



# Roundtable Workshop on Dairy Industry Sustainability through Adding Value to Processing Sidestreams

5th February 2024, Pridelnn Azure, Nairobi

***How can adding value to sidestreams such as whey be integrated in the Kenyan dairy industry to enhance business opportunities while lowering environmental footprint?***



# A Circular Bioeconomy for the Kenyan Dairy Sector VALORISE

A collaborative research project  
2022-2025

Supported by the Ministry of Foreign Affairs of Denmark

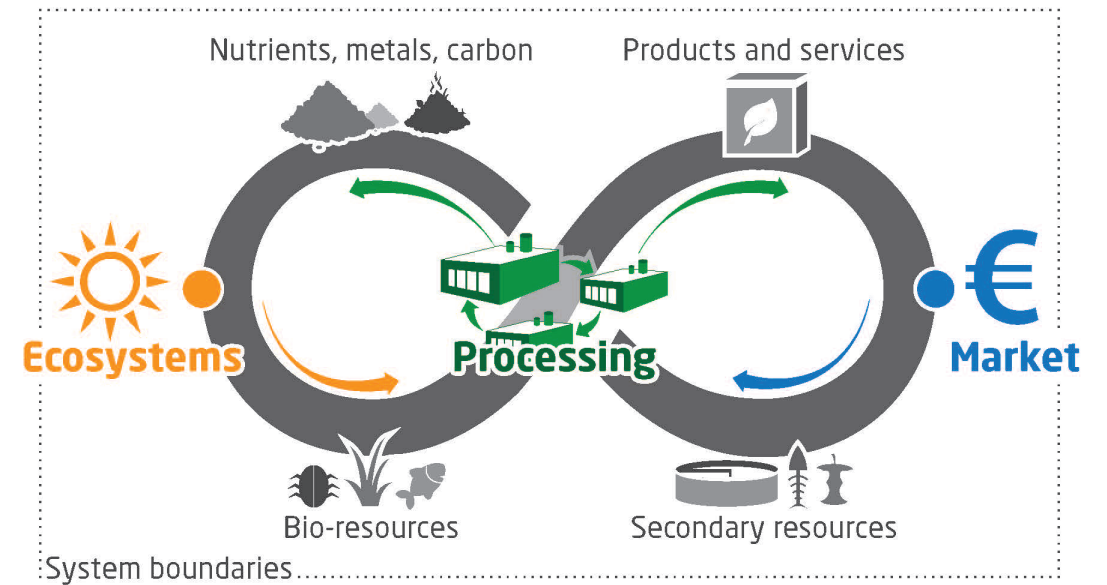


# Circular bioeconomy in the food processing industry

Food-processing accounts for **39% of total materials lost** in the food sector.

How do we ensure **sustainable and efficient food systems** that:

- Optimize circular use of scarce resources?
- Reduce food loss and waste?
- Reduce GHG emissions?



Focus on circular bioeconomy approaches that **convert waste and sidestreams** as a **bio-feedstock** into value added products such as **food, feed, fibres and industrial raw materials**.

# Toward a circular bioeconomy in the Kenyan dairy sector

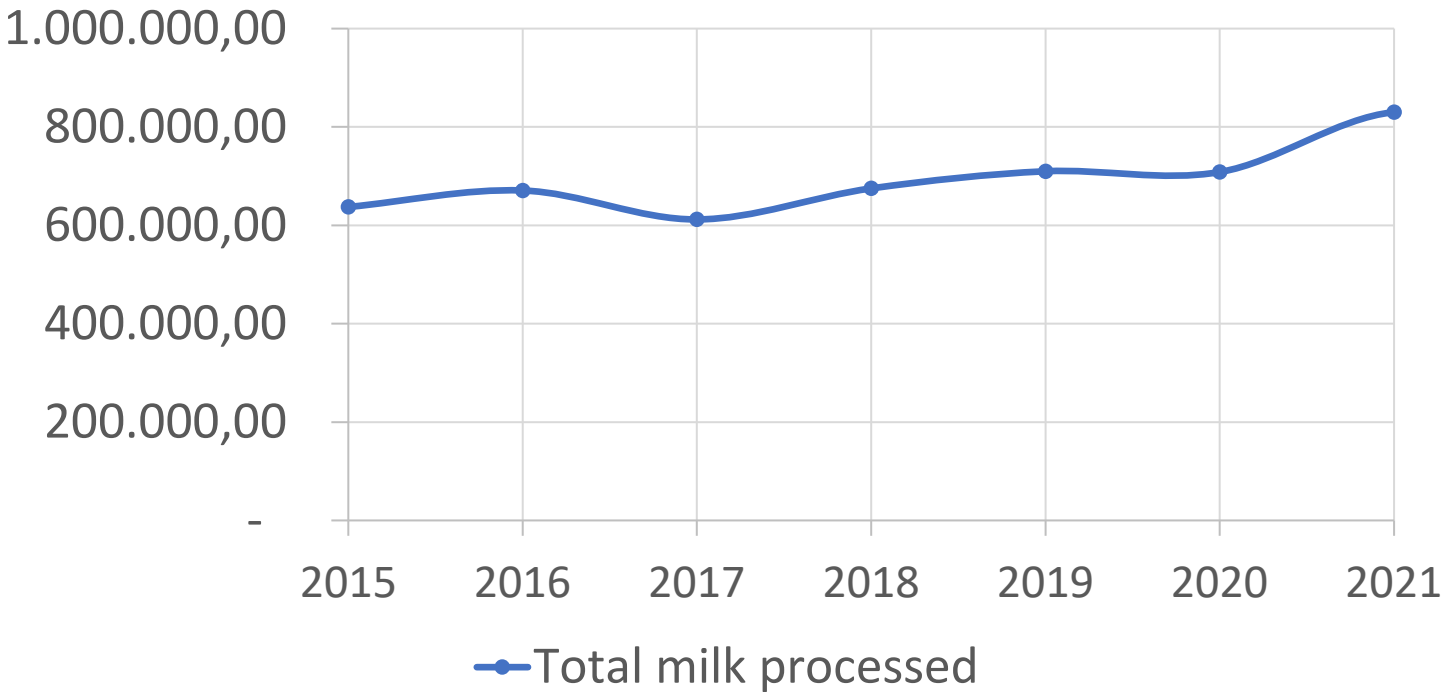
- Dairy sector contributes 14% of agricultural GDP and 4% of national GDP
- Total milk production was +6 billion litres in 2021
- 20% of raw milk is processed
- Consumption of dairy products expected to double by 2030.
- Dairy processing firms are key value-chain actors and leverage points for developing a circular bioeconomy in Kenya



# Trends in product processing

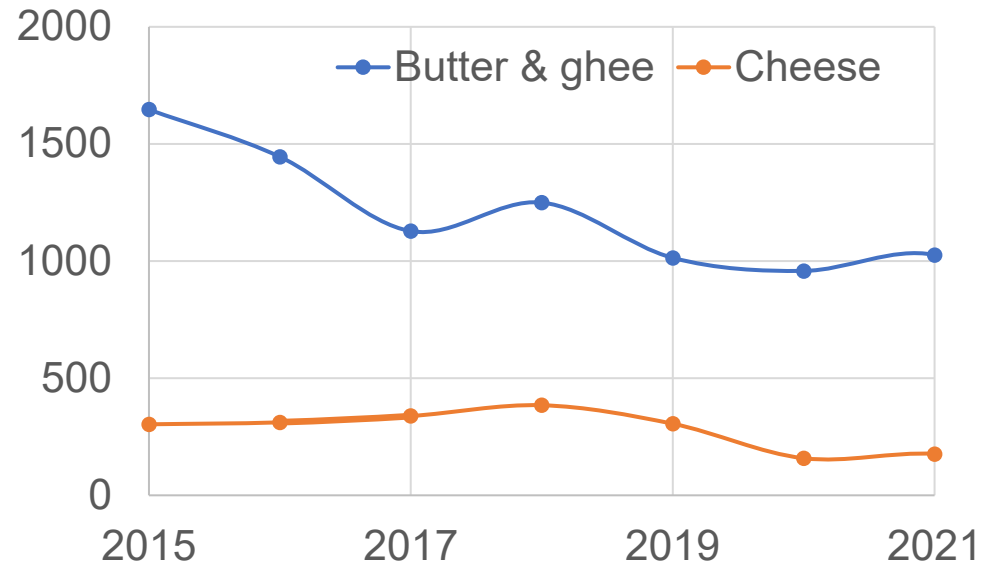
## Milk intake for processors (formal)

Trends in total milk processed (tonnes) by processors



## Volume of butter, ghee and cheese processed

Tonnes of butter and ghee, cheese production



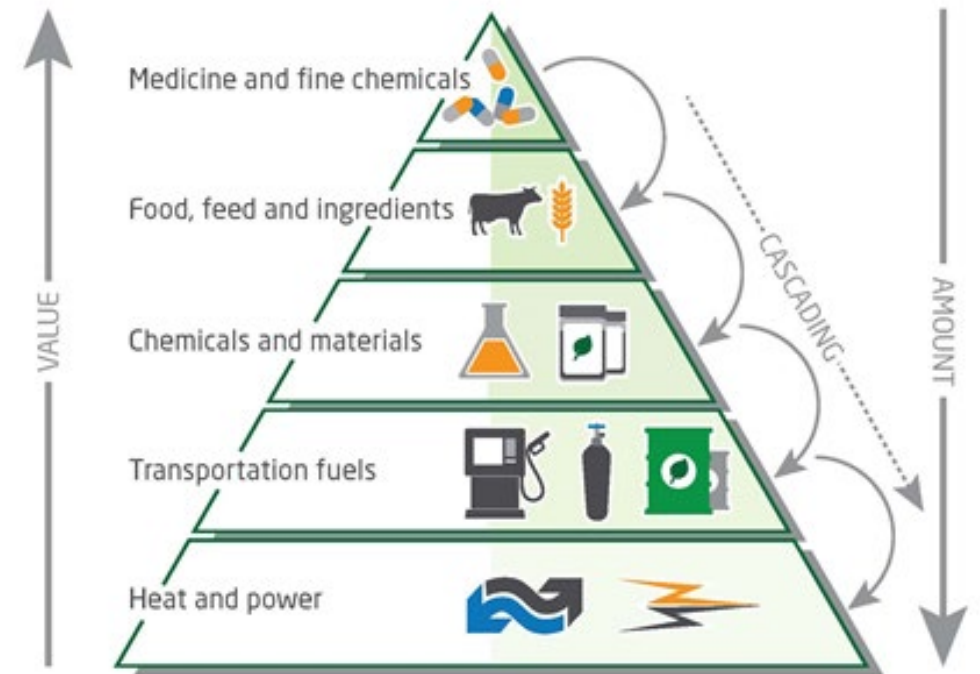
Source : Kenya Economic Surveys, KNBS: 2015 to 2022)

# Project objectives

Produce an integrated and comprehensive **understanding** of circular bioeconomy potential and dynamics in Kenya with a focus on milk processing.

Create bioeconomic knowledge on which Kenyan dairy-industry stakeholders can **act** in applying biocircular principles to facilitate sustainable growth pathways.

Increase **research capacity** in Kenya, including training of researchers with the skills to advance a research and innovation agenda in the circular bioeconomy.



# Valorisation pathways for sidestreams

## Prevention

- **Reducing biomass (milk) waste** - reducing the amount of milk that is discarded or lost due to inefficient transport and storage

## Reuse/cycle - feed

- **Processing spoilt milk, whey etc into animal feed** for dairy cows/calves and for pigs and chickens, which utilise proteins better than cattle

## Reuse/cycle - food

- **Simple processing** of whey – for **whey-based drinks** butter flavour, sweet sugars, fermented dairy products, etc.
- **Advanced processing** of whey into **food ingredients** using advanced filtering and separation technologies (e.g. separation of proteins from lactose) and complying with high hygienic standards.



# Research and innovation activities

Map **actors, activities and institutions** in the **dairy value chain**

Analyse the **flows, volumes and quality of dairy sidestreams** and estimate the volumes available for circular utilisation

Identify **technical solutions and products** that can match the needs of a dairy CBE

Analyse the **incentives and capabilities**, the **policies** and the **business models** that enable dairy firms to innovate and apply biocircular principles

Explore **future scenarios** for a dairy bioeconomy development through **stakeholder engagement**







# Workshop objectives

- Understand the status of processing in the dairy sector
- Present emerging findings from the VALORISE project
- Explore and envision with the roundtable participants the future of the dairy sector that considers adding value to sidestreams such as whey
- Formulate optimal pathways for integrating sidestream valorisation in the industry.

# Agenda

<b>Activity</b>	<b>Focus</b>	<b>Time</b>	<b>Responsible</b>
Arrival and registration of participants	Registration and welcome	0830 – 0900	Erica Atieno Luseka Mwanzi
<b>Opening remarks</b>	Introduction to VALORISE Introduction to workshop	0900 – 0915	Simon Bolwig Catherine Kilelu
<b>Session I: Setting the scene for envisioning sustainability</b>			<b>Chair: Catherine</b>
Status and outlook of the Kenyan dairy sector	Presentation by KDB	0915 – 0930	Kenya Dairy Board
Climate change 2020-50 in East Africa and implications for the dairy sector	Climate change in East Africa and implications for the dairy sector	0930 – 0945	Andreas Kamp Phyllis Wanjugu
Q & A to the panel		0945 – 1000	KDB, Andreas, Phyllis
Insights from the VALORISE project	Findings from the survey of dairy processors. Technologies and products for valorization of whey.	0945 – 1030	Bockline Bebe  Charlotte Sørensen Salma Molly
Q & A to the Panel		1030 – 1045	Bebe, Charl., Salma
<b>Coffee &amp; snacks</b>		1045 – 1100	Erica Atieno

# Agenda

<b>Activity</b>	<b>Focus</b>	<b>Time</b>	<b>Responsible</b>
<b>Session II: Envisioning sustainability through circularity</b>			<b>Chair: Joel</b>
Introduction to the SEEDS approach to scenario development	Acquaint participants with the seeds approach in preparation for the next session	1100 – 1115	Joel Onyango
Stakeholders and experts co-create visions for circularity in the dairy sector	Nurturing of SEEDS to develop circular economy in the dairy sector	1115 – 1230	Joel Onyango (facilitator)
Plenary presentation on the identified visions	Presentation of visions and identification of needs	1230 – 1300	Joel Onyango (facilitator)
Wrap up and way forward	Next steps towards solutions on circularity for dairy sector development	1300 – 1330	Catherine Kilelu
<b>Lunch</b>		1330 - 1400	Erica Atieno



## Contacts

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*Supported by the Ministry of Foreign Affairs  
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**Thank you for  
listening 😊**

