



# Malawi: building a sustainable dairy farming sector



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# Some information about Malawi



- Population **15.9 million** (2012)
- Low income developing country with **GNI per capita US\$320** (2012)
- **Agriculture** contributes with **28% of GDP** (services contribute 33%)
- Inflation was **21.3%** (2012)
- It is ranked **170 out of 186** (UN HDI of 2012)
- **Poverty** declined by less than 2% since 2004/05, to **50.7%** (2011) (rural poverty increased from 55.9% to 56.6%)
- On hunger, population at risk of **severe food insecurity is 1.4 million** (**9.5% of the total population**)



## Some information about the dairy sector in Malawi

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- The Malawian dairy sector represents a **small proportion** of the country's agricultural sector and livestock sub-sector.
- **Location.** Most dairy (smallholder) farmers are situated around the three large cities in Malawi: **Blantyre** (the Southern Region), **Lilongwe** (Central Region) and **Mzuzu** (the Northern Region).
- **Number of farmers.** There are currently around **9,584** dairy farmers in 3 producing regions (**61%** of them in the **South**).
- **Number of dairy cows.** Several estimations, approximately **36 thousand** dairy cattle.
- **Milk production.** The 3 main milk producing associations in Malawi in 2012, smallholders produce around **13.5 million** litres of milk (**90% in the Southern region**).
- To a **smallholder farmer**, milk is **economically important** and provides dietary protein to both family and local community.

# SRUC work in Malawi's dairy sector

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The SRUC work on the dairy sector in Malawi has been based on 3 projects:

1. Smallholder Dairying in Malawi: A sustainable future (2008-2011)
2. Identifying Pathways to Support Climate-Compatible Agricultural Development through NAMAs (Nationally Appropriate Mitigation Actions) (2011-Jan 2014)
3. Assessing the Contribution of the Dairy Sector to Economic Growth and Food Security in Malawi (June 2012 – May 2015)



# Smallholder Dairying in Malawi: A sustainable future

**Scotland's Rural College(SRUC)**

**Department of Animal Science, Bunda College of Agriculture,  
University of Malawi, Malawi**

**Mzuzu University**

**Department of Animal Health and Livestock Development,  
Ministry of Agriculture**

**International Development Centre, University of Edinburgh.**

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## Background and aim of the project

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- Malawian agriculture faces many challenges: infrastructure, milk quality, herd health and genetics, human health, availability of information.
- This **capacity building** project brings together the SRUC Dairy Centre, Bunda College, Mzuzu University and other organisations within Malawi.
- It comprised a range of projects **aiming to maximize smallholder dairying potential by focusing on knowledge exchange to meet these challenges.**
- The project was delivered through **four themes:**
  - forage and feed resource management,
  - animal fertility and reproduction,
  - animal recording and breeding,
  - milk keeping quality.

# The project approach

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- The UK institutions worked in **partnership with colleagues in Malawi** to ensure that the work remained relevant and in touch with requirements of local agriculture.

## **Activities included:**

- An **intensive training of trainers** (experience exchange) course for Malawian and Scotland based project members.
- **Knowledge transfer clinics** on the 4 themes with stakeholders (farmers, extension workers, artificial insemination technicians) in Malawi.
- **Developing a system for capturing milk yield / milk sales** from the farms every time they bring milk to the bulking group (collection centre) to generate a **visual decision-support system for farmers**.



- **Monitoring milk quality** by taking samples of milk and analysing for indicators of quality.
- **Identifying volunteer farmers** that would be used as demonstration units for farmer-to-farmer peer knowledge transfer.

## **Outputs from the project**

- Capacity building through formal training in dairy production scientists at MSc level.
- Training of farmers in the four project themes.
- Training of farmers as artificial insemination technicians
- 8,640 man-training days (16% participants were female).
- 3 Malawian MSc students trained (1 female)



# Project

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- Staff exchange and training on artificial insemination.
- Veterinary equipment was bought for 12 milk bulking groups.
- Organisation of a workshop on National Animal Recording.



# Identifying Pathways to Support Climate-Compatible Agricultural Development through NAMAs (Nationally Appropriate Mitigation Actions)

Prof. Dominic Moran

Lead Investigator

Irina Arakelyan

PhD Student

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## Background and aims

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- More than 85% of population in Malawi depend on agriculture for their livelihoods
- 95% of Malawi's contribution to climate change is attributed to agriculture, forestry and other land use
- Mitigating (i.e. reducing) agricultural emissions can serve as a vehicle for climate compatible development in the country

### **Main Aims**

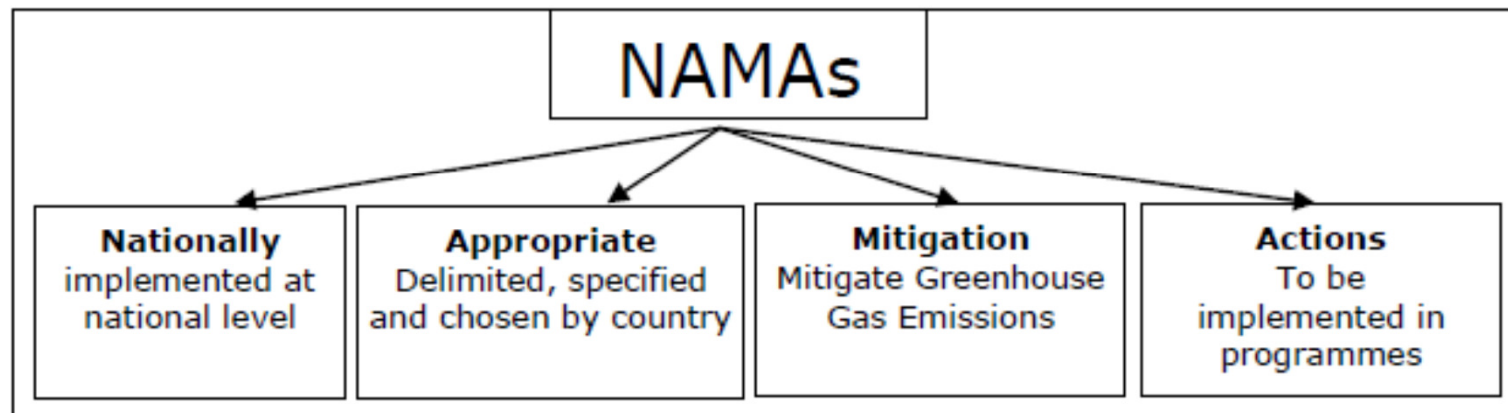
- To demonstrate how on farm and supply chain interventions can deliver production and climate objectives
- To identify climate compatible practices and their synergies and trade-offs with other policy goals
- To investigate how international climate funding (NAMAs) might help to do this
- To develop lessons that can be generalised to other developing countries

# NAMAs as a financing mechanism for mitigating climate change



- First introduced in 2007 at the COP13 in Bali
- Promising instrument for promoting climate change abatement policies and mitigation action in developing countries
- NAMAs vs NACSAAs
- Main goal is to achieve food security, sustainable agricultural development and adaptation to climate change, with decreased emissions as a co-benefit.

## Box 1: What are NAMAs



## Focus on dairy systems in Malawi – Key facts



- One of the poorest countries in the world
- Large number of smallholders
- Lack of farmer knowledge and training
- Poor farm practices
- Erosion of extension services
- Lack of investment
- Heavy reliance on imported milk powder
- Weak infrastructure
- Institutional blockages
- Second highest selling price of milk in Africa

# Dairy baseline survey

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- Dairy Baseline Survey – 460 farmers in 3 main milk producing regions
- Main aim - to produce a list of mitigation and adaptation practices that can inform national policies and the development of dairy NAMAs

## Opportunities for NAMAs identified in:

- Grazing land management and Pasture improvement
- Feeding practices
- Manure management incl. biogas production
- Agroforestry
- But supply chains also matter

# Conclusions

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- There are opportunities for synergies among food production, adaptation and mitigation within the dairy sector in Malawi.
- A number of adaptation and mitigation practices could be applied focussing directly on animal productivity, feed and manure management.
- Co-benefits for efficiency in GHG emissions
- Additional co-benefits, such as higher incomes and improving the livelihoods and food security of smallholder dairy farmers
- The most cost-effective strategies can be developed further to become Nationally Appropriate Mitigation Actions.

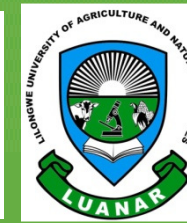


# Acknowledgements

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- This research is funded by the Climate and Development Knowledge Network - <http://cdkn.org> The Climate and Development Knowledge Network supports decision-makers in designing and delivering climate compatible development.
- Dominic Moran acknowledges support of the Scottish Government Rural and Environmental Science and Analytical Services division through ClimatexChange (<http://www.climatexchange.org.uk/>) and AnimalChange, financially supported from the European Community's Seventh Framework Programme (FP7/ 2007–2013) under the grant agreement number 266018.



# Assessing the Contribution of the Dairy Sector to Economic Growth and Food Security in Malawi

Scotland's Rural College (SRUC), UK

Lilongwe University of Agriculture and Natural Resources, Bunda Campus, Malawi

The African Institute of Corporate Citizenship (AICC), Lilongwe, Malawi

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## Logic behind the project

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- It is multidisciplinary (economists and dairy scientists) and **SRUC** partners in this work with **Bunda College of Agriculture in Malawi** and the **African Institute of Corporate Citizenship (AICC)**, Malawi office.
- The logic of the project is based on the following facts (according to the literature):
  1. A processing sector of four major firms using only a **limited part of their production capacity**;
  2. Part of the milk domestically transformed into processed products used to be made from **imported reconstituted powder milk**;

# Logic behind the project

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3. The **processing sector makes profits, despite its high costs**, by targeting the **affluent part of the urban population**;
4. A high percentage of the **milk** sent to the processing companies is **rejected due to quality** (estimated at 17%);
5. Important **sales of unpasteurised milk** through the so-called “**informal market**” to the rural population and less affluent urban segments;
6. Malawi has the **lowest consumption of milk** per capita in Africa (estimated at 4.7 kg/capita/year).
7. Donors (e.g., USAID, JICA, FICA) have been contributing to the development of the sector for several years without impressive results.

# Aim of the project

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- At the highest level the project aims to **evaluate two alternatives of development for the sector** (both present in the sector and supported by different groups):
  - To strengthen the formal dairy supply chain;
  - To foster micro-processing at the level of the milk bulking groups and selling directly to consumers.
- An additional strategy (currently being lobbied by some groups) is **to sell raw milk directly to consumers**.
- In the current context, these **strategies compete with each other**, and which one of them is preferred may actually depend on a number of factors, e.g., structure market, efficiency of each stage of the supply chain.

## Aim of the project

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- The aim of the project is to provide an **assessment of the operation of the entire dairy supply chain** to identify factors hampering the sector's contribution to economic growth and food security.
- Each stage of the supply chain has particular questions. Some of them are:
  - How efficient is the production of milk in Malawi and what factors affect its expansion?
  - What factors affect the marketing of milk?
  - Do processors have market power on the buyer and selling side?
  - What is the role of retailers?

# Methodologies and Progress

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- The methodology of project involves several stages, some of which are:
  - Review of the **operation of each of the chain stages**;
  - **Integration of results** into a multimarket model to simulate the impact of different policy scenarios on food security indicators and sector growth;
  - **Propose solutions** based on the quantitative and qualitative evidence and on the analysis.
- Some of the work to date includes:
  - Survey of 460 dairy producers;
  - Semi-structured interviews with 25 milk bulking groups;



# Methodologies and Progress

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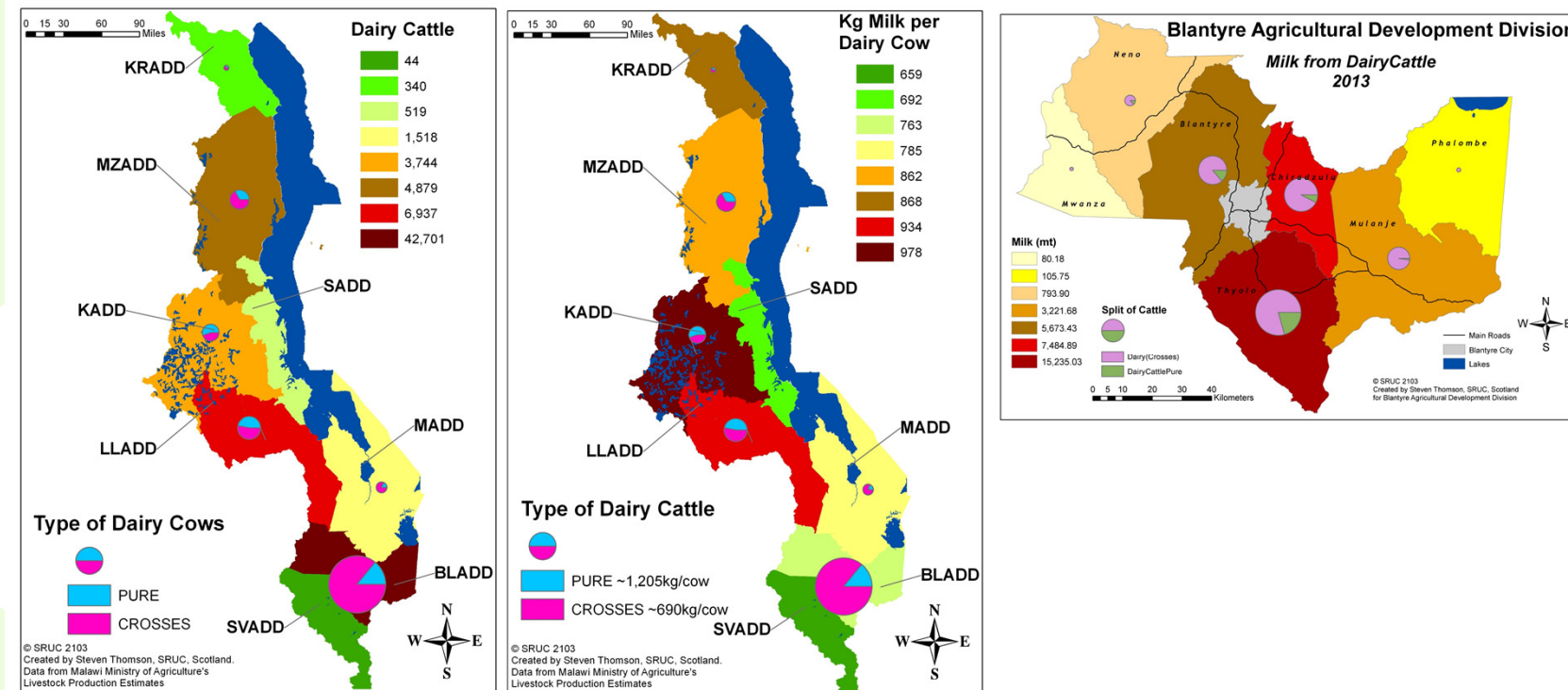


- Interviews with most of the processors and other stakeholders (including donors);
- Interviews with consumers;
- Survey to retail shelves (retail audit to collect retail prices);
- Estimation of a demand system using the latest LSMS for Malawi 2010-11.



## **Some Interesting Initial Findings**

# Production – Herd features and distribution of yields



**Blantyre has a higher proportion of crossbred cattle in comparison with Lilongwe. Due to this its average milk yield is lower than in Lilongwe. It reflects Aid programme investments within the central region.**

## Some milk bulking groups issues

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- **A lack of cows was seen as an issue that restricted membership to MBGs.** The Pass-on-Programme is restricted by the speed at which heifer calves are born from new members' cows.
- There is a common **demand for more Holstein cows** despite acknowledgement of additional associated feed and veterinary costs.
- Many **MBGs would like government involvement** in setting 'fair' **milk price.**
- **Lack of market return was often cited as a problem** and many MBGs have **ambitions to process and retail their own milk.** However, little **research into the feasibility** or looked at Bvumbwe cooperative experience.

# Procurement of milk by processors



	Dairibord Malawi Ltd.	Suncrest Creameries	Sable Farming Company	Lilongwe Dairies Ltd.			MDI	Total
				South	Central	Total		
<b>Thousand litres</b>								
2009	4,153	1,829	–	4,734	841	5,576	417	11,973
2010	4,660	2,045	312	6,817	805	7,622	598	15,237
2011	5,987	2,121	466	7,260	1,288	8,548	416	17,538
2012	5,527	2,143	286	8,608	1,179	9,787	287	18,029
<b>Shares (%)</b>								
2009	34.7	15.3	–	39.5	7.0	46.6	3.5	100.0
2010	30.6	13.4	2.0	44.7	5.3	50.0	3.9	100.0
2011	34.1	12.1	2.7	41.4	7.3	48.7	2.4	100.0
2012	30.7	11.9	1.6	47.7	6.5	54.3	1.6	100.0

Source: Based on data provided Brian Lewis (SHMPA) and Jonathan Kaphela (CREMPA).

**High concentration of buyers. Three processors represent about 96% of the collection in the central and southern areas and two of them about 85%.**

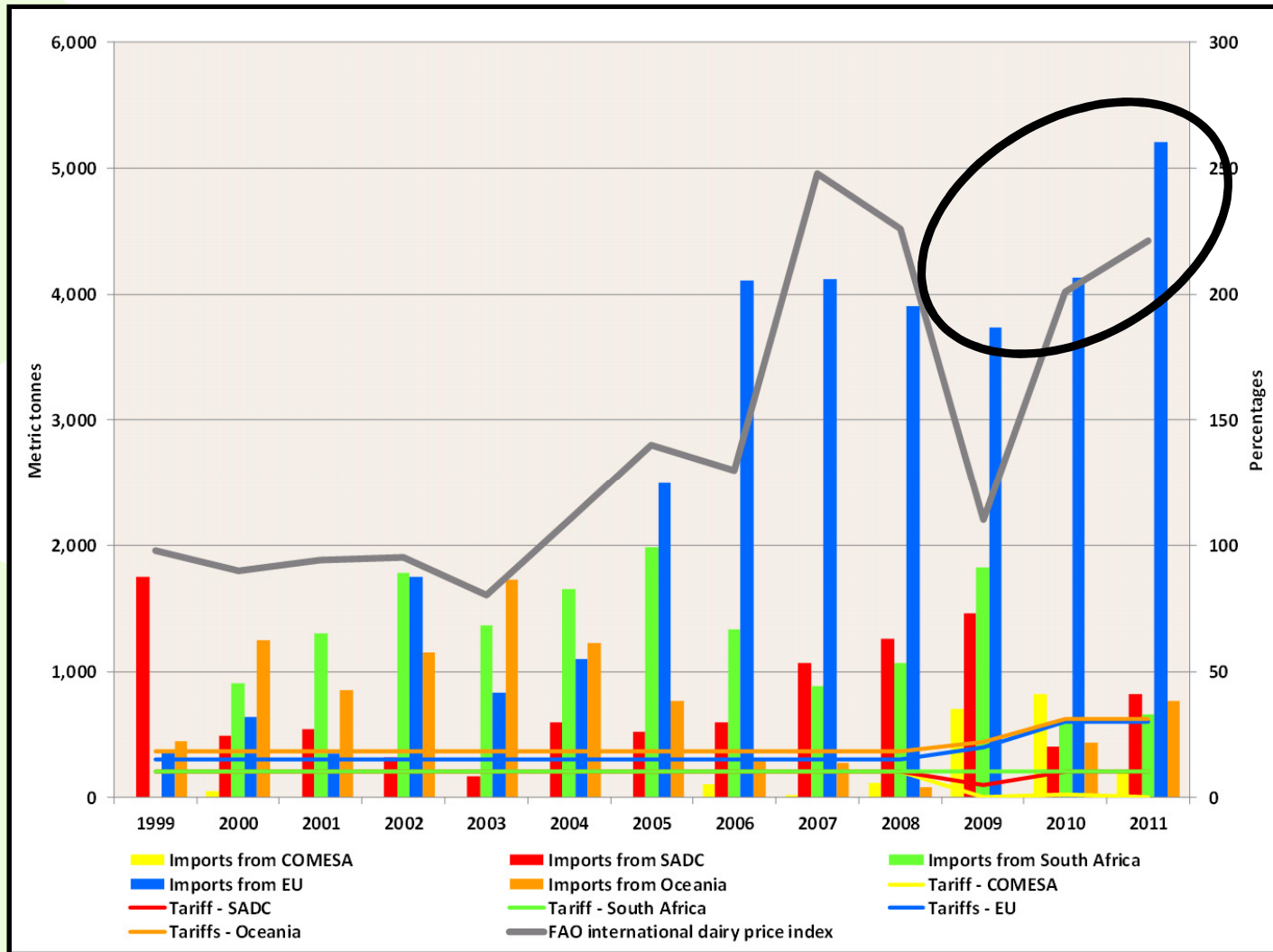
# Wholesale, recommended, retail prices and the computed margins



	Wholesale price (MKW)	Recommended sale price (MKW)	Retail price (MKW)	Recommended margin (%) - A	Retail margin (%) - B	Difference (B-A)
<b>Pasteurised milk - 250ml</b>						
Dairiboard Malawi	83	95	149	14.5	79.5	65.1
Suncrest Creameries	63	75	176	19.0	179.4	160.3
<b>Pasteurised milk - 500ml</b>						
Dairiboard Malawi	160	180	195	12.5	21.9	9.4
Suncrest Creameries	120	140	185	16.7	54.2	37.5
Sable Farming	145	165	172	13.8	18.3	4.5
<b>Chambiko - 250ml</b>						
Dairiboard Malawi	130	150	173	15.4	33.1	17.7
Suncrest Creameries	100	120	148	20.0	47.5	27.5
Sable Farming	134	155	153	15.7	14.4	-1.2
<b>Chambiko - 500ml</b>						
Dairiboard Malawi	240	276	277	15.0	15.4	0.4
Suncrest Creameries	190	230	278	21.1	46.3	25.3
Sable Farming	210	255	240	21.4	14.3	-7.1
<b>Yogurt - 250ml</b>						
Dairiboard Malawi	200	233	285	16.5	42.5	26.0
Suncrest Creameries	148	180	220	21.6	48.6	27.0

**Dispersion of retail margins. 250 ml of pasteurised milk shows the highest margin. This is a product demanded by low income consumers.**

# Milk powder imports and tariffs



**Despite the increase in tariffs and international dairy price since 2010, Malawi imports of dairy products, and especially milk powder are still strong.**

Source: UN COMTRADE database





**Many thanks for your attention !**

