The IFCN Dairy Report 2013
For a better understanding of milk production world-wide

Torsten Hemme, IFCN Dairy Research Center at University Kiel
torsten.hemme@ifcndairy.org
IFCN Dairy Reports+ 14 years cooperation of dairy researcher from 95 countries.
IFCN = International Farm Comparison Network

The IFCN is a global dairy network of researchers, companies and other stakeholders who are active in the dairy chain.

The IFCN has a Dairy Research Center with 15 dairy researchers coordinating the network process and running dairy research activities.

The IFCN is independent from third parties and committed to truth, science and reliability of results.
IFCN 2013 - 20 new members
dairy related companies and institutions

<table>
<thead>
<tr>
<th>Category</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk processing</td>
<td>SodiaL, Saputo, Land O'Lakes Inc., Mondelēz,</td>
</tr>
<tr>
<td></td>
<td>Baringa, SABCA, Ashley, Lactalis, Alpro, etc.</td>
</tr>
<tr>
<td>Milking and barn equipment</td>
<td>DeLaval, DeLaval, Kärcher, Interplast, etc.</td>
</tr>
<tr>
<td>Health and hygiene</td>
<td>Zoetis, MSD, NAHCO, Dehner, etc.</td>
</tr>
<tr>
<td>Feed</td>
<td>Nutreco, Carigil, DSM, Alltech, Josera, etc.</td>
</tr>
<tr>
<td>Farm machinery</td>
<td>Claas, John Deere, Krone, Schuler, etc.</td>
</tr>
<tr>
<td>Genetics for animal &amp; plants</td>
<td>Semex, MasterMond, CRV, Evolution, etc.</td>
</tr>
<tr>
<td>Other branches of the dairy chain</td>
<td>FOSS, SIG, Elopak, Friesland Coop, etc.</td>
</tr>
</tbody>
</table>

Companies which are partner of IFCN
No. of companies & institutions
The researchers network 2013
95 countries participating (+5 ; -1 Syria)

Farm Comparison: 51 countries & 61 dairy regions
Country Profile: + 44 countries = 95 countries
- New country - Azerbaijan, Sudan, Turkmenistan, Yemen, Zimbabwe
- Move forward – Mexico, US west, WU, Russia
- Move backward – Syria,
IFCN Dairy Report 2013 officially released

Country coverage:
- 95 country profile analysis
- 51 countries in costs analysis

Comparable data on
- milk production costs
- milk prices
- feed prices
- dairy farm structure
- etc.

Special studies on:
Water footprint in 49 countries,
Real time farm economics method etc.
IFCN Dairy Report 2013
A summary of it is in the IDF world dairy situation report

Three selected findings:

1. **122 million dairy farms**: Ø 2.9 cows, Ø milk yields 2100 kg/cow/year

2. **Costs to produce milk** in 2012 ranges from 4 - 128 USD per 100 kg milk
   - **Germany**: Costs in Germany are 2012 below costs in USA Wisconsin
   - **China**: Cost are 50% above the level in US and Germany

3. **Dynamics of costs**: Costs can double or triple within 3-6 years driven by prices for feed, land, labour, exchange rates, droughts, etc.

Paradigm shift confirmed:
- **EU/US**: More competitive costs/ milk prices + less subsidies
- **BRIC / emerging dairy countries**: Less competitive in costs / milk prices + more subsidies
Costs of milk production 2000 – 2012
Estimate for typical dairy farms

USA, Germany, Poland

USA, Germany, Poland

 Argentina, New Zealand, China

30.2 €/100 kg
17.2 US-$/CWT
6.8 NZ-$/kg milk solids

Source: IFCN Dairy Research Center
The dairy world in 2023?

Torsten Hemme, IFCN Dairy Research Center at University Kiel
torsten.hemme@ifcndairy.org
IFCN Dairy Reports+ 12 years cooperation of dairy researcher from 90 countries.
Two sentences what we belief regarding forecasts

1. Predicting the future shall be done in a dialog.

2. Predicting the future shall be continued process
Why an IFCN Baseline?

Why We receive questions about long term future and think we can improve the existing baseline in dairy

1. Step 900 mill t in 2025 qualitative work

2011

2. Step quantitative work + mile stone in IFCN development

  analysis and database for 1996 – 2023

  globally consistent and comparable

2013

3. Step refine, improve and deepen after your feedback

  in 03/2014 new IFCN Baseline 2025

2014
IFCN’s world milk price indicator

World market price of milk 1996 – 2013 Sept

1. What price level to rely on?
   - 30.2 €/100 kg
   - 17.2 US$/CWT
   - 44.5 milk price level at feed price 30-33$/kg (10% below feed price level 10/2013)

2. What's about the next swing?
   - up/down?
   - when to come?
   - how high/deep?
Real time milk production data
monthly growth in % 2007 – 9 / 2013

Change of milk production
to previous year

Key fact of this data
1. 60 countries (> 85% world milk)
2. ECM corrected (4% fat, 3,3% protein)
3. Leap year adjusted
4. real time estimates (1-4 month)

=> a tool to better predict future milk supply and world supply and demand balance

Explanation: Relative change of the 12-months rolling sum of milk production expresses the relative deviation of milk production in a 12 month period compared to the same period one year before. Countries included represent 92% of world milk production. Data is adjusted for leap year effect.
World milk production - Sept 2013 vs. 2012
Price, margins + milk production
2007 – 6/ 2013 July-Sept - real time estimates

World milk and feed price

IFCN margin over compound feed costs

% change in milk production
60 countries

Explanation: Relative change of the 12-months rolling sum of milk production expresses the relative deviation of milk production in a 12 month period compared to the same period one year before. Countries included represent 92% of world milk production. Data is adjusted for leap year effect.

Source: Monthly real time data of milk production, milk & feed prices, status 9/2013
Baseline assumptions on milk and feed price & uncertainties

World milk and feed price

Explanation: Relative change of the 12-months rolling sum of milk production expresses the relative deviation of milk production in a 12 month period compared to the same period one year before. Countries included represent 92% of world milk production. Data is adjusted for leap year effect.

Milk price assumption 44.5 US-$/; 34 euro
Feed price assumption 33 US-$/; 25 euro

Uncertainties: There are a lot the key questions is not what is out there but what are the biggest 1-5?
Development of the IFCN Baseline
Continual improvement process

Step 1: Select 11 variables to describe the dairy sector

Step 2: Define milk and feed prices for baseline scenario

Step 3: Make assumptions on key variables

Step 4: Run model

Step 5: Validate results

Supply assumptions:
- Farm economics: feed price, milk price
- Technical and genetic progress
- Structural change

Demand assumptions:
- Population growth
- Per capita consumption development

Supply and demand in balance (or restart step 2)

Researcher Network
June 2013 Conference
Country fact sheets 1996 – 2023

Supply & demand balance
Milk supply, demand, Imports/export
Self sufficiency

Milk supply details
% growth / year
Cows & milk yield
Farm number and size

Milk demand details
% growth / year
Population
Per capita consumption

© IFCN 2013 – for internal use
## Where will the world be in 10 years?
### Global results of IFCN Baseline 2023

<table>
<thead>
<tr>
<th>Variable</th>
<th>Results 2023</th>
<th>% change 2023 vs 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk production +</td>
<td>1,006 mil t ECM</td>
<td>+29%</td>
</tr>
<tr>
<td>consumption</td>
<td>+ 225 mil t to 2012</td>
<td></td>
</tr>
<tr>
<td>Per capita consumption</td>
<td>111 → 126 kg milk per capita / year</td>
<td>+ 13%</td>
</tr>
<tr>
<td>Population</td>
<td>8 bn</td>
<td>+14%</td>
</tr>
<tr>
<td>Milk animals</td>
<td>406 million cows and buffalos</td>
<td>+ 13%</td>
</tr>
<tr>
<td>Milk yield</td>
<td>2.1 → 2.4 t ECM / milk animal / year</td>
<td>+14%</td>
</tr>
</tbody>
</table>

Data: Milk production and consumption considering all milk (cow, buffalo, sheep, goat, camel)
Significant changes ahead
Dairy opportunities 2013-2023

- **Growth** in milk produced and consumed by 10-20 mill t/year or 2.3% annual growth
- **Growth** in milk delivered and processed by 145 mill t or 2.5 – 3% annual growth
- **Growth** via regional movement of milk production >3% annual change
- **Growth** via milk moving between farm size segments and farming systems 5-10% or more

→ Dairy market = growth market
Where will the growth happen?
IFCN Baseline results on production growth next 10 years

World
+ 225 mill t, that is +29% or +2.3% per year

Milk production 2011
in mill tons ECM

Sources: Dairy sector database and baseline projection product, Map: IFCN Dairy Report 2012
Farm number and size consolidation but with different direction and speed

**World**
- Farm number
- Average farm size

**China**
- Farm number
- Average farm size

**Poland**
- Farm number
- Average farm size

Sources: Dairy sector database and baseline projection product, IFCN Dairy Research Center
What about dairy exports and imports?
Will there be a new cruise ship in 2023?
Milk surplus and deficit in 2012 in mill. t Milk Equivalent (ME)

Driving question:
How will the bullets look like in 10 years?

2012 milk surplus in mill t ME
2012 milk deficit in mill t ME

Sources: Dairy sector database product, IFCN Dairy Research Center
Milk surplus and deficit in 2023
in mill. t Milk Equivalent (ME)

On the export side we see EU+ NZ with highest volume growth

Sources: Dairy sector database and baseline projection product, IFCN Dairy Research Center
Milk surplus and deficit in 2023
in mill. t Milk Equivalent (ME)

More imports from China, Southeast Asia, Africa, Middle East
+ “new” larger importers like Brazil, India, etc.

Sources: Dairy sector database and baseline projection product, IFCN Dairy Research Center
Taking home messages  
The dairy world 2023

We are in a growth market

- Milk production reaching 1,000 mill t ECM (+2.3% / year)
- Higher growth rates in milk delivery, regional milk movements,…

Content highlights

- Strongest supply growth in South Asia, Africa, parts of South America
- Maximum dairy farm numbers most likely reached in 2012
- Share of dairy trade will rise from 8% to 10%

Method highlights

- 2013 IFCN Dairy Baseline – global coverage, comparable data,…
- 2014 updated version in March incl. method improvements planned

So any feedback on content or method from your side is very welcome