Livestock Policy Document, Livestock Development Master Plan and Strategic Plan
- There is technical expertise in both veterinary and livestock production areas
- A network of non state actors promoting dairy programmes that include Donors, NGOs, private sector and associations

Weaknesses
- Limited capacity in terms of human resources in most organizations including government
- Limited expertise among extension workers such that issues of entrepreneurship, marketing, record keeping are never promoted in the dairy farming communities.
- Limited funding opportunities especially for NGOs and associations on administration and human capital development
Most of the dairy projects have time limit such that when NGOs leave, they create extra pressure on government which is already constrained on human resource.

**Opportunities**
- There is high demand for dairy projects by communities
- There is room to improve the productivity of the dairy cows through intensification of farmer trainings
- The One Cow Per Family drive by the Presidential Initiative is another great opportunity to develop the industry.
- Collaboration among dairy actors can be improved to turn around the dairy industry.
- Many people can be offered short courses in dairy management through established institutions like Natural Resources College, Bunda College and private trainers.

**Threats**
- Lack of team spirit, lack of consultation and limited collaboration among dairy value chain actors threatens the growth of the industry.
- Most donors tend to have limited interest to invest in dairy programmes because of high capital requirement especially on procurement of dairy heifers.
- The regulatory framework on the part of Government has loose ends such that actors implement dairy programmes that suit their interests without much consultation with government.
10.0 GOVERNMENT POLICY ON LIVESTOCK AND ITS IMPACT ON DAIRY

The biggest Policy Shift in dairy industry occurred when Government privatized Malawi Dairy Industry. The recently reviewed Policy provides Guiding Principles which include:

- Demand driven livestock services delivery
- Pluralism of service delivery
- Privatization of some livestock services
- Cost recovery and cost sharing
- Participatory approach and community empowerment.

The guiding principles according to the Policy are to ensure that farming communities have an opportunity to prioritize and have commitment to their activities. The approach provide for a sense of ownership, accountability, transparency and sustainability.

This Policy has encouraged many players including NGOs, civil society, Private sector, Individuals, Consultants, other Ministries and Government Departments and various donors to freely take part in the development of the dairy Industry. The Policy has created an enabling environment for all dairy actors to contribute to the industry development. To a big extent the Policy has been successful in that it has seen more dairy processors entering the market, more dairy cows being imported into the country through well known NGOs like SSLLP and Heifer International and more milk being processed within the country.

The study found out that if you focus on Policy Guiding Principles, 95% of the farmers are practicing all the principles though without knowing that it comes from the Policy Document. One of the biggest challenges with the policy is lack of understanding of the Policy by the farmers and the field government workers. There has not been much sensitization on how the Policy would be implemented. This study discovered that in many areas there is shortage of Government Extension Veterinary Workers such that even if a farmer demands for a service it never happens. Demand goes with understanding of the problems and availability of services and products. Our farmers seem to have many gaps in dairy. The Policy appears to have left farmers in suspension without a foundation on how to move forward with the policy.

Beyond the Livestock Policies, Malawi has other Policy Documents which also affect the dairy industry. The 3% withholding tax on MBG sales, is one of those policies which should have been reviewed and scrapped off. It has badly affected the performance of the dairy at smallholder level.
Polices on Devalution and flotation of Malawi Kwacha in positive response to the donor conditionarites for aid have caused some negative impact in dairy. Processors and smallholder farmers are feeling this the hard way. The cost of transportation of milk and electricity for milk processing and storage have gone very high for processors to cope with. Cost of feed for dairy cows is also high for farmers to maintain the condition and productivity of their animals. At Policy level, there is need to consider how to bail out the industry actors from high cost of dairy operations.

At Livestock Policy level, the country faces some major constraints to livestock development that need to be addressed including:

- Unavailability of breeding stock
- Inadequate capacity to deliver various livestock services at all level.
- Inadequate input supply
- Limited regulatory services
- Inadequate coordination and networking in the livestock sub-sector

The Malawi Livestock Policy recognizes the following as opportunities for livestock development

- Presence of democratic government with commitment to poverty reduction
- New technology developments
- Integrated farming systems of crops and livestock
- High demand for livestock and livestock products
- Labor availability
- Malawi is free from major trade sensitive livestock diseases.
- Availability of grant and loan facilities
- Availability of livestock insurance

11.0 MILK AND MILK PRODUCTS ACT

Malawi is still using the 1972 Milk and Milk Products Act which in many respect is outdated and needs to be amended. The DAHLD is currently reviewing the Milk and Milk Products Act. The Act provides for the establishment of a Dairy Advisory Committee under Cap.67:05 Section 4- (1) and (2). The function of the Committees or Committees is to advise the Minister on the development of milk production, the premises used therefore, systems of distribution and the sale of milk and milk products. Section 5 (1) and (2) of the same Act of the same chapter also provides for the establishment when necessary, of a National Milk Marketing Board charged with formulation, development, co-ordination and administration of a national policy with regards to milk and milk
products, covering all aspects of milk production, manufacturing, processing, sale and distribution of milk and milk products, maximum and minimum prices, the importation and exportation, the standards and quality of milk and milk products.

Malawi does not have a Dairy Advisory Committee(s) and it has never established a National Milk Marketing Board. This is due to lack of political will for no any better reason but lack of commitment to the development of the industry. When one looks at the important roles and functions of the Committee and Board in dairy, one tends to wonder why is it taking Malawi too long to have one in place. There is need to have one of these two in place if dairy is to move forward.

**12.0 CRITICAL DAIRY VALUE CHAIN POINTS**

Following the undertaking of this study, critical dairy value chain points have been identified and summarized in the table below. The value chain points have been presented in order of priority where 1 shall mean the most important and 4 stands for the least. These points represent entry points to improve the dairy industry in Malawi. For example in milk production at smallholder level, the need for proper skills and knowledge to manage their animals is most critical. The critical points under number ones at smallholder level (skill and knowledge, milk storage and quality, AI services and governance) are central in milk production as business. 1 means a priority and the most critical intervention that is required. By addressing issues under column 1, it can partially solve the rest of the other challenges on columns 2 to 3 under some levels. 4 means less felt compared to 1, 2 and 3.

In line with these critical value chain points it is necessary to have full understanding of the cost implication if any of these activities is to be implemented

<table>
<thead>
<tr>
<th>Dairy Value Chain Activity</th>
<th>Estimated Cost (MK)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI service provision</td>
<td>2,500,000</td>
<td>AI full kit &amp; Motor cycle</td>
</tr>
<tr>
<td>Vet drugs provision</td>
<td>2,500,000</td>
<td>Drugs &amp; Motor cycle</td>
</tr>
<tr>
<td>Procurement of heifers</td>
<td>800,000</td>
<td>One imported In-calf heifer</td>
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<tr>
<td>Small Scale Feed making</td>
<td>5,500,000</td>
<td>Hammer mill, roaster, ingredients</td>
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<tr>
<td>Capacity building of farmers</td>
<td>400,000</td>
<td>Training about 40 farmers (10,000 per farmer)</td>
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<tr>
<td>Training on Food Safety</td>
<td>700,000</td>
<td>For one dairy factory</td>
</tr>
<tr>
<td>Management of milk storage</td>
<td>3,000,000</td>
<td>For initial purchases of milk &amp; transportation</td>
</tr>
<tr>
<td>Running of Mini dairies</td>
<td>7,000,000</td>
<td>Maintenance and running of factories</td>
</tr>
</tbody>
</table>

*Table 5: Estimated cost for implementation*
<table>
<thead>
<tr>
<th>DAIRY VALUE CHAIN LEVEL</th>
<th>DAIRY VALUE CHAIN CRITICAL AREAS</th>
</tr>
</thead>
</table>
| SMALLHOLDER FARMER       | 1. Skills and Knowledge  
                          | 2. Feeds & Feeding  
                          | 3. Number and productivity of cows.  
                          | 4. Animal Health supplies |
| Production               | 1. Milk Storage and Quality (MBS)  
                          | 2. Farmers involvement in processing  
                          | 3. Levies & 3% withholding tax  
                          | 4. Milk Pricing and Payment Delays |
| Breeding                 | 1. Unreliable AI services  
                          | 2. Farmers knowledge on heat detection  
                          | 3. Lack of quality bulls for breeding  
                          | 4. Slow pace of cross breeding program |
| Farmer Organization      | 1. Governance  
                          | 2. Accountability & Transparency  
                          | 3. Leadership crisis  
                          | 4. Literacy level |
| PROCESSORS               | 1. Volume of milk- & Low productivity  
                          | 2. Cost of production  
                          | 3. Technology and investment  
                          | 4. Credit facilities |
| MMPA                     | 1. Duty on Semen imports  
                          | 2. Support from government  
                          | 3. Coordination of dairy actors.  
                          | 4. Funding for Training of farmers |
| DAHLD                    | 1. Collaboration / Joint planning  
                          | 2. Development of Dairy Cooperatives  
                          | 3. Promotion of rural mini dairies  
                          | 4. Supply of dairy cows & AI |
| Milk Import & Export     | 1. Volume and Quality of Milk  
                          | 2. Food safety standards (HACCP)  
                          | 3. Devaluation and Foreign exchange currency  
                          |
| KEY                      | 1= most critical  
                          | 2= very critical  
                          | 3= moderately critical  
                          | 4= critical |

*Table 6: Dairy Value Chain Critical Points*
13. RECOMMENDATIONS

Looking at milk marketing, dairy processing, dairy infrastructure opportunities and the need for dairy commercialization, this study looks at Mchinji, Thyolo and Lilongwe as strategic dairy sites for impact at household and national level. However, broader recommendations for the study are as follows:

1. Dairy commercialization can be realised if the Industry strengthen collaboration and partnership among the dairy value chain actors by promoting public private partnerships through existing social structures like the Dairy Industry Development Platform of CISANET. All dairy actors such dairy processors, milk producers associations, Government dairy programmes, dairy promoting organizations including NGOs and any other dairy private actors need to actively take part in the dairy commercialization processes.

2. Promote participation of private individuals or companies from private sector to run the mini dairies of Bvumbwe, MDFA and Mwera Mkaka in Thyolo, Mzuzu and Ntchisi respectively which are currently managed by farmers. Post harvest losses and management of storage of milk is an area that Malawian smallholder farmers have loose grip over due to their limited capacities to sustain such high level of business skill requirement and technological advancement. Management of Milk Cooling Tank and Storage of milk should be privatised to individuals to reduce farmers challenges and liabilities at the Collection Centre through milk losses due to sourness, non collection of milk and power problems. This process should be in consultation with farmers, District Assemblies, processors and promoting Organizations in the specific sites. It will be a good idea to learn from grain commodity warehouse receipting system which reduces post harvest losses by farmers through public private partnership in managing grain banks.

3. There is need to encourage Dairy Business Hub Models at MBGs. The Dairy Business Hub Model is well recognized in Malawi but not fully utilized. Farmers need feeds, vet supplies, banking services (credit and saving facilities), dairy extension and AI services through their MBG Centres. To sustain the dairy business hub model there is need for farmer attitude change to dairy commercialization. The business hub model can be sustained if there is high efficiency at milk production, milk storage and milk marketing. The present scenario is that farmers fail to honor bank loans, sustain buying of dairy feeds and fail to save money for inputs and others despite having enough animals at MBG level. One possible reason why the dairy business hub model appears not to be very successful is that some actors in the dairy value chain are not effectively and commercially contributing to success of the model. Adding few more actors at milk storage level or milk transportation in good faith and to the benefit of farmers and the actors is an effective way to make the hub model sustainable. There is need for effective engagement between actors including processors and farmers on pricing and marketing issues.
4. There is need to support the existing service providers or identify new actors with the prerequisite technical capacities to fill the gaps in Dairy Management and Technical skills / knowledge of farmers, AI Services, Veterinary Supplies, Feed/Feeding services, Farmer Group Organization (leadership, group dynamics and value Based model for sustainable development trainings), Book Keeping and Record Keeping Training.

5. Malawi needs to institutionalize both National and International Food Safe Quality Standards such as the Safe Quality Food (SQF) Code. SQF is a process and product certification standard. It is a Hazard Analysis Critical Control Points (HACCP)-based food safety and quality management system. The SQF Code is intended to support industry or company branded products and offers benefits to suppliers and their customers. Products produced and manufactured under the SQF Code certification retain a high degree of acceptance in global markets. This is where Malawi would realize its Export Dream. To achieve this, there is need to build the capacity of all processing plants (personnel) to practice HACCP, GMP, TQM and QA. The success of Dairiboard to have SAZ ISO 22000:2005 International food safety and quality management certification is the right direction for the industry.

6. There is need to support Large Processors like MDI and other dairy supporting organizations like NGOs for purposes of strengthening partnership between them and farmers. Processors play a critical role in supporting active poor in rural areas through dairy farming. The collapsing of processors can spell doom for our farmers but not necessarily consumers. This is because if farmers fail to survive there will be no volumes of milk to sustain production. This will encourage importation of milk powders and other milk products to feed Malawi. MDI at the time of study was having challenges in sustaining its milk collection, had difficulties in paying famers and was looking for funding opportunities in form of soft loans or grants to improve some technologies. In addition, the other large Processors had challenges with dairy infrastructure like electricity and cost of transportation. NGOs like Heifer International, Land O Lakes and SSLPP are specialized in dairy development in which case supporting them would directly benefit farmers.

7. Supply of pure dairy in calf heifers is another opportunity for investment to increase the numbers of animals in places like Lumbadzi and Blantyre City MBGs. An injection of 40 heifers per years into the country would make a large impact on milk volumes. Quality heifers are normally imported from South Africa at a cost of about US$2,300 each CIF Lilongwe from RSA. The view of the consultant is that it would be advisable to concentrate on the improvement of the dairy value chains within the existing MBGs unlike opening of new sites.
## 14. ANNEXES

<table>
<thead>
<tr>
<th>Farmer’s Name</th>
<th>Lyton Nyasulu</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBG Name</td>
<td>Chikwina</td>
</tr>
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</table>

<table>
<thead>
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<th>Details</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>TOTAL</th>
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<td>54,600</td>
<td>47,952</td>
<td>45,600</td>
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<td>350</td>
<td>350</td>
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<td>0</td>
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<td>36,102</td>
<td>33,750</td>
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Table 7: 6- Months Loss and Profit Statement
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<th>Luwiza Mzungu</th>
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<td><strong>MBG</strong></td>
<td><strong>BUA</strong></td>
</tr>
<tr>
<td><strong>Profit and Loss Account for Aug 2012 - Jan Mid 2013</strong></td>
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<tr>
<td><strong>Details</strong></td>
<td><strong>Aug</strong></td>
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<td>Home-made feed</td>
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<td>Treatment</td>
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<td>Bicycle repair</td>
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<td>Green Grass</td>
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<td>10% MBG Levies</td>
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<td><strong>Total Deductions</strong></td>
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<td><strong>Take Home Cash</strong></td>
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<tr>
<td>% Gross Profit</td>
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*Table 8: Gross Margin Analysis for a Smallholder Farmer*
## Smallholder Managed Mini Dairies

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<th>Feb</th>
<th>Mar</th>
<th>April</th>
<th>May</th>
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<th>July</th>
<th>AUG</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
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<td></td>
<td></td>
<td></td>
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<td>Allowances</td>
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<td>4,500</td>
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<td>7,000</td>
<td>9,300</td>
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<td>22,500</td>
<td>7,000</td>
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<td>22,770</td>
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<td>14,392</td>
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<td><strong>Gross Margin %</strong></td>
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<td>-</td>
<td>8</td>
<td>12</td>
<td>4</td>
<td>28</td>
<td>22</td>
<td>38</td>
<td>-</td>
<td>11</td>
<td>23</td>
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Table 9: Mwera Mkaka Profit and Loss Statement
Figure 10: challenges at Blantyre City MBG

Figure 11: Sources of Income
Figure 7: Picture Taken at Dairy Value Chain Validation Workshop