

# “Changing dairy world: 2000 – 2020 – 2040” focusing on special types of milk

Outcome of the 20<sup>th</sup> IFCN Dairy Conference 2019

15<sup>th</sup> – 19<sup>th</sup> June, 2019  
Berlin, Germany

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The IFCN Dairy Conference is a key annual platform for the IFCN Research Network of dairy economists and experts to discuss sector developments, farm economic analysis, research methods and special topics.

On June 15<sup>th</sup> – 19<sup>th</sup>, 2019 the network celebrated the 20<sup>th</sup> Anniversary IFCN Dairy Conference themed “Changing dairy world: 2000 – 2020 – 2040” with a focus on special types of milk. The event brought together over 80 participants representing 48 countries from all continents. The institutions delegating their representatives encompassed universities, research centers, dairy boards and associations, private and public sector representatives, consultants and farmers.



This outcome paper and a press release can be found here: <https://ifcndairy.org/press/>

## KEY MESSAGES ON DAIRY AND SPECIAL MILK

*The **dairy business** cannot be as **usual business**. If it will not change, dairy business will lose the track.*

*Different types of milk will play a role. **Keep your eyes open!***

*The dairy industry is facing many challenges – **sharing challenges** and working together will help to overcome them.*

*Value of milk depends on the **relationship** between farmers, consumers and the society.*

*We should think about the **future today** and define the key drivers already today.*

*The **biggest competitor** for every dairy farm is rising wages in his country.*

## CONFERENCE PROGRAM OVERVIEW

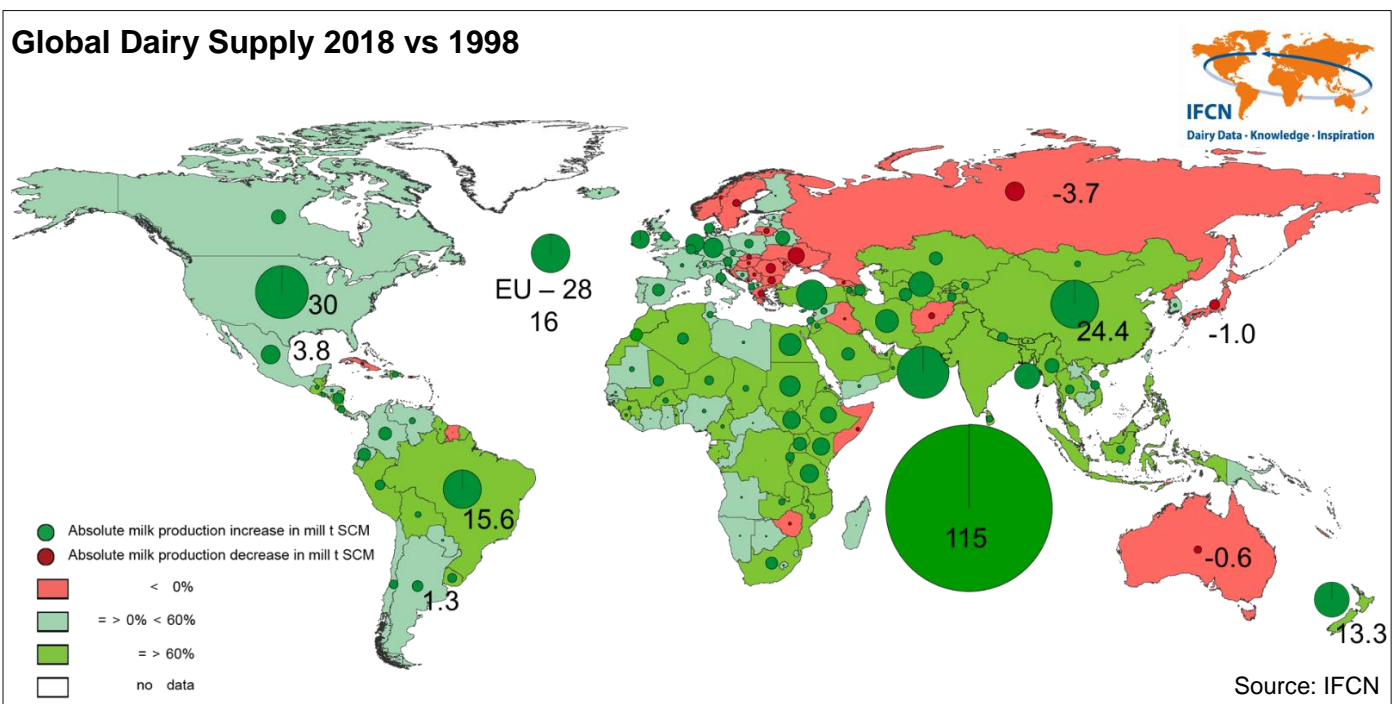
| Mon. June 17<br>Dairy World Status                                                                                                                             | Tue. June 18<br>Special types of milk                                                                                                                                                 | Wed. June 19<br>Dairy Outlook                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Conference opening</li> <li>20 years IFCN</li> <li>IFCN researchers' Network 2020: New ways of communication</li> </ul> | <ul style="list-style-type: none"> <li>Partners' Year box results</li> <li>Challenges and opportunities for processors</li> <li>Trends in dairy consumption</li> <li>Panel</li> </ul> | <ul style="list-style-type: none"> <li>Dairy developments' impact on poverty reduction</li> <li>20 years backwards and forward for the dairy industry</li> <li>IFCN Dairy Outlook 2040</li> </ul> |
| <ul style="list-style-type: none"> <li>IFCN Global picture on dairy markets</li> <li>Country cases</li> </ul>                                                  | <ul style="list-style-type: none"> <li>Overview on special types of milk</li> <li>Milk = Milk? Trends on “special” milk in different countries</li> </ul>                             | <ul style="list-style-type: none"> <li>IFCN Dairy Outlook 2020</li> <li>IFCN Network 2020/2025</li> <li>Closing</li> </ul>                                                                        |
| <b>Lunch</b>                                                                                                                                                   | <b>Lunch</b>                                                                                                                                                                          | <b>Lunch</b>                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>IFCN Global picture on dairy farms</li> <li>Country cases</li> </ul>                                                    | <ul style="list-style-type: none"> <li>Workshop on “special types of milk”</li> <li>Poster session and milk packages exhibition</li> </ul>                                            |                                                                                                                                                                                                   |
| <b>German dinner</b>                                                                                                                                           | <b>20<sup>th</sup> Anniversary Celebration</b>                                                                                                                                        |                                                                                                                                                                                                   |

## 1. TRENDS AND DRIVERS in the last 20 years

Celebrating the 20<sup>th</sup> anniversary of the IFCN, a flashback of the development and the most important drivers for the dairy industry to recap the last 20 years. The key variables reflect the growth story of the dairy world:

- Global milk production and consumption increased by +63% reaching from 1998-2018
- Per capita consumption reached a level of 116.5 kg ME/ capita rising by 26% since 2018
- Milk and dairy products (excl. EU-intra trade) doubled, reaching a level of 57 mill t ME in 2018

Firstly, this shows that more milk was needed worldwide as a source to provide protein and secondly, in the course of globalization, more milk was demanded by countries not producing enough milk to cover the rising demand e.g. in Asia, Africa and Latin America which accelerated the growth in dairy trade.



Different kind of drivers were identified and brought into connection with the world milk price development which not only showed an increase in volatility but also an average price shift from ~40 USD/ 100kg SCM for the years 2006 to 2016 and 35 USD from 2017 onwards. Foreseen and unforeseen drivers were assigned to trade, supply and demand.

- **Trade:** Global financial crisis, Chinese melamine scandal, Russian import ban
- **Supply:** Peaks and dips in oil prices, droughts like in the US and NZ, EU quota abolishment
- **Demand:** New perception of butter consumption, decline in SMP and WMP import demand

However, those are only some drivers, while the Research Network identified a lot more drivers like e.g. energy prices increasing feed prices, increase in fat consumption, occurrence of diseases, changing dietary trends, whey as source of protein, higher volatility in oil prices, GMO in agriculture, growing relevance of sustainability, trade tensions, environmental regulations, relevance of social media, IT and big data etc.

The “special topic day” on different types of milk inspired participants by various presentations covering different views along the whole supply chain. In the workshop the complexity and opportunities of different milk was discussed. It was agreed that trust and transparency are important and that the real value of dairy products needs to be promoted more.

### Definition

IFCN defines special milk as value-added cow milk and milk alternatives. Special types of milk are clustered in three main categories:

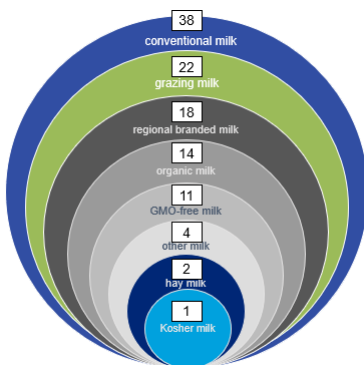
- Milk from different sources (type of animals, plant-based milk, synthetic milk, etc.),
- Milk generated with different farming practices (organic, GMO-free, etc.), and
- Different ways of processing and packaging (composition of liquid milk).



### Different types of milk

With a survey, IFCN tries to define annually the status quo of current developments and catch a glimpse into the future of dairy farming. The survey 2019 focused on governmental regulations, organic milk production, future sustainable milk production systems, availability of non-dairy “milk”, etc.

E. g. What will be the most sustainable milk production system in the future (max. three response options per country)?



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

(n= 50 different countries)

### Key conclusions:

- **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.
- **Processors:** Processors are the link between the legislation, consumers, and farmers. Increasing regulations and demands require constant adjustments in product development and logistics.
- **Farmers:** Farmers operate under increasing pressure and have to fulfil growing environmental sustainability and animal welfare requirements under (often) tight economic conditions.

## Workshop results: complexity and opportunities of special types of milk

In working groups, the conference participants discussed the complexity and opportunities of special types of milk in different countries. Partners identified milks that consumers in their country see at the moment as most exciting besides conventional milk.

According to the partners' opinions, the following special milk types are currently mostly demanded worldwide (ranked):

1. Organic milk
2. Plant based "milk" (soy, almond, rice, oat, etc.)
3. Regional/ my farm milk
4. Milk from other animals (sheep, goat, buffalo, etc.)
5. Grazing milk



### Opportunities:

As the next step, participants brainstormed on country specific success stories where value has been generated with special types of milk. Here are some examples:



- Alpro (DE), ne moloko (RU), Oatly: plant-based milk
- Fairlife (US): ultra-filtered milk
- Parag (IN): milk quality and branding
- Hemme Milch (DE): regional
- The A2 milk company (NZ): A2 milk
- Ornuu, Kerrygold (IE): grazing and sustainability

### Key learnings:

- **Special milk products remain a small market portion:** Sales of plant-based drinks are growing fast both in value and volume but so far, they remain a small market portion. In 2018, they represented 4 % share on cow milk volume sales.
- **Differentiation creates value for the early adopters:** Opportunities in special milk production exist. Differentiation of milk adds and creates additional value.
- **Organic and local milk are appreciated by consumers as special milk:** Organic milk is well accepted by consumers. Also, local milk plays an important role. Vertical integration is an opportunity especially for small-scale farmers to sell milk directly to consumers ("from grass to finished milk"). Consumers want to support their neighbourhood and know the source of the products. Partners state that consumers' demand is driven by the wish for protecting the environment and animals.
- **Emotional stories touch consumers more than facts:** Plant based products are coupled with a specific way of life like sports, freedom, animal welfare. It is important to promote local and vertical produced milk which consumers can link to products coming from known source and production standards. Trust and transparency are very important – however, emotional stories often win over facts. In the long-term, it is important to promote real value-added products with impactful campaigns and simple messages.



## Background and justification

Today the dairy world is serving over 7 billion consumers and providing livelihoods for approximately 1 billion people involved in the dairy chain. The dairy sector is highly complex which entails great challenges due to its high rate of significant changes. IFCN has taken a step forward to create four possible scenarios of how demand, supply and trade could develop on country but also on regional level. In accordance with the IFCN 20<sup>th</sup> Anniversary, the IFCN Long-term Dairy Outlook gives insights on how the world will develop the next 20 years, or more particular 22 years, to answer the question how the dairy world will look like in 2040.

## Methodology

The IFCN Long-term Dairy Outlook is an iterative country supply/demand modelling process. It is produced based on the feedback of the 100 IFCN Research Partners considering the last 12 months.

- First, IFCN determines the two most relevant drivers of the dairy world, with which a matrix four scenarios were constructed.
- Secondly, IFCN selects “Pro-dairy” scenario -the most probable scenario which assuming preferences for dairy and progressive GDP growth as well as political stability

The results are a forecast of data for around 200 countries until 2040, covering indicators like supply, demand and farm size. This is not only describing the dairy world for the next 22 years but also providing a base for a strategic analysis and planning. IFCN revises and develops the IFCN Long-term Dairy Outlook annually. In 2019, ceilings in milk yield and per capita demand were implemented, showing a slightly lower supply growth (+1.7%) than demand (+1.8%), resulting in a slight deficit of -12 mill t ME in 2040.

## Key results

- Global milk supply will rise by 45% (+400 mill t SCM) until 2040, about 4 times the current US milk supply
- Global dairy trade will be the fastest growing indicator – almost doubling until 2040 +51 mill t traded
- Main driver of future milk production is an increase by milk yield (+27%) but also by more animals (+14%)
- Consolidation will continue: While farms decrease by -17%, average farm size increases by +37%
- Demand is almost equally driven by population growth (+23%) and per capita demand increase (+20%)

## The dairy world 2008/ 2018/ 2030/ 2040

| World                           | Unit                   | Annual values |       |      |      | Change 2040 vs 2018 |      |             |
|---------------------------------|------------------------|---------------|-------|------|------|---------------------|------|-------------|
|                                 |                        | 2008          | 2018* | 2030 | 2040 | Absolute            | %    | CAGR %/year |
| <b>Milk supply and demand</b>   |                        |               |       |      |      |                     |      |             |
| Milk production & milk demand** | mill t SCM             | 693           | 882   | 1138 | 1282 | 400                 | 45%  | 1.7%        |
| <b>World trade</b>              |                        |               |       |      |      |                     |      |             |
| Excl. EU-28 intra trade***      | mill t SCM             | 39            | 57    | 84   | 108  | 51                  | 90%  | 3.0%        |
| <b>Supply drivers</b>           |                        |               |       |      |      |                     |      |             |
| Number of milk animals          | mill head              | 331           | 373   | 414  | 427  | 54                  | 14%  | 0.6%        |
| Average milk yield              | t / milk animal / year | 2.0           | 2.3   | 2.6  | 2.9  | 0.6                 | 27%  | 1.1%        |
| Farm number                     | mill                   | 120           | 118   | 105  | 99   | -20                 | -17% | -0.8%       |
| Average farm size               | head / farm            | 2.8           | 3.2   | 4.0  | 4.3  | 1.2                 | 37%  | 1.5%        |
| <b>Demand drivers</b>           |                        |               |       |      |      |                     |      |             |
| Population                      | billion                | 6.7           | 7.5   | 8.6  | 9.3  | 1.7                 | 23%  | 0.9%        |
| Dairy consumption per capita    | kg ME/ capita/ year    | 102           | 117   | 132  | 140  | 23                  | 20%  | 0.8%        |

### Explanations:

Results based on scenario 1 (High milk demand due to consumer preferences and beneficial political and economic situation)

\* Preliminary data of year 2018, partly estimated

\*\* Small deviations of total supply and demand due to changes in stocks, demand will be slightly higher than production in 2040

\*\*\* Representing volume traded from surplus countries; imports from net exporters not included

SCM= Solid Corrected Milk (standardised to 4% fat and 3.3 % protein)

ME= Milk equivalents, method: "fat and protein only"

CAGR= Compound Annual Growth Rate

Status of data : 04/2018

| <b>MONDAY, JUNE 17 – DAIRY WORLD STATUS AND TRENDS</b> |                                                                                                                                                |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 – 09:30                                          | <ul style="list-style-type: none"> <li>Conference Opening (IFCN)</li> </ul>                                                                    |
|                                                        | <b>20 YEARS IFCN</b>                                                                                                                           |
| 09:30 – 09:55                                          | <ul style="list-style-type: none"> <li>20 years IFCN: What is IFCN for you?</li> </ul>                                                         |
| 09:55 – 10:30                                          | <ul style="list-style-type: none"> <li>IFCN Researchers' Network 2020: New ways of communication</li> </ul>                                    |
| <b>10:30– 11:00</b>                                    | <b>BREAK</b>                                                                                                                                   |
|                                                        | <b>IFCN GLOBAL PICTURE ON DAIRY MARKETS</b>                                                                                                    |
| 11:00 – 11:30                                          | <ul style="list-style-type: none"> <li>Flashback: 20 years of dairy market – (un)foreseen drivers and trends</li> </ul>                        |
| 11:30 – 12:00                                          | <ul style="list-style-type: none"> <li>20 years from country perspective – Game changers of the dairy market (IFCN Partners)</li> </ul>        |
| 12:00 – 12:30                                          | <ul style="list-style-type: none"> <li>Consecutive panel and discussion (Partners and IFCN)</li> </ul>                                         |
| <b>12:30 – 14:00</b>                                   | <b>LUNCH AND PHOTO SESSION</b>                                                                                                                 |
|                                                        | <b>IFCN GLOBAL PICTURE ON DAIRY FARMS</b>                                                                                                      |
| 14:00 – 14:30                                          | <ul style="list-style-type: none"> <li>20 years of dairy farming – Dairy production systems and farm structure (IFCN)</li> </ul>               |
| 14:30 – 15:10                                          | <ul style="list-style-type: none"> <li>Dairy production systems around the world – Key drivers for farm development (IFCN Partners)</li> </ul> |
| 15:10 – 15:40                                          | <ul style="list-style-type: none"> <li>Consecutive panel and discussion (Partners and IFCN)</li> </ul>                                         |
| 15:40 – 16:00                                          | <ul style="list-style-type: none"> <li>Hearing</li> </ul>                                                                                      |
| <b>16:00 – 17:00</b>                                   | <b>BREAK · BILATERAL TALKS · PRESS CONFERENCE</b>                                                                                              |
| <b>18:00 – 20:00</b>                                   | <b>DINNER</b>                                                                                                                                  |
| <b>TUESDAY, JUNE 18 – SPECIAL TYPES OF MILK</b>        |                                                                                                                                                |
| 09:00 – 09:25                                          | <ul style="list-style-type: none"> <li>Different types of milk and milk products – Partners' Year Box results (IFCN)</li> </ul>                |
| 09:25 – 09:45                                          | <ul style="list-style-type: none"> <li>Challenges and opportunities for processors (Philipp Hildebrandt, DMK)</li> </ul>                       |
| 09:45 – 10:05                                          | <ul style="list-style-type: none"> <li>Current and future trends in dairy consumption (A. Capkovicova, European Commission)</li> </ul>         |
| 10:05 – 10:30                                          | <ul style="list-style-type: none"> <li>Consecutive panel: Perception of milk from the farmer to the consumer</li> </ul>                        |
| <b>10:30 – 11:00</b>                                   | <b>BREAK</b>                                                                                                                                   |
| 11:00 – 11:20                                          | <ul style="list-style-type: none"> <li>Overview on special types of milk (IFCN)</li> </ul>                                                     |
| 11:20 – 12:30                                          | <ul style="list-style-type: none"> <li>Milk = Milk? – Trends on "special" milk in different countries (IFCN Partners)</li> </ul>               |
| <b>12:30 – 14:00</b>                                   | <b>LUNCH</b>                                                                                                                                   |
| 14:00 – 15:30                                          | <ul style="list-style-type: none"> <li>Workshop on "special types of milk" (working groups)</li> </ul>                                         |
| <b>15:30 – 17:00</b>                                   | <b>BREAK · BILATERAL TALKS · POSTER SESSION ON PARTNERS' RESULTS</b>                                                                           |
| <b>18:30 – 23:00</b>                                   | <b>IFCN 20<sup>th</sup> ANNIVERSARY CELEBRATION (Spreespeicher)</b>                                                                            |
| <b>WEDNESDAY, JUNE 19 – DAIRY OUTLOOK</b>              |                                                                                                                                                |
| 09:00 – 09:30                                          | <ul style="list-style-type: none"> <li>Dairy development's impact on poverty reduction (Ernesto Reyes, IFCN Board)</li> </ul>                  |
| 09:30 – 09:55                                          | <ul style="list-style-type: none"> <li>20 years backwards, 20 years forward for the dairy industry (Robert Erhard, Nestlé)</li> </ul>          |
| 09:55 – 10:30                                          | <ul style="list-style-type: none"> <li>IFCN Long-term outlook: Dairy world 2040 (IFCN) and Hearing</li> </ul>                                  |
| <b>10:30 – 11:00</b>                                   | <b>BREAK</b>                                                                                                                                   |
| 11:00 – 11:30                                          | <ul style="list-style-type: none"> <li>IFCN Short-term outlook 2020: IFCN's perspective on market developments (IFCN)</li> </ul>               |
| 11:30 – 12:00                                          | <ul style="list-style-type: none"> <li>IFCN Way forward 2020/2025: Summing up next steps</li> </ul>                                            |
| 12:00 – 12:30                                          | <ul style="list-style-type: none"> <li>Conference closing</li> </ul>                                                                           |
| <b>12:30 – 13:30</b>                                   | <b>LUNCH OR LUNCH PACKAGE</b>                                                                                                                  |