

Different Types of Milk in the World

IFCN Dairy Research Network

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The IFCN Network

The three pillars approach

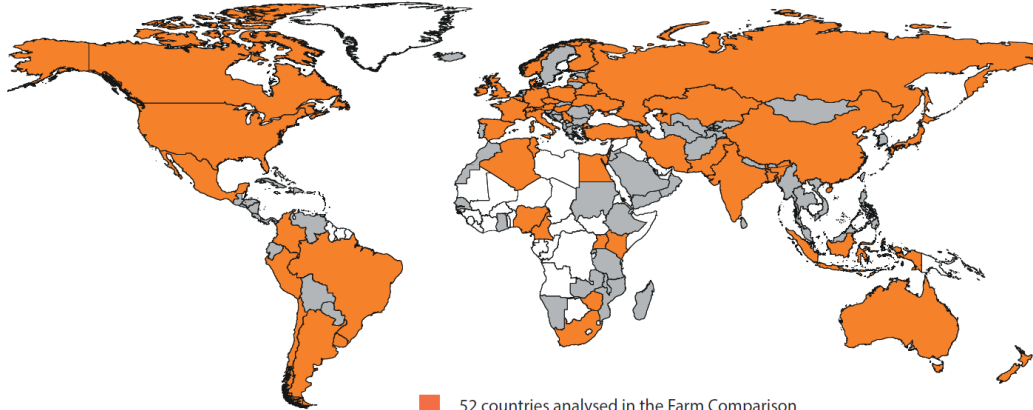
- Network of researchers, dairy economists
- Network of supporters
(companies & organisations of the dairy industry)
- IFCN Research Centre in Kiel



IFCN

Dairy Data · Knowledge · Inspiration

Research partners in over 100 countries



Status of the IFCN Network in 2020

Supporting partners (>140)

Milk processing



Feed and feed additives



Health and hygiene



Genetics for animal & plants



Milking and barn equipment



Farm machinery



Milk processing and testing



Financial institutions



Other segments



Agenda

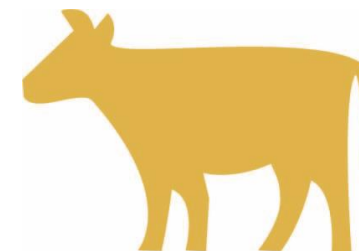
1. The dairy world in 2050 – an outlook
2. An overview of different types of milk (“non-cows”)
3. Cow milk: Opportunities within the dairy value chain

Dairy World – 2050 vs 2019 (30 years)



9.8 billion people
+28%

+60% more demand & supply
= +514 mill t (5x US today)



392 mill dairy „cows“
+5%
3.5 t milk / animal / year
+49%



147 kg „milk“ consumed / capita
+24%



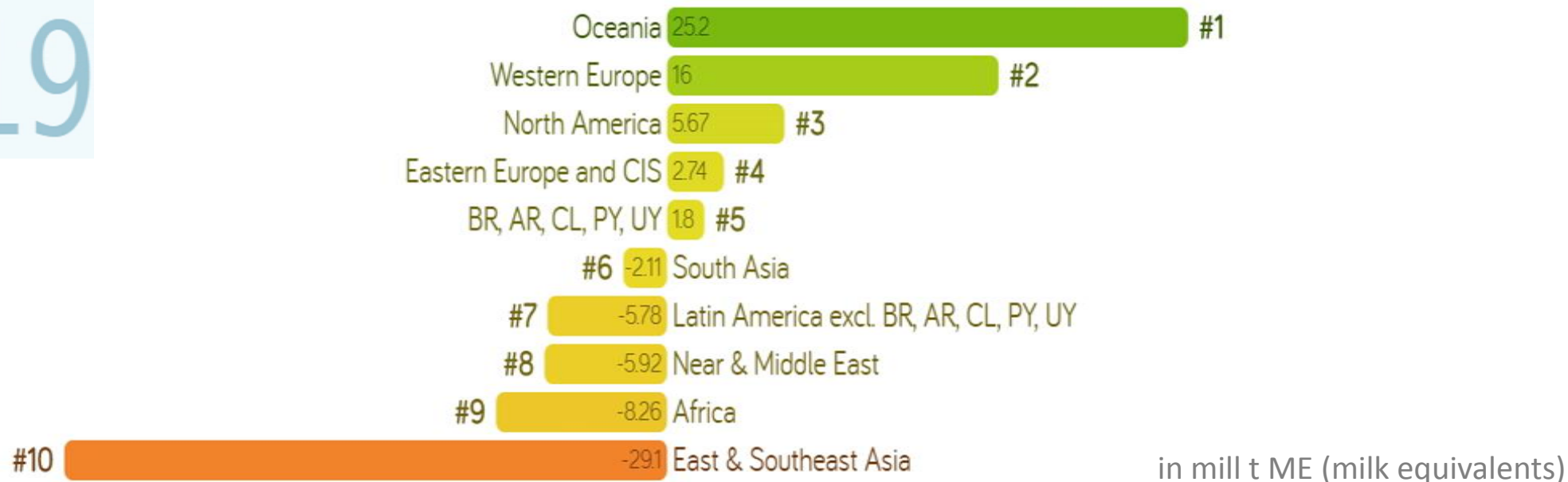
145 mill t ME milk traded (excl. EU-intra trade)
+140%



61 mill dairy farms
-45%



Milk surplus and deficit forecast 2050



Global dairy trade: up +140% or +85 mill t; 10% traded, 90% milk locally produced and consumed

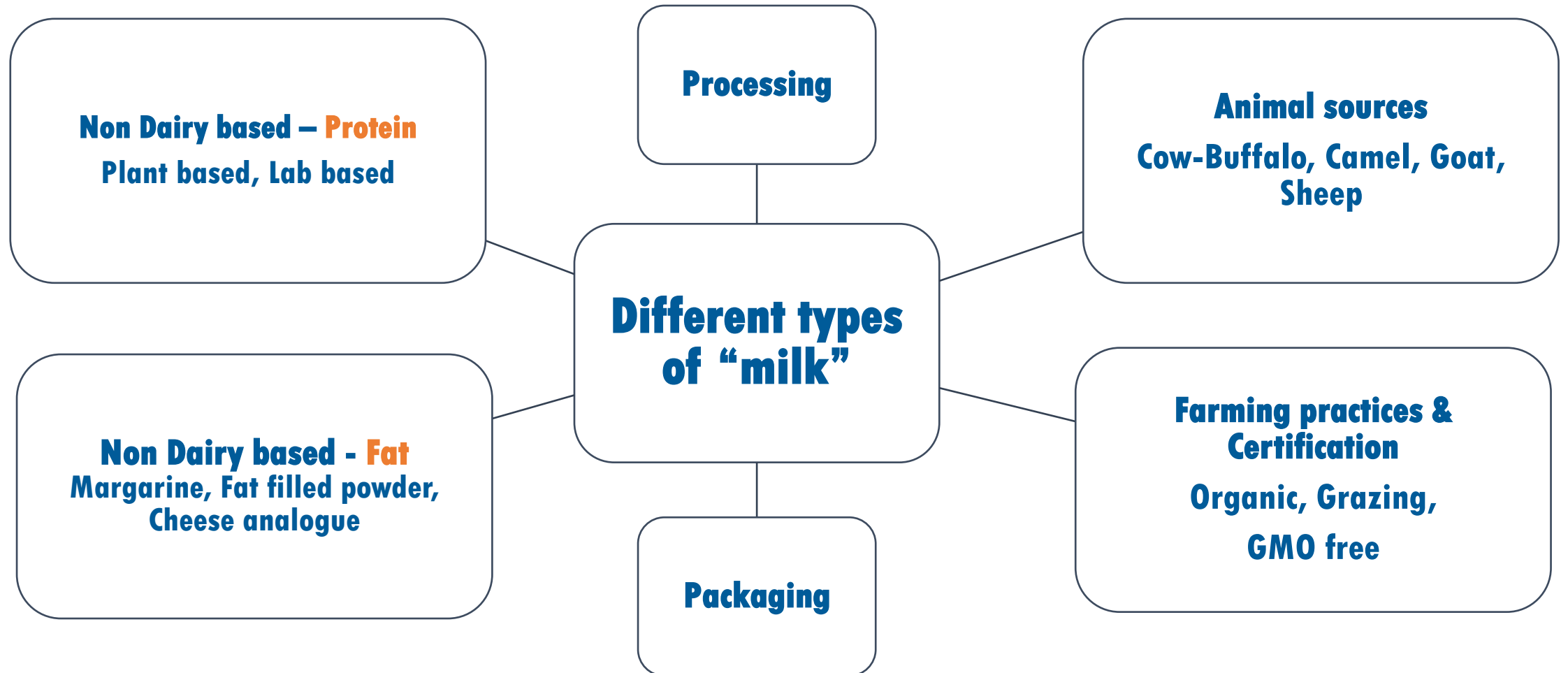
Key dairy exporters: New No.1 USA; No.2 Eastern Europe + CIS

Key dairy importers: East & SE Asia, South Asia, Africa and Middle East: Milk self-sufficiency 55% to 95%

Agenda

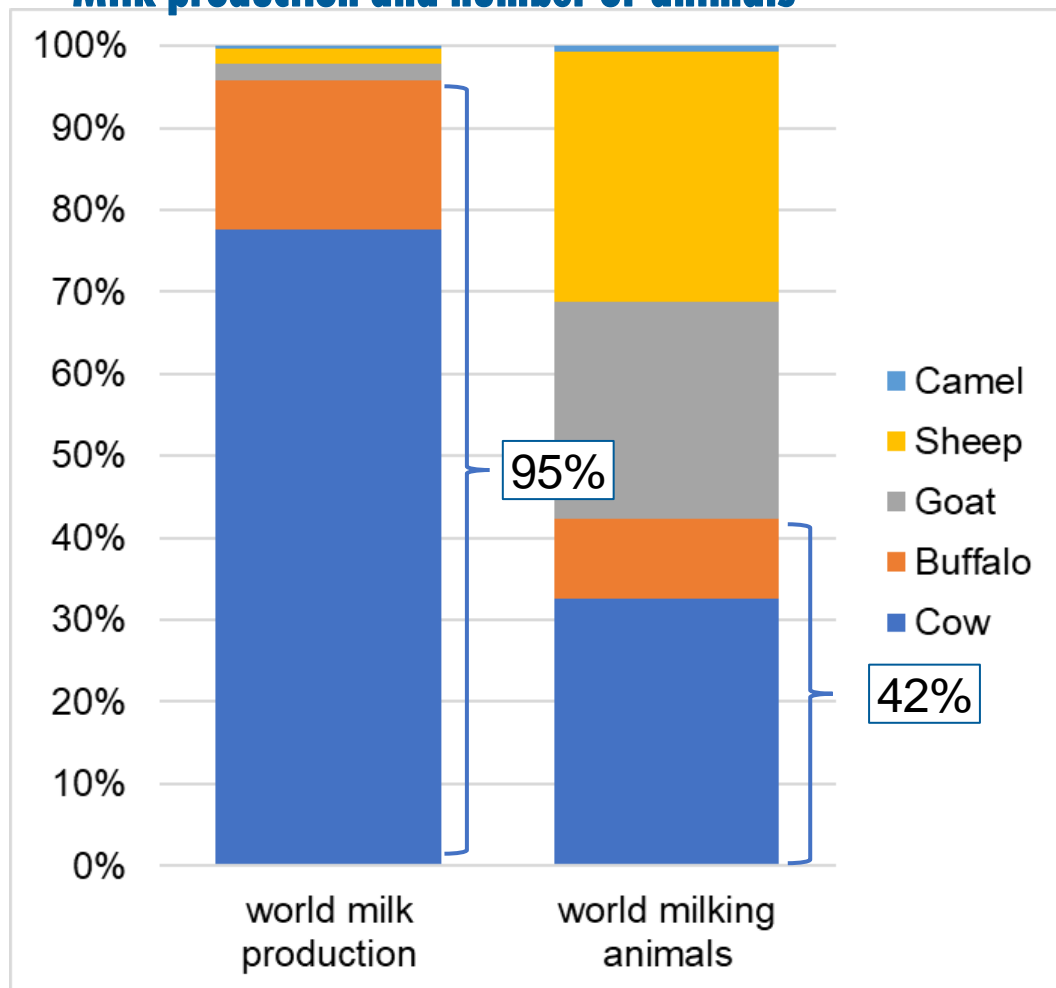
1. The dairy world in 2050 – an outlook
2. **An overview of different types of milk** (“non-cows”)
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Holistic view of different types of milk



Why is cow milk so popular?

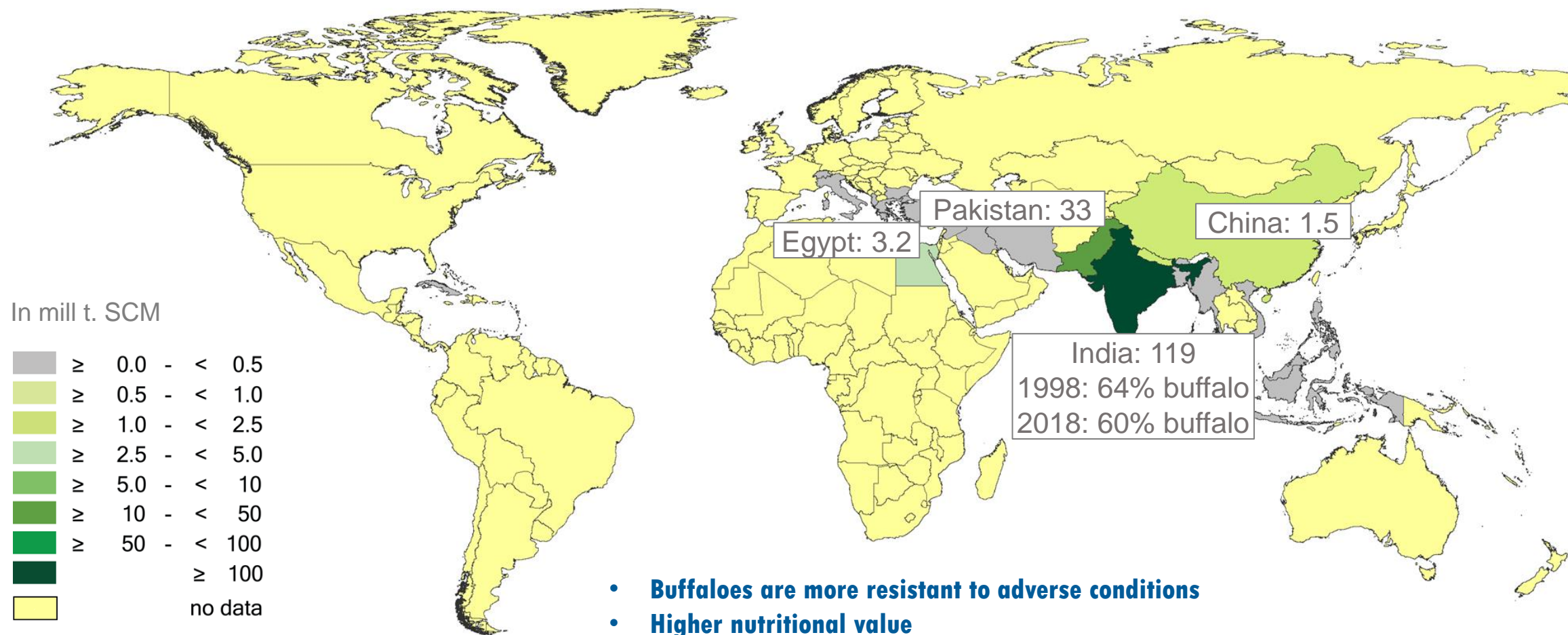
Milk production and number of animals



- **Cows are the most productive animals**
- **Docile nature makes them easy to manage and confine**
 - Advantage for industrial livestock farming
- **High level of daily milk production compared to other animals**
 - Advantage of economic profitability

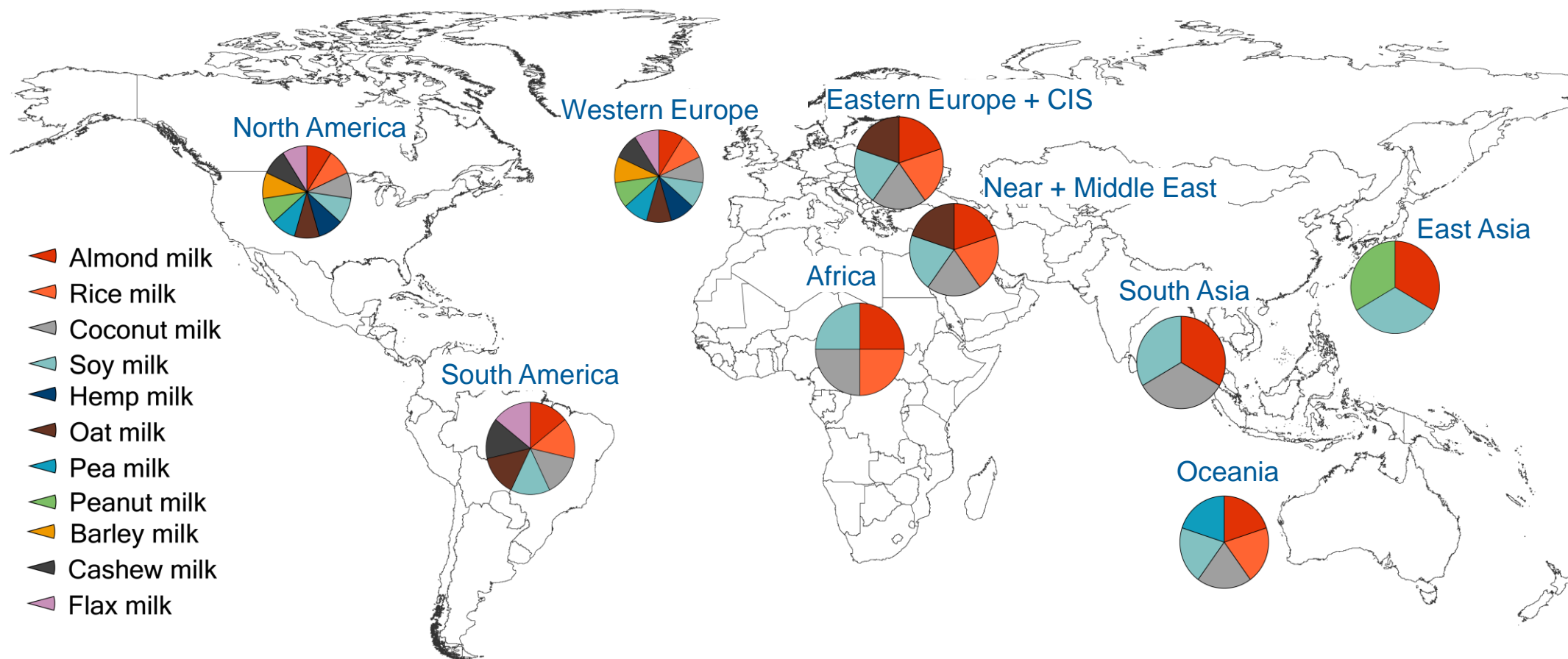
Why is buffalo milk so popular in India?

Buffalo milk production



- **Buffaloes are more resistant to adverse conditions**
- **Higher nutritional value**
- **High demand for cheese from buffalo milk**

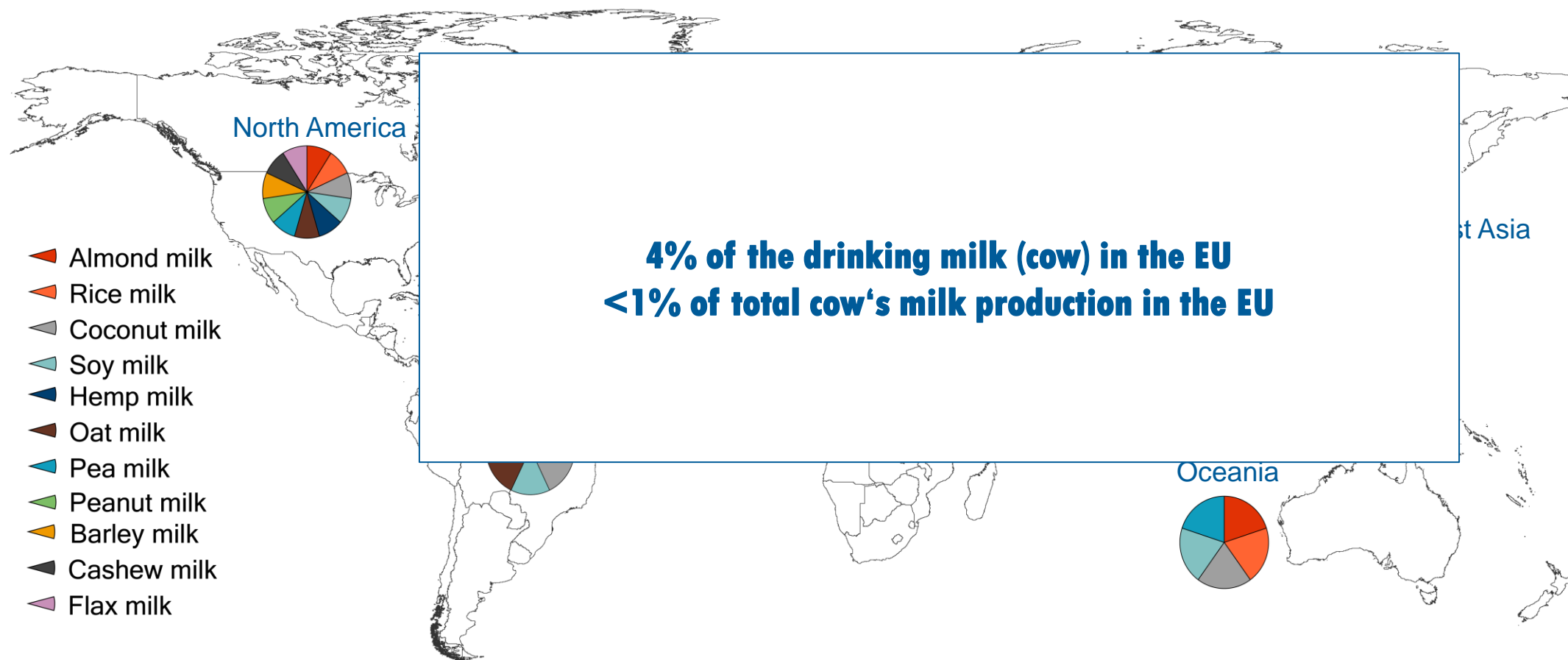
Availability of non-dairy „milk“ – a possible alternative?



- **Increasing trend/hype in developed regions: Saturated consumers are demanding new types of “milk”**
- **Non-dairy “milk” has lower nutritional value**
- **Anti-dairy movements and veganism become more popular, mainly in North America and Western Europe**

N = 45 countries

Availability of non-dairy „milk“ – a possible alternative?



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N = 45 countries

Special types of non-dairy „milk“: synthetic „milk“

Characteristics

- Lab-based alternatives supposedly mimic dairy products more closely
- Has more similar proteins to cow's milk than plant-based “milk”
- Vegan and lactose-free

Opportunities

- New protein
- Potential threat once price becomes competitive
- One company – Perfect Day (Sold out for ice cream)

Concerns

- Difficulties in production of full-fat milk
- Commercialization issues
- Expensive for consumers (+ 50%-100%)



Agenda

1. The dairy world in 2050 – an outlook
2. An overview of different types of milk (“non-cows”)
3. **Cow milk: Opportunities within the dairy value chain**

Dairy Value Chain

Government and society



Consumer



Processor



Farmer



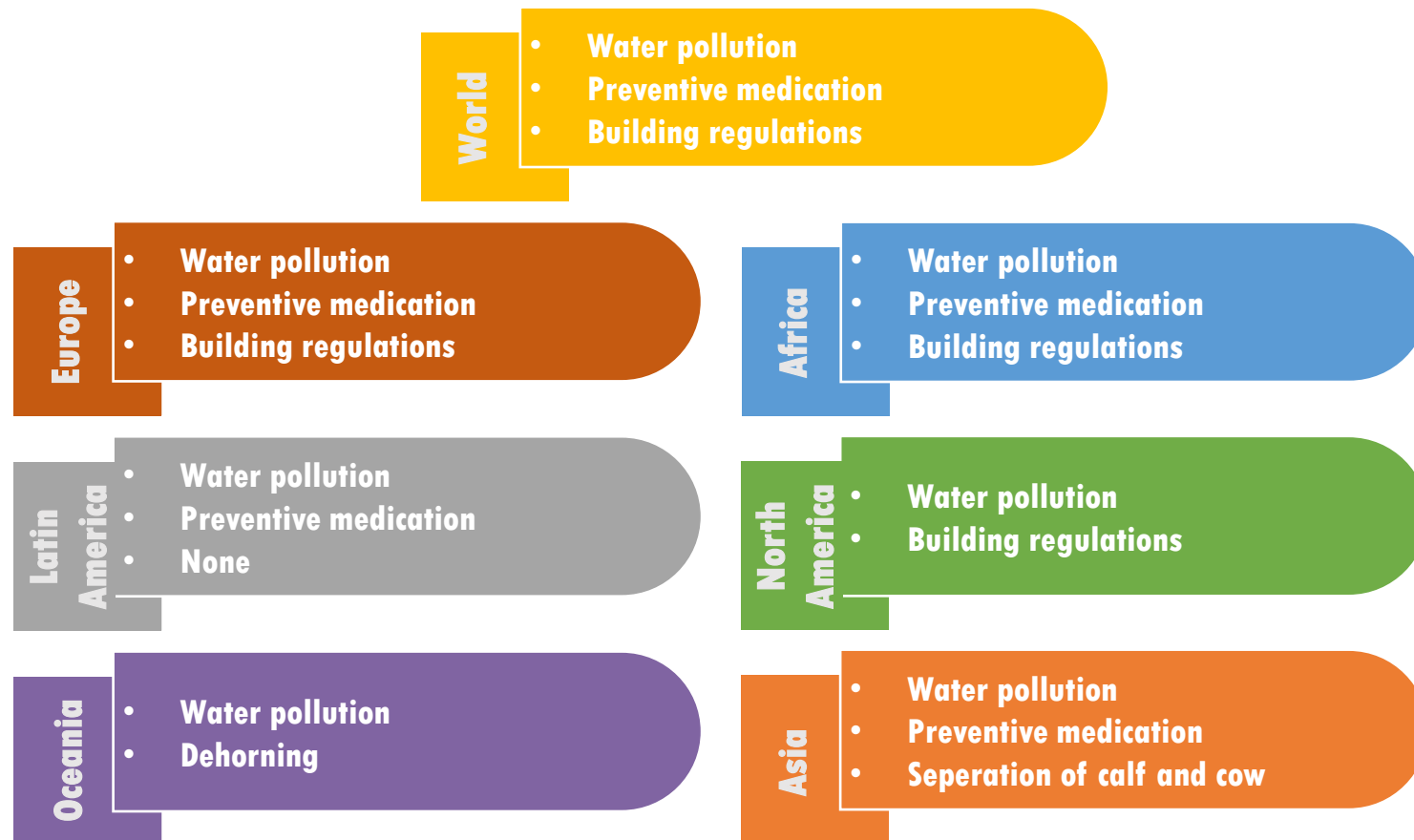
**How is milk production regulated
and what types of cow milk exist?**

Governmental regulations regarding milk production

Environmental regulation

Netherlands

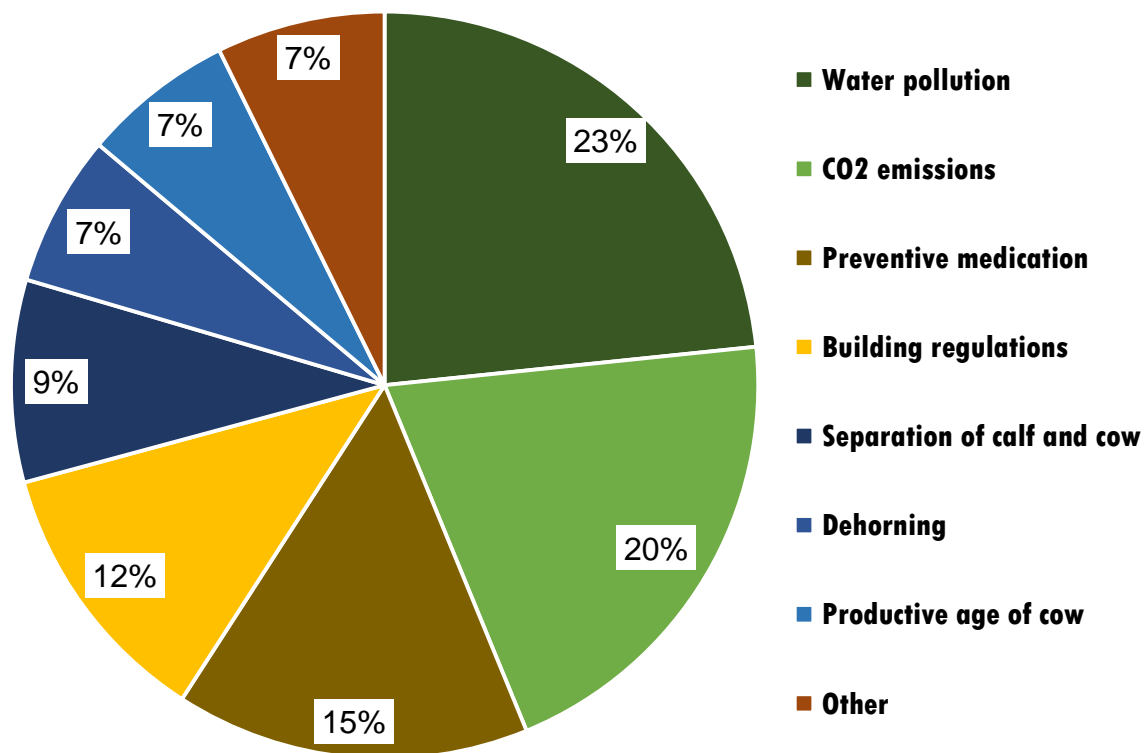
- **Phosphate regulation**
- **2018: dairy farms got phosphate rights**
- **Average price: >200 € per kg phosphate**
- **Farmers sell their rights to earn money**



Possible answers: dehorning; separation of calf and cow; water pollution; CO2 emissions; building regulations; preventive medication; other N = 42 countries

Which aspects is the society concerned about?

The animal welfare and sustainability aspects which are mostly discussed in society



Topics which are of importance in all regions:

- Environmental topics (water pollution or CO₂ emissions)

Topics which are important for the society are covered by the government e.g. Netherlands

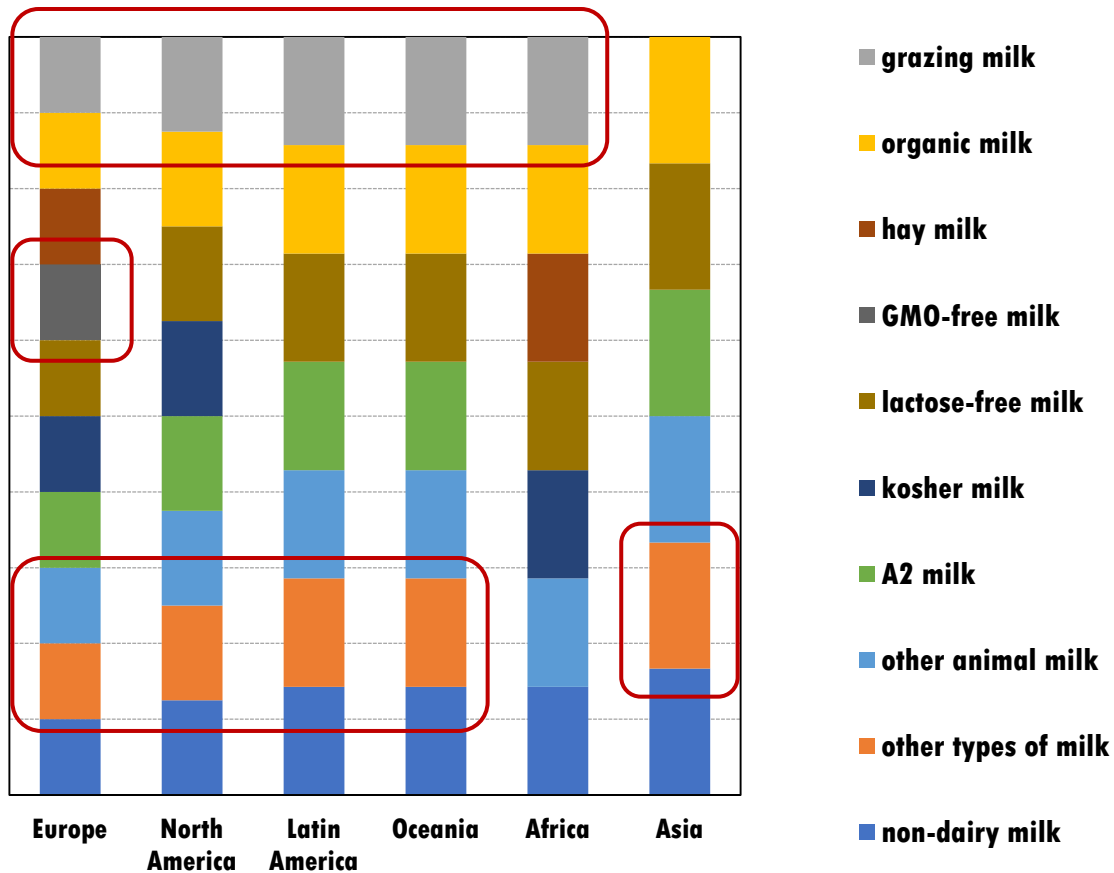
- **Discussed in society:**
environmental topics, preventive medication and separation of calf
- **Regulated by government:**
water pollution, building regulations and preventive medication

What does this mean?

- Government reacts to the concerns of the society
- Main topics are environmental + animal welfare aspects

N = 46 countries

What types of milk can be bought in your world region?



- **Nearly all milk types are available in all world regions**
- **Diversification to gain a higher market share**
- **Saturated consumers request special types of milk**
- **Low dairy demand per capita reduces amount of milk types**

Dairy Value Chain

Government and society



Under which framework do processors work?

Consumer



Processor



Farmer

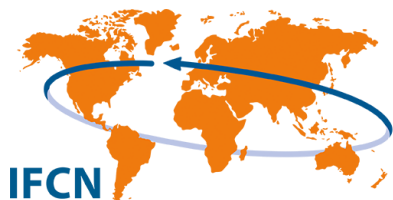


Governmental regulations on milk quality

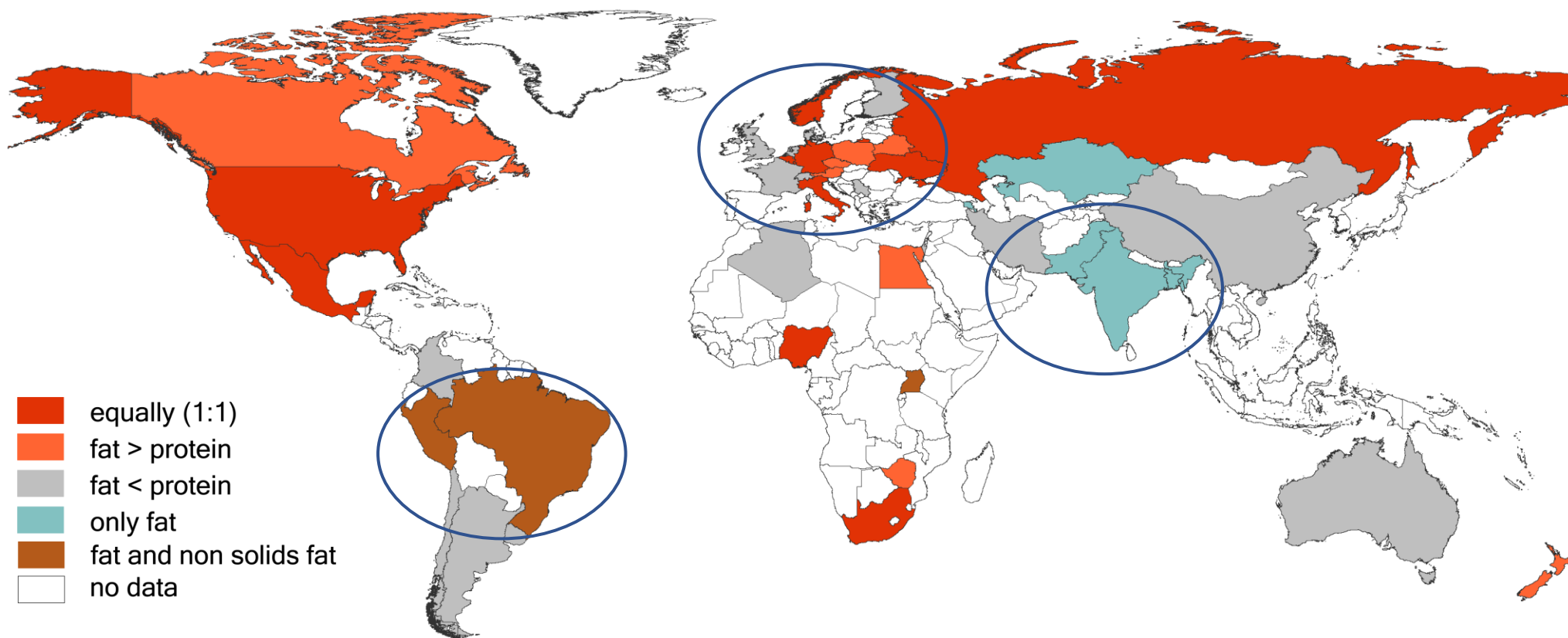
	Europe	North America	Latin America	Oceania	Africa	Asia
Antibiotics	x		X		X	X
SCC	X	X	X		X	X
BCC	X		X		X	X
Hormones	X		X			
Additionally added water	X		X		X	
Milk components	X	X	X		X	X
Chemical contaminants	X		X		X	
others				X	X	X

X regulation is common in specific region

- **Basis/minimum standard for milk quality**
- **Most common governmental regulations on milk quality:**
 1. **Antibiotics (70% or 32 countries)**
 2. **SCC (65% or 30 countries)**
 3. **BCC (55% or 25 countries)**
- **Oceania: no governmental regulation on milk quality; these are set up by different institutions/organisations**
- **The standards serve as one basis for the processors to determine the milk price**



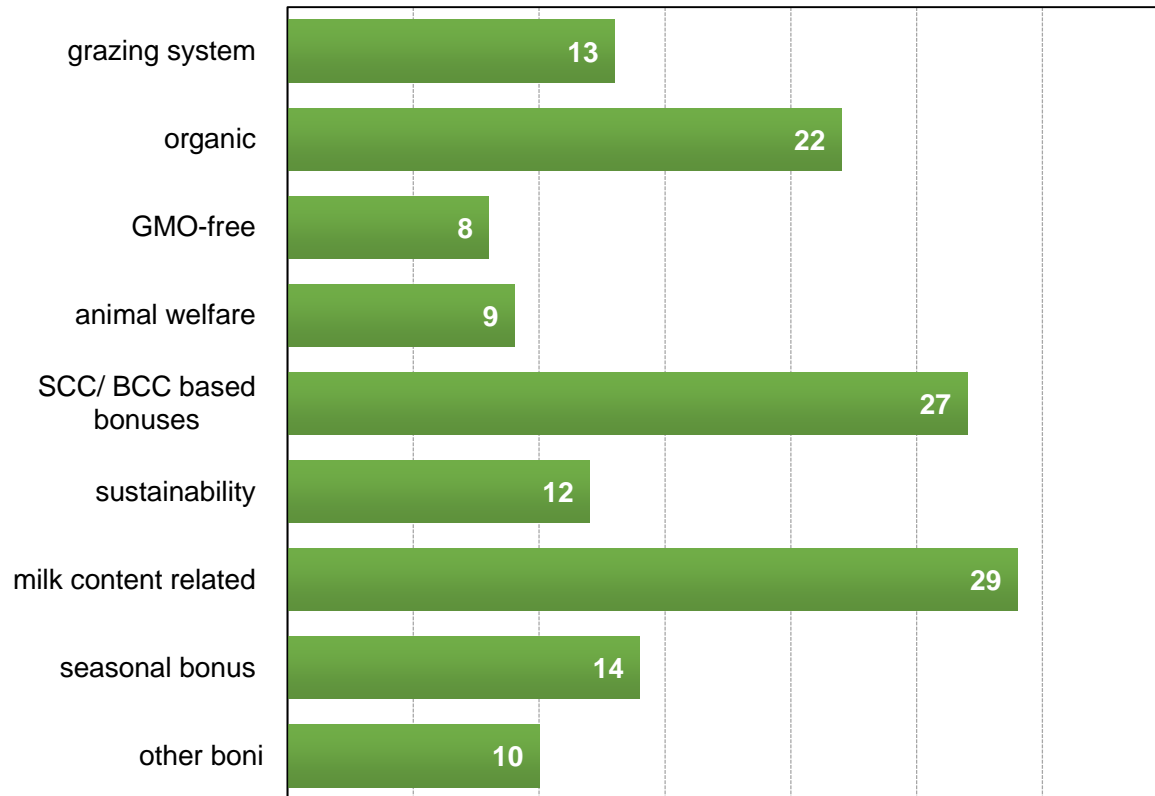
Weight of fat and protein in the milk pricing system



- Shown is the weighting system of a typical processor for a typical farm, but differences within the country occur
- 36% of all countries weigh fat < protein, 25% give equal weight to fat and protein
- Changing system due to high fat demand (e.g. German processors started to shift from fat < protein to 1:1)

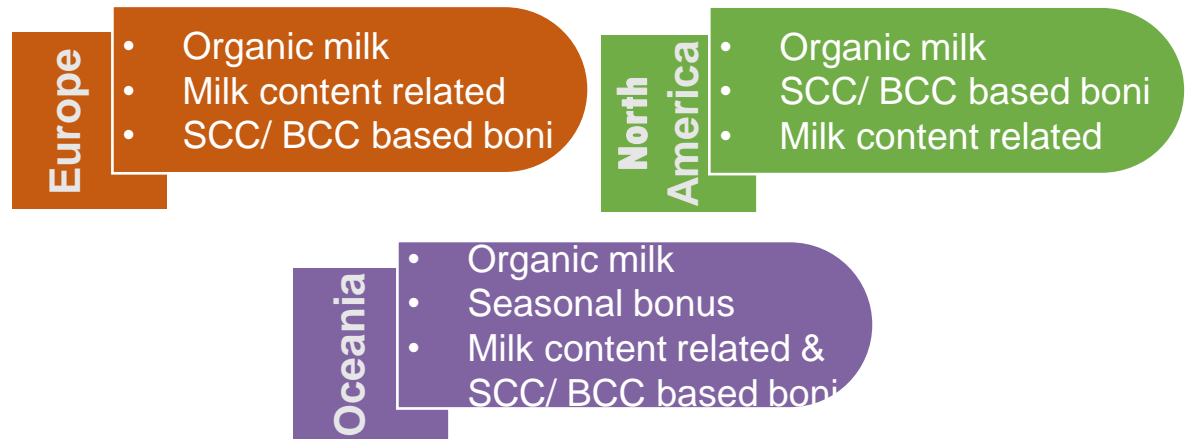
What are the possibilities to increase the basic milk price?

Possible strategies to increase the basic milk price around the world



Different types or qualities of milk enable the farmer to get a higher price

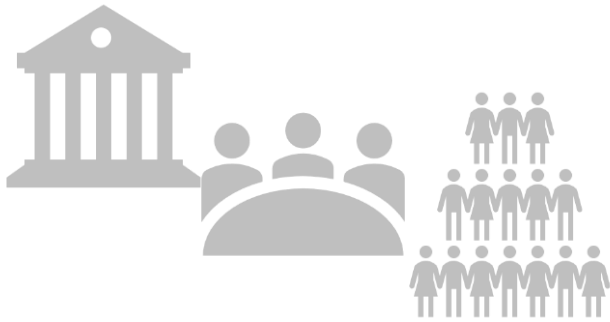
Main strategies for major milk producing countries:



N = 49 countries

Dairy Value Chain

Government and society

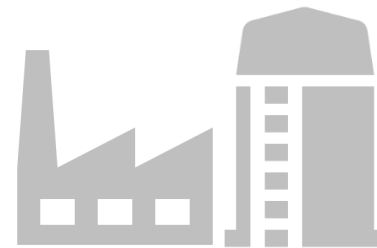


What can the farmer expect from the future?

Consumer



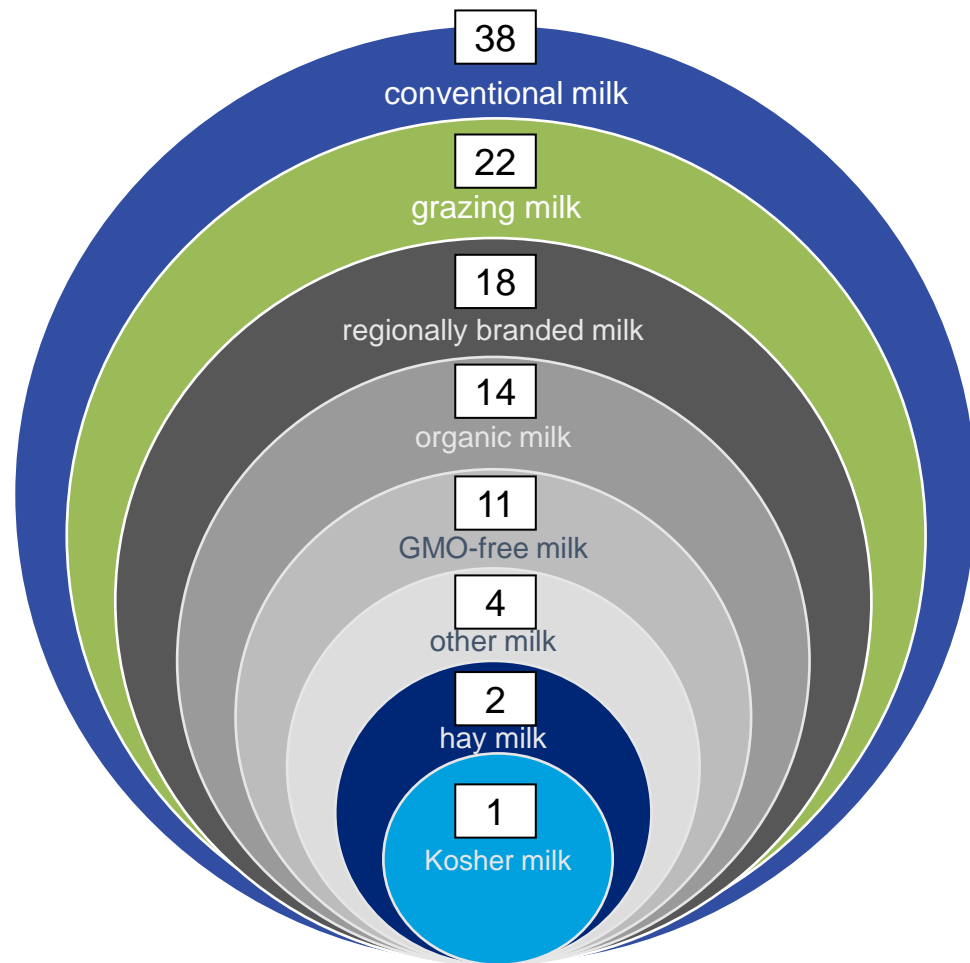
Processor



Farmer



What will be the most sustainable production system?

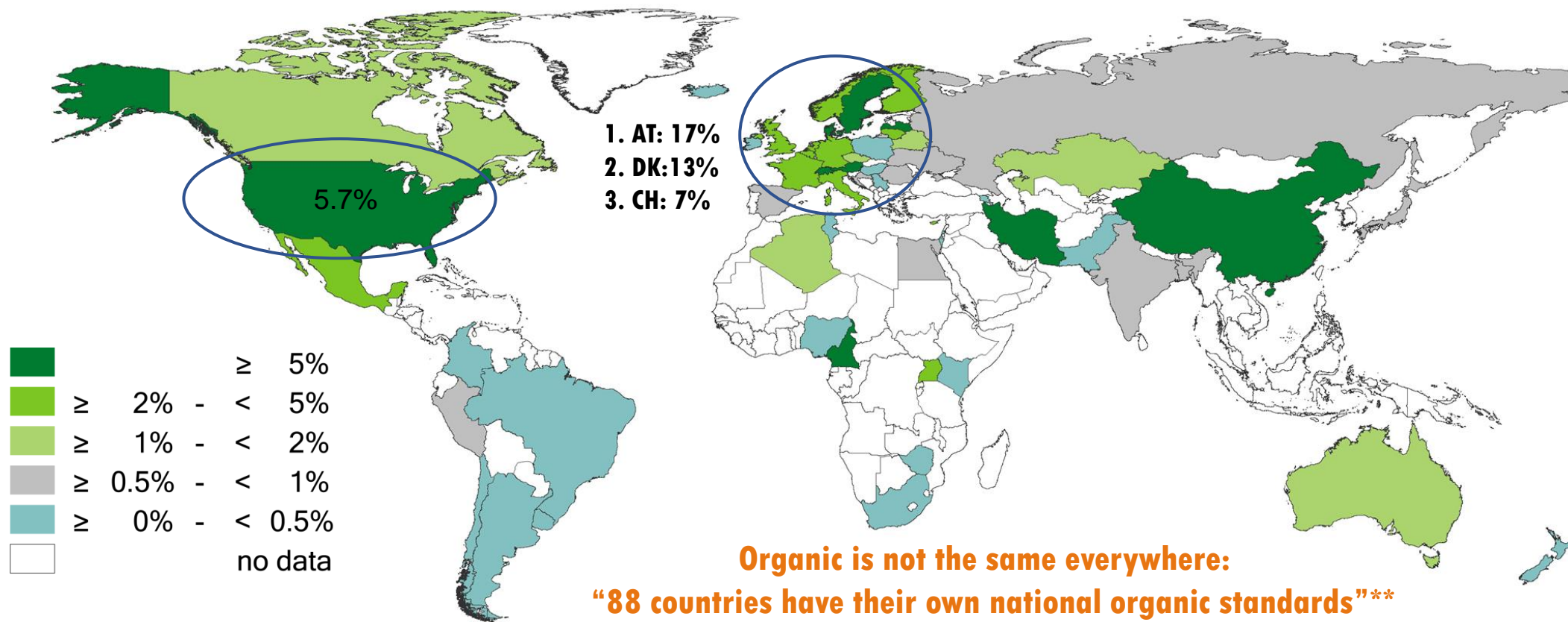


- **Conventionally produced milk is still the most popular product**
- **Animal-friendly systems and regionally branded milk will most probably guarantee a sustainable way of production**
- **Sustainable regional future production system:**
 - **Europe: conventional milk, regionally branded milk**
 - **Latin America: grazing milk, conventional milk**

N = 50 countries

Organic milk production

Share of organic milk to total milk produced in the country



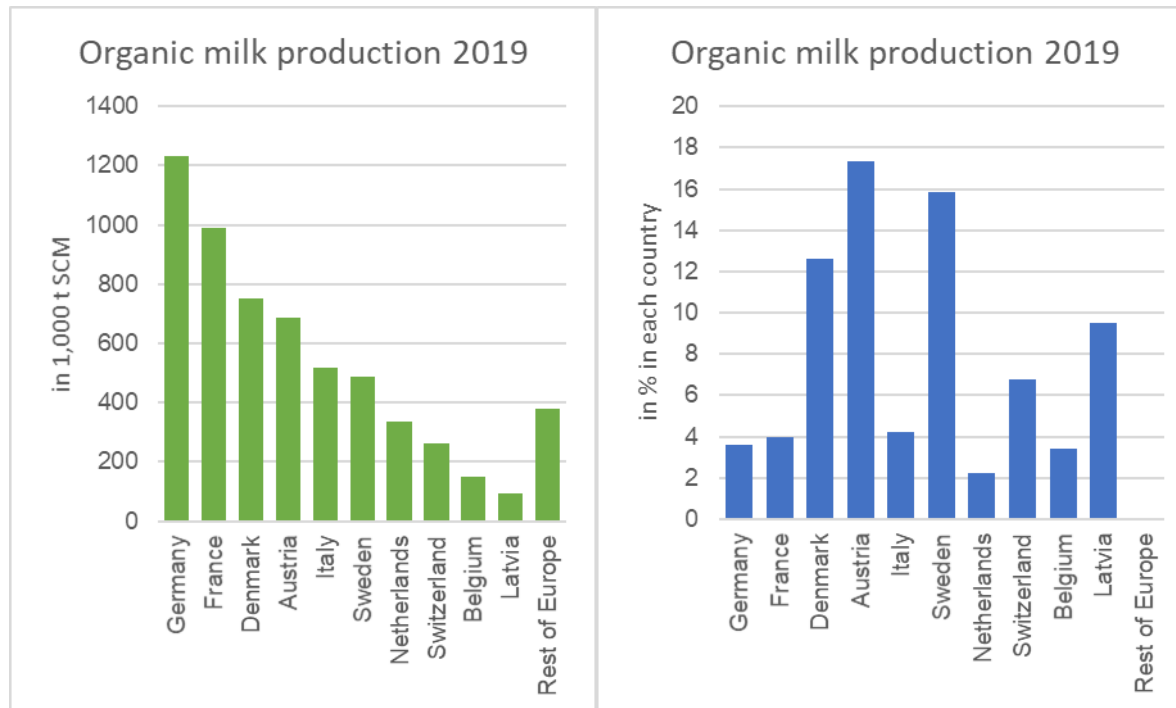
- **1.5 mill t organic milk production*** representing **3% of total milk production***
- **Fastest growing sector (CAGR 8%)** representing **20% of all organic food and drink sales globally****

*calculation based on Year Box results and IFCN Database

**according to Global Organic Dairy Market Report 2019

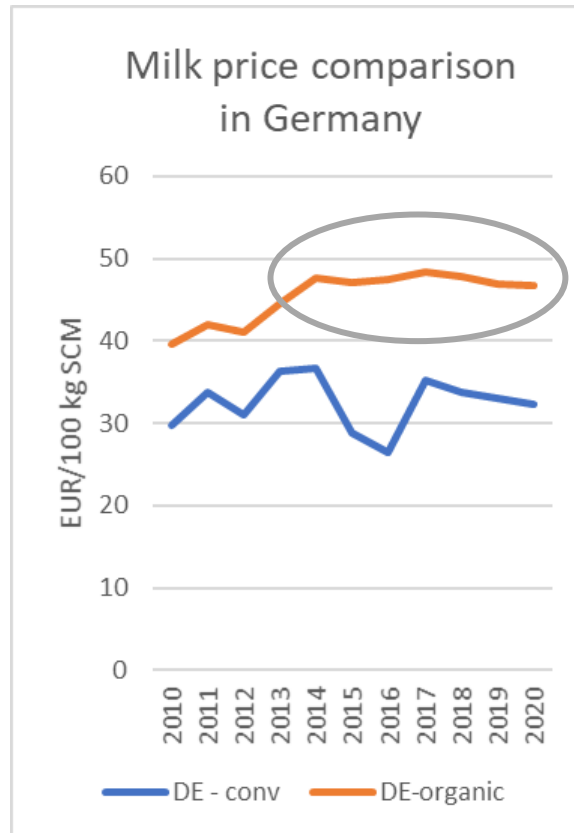
N = 42 countries

Organic milk production in Europe



- **The production of organic milk varies greatly in the European countries**
- **Germany, France, Denmark, and Austria are the biggest producers in absolute numbers**
- **Austria, Sweden, Denmark and Latvia are the biggest producers in relation to the nation milk production: 10 – 16%**

Organic milk production



Advantages

- **Stable milk prices, no volatility**
- **Environmentally friendly and sustainable, high animal welfare**
- **Acceptance among the consumers and growing demand**

Note

- **Transition period takes 2 years, it is a long-term decision**
- **Different production system is required, new skills are needed**
- **Higher milk price does not necessarily guarantee a higher farm income**

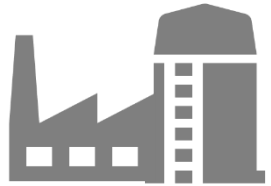
Summary

Government and society



The governments set guidelines to a changing world. Environmental sustainability and animal welfare on dairy farms have become a focus of the legislation and are increasingly regulated.

Processor



Processors are the link between the legislation, consumer, and farmer. Increasing regulations and demands and changing markets require constant adjustments in product development, logistics, and marketing.

Farmer



Farmers operate under increasing pressure and have to fulfil growing environmental sustainability and animal welfare requirements under (often) tight economic conditions.

Key facts about the „milk“ market

- 60%** **More demand and supply of cow milk world-wide in 2050**
 - 5%** **The share of non-cow+buffalo milk in total world milk supply**
 - 4%** **The share of plant-based alternatives in EU drinking milk consumption**
 - 3%** **The share of organic milk production in 50 monitored countries***
-
- **Cow milk will stay the staple and true milk product in the future**
 - **Diversification of cow milk (products) will help to satisfy demanding consumers especially in developed countries**

***IFCN estimation**

**Self-Sufficiency -
Sustainable Solutions**

IFCN Emerging Dairy Regions Forum

Join here: ifcndairy.org/EDRF



IFCN

Dairy Data • Knowledge • Inspiration

**NOV 12
2:30 PM, CET**

**1.5 hours
Online**

