

The Global Dairy World 2016/17

Price cycle 2013 – 2016 has ended and a new one will start

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Dairy Data · Knowledge · Inspiration

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Introduction

The dairy world today can be described as globally connected, complex and fast changing. The IFCN Research Network has been analysing and predicting dairy developments and trends since the year 2000. This article summarises the results of the research work done in collaboration with researchers from over 100 countries for the year 2016 and 2017. More details can be found in the IFCN Dairy Report 2017 which has recently been published.

Key findings

The world milk price cycle 2013-2016 has ended and a new cycle is about to start

Since 2013, the world milk prices have developed in a rollercoaster scenario showing fluctuations of +/- 50% in a range between 22.1 USD/100 kg ECM in May 2016 and 56.0 USD/100 kg ECM in February 2014. A price recovery started in mid-2016, which indicated the end of the milk price crisis and the shift to a new zig-zag scenario in 2017. For 2018 IFCN expects a new price cycle to start.

2016: Lowest world milk production growth rate since 1997

IFCN estimates that the world all milk production (including cow, buffalo, sheep, goat and camel milk) in 2016 reached a level of 845 mill t ECM (+1.1% versus 2015). This is considerably below the long-term average (1996-2015) production growth rate of 2.3% and the lowest growth rate since 1997. Poor farm economics due to low world milk prices and local adverse weather events triggered this decrease in production.

High variability in farm gate milk prices and transmission of global milk prices

The average world farm gate milk price for 2016 was 37.7 USD/100 kg ECM based on 124 typical farms analysed in 52 countries (as described in the Annex) with wide variability from 18.1 to 95.5 USD/100 kg ECM. The IFCN World Milk Price Indicator showed a milk price of 27.0 USD/100 kg ECM in 2016. This clearly indicated that global milk prices were transmitted to farm level at varying speeds in different countries, mainly driven by the production system and the political environment. There has been a sharp recovery of world milk prices since June 2016. The speed at which the price recovery transmits to farm level in the different regions should be monitored.

Significant and continuous reduction of average milk production costs since 2013

The average cost of milk production only at world level, has decreased significantly from 47.2 to 38.4 USD/100 kg ECM since 2013. The reduction was significant in 2015, during the milk price cycle 2013-2016, while the milk prices were very low as well. This was due mainly to the farmers' response to cost saving measures, although currency devaluation also played a major role.

Role of policies and farm profitability in driving structural changes

The share of profitable farms declined to 43% of all farms in 2016 compared to 49% in the previous year. Most farms analysed had positive farm income when all direct subsidies were considered, except in a few countries in Europe. This clearly indicated the role of subsidies in the European dairy sector. An average cost reduction of 5 USD/100 kg ECM was observed between the average and large farms. However, a reduction of up to 27 USD/100 kg ECM in costs could also be observed in some high cost countries due to economies of scale. Hence, this development will be quite significant in promoting greater farm consolidation and structural changes in the near future.

The dairy world in 2016 in a nutshell:

27 USD/100kg ECM milk –Annual world milk price level

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

1.1% growth - +9.2 mill t ECM– World all milk production growth. Long-term average: 2.3%

62% of the produced cow and buffalo milk is delivered to dairies

370.7 mill dairy cows & buffaloes produce milk, averaging a yield of **2.2 ECM/ t/ animal/ year**

119.6 mill dairy farms exist globally. After a steady growth, the number is declining since 2014

3.1 cows per farm is the average farm size at the global level

Milk price developments 2007 - 2017:

Phase 1 (2007 -2009) The first rollercoaster scenario with fluctuations of +/- 50% around the average. The start of the cycle was driven by global demand increasing faster than the world supply in 2005 and 2006. Prices peaked at a level of 53.7 USD/100 kg ECM in November 2007, followed by a low of 19.3 USD/100 kg ECM in February 2009. A recovery of the world milk price was triggered by the low milk supply in 2009 and a strong demand in late 2009.

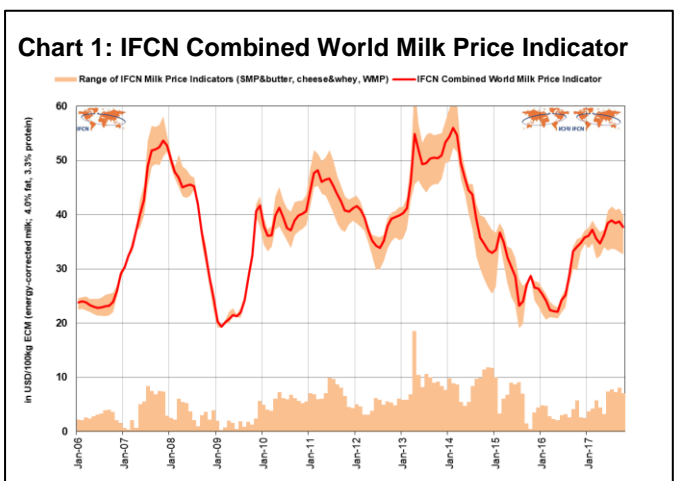
Phase 2 (2010) In this year the world milk price was at a stable level, averaging at 38.6 USD/100kg ECM. In this period the milk prices fluctuated by only +/- 10%. This stability was mainly driven by the high level of dairy stocks existing at the end of 2009.

Phase 3 (2011 – 2012) The world milk price showed a moderate volatility of +/- 20%. During this time world milk supply and demand grew at a similar rate and only minor imbalances existed at first. Poor farm economics led to a significantly low milk supply

Phase 4 (2013-2016).High world milk prices in 2013/2014 and low prices in 2015/2016 led to fluctuations of +/- 50% as in Phase 1. Low milk prices in 2015 and 2016 developed due to an oversupply of milk which was e.g. driven by the abolition of the European milk quota and previous high milk prices.

Phase 5 Since the milk price recovery in mid-2016, a new zig-zag cycle started in 2017 with a clear continuation of the milk price recovery and slight fluctuations due to the high level of stocks. One main reason for the world milk price increase in 2017 was the slowdown of milk supply growth and a significant surge in fat prices: The zig-zag scenario is characteristically a relatively short phase and will be succeeded by the next phase.

Phase 6 is expected to start in 2018.



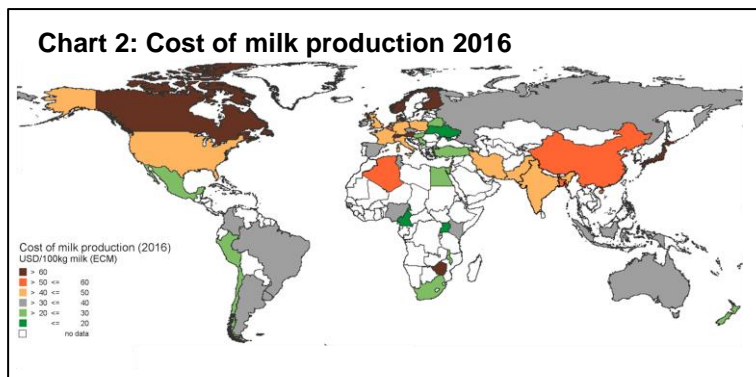
Cost competitiveness of milk production 2016

The IFCN analyses costs of milk production using the concept of typical farms (details in the annex). The map illustrates the cost level of average size farms in the 52 countries analysed.

The key findings for 2016 were:

The average costs in 2016 were 38.4 USD/100 kg ECM. This amount was established from the simple average taken from 124 typical average and large dairy farm types in 52 countries. The costs in 2016 were 3.0 USD/100 kg ECM below the level in 2015 and 7.5 USD/100 kg ECM below the level in 2014. This reduction in costs was driven by lower feed prices, strengthening of the USD and cost cuttings in the time of low milk prices.

The lowest costs (below 30 USD/100 kg ECM) were found in selected countries in Latin America, Africa, Central/Eastern Europe and in New Zealand.



Trends in milk production costs

Chart 3 illustrates the cost developments of typical farms in specific countries during the period of 2000 – 2016 and estimation for 2017.

High dynamics in cost developments driven by changes in farm input price, exchange rates and farm policies.

New Zealand: The period 2000-14 saw a sharp increase from 11 USD to 40 USD/100 kg ECM and later dropped since 2014 below 30 USD/100 kg ECM level by adjustments in intensity of the production system.

Germany: Stabilized costs levels around 45 USD/100 kg ECM since 2012 and since 2015 drop to 35 - 40 USD/100 kg ECM levels driven by currency devaluation.

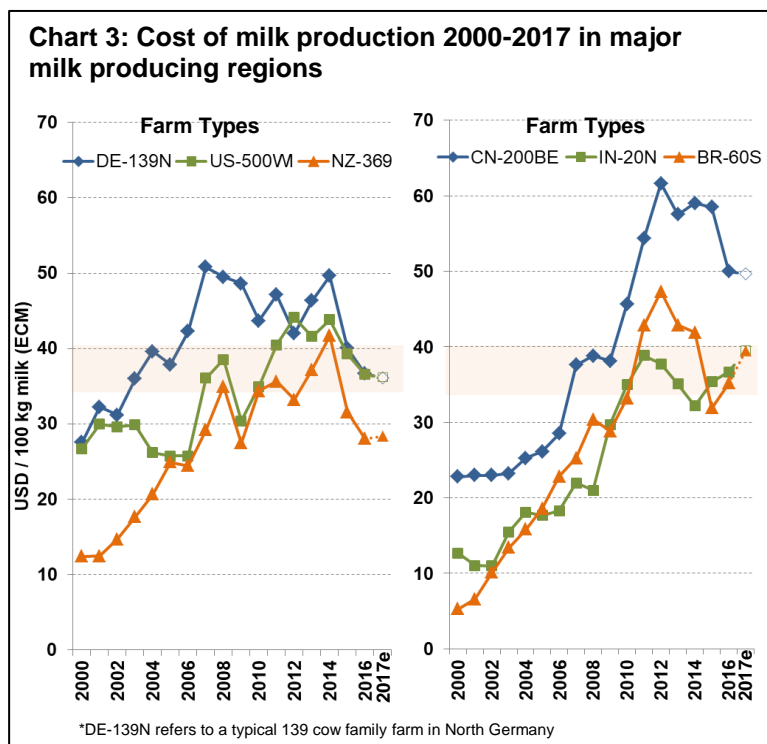
USA cost levels in Wisconsin since 2015 are now similar to larger farms in Germany.

Emerging economies have seen a progressive transformation from low cost to high cost of milk production driven by rising input prices, salary levels, land rates and currency appreciation.

Brazil and India have now costs similar to Europe and the USA.

China has substantially higher cost levels in the range of 50 - 60 USD/100 kg ECM.

Cost estimations for 2017 show no significant change, except India due to the inflationary trends in feed prices and wage rates. Costs are expected to stabilize in the 35 - 40 USD/100 kg ECM range.



Lessons to be learnt from the crisis and future approach

Perspectives from different farming systems/ countries/ regions

There has been a gradual shift down in costs of milk production towards the 35 - 40 USD/100 kg ECM mark since 2012 in the major milk producing countries. This clearly indicates market supply corrections and stabilization in prices in the medium and long run. Countries are affected differently by the crisis. The IFCN Cost Analysis at factor level shows wide variability in productivity and economic cost levels and could be very useful to develop suitable strategies to build adaptable and resilient systems.

Approach and orientation to crisis as economic cycles

Volatility of markets is seen more frequently in the global dairy environment. Crisis need to be viewed in the perspective of economic cycles that will have their “ups and downs”. Hence, it is necessary to use systems that can be flexible, adaptable and which respond to these trends.

Developing resilience, risk ability, financial agility and preparation

Although a recovery from the crisis has taken place, there are many uncertainties in the future. Farmers need to have a risk mitigation plan from the start. Options like diversification, buffer capacity, future markets and adaptive systems need to be planned and put in place even in times of a good market situation. In answer to this need, IFCN has now developed more accurate and real time indicators in measuring farm productivity, real time costs, farm risk assessment, farm resilience, farm response reaction and real time farm economics assessment to support farmers.

Perspectives on dairy development and leadership

Dairy development takes place in every country at different levels, with various diverse perspectives and approaches. The social perspective of family livelihood, income and food security has been, and will be, the focus of future dairy development programmes. Finding and ensuring the right dairy development programme depends greatly on the current status of the country. There is a consensus on a value development base and leadership by private, or a public-private partnership for future dairy development. The role of data, metrics and impact analysis in strategy development, project designing and monitoring cannot be underestimated.

Perspectives on data, knowledge and awareness (quality and network)

With market volatility and consolidation taking place more frequently, the need to integrate and optimize the supply chain has become more prominent. Hence, the importance of real time data, knowledge and inspiration is all the more necessary to drive the dairy development further in the right direction. Ensuring quality of data and validation has become even more crucial as data is received from diverse sources, institutions, and individuals. IFCN has established a quality assurance system to ensure data quality at all levels.

For more information:

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ANNEX

IFCN Methods

The annual IFCN work of comparing typical farms around the world has been an on-going process since the year 2000. Since then, the number of countries participating has increased from 8 to over 50. Moreover, the number of dairy farms analysed has increased from 21 to around 159.

The IFCN Methodology applied for data collection, economic analysis and results validation uses the following three elements:

- a network approach of researchers continuously co-operating,
- the concept of typical farms described below and
- a standard model TIPI-CAL (Technology Impact Policy Impact Calculation model) to ensure technical comparability of indicators.

A typical farm represents the most common production system which produces a significant proportion of milk in a country or a region. Usually, two farm types are used per dairy region – the first represents an average farm and the second a larger farm type. The typical farms were modelled and validated by a combination of accounting statistics and a panel of dairy experts. The data collection and validation were done by researchers in the countries represented, researchers in the IFCN Dairy Research Network and also during method setting conferences every year.

ECM correction: As the dairy farms operate with milk of very different fat/protein content, the IFCN uses the Energy Corrected Milk (ECM) approach to standardize milk volumes to 4.0% fat and 3.3% protein. The following formula was used: $\text{ECM milk} = (\text{kg milk production} * (0.383 * \% \text{ fat} + 0.242 * \% \text{ protein} + 0.7832)) / 3.1138$.

Cost indicator: The IFCN uses the indicator “cost of milk production only” which can be directly related to a milk price. This cost includes all costs from the profit & loss account of the farm. From this cost level, the non-milk returns from sales of cull cows, heifers, calves, manure, etc. and also returns from coupled subsidies have been deducted. Furthermore, the opportunity costs for own labour, land and capital are also included. For the creation of the world map, the average size farm from each country was used.

IFCN World Feed Price Indicator: Source: International Monetary Fund. Specification: Soybean meal: CME futures first contract forward, Corn: FOB US Gulf. Calculation: $0.3 \text{ kg soybean meal price} + 0.7 \text{ kg corn price}$.

IFCN Combined World Milk Price Indicator: Based on the weighted average of 3 IFCN world milk price indicators: 1. SMP & butter (35%), 2. Cheese & whey (45%), 3. WMP (20%), based on shares of the related commodities traded on the world market. For more details, see <http://ifcndairy.org/about-ifcn-neu/ifcn-dairy-research-center-method/>

Exchange rates: Oanda.com