

Milking to potential

A strategic framework for dairy sector development in emerging economies - the case of East Africa

AgriProFocus Expert Meeting April 10, 2014

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Why think about dairy sector approach?

- Growing demand dairy in emerging economies
- Globalization of production & marketing
- Changing role private – public – civil society – knowledge institutes

What can Dutch actors contribute?



Based on two reports:

Milking to potential - Strategic framework for dairy sector development in emerging economies

- Discussion paper
- Jan van der Lee, Jelle Zijlstra, Bram Wouters, Simone van Vugt

White Gold: Opportunities for Dairy Sector Development Collaboration in East Africa

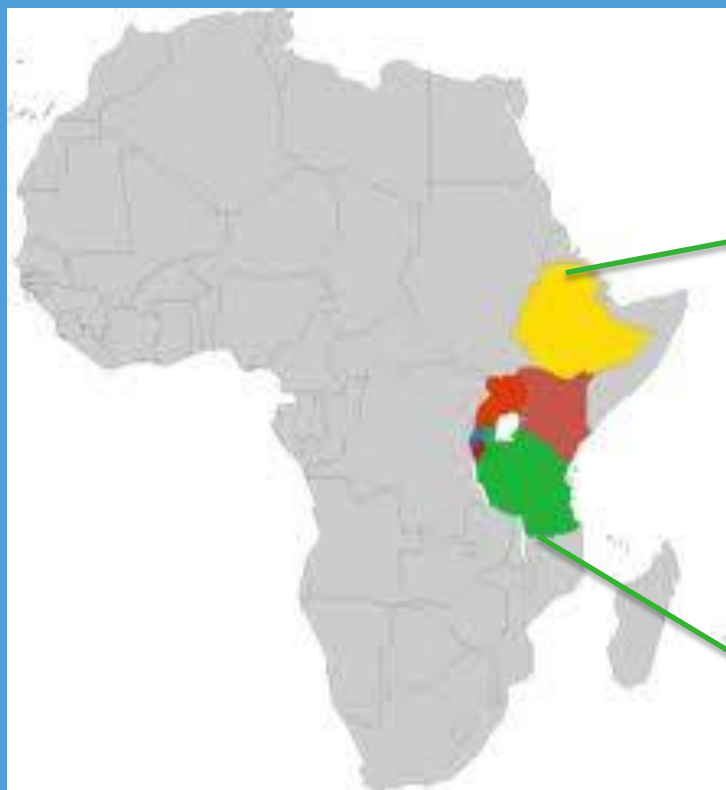
- Study for the Inter Agency Donor Grp on Livestock Development
- Discussed during IADG East Africa Dairy Expert Consultation, Masaka-Mbarare, Uganda, April 1-3, 2014
- Nathaniel Makoni, Raphael Mwai, Tsehay Redda, Akke van der Zijpp, and Jan van der Lee,

Methods used:

- 1st - Desk study + expert input
- 2nd - Desk study + stakeholder consultation + expert consultation



6 Study Countries – East African highlands



Outline

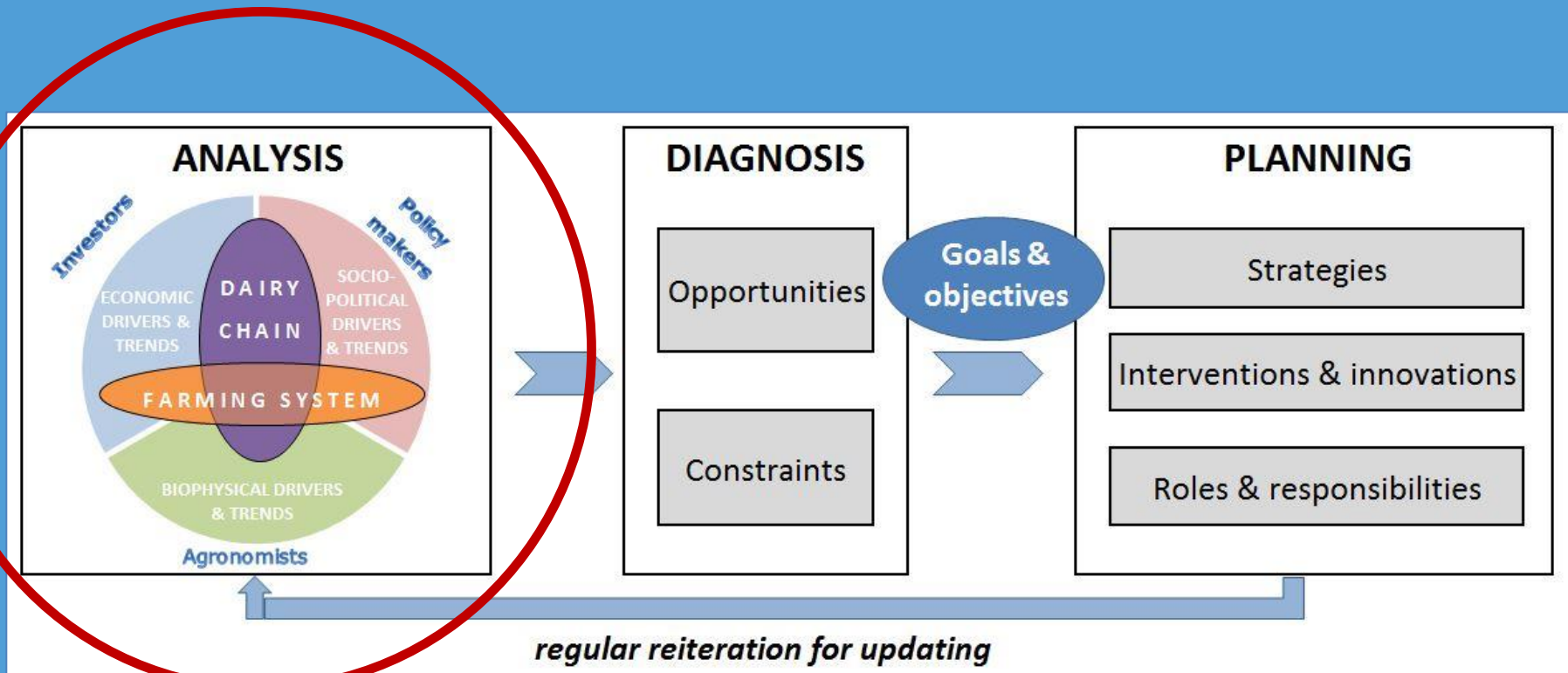
1. Framework for dairy sector development

→ Analysis - Diagnosis – Planning

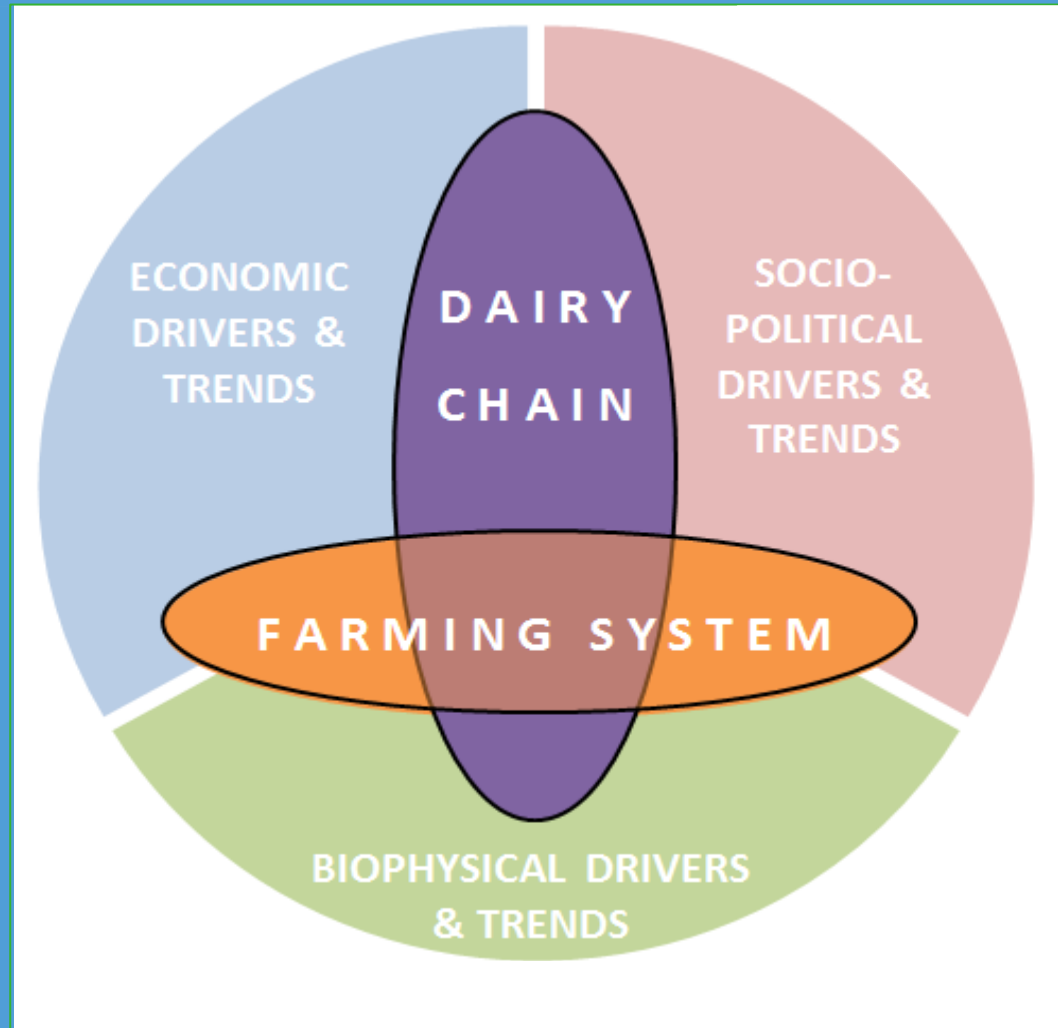
2. Prospects for Dutch actors & points to ponder



How to get to dairy sector strategy?



Dairy production & marketing are operating in dynamic context of economic, biophysical and socio-political drivers and trends

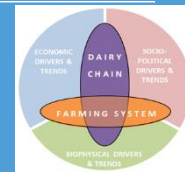








Involvement of women & youth



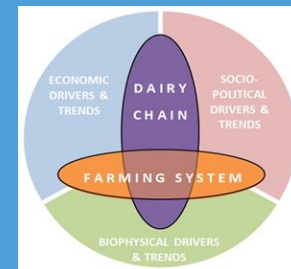
70% of smallholder dairy farmers are women, yet...



1. Ownership of land and productive resources
2. Drudgery – labour vs. equipment
3. Equitable earning
4. Low involvement of youth in the dairy sector



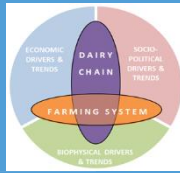
Key demographic and economic data for Ethiopia and Kenya



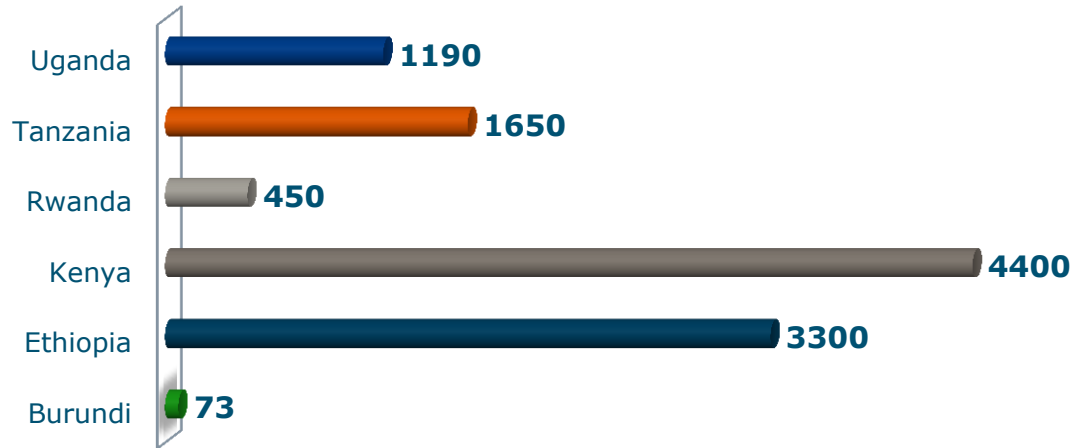
	Ethiopia	Kenya
Population (000,000)	89.2	44.2
Population growth (%)	2.6	2.7
Land area (000,000 km²)	1.1	0.6
Urbanization (%)	14	24
GDP Growth (%) WB 2012	8.5	4.6
GDP/capita (US\$) WB 2012/13)	454	943



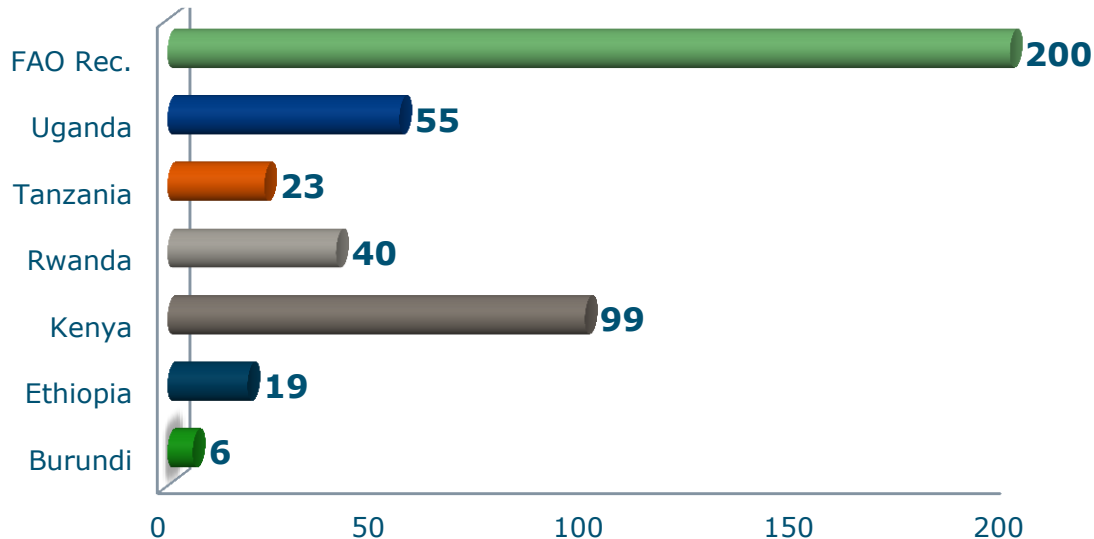
National milk production & consumption



National Milk Production /Year (million litres)



Milk Consumption/Capita (litres)

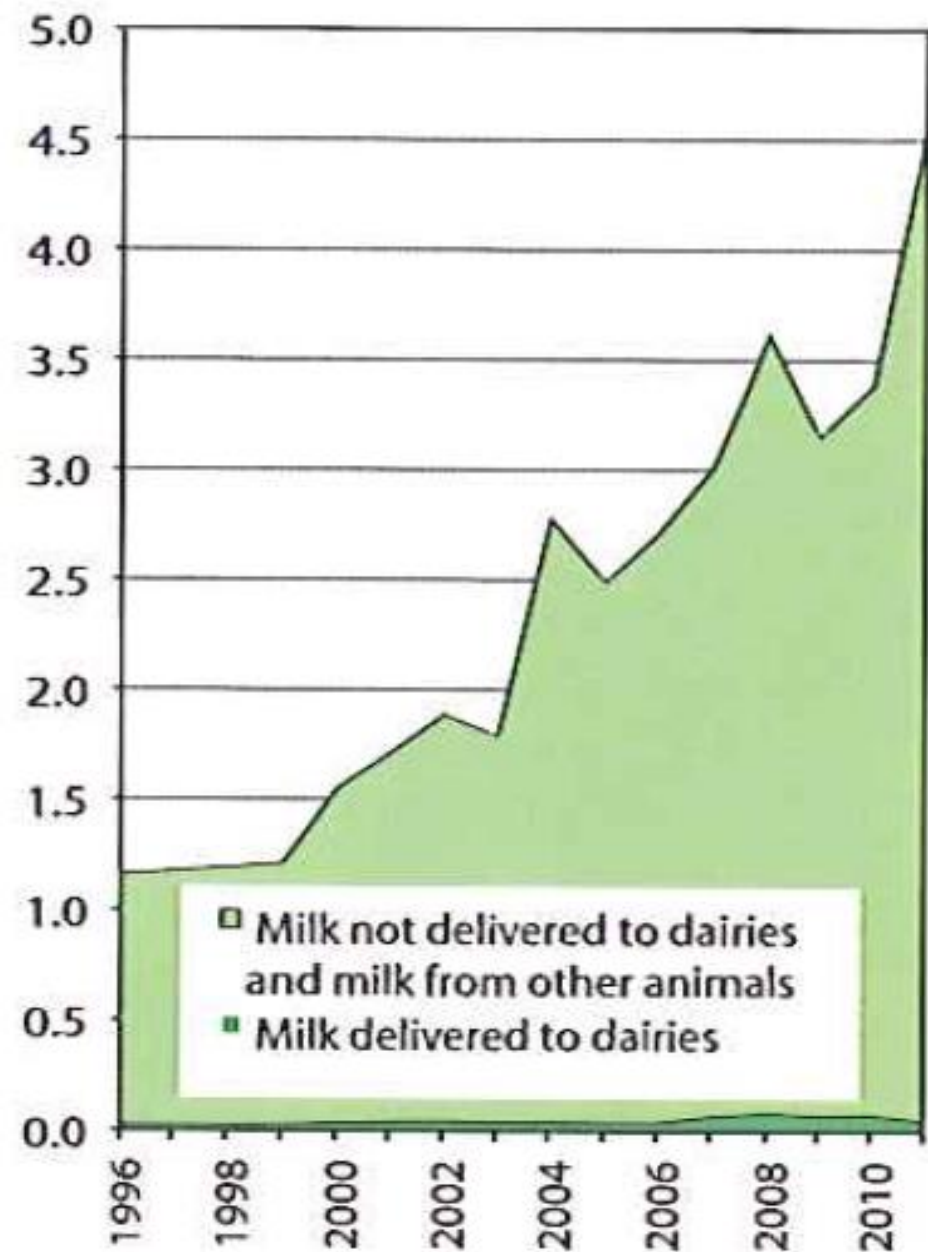


Total = 11.06 Billion ltr/yr
Potential Demand = 48.5 B
Potential Gap = 37.4 B ltr/yr

Milk production

mill t milk (ECM)

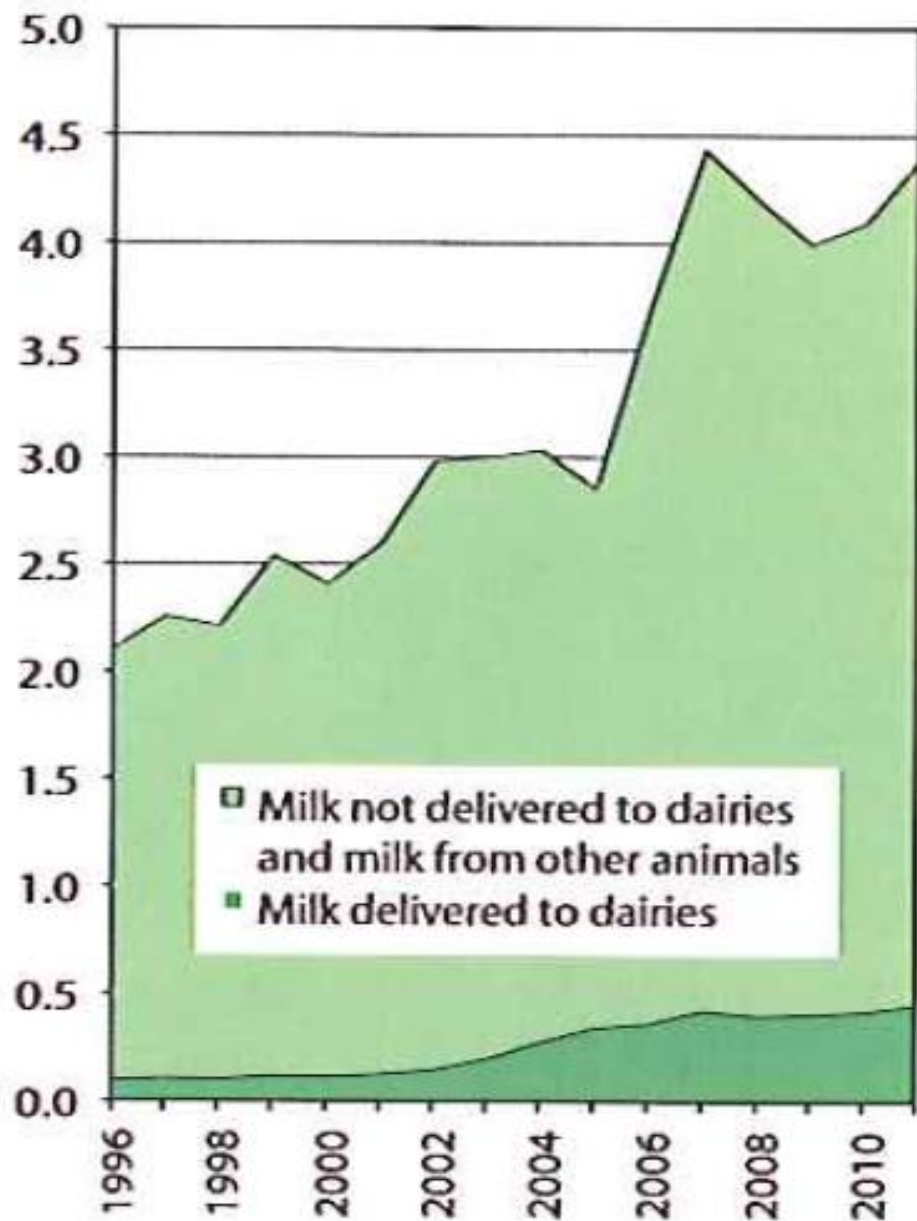
Ethiopia



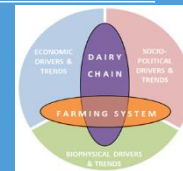
Milk production

mill t milk (ECM)

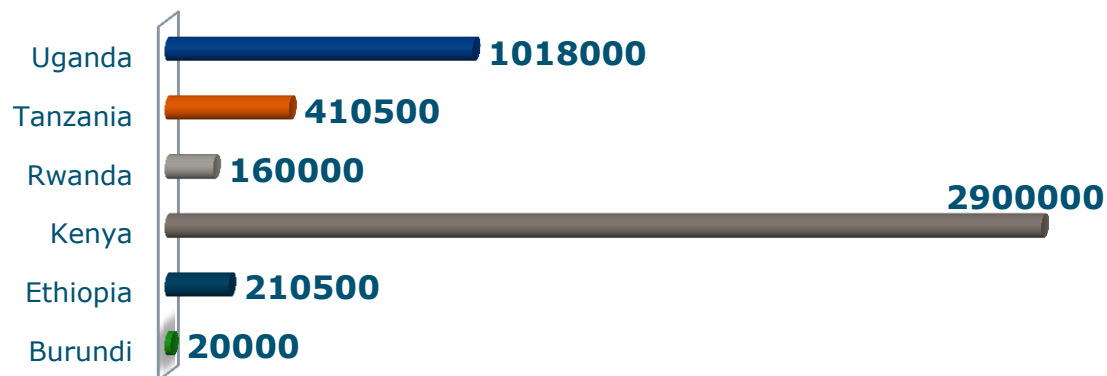
Kenya



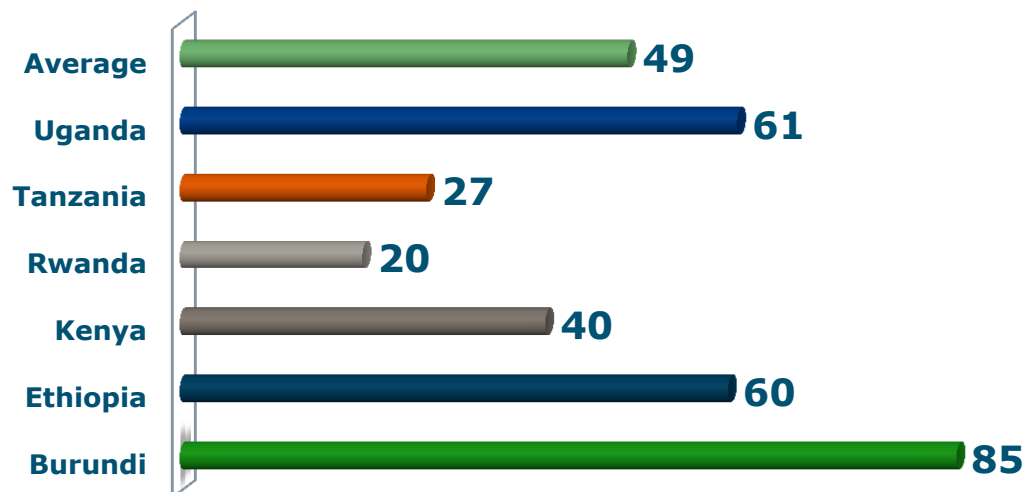
Processing capacity & utilization



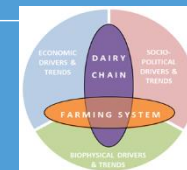
Milk processing Capacity (Litres/day)



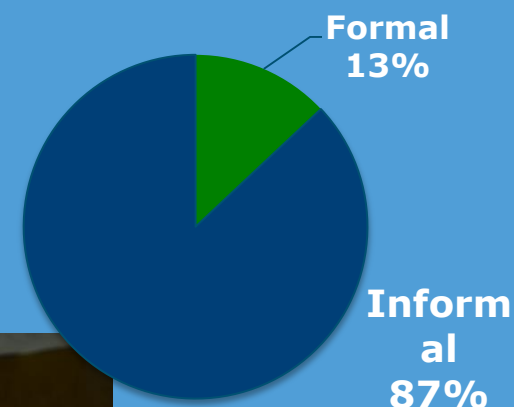
Utilized Capacity (%)



East Africa Informal Dairy Sector



Formal:Informal Sector



97%

Tanzania

95%

Burundi

95%

Ethiopia

80%

Rwanda

80%

Uganda

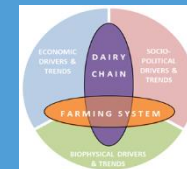
80%

Kenya

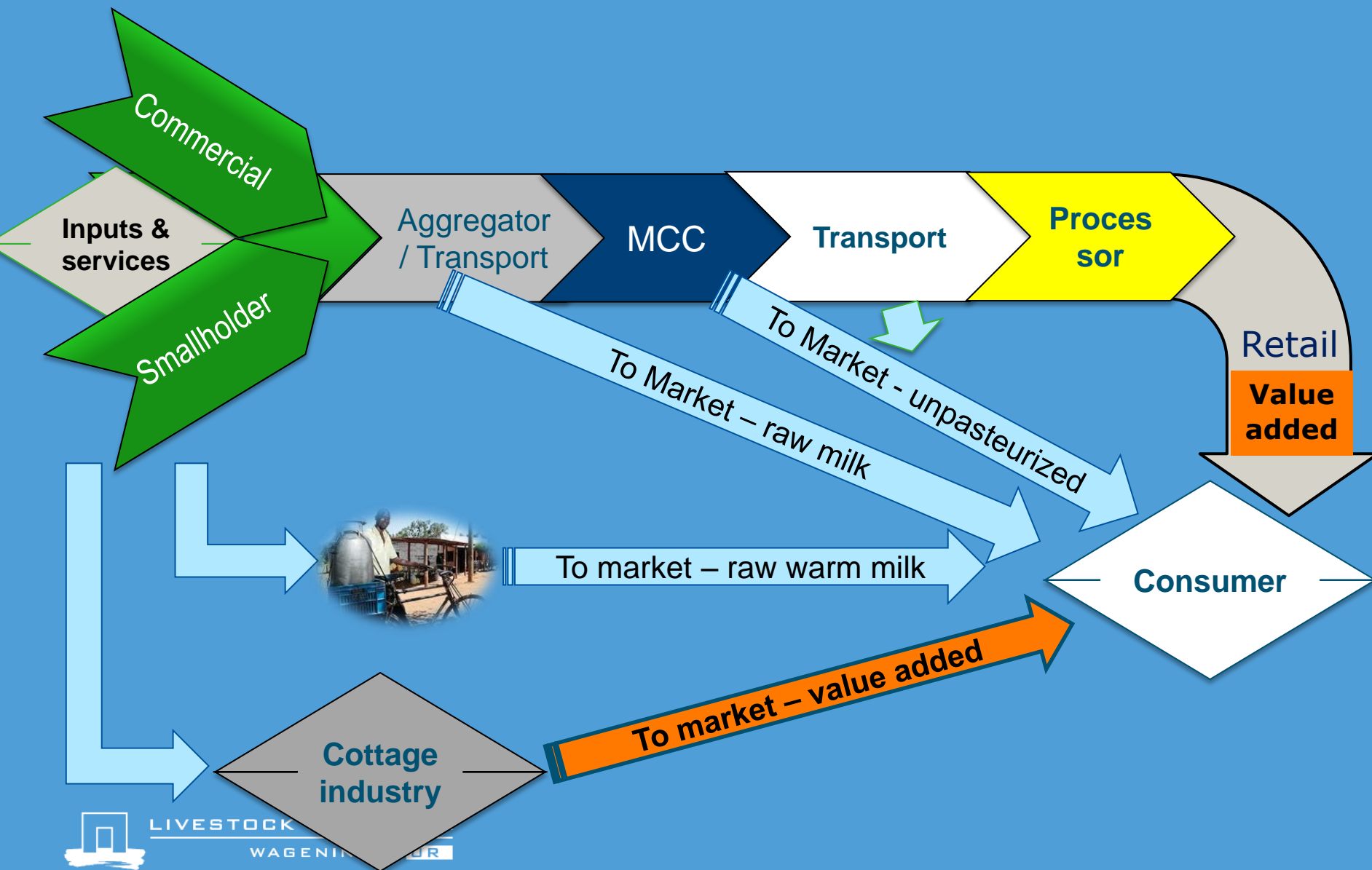


LIVESTOCK RESEARCH
WAGENINGEN **UR**

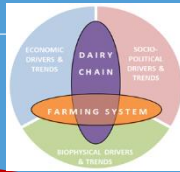
Dairy sector data Kenya & Ethiopia



	Ethiopia	Kenya
National cattle population (thousands)	49,200	18,000
Improved breeds cattle population (thousands)	190	3.500
No of dairy farmers (thousands, 2008)	5,265	1,850
Average dairy farm size (cows/farm)	2	4
Average milk yield (kg/cow/year)	300	600
AI cost in farm gate milk eq. (ltr/AI service)	63	30
Bred heifer price (US\$)	1,895	1,279
National milk prod./year (million liters)	3,300	4,400
Milk consumption/capita (liters)	19	99
Milk processing capacity (liters/day)	210,500	2,900,000
Actual processed (% Capacity Utilized)	127,050	1,170,000
% of installed capacity utilized	60	40
Concentrate feed cost USD/kg	0.16	0.30
No. of milkpowder plants	0	2
Retail price of milk (US\$/liter)	1.08	1.02
Farm gate price (US\$/liter)	0.41	0.39



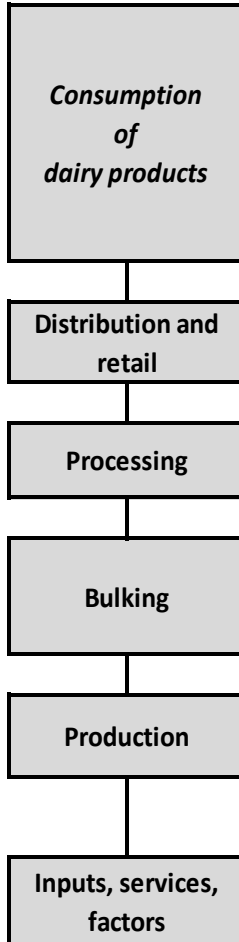
Main dairy value chain types



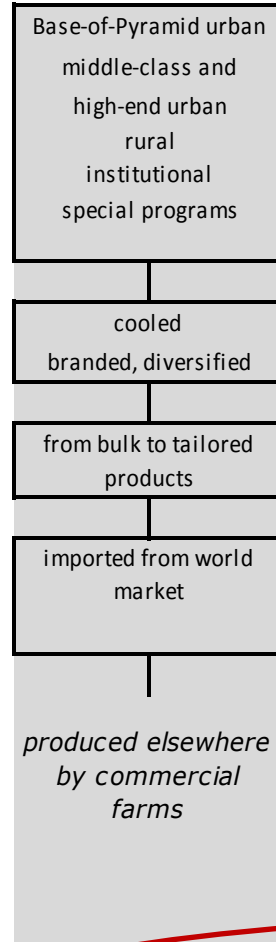
chain enablers

waste management, producer organizations, prices, food safety			
animal health, chain linkages, associations, education, R&D, quality assurance			
AI, veterinary, advisory, business development services, financial services			
stock, feed, fodder, production and processing equipment			
policies and regulations	institutions	service providers	input providers

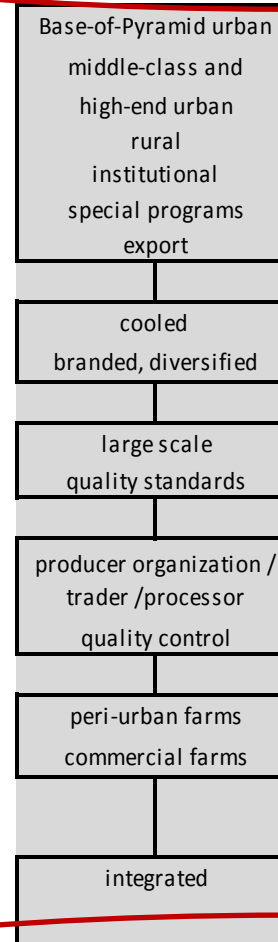
chain operators



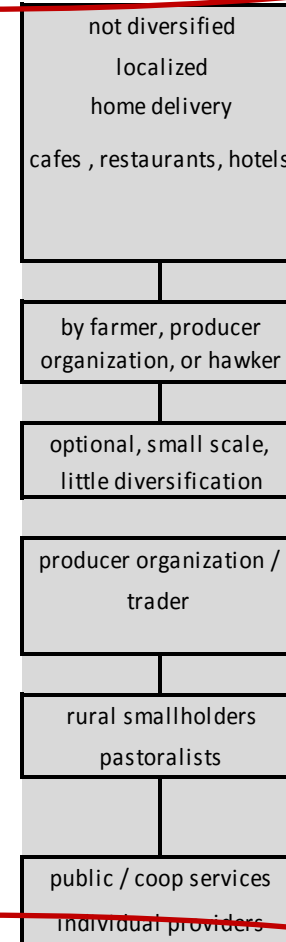
import chain



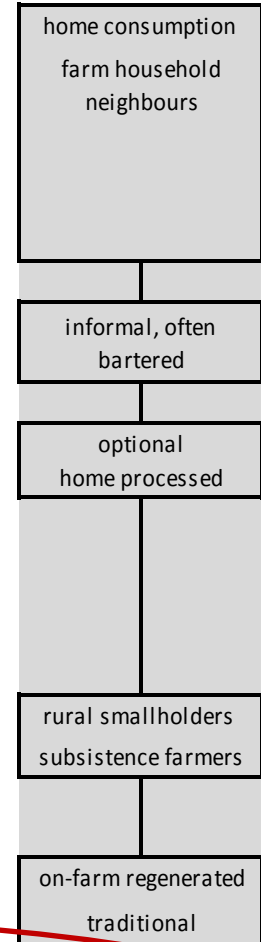
formal chain



local chain

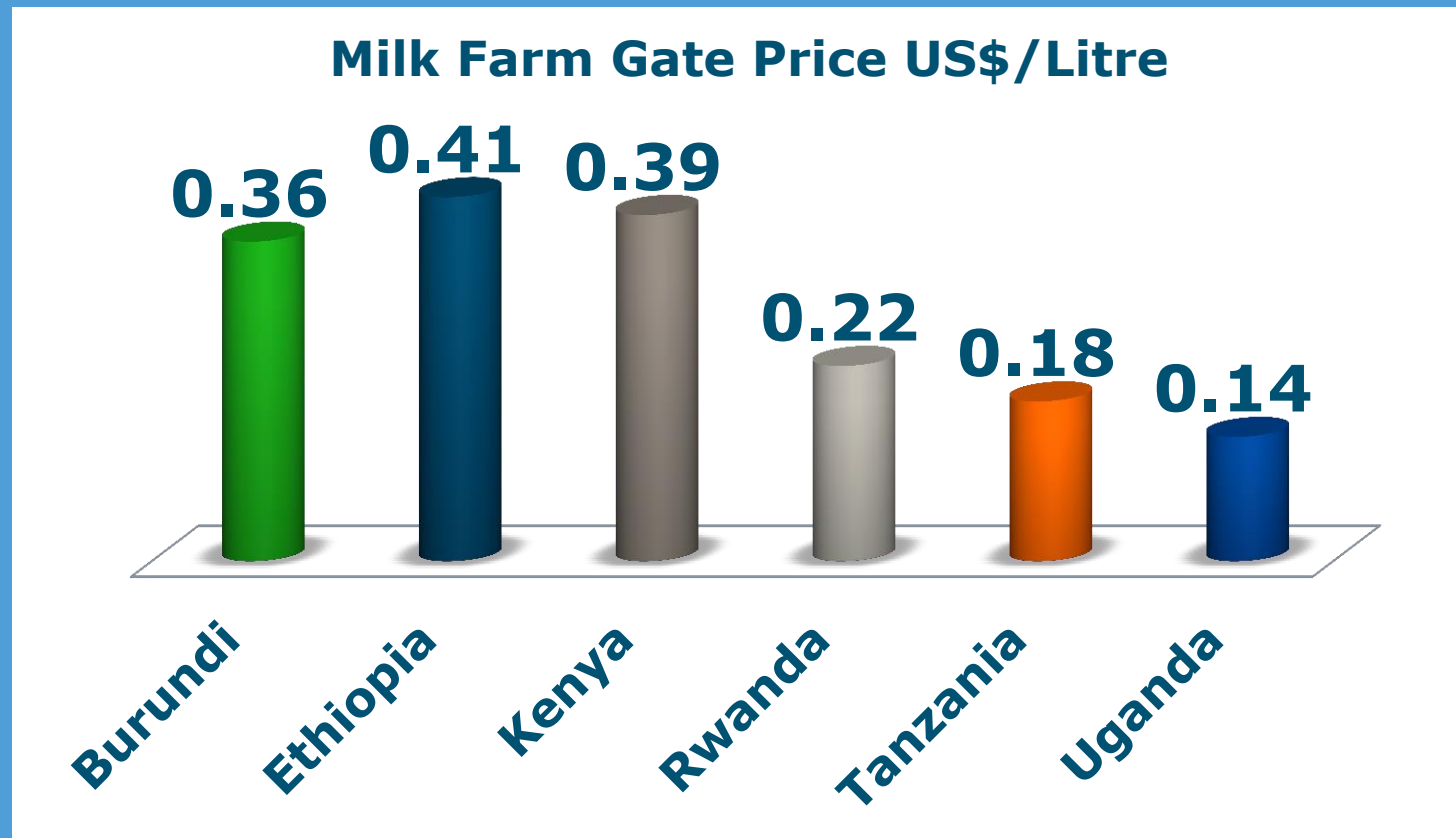
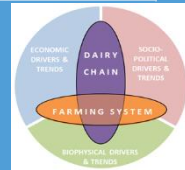


subsistence



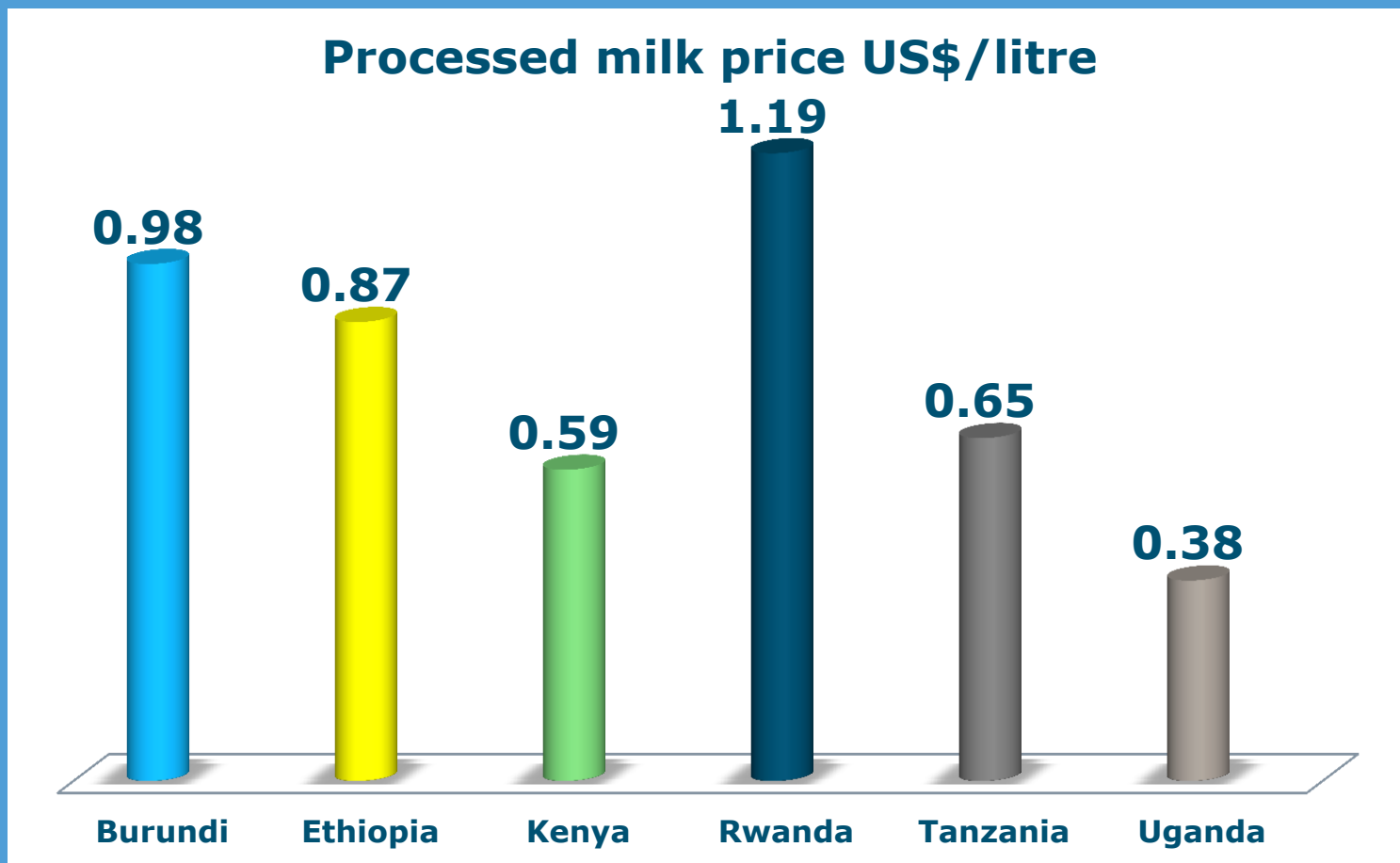
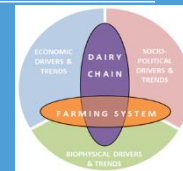
POTENTIAL TRANSITIONS

Farm gate prices

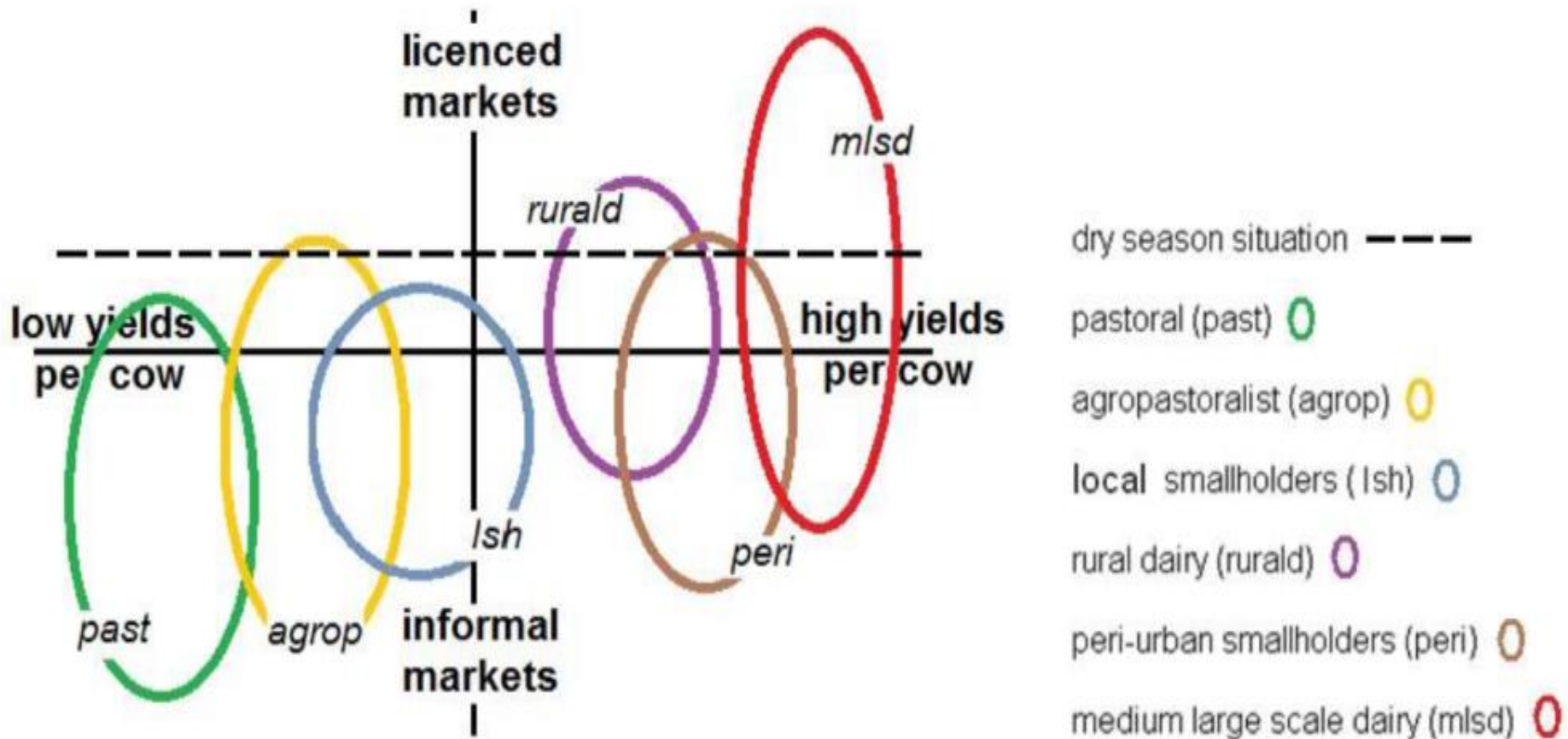


Uganda has lowest cost/ ltr. for farm-gate and processed milk
Ethiopia risks to be uncompetitive
The farm gate prices reflect breed, feed costs, warm chains

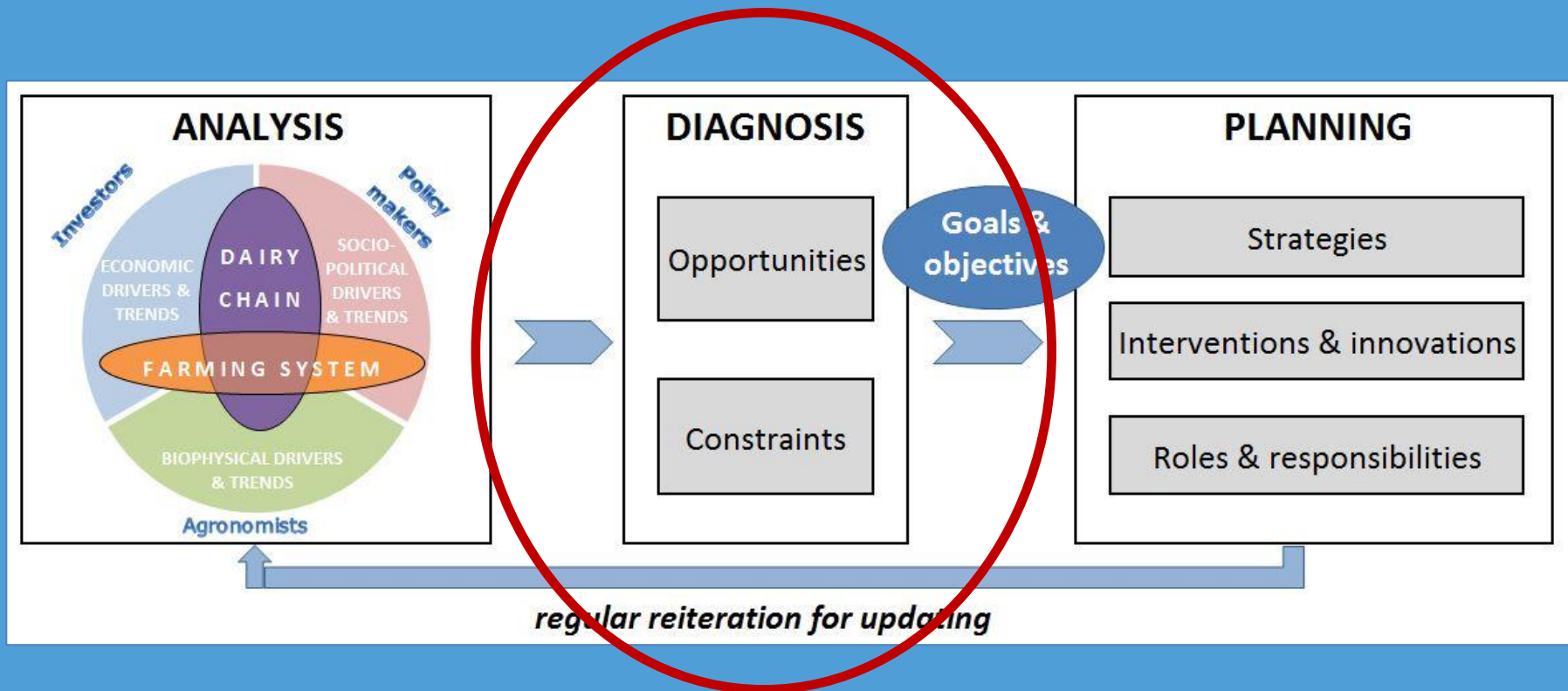
Price of retailed milk



Major farming systems in Tanzania 'overlaid' with the major types of dairy chains (Nell et al., 2014)



Step 2 - Diagnosis



Opportunities

DIAGNOSIS

Opportunities

Constraints

ETHIOPIA

- + 90 Million people with increasing demand
- + Huge potential to initiate new distribution channels such as school milk program
- + High demand dairy business development services
- + Good opportunities to export camel dairy products
- + Favorable climate for dairy farming in the highlands

KENYA

- + Large domestic and regional markets
- + Expanded possibilities in value addition
- + Expanding middle class leading to sustainable demand for milk and milk products.
- + Favorable climate for dairy farming in the highlands and central regions



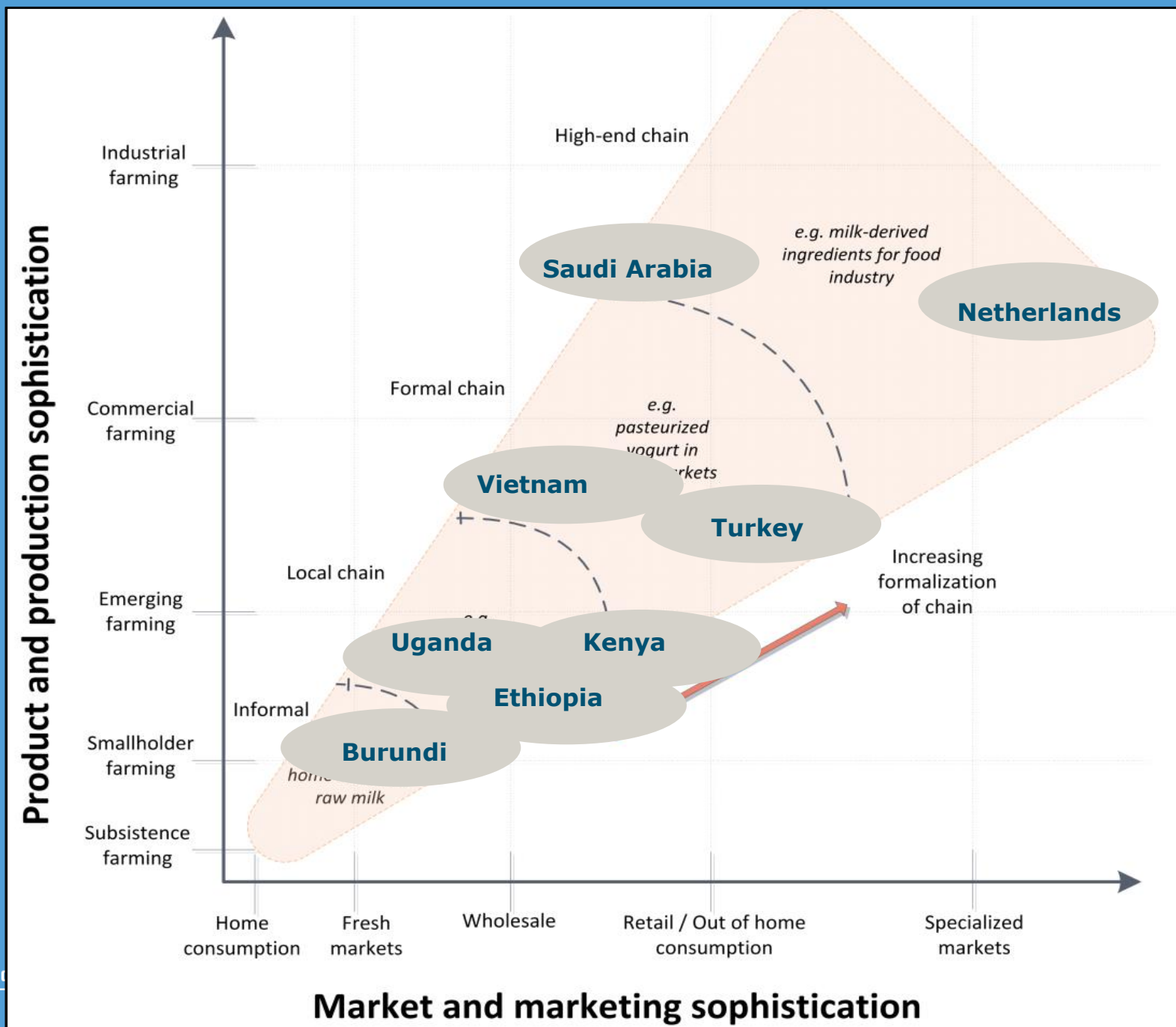
Overarching constraints East Africa



1. Low milk consumption
2. Poor infrastructure & access to markets
3. Low cow productivity: feed & breed
4. Seasonality in milk supply
5. Poor milk quality
6. National & Trans-boundary diseases
7. Limited research & extension
8. Inadequate farm management
9. Limited official industry data
10. Inadequate financial services
11. Lack of conducive policy & incentives
12. Low female & youth involvement



Development pathways of dairy sectors as function of increasing external inputs and diversifying markets



LIVESTOCK

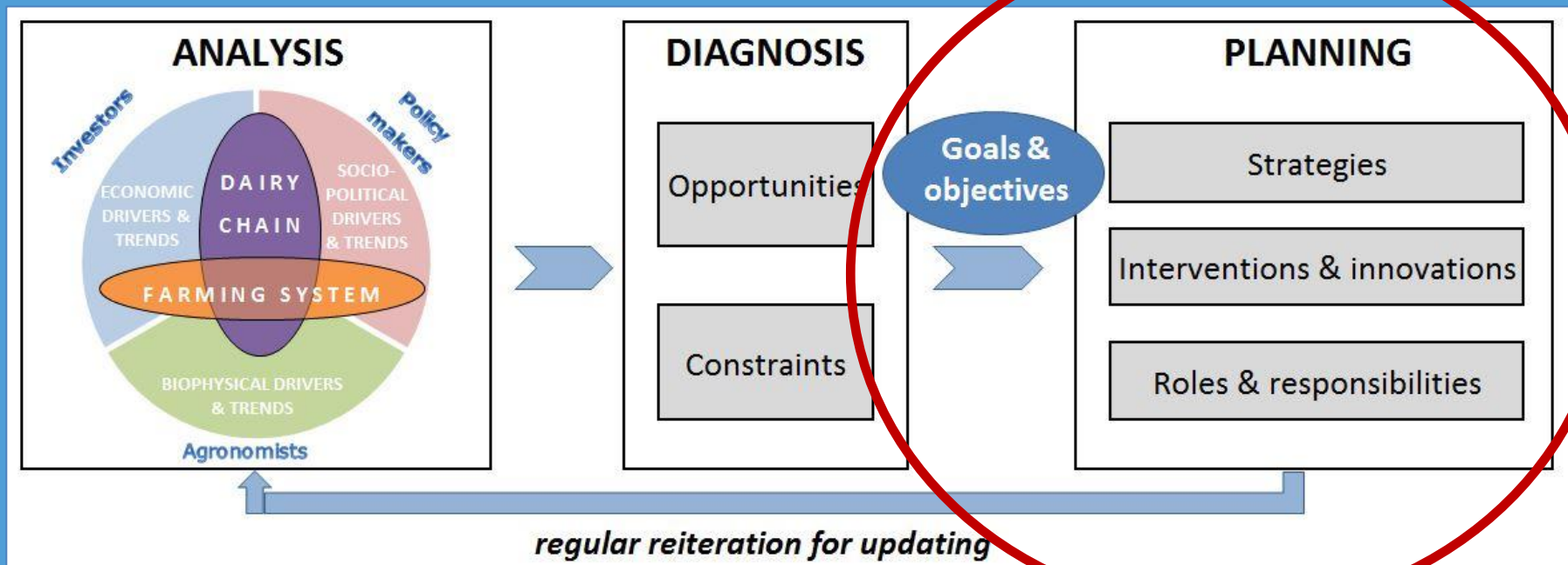
Varying goals affecting dairy sector



- Food security for the urban population
- Youth employment
- Rural poverty alleviation
- Smallholder inclusion in commercial agriculture
- Child nutrition improvement
- Protection of local agricultural production
- Import substitution / export promotion
- Privatization of government services
- Climate change mitigation/adaptation
- Responsible development cooperation
- Food safety
- Public investments



Step 3 - Planning



Typical dairy sector development dilemmas

- Investing in the formal or the informal dairy chain?
- Linking smallholders to dairy chains or establishing large-scale farms?
- Building the local herd or importing grade cattle?
- Starting from the business environment or from the business?
- Milk or soy? Nutritional value of dairy: under- or overestimated?
- Focus on dairy imports or on local milk production?
- Quick or steady increase of milk production to meet fast growing demand?
- How can intensification be sustainable?



Theory of Change

(generalized)

Goal	Competitive and developed dairy sector			
	Changes at impact level: Increased farmer income Growth in rural economy	Food security Nutrition security	Food safety Self-sufficiency	Reduced environmental impact
Objectives	Competitive dairy production	Developed dairy chains	Developed knowledge base	Developed organization and representation of the dairy sector
Changes at performance level not specified				
Strategies	<u>Improve / strengthen:</u>			
	Access to finance for milk producers	Linking producers in rural areas with processing industry and markets	Research and innovation	Producers' organizations
	Public and private investments in physical infrastructure (water, roads, electricity)	Inclusion of small scale milk producers to formal dairy chains	Education	Dairy sector organizations
	Policies supporting competitive dairy production	Increase rural milk processing and marketing (informal)	Farm and industry advisory services	Chain actor representation and coordination
	Policies related to food safety and implementation of regulations	Improve dairy marketing and consumption in urban areas	Knowledge on dairy production in supporting institutions (finance, government etc)	Public-private partnerships
	Land reform	Improve input and service supply to dairy producers		
		Implementation of improved food safety and quality standards		
		Improve investment climate in dairy sector		
Example interventions				
	Fodder introduction	Develop collection grid and business cluster	Business development services for producers' organizations and SMEs	Crossbreeding program
	AI service	Develop B2B linkages	Farm advisory service	Disease surveillance
	Dairy zone development	Investment fund	Innovation coaching and funding, co-innovation	Land titling
	Medium-sized farm development	Quality-based milk payment system	Dairy network development	Independent milk testing laboratory
	Soil fertility management management	Producers' organization capacity building	Business-linked vocational training	
	Training young-stock rearing			



LIVESTOCK
FISHERIES

Roles of stakeholders is context specific

- Private sector - large – medium - small
- Farmers
- Farmers' organizations
- Public sector
- Knowledge institutes (education & research)
- Civil society organizations



Research, Extension, Education

- Increase funding to strengthen regional applied dairy research & farmer demonstration farms
- Match research programs with stakeholder needs
- Improve dairy extension experience & extension agent to farmer ratio
- Reconsider public vs private role in extension



Alfalfa Research



Farmer demonstration



Prospects for Dutch actors

- Dairy processing technology
- Expertise and supplies for breeding and feeding
- Animal health control
- Capacity development along the entire education chain
- Sustainable intensification of dairy farming systems
- The use of technology in dairy farm management
- Farmers collaborating in cooperatives
- Collaboration between government, private sector and knowledge institutions
- Integrated dairy chain approach



Points to ponder:

1. What do you see as pro's and con's of the approach presented in this framework?
2. Dutch companies and knowledge institutes offer products/services that primarily fit the commercial dairy business in emerging economies. They should adjust their offer to the huge opportunities in the informal sector.
3. The innovation power of Dutch SME (MKB) can be very useful for development of dairy business in emerging economies. Dutch SMEs need to work together to use these opportunities.



Frontrunners in
Responsible Livestock
Development

Go to

Livestock Dialogue

Opportunities in
Eurasia

Opportunities in Africa

Dutch Expertise

Policy Instruments

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The Netherlands is a frontrunner when it comes to developing
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Thank you



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