IFCN Long-term Dairy Outlook

The IFCN Vision of the Dairy World in 2030

June 2018

Łukasz Wyrzykowski , Katrin Reincke, Torsten Hemme,

This paper is based on the contribution of the Researchers of the IFCN Dairy Research Network

IFCN Dairy Research Centre

Kiel, Germany

Torsten.Hemme@ifcndairy.org

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Authorship by IFCN – The Dairy Research Network, 04/2018

Meeting the complexity of a rapidly changing dairy sector

Today the dairy world is serving over 7 billion consumers and providing livelihoods for approximately 1 billion people involved in the dairy chain. In the future, even more people will need to be served with dairy products. Indeed, the dairy sector with its complexity entails great challenges due to its high rate of significant changes, influenced by economic and political decisions and drivers. In response to this, IFCN aims to answer upcoming questions concerning the development of the dairy world in the next 13 years and its crucial structural changes.

A global picture of the dairy world in 2030 is based on an extensive collection of data (obtained since 1996) and the expertise of the IFCN Network. The aim of producing a long-term outlook is to provide all stakeholders of the dairy value chain with a clearer understanding of future developments in the dairy sector. Therefore, this analysis is the result of a lengthy cooperation between many international IFCN Research Partners and the IFCN Center.

The dairy world in 2017 can be described in the form of these values:

864 mill t = World milk production of all species, standardised to ECM 4.0% fat, 3.3% protein

116 kg/year = Average world consumption per person in milk equivalents

3.1 milk animals/farm = Average world dairy farm size related to cows or buffalos

2.2 t/year = Average world milk yield per dairy cow/buffalo

35.5 USD/100kg milk = Annual world milk price level

Background on the IFCN Outlook

IFCN has been producing the IFCN Long-term Dairy Outlook annually since 2013. Stakeholders and political institutions are able to use the outlook for guidance and strategic planning, as future markets, shifting supply as well as demand patterns are monitored and global potentials in dairy production are made out.

The IFCN Outlook covers each dairy country in the world and considers all milk produced. Therefore, besides cow and buffalo milk (representing 95% of all milk) also sheep, goat and camel milk is included. The standardisation of data is a key element to insure comparability between countries. One example of this is the standardisation of milk production to 4.0% fat and 3.3% protein. The key method of the IFCN Long-term Dairy Outlook is an iterative country supply/demand modelling process. This process is concluded once a world milk price level is found where demand growth equals supply growth (see annex).

The IFCN Long-term outlook and its results

Technically the IFCN Long-term Dairy Outlook is a 10-year forecast, with a this year's extension to 13 years, until 2030. This Outlook contains a database of the key dairy parameters per country. The 2030 Outlook is based on the defined scenario "2.3% growth" (see annex). According to this, IFCN assumes future positive consumer preference for milk and favourable policies and economic situations. Coupled with this scenario, macroeconomic assumptions are applied to model the milk supply and demand growth. Therefore the results will be interpreted considering these defined frame conditions.

Long-term milk price level: As a key result, a long-term world milk price of 41 USD/100kg milk (ECM 4.0% fat, 3.3% protein) is estimated. At this price level, it is predicted that world milk demand and supply will balance out. Compared to the average milk price level in 2017 this level is 15.5% higher. Nevertheless, this level is comparable to the average world milk price of 40 USD/100kg milk in the time frame 2007 to 2014.

The dairy growth story is expected to continue: In the last 13 years milk demand and supply increased from 636 to 864 mill t ECM, which corresponds to a growth of 36%. (24% from 2007 – 2017). IFCN predicts, for the next 13 years, a similar growth of 35% with an expansion of milk production to 1168 mill t ECM. According to this, 304 mill t more milk will be produced and consumed.

Table 1: The dairy world in 2007 / 2017 / 2030

World	Unit	Annual values			Change 2030 vs 2017		
		2007	2017*	2030	Absolute	%	CAGR %/year
Milk supply and demand							
Milk production ≈ milk demand**	mill t ECM	696	864	1168	304	35%	2.3%
World trade							
Excl. EU-28 intra trade***	mill t ECM	36	55	95	40	73%	4.3%
Supply drivers							
Number of milk animals	mill head	332	372	417	45	12%	0.9%
Average milk yield	t / milk animal / year	2.0	2.2	2.7	0.5	23%	1.6%
Farm number	mill	119	118	104	-14.0	-12%	-1.0%
Average farm size	head / farm	2.8	3.1	4.0	0.9	29%	2.0%
Demand drivers							
Population	billion	6.6	7.5	8.7	1.2	16%	1.1%
Dairy consumption per capita	kg ME/ capita/ year	104	116	135	19	16%	1.2%

Explanations:
Results based on scenario 1 (High milk demand due to consumer preferences and beneficial political and economic situation)
* Preliminary data of year 2017, partly estimated
** Small deviations of total supply and demand due to changes in stocks
*** Representing volume traded from surplus countries; imports from net exporters not included
ECM= Energy 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 : 03/2018

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Population growth and higher per capita consumption drives future demand. Until 2030, global population will increase by 16% to 8.7 billion people, so 1.2 billion more consumers will demand milk products. Global per capita consumption will increase by 19 kg ME to 135 kg ME per person. The highest increase in per capita consumption will take place in South Asia (+40%) up to 196 kg ME per person. Main factors for urbanization and the preference for processed food and increasing purchasing power.

Trade of dairy products will gain further relevance. Within the time period 2004-2017, world trade increased by 53%. Until 2030, the net trade is expected to increase by 73% up to 95 mill t milk (ECM) in 2030. This reflects the increasing importance of trade in the dairy world, demand for processed dairy products and the development of shifting dairy production to more competitive locations.

Changes in future milk demand will shape trade patterns. Although growth in milk demand in the Near & Middle East is regressive (-3.5% 2017 vs. 2016), these countries potentially become more significant as exporters. As this decline is not caused by changing consumer preferences, but by economic and political conditions limiting the access to dairy products, the development of the economies and the political framework will determine the local consumption of dairy.

Level of global milk supply will keep on growing and cover global demand. Milk production is expected to increase by 35%, up to 1168 mill t milk (ECM) in 2030. More than half of the production growth is expected to take place in South Asia as regional supply will increase by 64% to 392 mill t milk (ECM). Predominantly, this milk will be consumed at household level and in domestic markets. As consequence, this milk produced has very limited impact on the global market.

There will be 417 mill dairy animals in the world in 2030. This represents an increase of 12%, driven mainly by the two regions of South Asia and Africa. Together they will house 66% of the total dairy animal population by 2030. Unless Oceania where the number will stabilize, all regions will increase in the number of animals. Lowest increase will be observed in EU-28 (+1.1%) However, the global surge in milk production will be driven more by the increase in global milk yield (1.6% p.a.) than the increase in the number of dairy animals (0.9% p.a.).

Fewer farms, but larger farm sizes in 2030. In the next 13 years, the number of dairy farms will decrease to 104 mill, hence 14 mill farm will be lost. This indicates the ongoing consolidation process as fewer farms will produce a greater amount of milk. Merely in Africa, a significant number of new dairy farms will emerge (+9.8%), mainly driven by the population growth accompanied by new smallholder farmers. At the global level average farm size will expand to 4 head / farm, which corresponds to a global increase of 29% in average farm sizes.

Feedback welcome: The IFCN Long-term Dairy Outlook is an ongoing research project. Therefore, IFCN will appreciate receiving any feedback to improve the work further. The next IFCN Outlook 2030 and its database will be available in March 2019. For any comments or questions, please contact us:

IFCN - The Dairy Research Network
Schauenburgerstrasse 116
24118 Kiel
Germany

Tel.: +49-(0)-431-5606
info@ifcndairy.org
www.ifcndairy.org

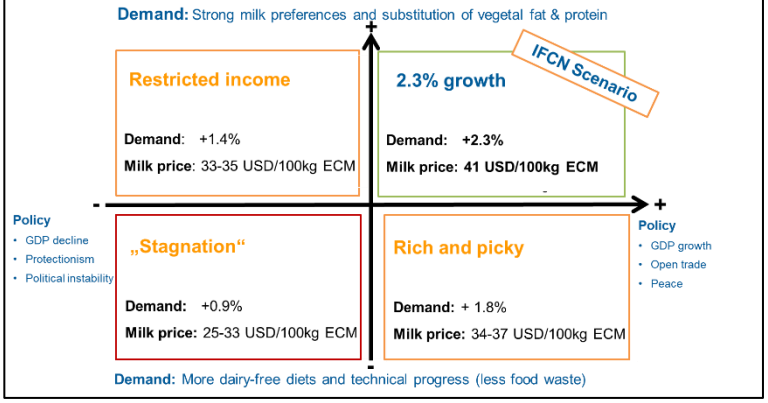


ANNEX

Method

The IFCN-Long Term Dairy Outlook is produced based on the feedback of the 100 IFCN Research Partners considering the last 12 months. IFCN maintains a database of 12 variables which describe the dairy world. The network validates this data every year and consequently has enabled a stable high-quality process since 2013. The main assumption of the outlook is a long- term balance of supply and demand. First, IFCN determines the two most relevant drivers of the dairy world, with which a scenario matrix is constructed.

Table 2: IFCN Long-Term Dairy Outlook Scenario Matrix



Secondly, IFCN selects the most probable scenario. Coupled with this, different assumptions are implied. Based on the mentioned assumptions, an iterative world supply/demand equilibrium modelling process is run to determine a world price level that will allow milk production on a level to cover demand. Thus, diverse data for around 200 countries, describing the dairy world for the next 13 years, are generated. In the following paragraph, scenarios and assumptions of the IFCN Long-term Dairy Outlook are discussed.

IFCN Scenarios and Assumptions

As has already been mentioned, the scenario matrix (see chart above) is built on two key variables of the dairy sector. IFCN assesses future consumer preferences for milk and future policies as the most crucial variables having an impact on the dairy world until 2030. Based on IFCN Data and Knowledge, it considers scenario 1 as the most probable one of the matrix. This scenario assumes positive consumer preferences in terms of milk and favourable policies facilitating peace, open trade and a positive level of GDP. Related to this, a demand growth by more than 20 t milk (ECM) a year is assumed.

Table 3: IFCN Outlook technical assumptions based on IFCN scenario

- GDP growth: 3.5-3.8% (IMF Outlook 10/2017 and 01/2018)
- Exchange rate: 1.17 USD/EUR
- Oil price: 75-80 USD/barrel
- World feed price: 26 USD/100 kg (OECD-FAO Outlook 07/2017)
- Weather: average condition

Based on the chosen scenario certain macroeconomic and technical assumptions (see table) are applied to the outlook. While some assumptions are based on external sources, other assumptions are derived from IFCN Expertise. However, other scenarios than the chosen one are possible. In that case, assumptions need to be adjusted based on the scenario and the modelling process needs to be performed once more. As economic and political conditions can change quickly, IFCN revises the dairy world every year and aligns the IFCN Long-term Dairy Outlook.