Dairy Report 2015

For a better understanding of the dairy world

IFCN
The Dairy Research Network
Dear friends,

In this IFCN Dairy Report 2015 you will find a summary of the research highlights and network activities in 2015.

The IFCN Mission and Vision
IFCN Mission: We create a better understanding of the dairy world by providing comparable data, knowledge and inspiration.

IFCN Content work 2015
Real time economic analysis: In times of rapid changes of milk and feed prices annual farm economic analyses are outdated too fast. Therefore IFCN was focussing in two areas to have a more real time understanding of the economic on typical farms in the current year 2015. Moreover a concept of monthly real time farm economics has been developed.

Dairy farm structure: Dynamics in farm structure are a key to predict dairy developments. IFCN has collected and standardised farm structure data. Additionally drivers, perspectives and potential future dairy farm types have been discussed.

Milk production by region: This year a key focus was to better understand milk production by region within countries. These are more dynamic than average national statistics show.

Outlook: As each year IFCN was focussing on the perspectives of the dairy world in the short term (1-2 years) and the long run (next 10 years).

Highlights – IFCN events in 2015
IFCN Dairy Conference 2015
The focus of this conference was dairy farm structure changes, their drivers and perspectives for the future. GEA hosted this event that took place in Kiel, Germany, in June.

IFCN Supporter Conference 2015
The conference was held in September, in Minneapolis, USA. Focus was on the learnings from the US dairy industry and the global dairy developments. Cargill and Elanco hosted this conference.

IFCN Regional Workshop 2015
During this workshop in India, the participants discussed the question: How to sustainably increase milk production in India at a price consumers can afford? YesBank, Cargill, Elanco and Royal Friesland Campina hosted this event.

Status of the research network in 2015
In the dairy sector analysis, 100 countries which represent 98% of the world’s milk production, have been included.

In the farm comparison 170 typical farms from 64 dairy regions in 55 countries were analysed.

IFCN Dairy Report 2015
Chapter 1: Cost comparison: This chapter summarises results on costs, returns, profitability and productivity of dairy farms worldwide.

Chapter 2: Global monitoring: This chapter provides a broad overview on specific dairy issues such as milk prices, feed prices and milk : feed price ratio.

Chapter 3: Dairy sector and chain profile: This profile, prepared for 100 countries, presents a comparable overview related to:
- Regional average annual milk production growth
- Farm structure data on farm and herd sizes
- Prices of cull cows and purchase of land
- Milk and feed price
- Monthly farm gate milk price

Moreover, the key results are summarised at the beginning of the chapter via maps of the world and Europe.

Chapter 4: IFCN Methods & definitions: IFCN Methods: This chapter is dedicated to explain the methods used for the IFCN analyses.

Acknowledgement
We would like to thank all our scientific partners, agribusiness partners, institutional partners and the people working in the IFCN Dairy Research Center during the last year. It was a pleasure to work with you and strengthen the network in 2015. We are looking forward to our activities in 2016.

Torsten Hemme
Managing Director
Anders Fagerberg
Chairman of the IFCN Board
Participating dairy economists / co-editors of the IFCN Dairy Report

Dairy Expert

Djellali Abderrazak | Horizons Agro-alimentaires Boufarik, Gouraya, Algeria
Hugo Quattrochi | Unión Productores de Leche Cuenca Mar y Sierras, Tandil, Argentina
Anna Yeritsyan, Varden Urutyan | International Center for Agribusiness Research and Education (ICARE), Yerevan, Armenia

Henri Bayemi, Asaah Ndambi | Institute of Agricultural Research for Development (IRAD), Yaoundé; International Livestock Research Institute (ILRI), Nairobi, Kenya, Cameroon
Steve Couture | Dairy Farmers of Canada, Ottawa, Canada

Dorothée Bolling | IFCN Dairy Research Center, Kiel, Germany

Dairy Consultant

Jon Hauser | Xcheque Pty Ltd, Glen Alvie, Victoria, Australia

Leopold Kirner, Josef Hambrusch, Gerhard Gahlteiner | Federal Institute of Agricultural Economics, Vienna, Austria

Mohammad Uddin | Bangladesh Agricultural University, Mymensingh, Bangladesh

Anatoli Takun, Sviatlana Takun | Institute of System Research in Agro-industrial Complex, Minsk, Belarus

Erwin Wauters | Institute for Agricultural and Fisheries Research, Merelbeke, Belgium

Lorílido A. Stock | Embrapa Gado de Leite (Embrapa Dairy Cattle), Juiz de Fora, Minas Gerais, Brazil

Henri Bayemi, Asaah Ndambi | Institute of Agricultural Research for Development (IRAD), Yaoundé; International Livestock Research Institute (ILRI), Nairobi, Kenya, Cameroon

Mario E. Olivares | Cooperpinem, Osorno, Chile

Devend Prasad Rao | Arohana Dairy Private Limited, Vallam, Tamil Nadu, India

Kuldeep Sharma | Suruchi Consultants, Noida, Uttar Pradesh, India

Inderpreet K. Kular | College of Dairy Science & Technology, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, Punjab, India

Farhad Mirzaei | Animal Science Research Institute of Iran, Karaj, Iran

Asaah Ndambi | International Livestock Research Institute (ILRI), Nairobi, Kenya, Ethiopia

Susanne Clausen | SEGES, Aarhus, Denmark

Fiona Thorne | Rural Economy Research Centre, Teagasc, Dublin, Ireland

Liron Tamir | Israel Dairy Board, Rishon-Le Zion, Israel

Alberto Menghi | CRPA – Centro Ricerche Produzioni Animali, Reggio Emilia, Italy

Hiromi Hosono | The University of Tokyo, Tokyo, Japan

Othman Alqaisi | Livestock and Feed Analyst at Noble Group, Geneva, Switzerland, Jordan

Simone Adam | Ministère de l’Agriculture, Service d’Économie Rurale, Luxembourg, Luxembourg

Mc Loyd Banda | DARS - Department of Agricultural Research Services, Bunda College, Lilongwe, Malawi

José Luis Dávalos Flores | UNAM FMVZ CEIEPAA, Tequisquiapan, Mexico

P.P. Gibraltar

Rigoberto Becerra | Establo Gibraltar, Gomez Palacio, Durango, Mexico

Btissam Kessab | Centrale Laitière, Casablanca, Morocco

Nicola Shadbolt | College of Sciences, Massey University, Palmerston North, New Zealand

Ola Flaten, Bjern Gunnar Hansen | NIBIO – Norwegian Institute of Bioeconomy Research, Ås, Norway
Researchers participating only in the country profile analysis or in specific country information:

Shakir Ullah Akhtar | Dairy Expert, Afghanistan
Ilir Kapaj | Agricultural University, Tirana, Albania
Felix Menzel | Dairy Expert, Mezza Sucre, Bolivia
Konstantin Stankov | Trakia University, Bulgaria
Ying Li | Nestlé Dairy Farming shrimpchong, China
Federico Pérez García | DMV U.N., CNLM, Colombia
Francisco José Arias Cordero | Dos Pinos, Costa Rica
Jasmina Havranek, Iva Dolenčić Špehar | Faculty of Agriculture, University of Zagreb, Croatia
Rafael Vizcarra | Centro de la Industria Láctea, Quito, Ecuador
Katri Kall | Estonian University of Life Sciences, Estonia
Melake Assefa | Ministry of Agriculture, Ethiopia
Gerard You | Institut de l’Elevage, France
Lukasz Wyzrykowski | IFCN AG, Kiel, Germany

Arthur Grigorian | European Center for Research and Sustainable Development (ECRSD), Thessaloniki, Greece
Daniel Mándi-Nagy | Research Institute for Agricultural Economics (AKI), Budapest, Hungary
Baldrur H. Benjaminsson | Association of Icelandic Dairy and Beef Cattle Farmers, Reykjavik, Iceland
Dr. A. K. Srivastava, Smita Sirohi | National Dairy Research Institute, Karnal, India
Emmanuel Kinuthia | International Livestock Research Institute, Kenya
Azt Mukaliev | Kyrgyz State Agricultural University, Bishkek, Kyrgyzstan

Agneze Krievina | Latvian State Institute of Agrarian Economics, Riga, Latvia
Deiva Mikkelionyte | Lithuanian Institute of Agrarian Economics, Vilnius, Lithuania
Blaqica Sekovska | Veterinary Faculty, Institute for Food, Skopje, Macedonia
Zakaria Abd Rahman | Dairy Expert, Redagion Farm Sdn Bhd, Hul Terengga
Aminu Shittu | Usman Danfodiyo University, Sokoto, Nigeria
Euclides Diaz | ANAGAN-Asociación Nacional de Ganaderos de Panamá, Panama
Naomi K. Torreta | National Dairy Authority, Quezon City, Philippines
António Moitinho Rodrigues | School of Agriculture - Polytechnic Institute of Castelo Branco, Portugal
Michael Mishchenko | DairyNews.ru, Russian Federation
Christian Corniaux | IRAD / PPZS, Senegal
Margita Stefanikova | Slovak Association of Milk Producers (SZPM), Nitra, Slovakia
Ben Moljik | Agricultural Institute of Slovenia, Ljubljana, Slovenia
Hemali Kothalawala | Department of Animal Production and Health, Peradeniya, Sri Lanka
Juliane Liu | Forefront Enterprise Co., Ltd., Taipei, Taiwan
Adul Vangtal | Thai Holstein Friesian Association (T.H.A.), Thailand
Abdulkarim Abdulmaged Amad | Thamar University, Yemen
Rob Jansen-van Vuuren, Addmore Maniwa | Livestock Consultant, Department of Livestock & Veterinary Services, Zimbabwe

© IFCN Dairy Report 2015
Preface
Regional maps and the typical farms 7
About IFCN 8
IFCN Dairy Research Center and IFCN Board 9
16th IFCN Dairy Conference 2015 10
12th IFCN Supporter Conference 2014 11
3rd IFCN Regional Workshop 2014 12

1. Comparison of the typical farms 2014
1.1 Summary – Farm comparison 2014 17
1.2 Regional overview on costs and returns of the dairy enterprise 18
1.3 Milk supply curves 2014 20
1.4 Cost of milk production on average sized farms 2014 22
1.5 Cost of milk production in larger farms 2014 23
1.6 Description of the dairy farms analysed 24
1.7 Cost of milk production only 26
1.8 Total costs and returns of the dairy enterprise 28
1.9 Returns: Milk price, non-milk returns and decoupled subsidies 30
1.10 Description of direct subsidies and policies 32
1.11 Dairy enterprise: Profits and return to labour 34
1.12 Asset structure and return on investment 36
1.13 Overview of all typical farms analysed – costs and returns 38
1.14 Farm level analysis 40

2. Global monitoring dairy economic indicators
2.1 Summary: Monitoring dairy economic indicators 43
2.2 Global trends in oil, milk and feed prices 1981 – 2015 44
2.3 National milk prices in 2014 in US-$ 46
2.4 Monitoring milk prices 1996 – 2014 48
2.5 Monthly milk price transmission and key facts 50
2.6 Monitoring feed prices 1996 – 2014 52
2.7 Monitoring milk : feed price ratio 1996 – 2014 54

3. Country reports – Milk production fact sheets
3.1 Summary – status and development of milk production 62
3.2 Status and development of milk production 64
3.3 Centres of milk production 2014 65
3.4 Percentage change in milk production 2009 – 2014 66
3.5 Volume change in milk production 2009 – 2014 67
3.6 Milk surplus and deficit in 2014 68
3.7 Land and quota prices in selected countries 70
3.8 Farm structure – Dairy farm numbers and IFCN Standard classes 72
3.9 Method explanation of the Country Page 2015 74

Milk production fact sheets
3.10 Afghanistan 75 3.39 Ethiopia 105
3.11 Albania 76 3.40 Finland 106
3.12 Algeria 77 3.41 France 107
3.13 Argentina 78 3.42 Germany 108
3.14 Armenia 79 3.43 Greece 110
3.15 Australia 80 3.44 Hungary 111
3.16 Austria 81 3.45 Iceland 112
3.17 Azerbaijan 82 3.46 India 113
3.18 Bangladesh 83 3.47 Indonesia 114
3.19 Belarus 84 3.48 Iran 115
3.20 Belgium 85 3.49 Ireland 116
3.21 Bolivia 86 3.50 Israel 117
3.22 Bosnia - Herzegovina 87 3.51 Italy 118
3.23 Brazil 88 3.52 Jamaica 119
3.24 Bulgaria 89 3.53 Japan 120
3.25 Cameroon 90 3.54 Jordan 121
3.26 Canada 91 3.55 Kazakhstan 122
3.27 Chile 92 3.56 Kenya 123
3.28 China 93 3.57 Korea, Republic of 124
3.29 Colombia 94 3.58 Kyrgyzstan 125
3.30 Costa Rica 95 3.59 Latvia 126
3.31 Croatia 96 3.60 Lithuania 127
3.32 Cuba 97 3.61 Luxembourg 128
3.33 Cyprus 98 3.62 Macedonia 129
3.34 Czech Republic 99 3.63 Malawi 130
3.35 Denmark 100 3.64 Malaysia 131
3.36 Ecuador 101 3.65 Mexico 132
3.37 Egypt 102 3.66 Mongolia 134
3.38 Estonia 104 3.67 Morocco 136

© IFCN Dairy Report 2015
### 4. Methods applied in IFCN analyses

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Standardisation used by IFCN</td>
<td>184</td>
</tr>
<tr>
<td>4.2</td>
<td>Typical farm approach</td>
<td>185</td>
</tr>
<tr>
<td>4.3</td>
<td>Definition of different enterprises</td>
<td>186</td>
</tr>
<tr>
<td>4.4</td>
<td>Whole farm calculations</td>
<td>186</td>
</tr>
<tr>
<td>4.5</td>
<td>Details on farm economic analysis</td>
<td>187</td>
</tr>
<tr>
<td>4.6</td>
<td>Method development: A brief update of farm data in TIPICAL model</td>
<td>190</td>
</tr>
<tr>
<td>4.7</td>
<td>Method development: Real Time Farm Economics in national and farm level</td>
<td>191</td>
</tr>
<tr>
<td>4.8</td>
<td>Glossary</td>
<td>192</td>
</tr>
<tr>
<td>4.9</td>
<td>Specifications of world regions</td>
<td>195</td>
</tr>
</tbody>
</table>

### Annex

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1</td>
<td>IFCN dairy publications</td>
<td>198</td>
</tr>
<tr>
<td>A.2</td>
<td>Typical farm approach and data quality assessment</td>
<td>199</td>
</tr>
<tr>
<td>A.3</td>
<td>Description of the typical dairy farms analysed</td>
<td>200</td>
</tr>
<tr>
<td>A.4</td>
<td>Exchange rates 1996 – 2014</td>
<td>206</td>
</tr>
<tr>
<td>A.5</td>
<td>Abbreviations</td>
<td>207</td>
</tr>
<tr>
<td>A.6</td>
<td>Who is who</td>
<td>208</td>
</tr>
</tbody>
</table>

#### Which countries are participating in the IFCN Dairy Report activities in 2015?

![Map showing countries participating in IFCN Dairy Report activities]

- **55 countries** analysed in the Farm Comparison
- **+45 countries** participated in the Country Pages

<table>
<thead>
<tr>
<th>Year</th>
<th>Countries included in farm comparison</th>
<th>Countries included in country profile analysis</th>
<th>No. of farm types analysed</th>
<th>Topic of Country Report</th>
<th>IFCN Dairy Conferences</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>8</td>
<td>8</td>
<td>21</td>
<td>Ex-post analysis 1996–2000</td>
<td>Sep-00</td>
</tr>
<tr>
<td>2001</td>
<td>20</td>
<td>20</td>
<td>52</td>
<td>Country reports on milk production</td>
<td>Jun-01</td>
</tr>
<tr>
<td>2002</td>
<td>24</td>
<td>24</td>
<td>72</td>
<td>Dairy production systems survey</td>
<td>May-02</td>
</tr>
<tr>
<td>2003</td>
<td>27</td>
<td>24</td>
<td>76</td>
<td>Farm structure analysis 1990-2001</td>
<td>May-03</td>
</tr>
<tr>
<td>2005</td>
<td>33</td>
<td>41</td>
<td>102</td>
<td>Milk production fact sheet 1996-2003</td>
<td>May-05</td>
</tr>
<tr>
<td>2006</td>
<td>34</td>
<td>60</td>
<td>103</td>
<td>Dairy sector &amp; chain profile 1990-2004</td>
<td>May-06</td>
</tr>
<tr>
<td>2007</td>
<td>38</td>
<td>73</td>
<td>120</td>
<td>Milk production fact sheet 1996-2005</td>
<td>Jun-07</td>
</tr>
<tr>
<td>2008</td>
<td>44</td>
<td>78</td>
<td>134</td>
<td>Dairy sector &amp; chain profile 1996-2007</td>
<td>Jun-08</td>
</tr>
<tr>
<td>2009</td>
<td>46</td>
<td>80</td>
<td>147</td>
<td>Milk production fact sheet 1996-2008</td>
<td>Jun-09</td>
</tr>
<tr>
<td>2010</td>
<td>44</td>
<td>86</td>
<td>143</td>
<td>Dairy sector &amp; chain profile 1996-2009</td>
<td>Jun-10</td>
</tr>
<tr>
<td>2012</td>
<td>51</td>
<td>91</td>
<td>177</td>
<td>Dairy sector &amp; chain profile 1996-2011</td>
<td>Jun-12</td>
</tr>
<tr>
<td>2014</td>
<td>54</td>
<td>100</td>
<td>172</td>
<td>Dairy sector &amp; chain profile 1996-2013</td>
<td>Jun-14</td>
</tr>
</tbody>
</table>
Regional maps and the typical farms

Legend: Numbers indicate the number of cows in the typical farms. ++ = future farm, AMS = Automated Milking System (robot), B = Buffalo, BE = Beijing, bio = Organic, C= Central, CA = California, CN = Central North, DP = Dual purpose, E = East, HJ = Heilongjiang, ID = US-Idaho, JA = Jalisco, MC = Massif Central, N = North, NG = Ngantang, NJ = Nongkojaja, NW = North West, NY = New York, PU = Punjab, S = South, SE = South East, SW = South West, TO = Torreon, W = West, WI = Wisconsin
The dairy world today

Today the dairy world is serving over 7 billion consumers and providing livelihoods for approximately 1 billion people living on dairy farms. The key challenges for the dairy stakeholders lie in its complexity and the high rate of change in a globalised world.

About IFCN

IFCN is the global dairy research network. By addressing challenges in the dairy world, IFCN can contribute to a more resilient and more sustainable future for all of us.

What does IFCN do?

IFCN provides globally comparable dairy data, outstanding knowledge and inspiration to widen your imagination.

How does IFCN operate?

IFCN creates a better understanding of the global dairy world. The IFCN – International Farm Comparison Network - started in 2000 with the basics - the cow and the dairy farmer. Step by step we deepen and widen the knowledge base every year.

The knowledge is created via a network of dairy researchers from over 90 countries contributing to our annual processes and managed by our 15 dairy researchers at the IFCN Dairy Research Center.

The IFCN economic models and standards ensure comparability between countries and provide a global picture.

More than 100 dairy related companies and organisations support the IFCN and use the knowledge to solve challenges in the dairy world better.

IFCN has innovative ways to share the knowledge with their members and with the dairy world as a whole. The IFCN events are a key element in developing the network spirit.

IFCN values: Trust – Independence - Truth

Trust among the IFCN members is vital for open sharing, cooperation and a network that really works. The IFCN is independent from third parties and is committed to truth, science and reliability of results. Truth means that IFCN shows the dairy world as it is and as accurately as measurements allow. IFCN describes realities and reports without having any hidden agendas.

IFCN Vision

We are the leading, global knowledge organisation in milk production, milk prices and related dairy economic topics.

IFCN Mission

We create a better understanding of the dairy world by providing comparable data, knowledge and inspiration.

Dairy data: We provide globally comparable dairy economic data and forecasts.

Knowledge: We create knowledge out of our data, models and analysis. Our core competence is in the field of milk production, milk prices and related economic topics.

Inspiration: We inspire people in the dairy world to build a better future. We inspire passionate people to develop a successful career in the dairy world.

What does IFCN offer stakeholders in the dairy chain?

1. Farmers: IFCN gives you a voice to reach other players in the dairy world. Actual global milk price trends and helpful IFCN publications are published on the IFCN website. Farm comparison work allows you to judge the competitive position of milk production in your region.

2. Researchers and advisors: IFCN makes you part of the leading global dairy network. We support you to serve your dairy stakeholders better and to develop your professional career in the dairy world - to become a leading dairy economist in your country.

3. Companies: IFCN provides dairy related companies such as milk processors and farm input companies a holistic and continuously updated picture of the dairy world. We help you to develop your business.

4. Global and national organisations involved in policy-making for agriculture, environment and food supply: IFCN provides our holistic dairy knowledge to be used for your policy decisions and conferences.

5. Consumers: IFCN illustrates milk-production, its fascinating culture and how this creates value in rural areas.

6. People in the IFCN Center: You are invited to build a life time career in the IFCN center to operate globally and enjoy a stable local life. You are also welcome to use IFCN as the ideal stepping stone for further developments in the dairy world.

For further information please contact: info@ifcndairy.org
Organisational setup

The IFCN has a Dairy Research Center (DRC) with 18 employees, coordinating the network process and running dairy research activities.

The IFCN Board has the mandate to support the IFCN management in the strategic development and guarantee transparency in the operation to the members of the network.

The IFCN Board is composed of the following members: Anders Fagerberg (chairman), Luc Morelon (nominated by the supporters), Ernesto Reyes (nominated by the researchers), Uwe Latacz-Lohmann (Kiel University), Olaf Rosenbaum (legal and fiscal expertise).
Chapter 1 – Comparison of the typical farms 2014

Authors: Dorothee Boelling, Maria Schmeer, Amit Saha
with the contribution from researchers mentioned on page 2-3 of this report

1.1 Summary – Farm comparison 2014
1.2 Regional overview of costs and returns of the dairy enterprise
1.3 Milk supply curves 2014
1.4 Cost of milk production on average sized farms 2014
1.5 Cost of milk production on large typical farms 2014
1.6 Description of the dairy farms analysed
1.7 Cost of milk production only
1.8 Total costs and returns of the dairy enterprise
1.9 Returns: Milk price, non-milk returns and decoupled subsidies
1.10 Description of direct subsidies and policies
1.11 Dairy enterprise: Profits and return to labour
1.12 Asset structure and return on investment
1.13 Overview of all typical farms analysed – costs and returns
1.14 Farm level time series analysis 2000-2014 – Cost of milk production only

Authors: Clara Secher, Łukasz Wyrzykowski, Hassan Aijini, Barbara Siwirska, William Allen
with the contribution from researchers mentioned on page 2 – 3 of this report

2.1 Summary: Monitoring dairy economic indicators 45
2.2 Global trends in oil, milk and feed prices 1981 – 2015 46
2.3 National milk prices in 2014 in US-$c 48
2.4 Monitoring milk prices 1996 – 2014 50
2.5 Monthly milk price transmission and key facts 52
2.6 Monitoring feed prices 1996 – 2014 54
2.7 Monitoring milk : feed price ratio 1996 – 2014 and margin over compound feed costs 56

Combined IFCN world milk price indicator

[Graph showing a line plot with the title Combined IFCN world milk price indicator: weighted average of 3 IFCN world milk price indicators: 1. SMP & butter (35%), 2. Cheese & whey (45%), 3. WMP (20%)]

Iran
### Germany

#### Top 10 regions - Ø annual milk production growth
2009 - 2014 - regions represent 59% of national milk production in 2014

<table>
<thead>
<tr>
<th>Rank</th>
<th>Region</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Weser-Ems</td>
<td>3.3%</td>
</tr>
<tr>
<td>2</td>
<td>Schleswig-Holstein</td>
<td>2.5%</td>
</tr>
<tr>
<td>3</td>
<td>Lüneburg</td>
<td>4.7%</td>
</tr>
<tr>
<td>4</td>
<td>Oberbayern</td>
<td>1.6%</td>
</tr>
<tr>
<td>5</td>
<td>Schwaben</td>
<td>1.3%</td>
</tr>
<tr>
<td>6</td>
<td>Mecklenburg-Vorpommern</td>
<td>2.1%</td>
</tr>
<tr>
<td>7</td>
<td>Sachsen Anhalt</td>
<td>1.2%</td>
</tr>
<tr>
<td>8</td>
<td>Oberpfalz</td>
<td>1.6%</td>
</tr>
<tr>
<td>9</td>
<td>Tübingen</td>
<td>0.9%</td>
</tr>
<tr>
<td>10</td>
<td>Thüringen</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

#### Key variables

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk production (cows')</td>
<td>30.00</td>
<td>29.49</td>
<td>29.36</td>
<td>28.80</td>
<td>29.28</td>
<td>28.76</td>
<td>29.42</td>
<td>30.49</td>
<td>31.45</td>
<td>32.98</td>
<td>0.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Cows (in 1,000's)</td>
<td>5,195</td>
<td>4,833</td>
<td>4,564</td>
<td>4,373</td>
<td>4,287</td>
<td>4,054</td>
<td>4,229</td>
<td>4,182</td>
<td>4,190</td>
<td>4,296</td>
<td>-0.6%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Milk yield (t / cow / year)</td>
<td>5.8</td>
<td>6.1</td>
<td>6.4</td>
<td>6.6</td>
<td>6.8</td>
<td>7.1</td>
<td>7.0</td>
<td>7.3</td>
<td>7.5</td>
<td>7.7</td>
<td>1.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>No. of dairy farms (in 1,000's)</td>
<td>186</td>
<td>164</td>
<td>139</td>
<td>125</td>
<td>114</td>
<td>102</td>
<td>99</td>
<td>92</td>
<td>83</td>
<td>76</td>
<td>-3.3%</td>
<td>-4.4%</td>
</tr>
<tr>
<td>Average farm size (cows / farm)</td>
<td>28</td>
<td>30</td>
<td>33</td>
<td>35</td>
<td>38</td>
<td>40</td>
<td>43</td>
<td>46</td>
<td>51</td>
<td>56</td>
<td>2.9%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Milk : feed price ratio</td>
<td>1.8</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.0</td>
<td>2.0</td>
<td>1.4</td>
<td>1.9</td>
<td>1.4</td>
<td>1.5</td>
<td>-7.6%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Cull cow (EUR / kg live weight)</td>
<td>1.1</td>
<td>1.2</td>
<td>1.2</td>
<td>0.9</td>
<td>1.1</td>
<td>1.3</td>
<td>1.4</td>
<td>1.4</td>
<td>2.0</td>
<td>2.1</td>
<td>5.8%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Land - buy (EUR / ha)</td>
<td>10,394</td>
<td>9,500</td>
<td>9,081</td>
<td>9,465</td>
<td>9,233</td>
<td>8,909</td>
<td>9,955</td>
<td>11,854</td>
<td>14,424</td>
<td>18,254</td>
<td>3.4%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Quota (EUR / kg milk)</td>
<td>0.82</td>
<td>0.85</td>
<td>0.57</td>
<td>0.72</td>
<td>0.43</td>
<td>0.48</td>
<td>0.34</td>
<td>0.09</td>
<td>0.10</td>
<td>0.10</td>
<td>-16.1%</td>
<td>-11.6%</td>
</tr>
</tbody>
</table>

#### Status and key developments

**Status 2014**
- No. 5 in the world milk production: 33.0 mill t ECM
- No. of dairy farms: 76,469
- Milk price: +16% to world market
- Feed price: +19% to world market

**Key developments over the past five years**
- Milk production growth: +1.9% per year
- Farm numbers: -4.4% per year
- Milk price was on average +12% to world market
- Feed price was on average +4% to world market

---

### Explanations

**Sources:** National statistics, FAO, IMF, Eurostat, AMI. 2014 data preliminary and partly estimated.

**Regional chart:** Ranking according to year 2014 distribution. Milk production in natural fat and protein content.

**Estimates done for:** Land price 2014 following the trend. Cull cow price 2011-2013 based on growth rate for price of cows, 2014 following that trend.

**Regional data remarks:** 2014 data estimated.

---

© IFCN Dairy Report 2015
Chapter 4 – Methods applied in IFCN analyses

Authors: IFCN

4.1 Standardisation used by IFCN 184
4.2 Typical farm approach 185
4.3 Definitions of different enterprises 186
4.4 Whole farm calculations 186
4.5 Details on farm economic analysis 187
4.6 Method development: A brief update of farm data in the TIPICAL model 190
4.7 Method development: Real Time Farm Economics at national and farm level 191
4.8 Glossary 192
4.9 Specifications of world regions 195
## Annex

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1 IFCN Dairy publications</td>
<td>198</td>
</tr>
<tr>
<td>A.2 Typical farm approach and data quality assessment</td>
<td>199</td>
</tr>
<tr>
<td>A.3 Description of the typical dairy farms analysed</td>
<td>200</td>
</tr>
<tr>
<td>A.4 Exchange rates 1996 – 2014</td>
<td>206</td>
</tr>
<tr>
<td>A.5 Abbreviations</td>
<td>207</td>
</tr>
<tr>
<td>A.6 Who is who</td>
<td>208</td>
</tr>
</tbody>
</table>
**Partners of the IFCN**

**Dairy researchers representing 100 countries**

**Institutional partners**

<table>
<thead>
<tr>
<th>CAU</th>
<th>International Dairy Federation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DairyNZ</td>
<td></td>
</tr>
</tbody>
</table>

**Agribusiness partners**

### Milk processing

- Fonterra
- Lactalis
- Nestlé
- Dean Foods
- Ato
- Biofuturo
- Sodiam Union
- Saputo
- Melega
- Land O’ Lakes, Inc.
- General Mills
- Danone
- glanbia
- Arla Foods
- Müller
- Danone
- Sodia
- Kraft Foods
- PepsiCo
- Unilever
- Nestlé
- Danone
- Unilever

### Milking and barn equipment

- DeLaval
- GEA
- Firma Technologies
- DeLaval
- Lely
- BouMatic
- Fullwood
- Avon
- Redap
- InterPuls
- SCR
- Kraiburg
- Milkline
- Milkoos

### Health and hygiene

- Zoetis
- Ecolab
- Vétoquinol
- Hypred
- Ceva
- Alfa-Laval
- Boehringer Ingelheim
- Merck
- Pfizer
- Merial
- MSD Animal Health

### Feed

- Nutrecc
- Cargill
- DSM
- Alltech
- Josera
- Lallemand
- Evonik
- Lallemand Animal Nutrition
- Nutriment
- Nutribic
- Ferrarzi
- Phibro

### Farm machinery

- Claas
-ilo
- Krone
- Kverneland
- Pottinger
- Storti
- Siloking
- Faresin
- Weidmann

### Genetics for animal & plants

- Semex
- MASTERRIND
- Evoluation
- KWS
- Advanta
- Delta
- Phibro
- Elkopak
- Life
- Primar International
- Ausfine
- Chirola
- IFC
- Allgod

### Other branches of the dairy chain

- FOSS
- Peritus Farm DMCC
- Farm Credit East

**ISSN 1610-434X**