

World-wide status of dairy farming

20th annual workshop for dairy economists



Torsten Hemme
 IFCN Dairy Research Center,
 at University Kiel, Germany
 torsten.hemme@ifcndairy.org



Outline

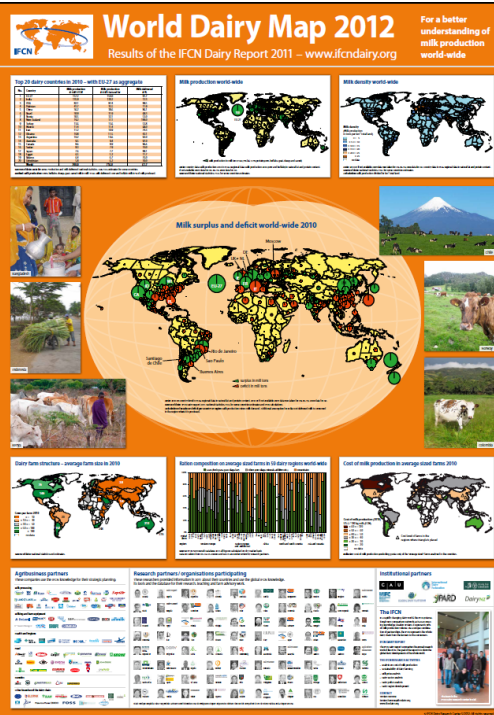
IFCN concept + method

Focus 1: Milk price the key driver for dairy farming

Focus 2: Global milk production trends and drivers

Focus 3: Dairy farm economics a key driver for milk production?

Sum up



**IFCN is a way to understand
a complex & fast changing dairy world**



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 + running dairy research activities.

The IFCN is **independent** from third parties and committed to truth, science and reliability of results.





IFCN mission

We create a better understanding of milk production world wide

Status of the IFCN Network in 2012

IFCN

Researchers partners from 91 countries

100 Agribusiness partners

■ Participating countries in IFCN 2012
● Progress made in 2012

Milk processing

Milking and farm equipment

Health and Hygiene

Feed

Genetics

Other branches of the dairy chain

Milk processing

Milking and farm equipment

Health and Hygiene

Feed

Genetics

Other branches of the dairy chain

Annual IFCN company conference

Outline

IFCN concept + method

Focus 1: Milk price the key driver for dairy farming

Focus 2: Global milk production trends and drivers

Focus 3: Dairy farm economics a key driver for milk production?

Sum up

World Dairy Map 2012

Results of the IFCN Dairy Report 2011 - www.ifcndairy.org

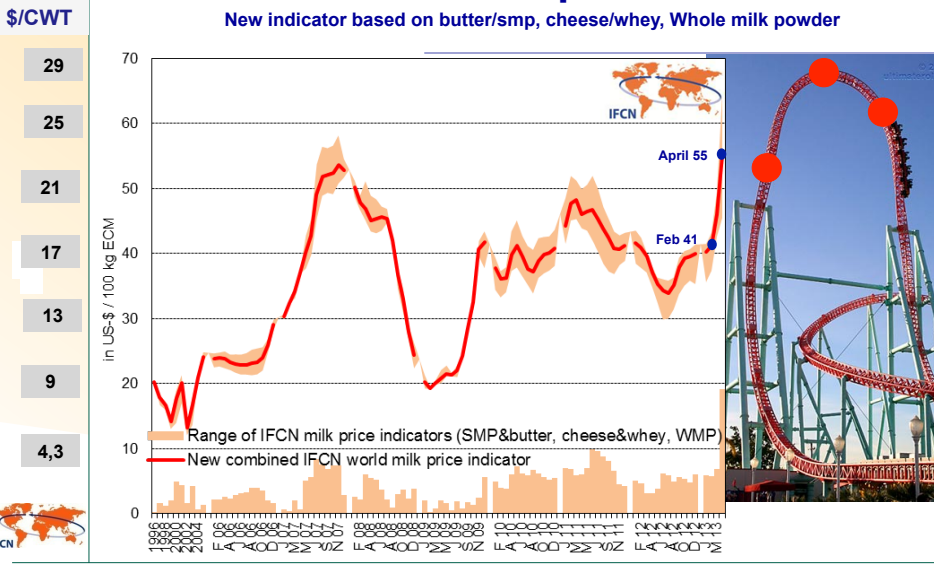
For a better understanding of milk production world-wide

The infographic includes several key components:

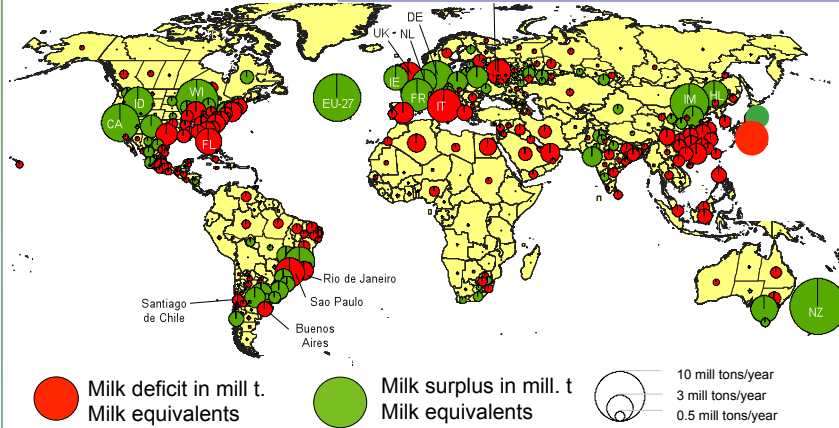
- Top Left:** A table titled 'Top 20 dairy countries in 2010' listing countries and their production in million metric tons (MT).
- Top Middle:** A world map showing 'Milk production trends 2010' with color-coded regions.
- Top Right:** A world map showing 'Milk surplus and deficit world-wide 2010' with green circles for surplus and red circles for deficit.
- Center:** A large world map titled 'Milk surplus and deficit world-wide 2010' with detailed regional data.
- Bottom Left:** A world map titled 'Dairy farm structure - average farms size in 2010'.
- Bottom Middle:** A bar chart titled 'Farm competition on average stock prices in 10 dairy regions world-wide'.
- Bottom Right:** A world map titled 'Cost of milk production in average dairy farms 2010'.
- Bottom Section:** Logos of 'Agribusiness partners', 'Research partners/organisations participating', and 'Institutional partners'.

The IFCN world milk price 1996 - 2013

New indicator based on butter/smp, cheese/whhey, Whole milk powder



IFCN estimates of world regions milk surplus and deficit in 2010



Calculation of surplus or deficit per country or region: Milk production minus milk demand. Regional demand: Regional population and country average per capita milk consumption.
 Additional assumption for India: Not delivered milk is consumed in the region where it is produced. Remarks: Moscow region and city shown as one. Buenos Aires region and city shown as one. Santiago de Chile = Metropolitan region. Regional abbreviations: USA: CA = California, ID = Idaho, WI = Wisconsin, FL = Florida, China: IM = Inner Mongolia, HL = Heilongjiang Sheng.

Outline

IFCN concept + method

Focus 1: Milk price the key driver for dairy farming

Focus 2: Global milk production trends and drivers

Focus 3: Dairy farm economics a key driver for milk production?

Sum up

World Dairy Map 2012

Results of the IFCN Dairy Report 2011 – www.ifcndairy.org

For a better understanding of milk production world-wide

Top 20 dairy producing countries 2010

Country	Production (mill. tons)
USA	36.0
India	18.0
China	17.0
France	16.0
Germany	15.0
UK	14.0
Canada	13.0
Italy	12.0
Spain	11.0
Sweden	10.0
Denmark	9.0
Poland	8.0
Japan	7.0
South Korea	6.0
Israel	5.0
Switzerland	4.0
Australia	3.0
Belgium	2.0
Other	1.0

Milk production world-wide

Milk deficit world-wide

Milk surplus and deficit world-wide 2010

Dairy farm structure - average farms world-wide 2010

Milk competition on average world-wide in 10 dairy regions world-wide

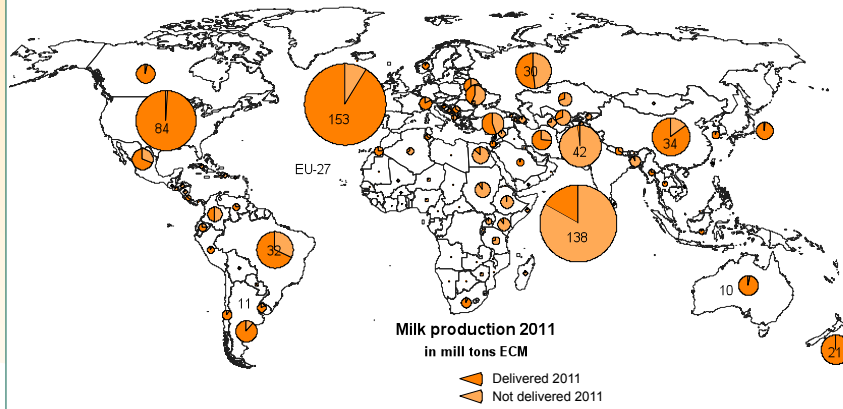
Cost of milk production in average world farms 2010

Agri-business partners

Research partners / organisations participating

Institutional partners

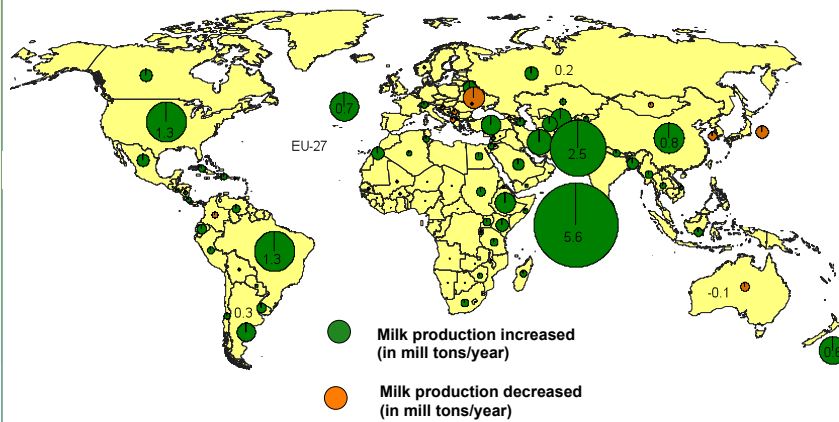
Status of milk production 2011



Milk volumes cows & buffalo milk –standardised to 4% fat and 3,3% protein

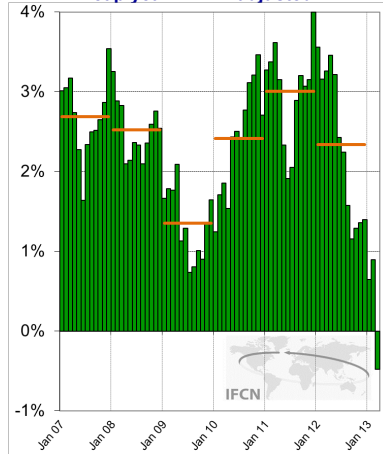


Change in milk production 2006-2011

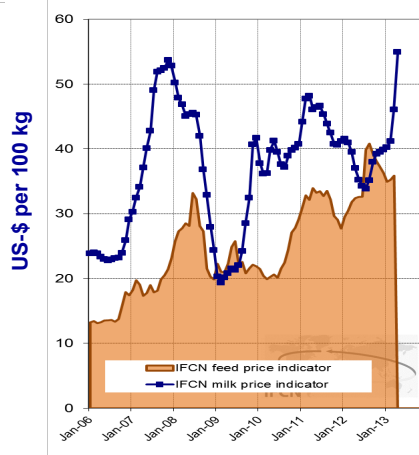


Monthly developments 2006 – 3/2013

Milk production growth*
leap year + ECM adjusted



World milk price & feed price

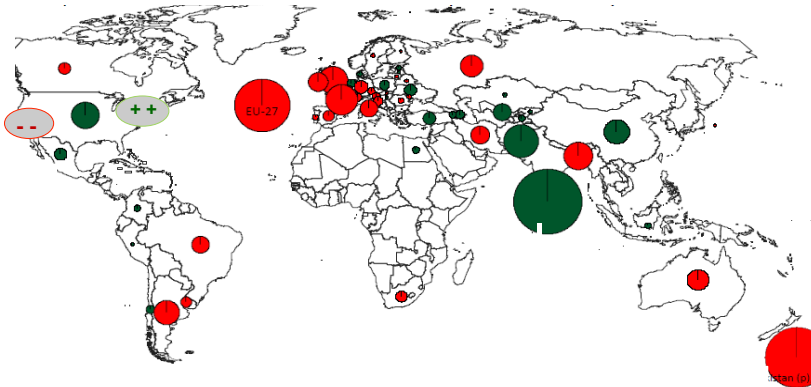


IFCN
© IFCN 2013

IFCN database: 60 countries (milk production o. delivered) represent >90% milk production, figures Feb + Mar 2013 are partly estimates

Milk production growth in March 2013

IFCN data+estimates for March 2013 vs. 2012 (ECM + leap year adjusted)



IFCN
© IFCN 2013

Comment: 59 Countries included (p = milk production, d = milk delivery): EU-27: (d), CIS: Armenia (p), Azerbaijan (p), Belarus (p), Kazakhstan (p), Kyrgyzstan (p), Moldova(p), Russia (p), Tajikistan (p), Ukraine (p), Uzbekistan (p), USA & Canada: Canada (d), USA (p), Latin America: Argentina (p), Brazil (d), Chile (d), Colombia (d), Mexico (p), Peru (d), Uruguay (d), Oceania: Australia (p), New Zealand (p), Asia: Bangladesh (p), China (p), India (p), Indonesia (d), Japan (p), Pakistan (p), Africa: Egypt (d), Other: Croatia (d), Switzerland (d), Turkey (d), Iran (p). Countries included represent 92% of world milk production. Figures adjusted to a 30-day-month. October 2012 data is preliminary or estimated.

Source: IFCN add-on product 3.4: Monthly milk production and prices

Outline

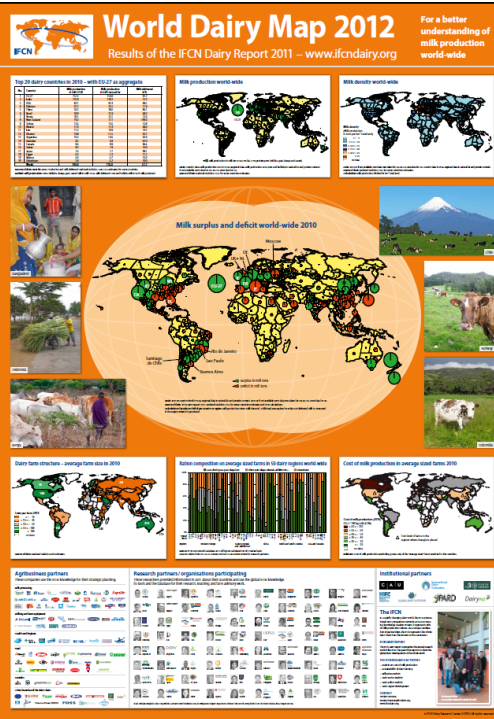
IFCN concept + method

Focus 1: Milk price the key driver for dairy farming

Focus 2: Global milk production trends and drivers

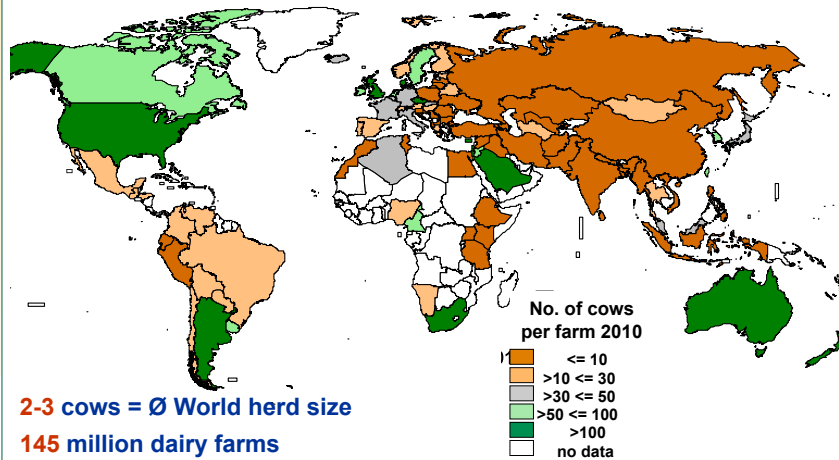
Focus 3: Dairy farm economics a key driver for milk production?

Sum up



Average dairy farm size world-wide

➔ The world average farm has 2 – 3 cows



2-3 cows = Ø World herd size
145 million dairy farms
0.7 – 1 billion people live on dairy farms



Farm ownership and decision making

Household farms = 78% of the farms; 33% world milk

Key characteristics: Small farms 1-3 cows, dairy is one income source,
50% of the milk is consumed on the farm, 50% sold.

Key driver: Selling milk provides daily cash for family needs

Family farms = 22 % of the farms, 33% world milk

Key characteristics: Work is mainly done by the family,
Size in developed countries 10 up to 100/300 cows?

Key driver: Generate an income,

Business farms = 0,3 % of the farms , 33% world milk

Key characteristics: Work is mainly done by employees,
Size in developed countries > 300 cows?

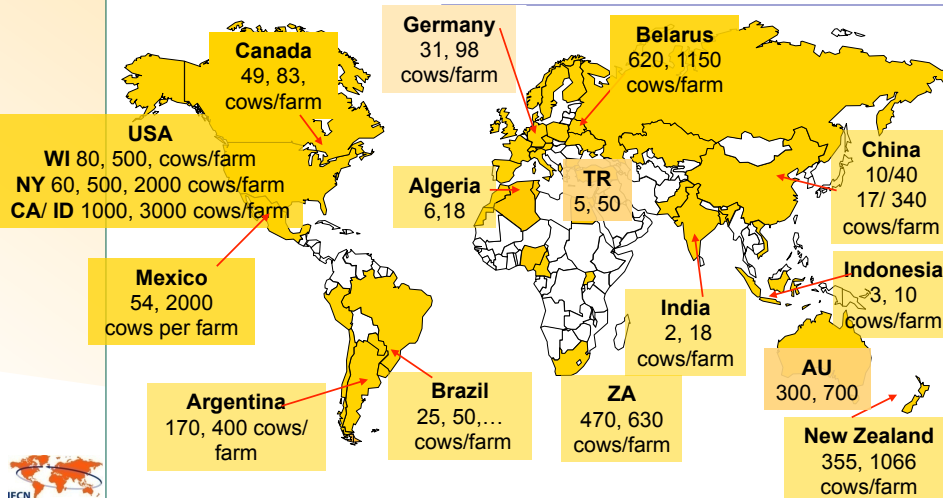
Key driver: Generate the expected ROI, return to labor, etc.



© IFCN 2013

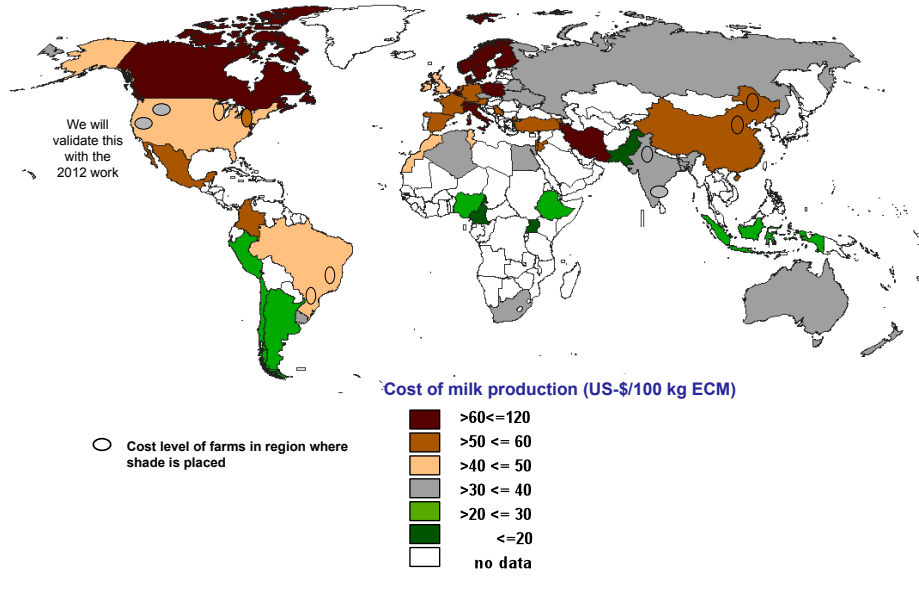
Examples of typical farms 2011

they represent in a country a certain share of milk production

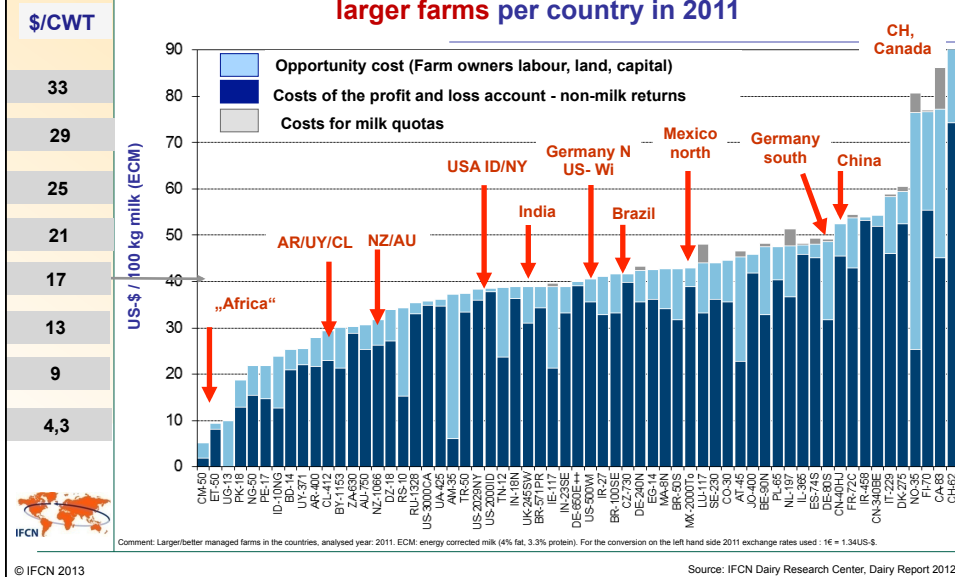


© IFCN 2013

Cost of milk production only in 2011 average sized farms

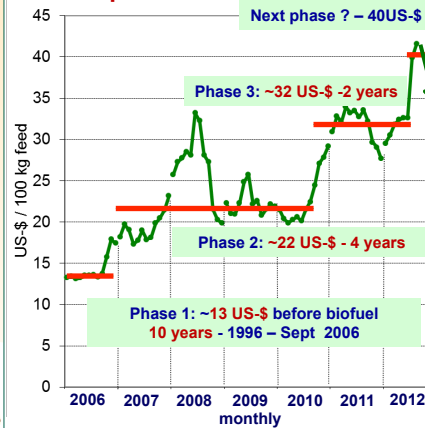


Ranking countries by cost of production larger farms per country in 2011



Implications of rising world feed prices

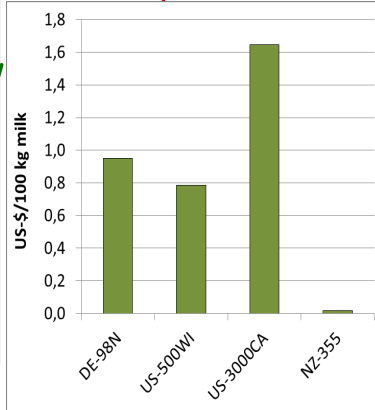
Feed prices 2006 – 2012*



IFCN indicator based on 0,3 kg soyabean meal and 0,7 kg corn

© IFCN 2013

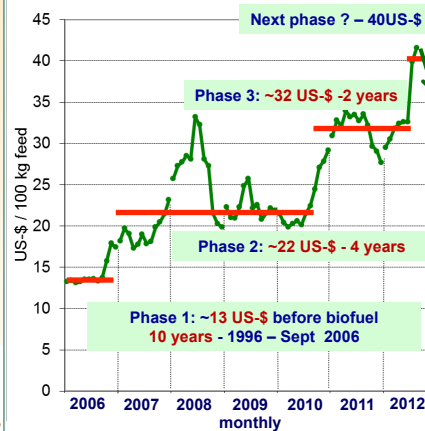
Cost of milk production increase on 10% feed price increase



4 typical farms & its size

Source: IFCN Dairy Research Center

Implications of rising world feed prices monthly price developments 2006 – 2012



© IFCN 2013

Impact on dairy farm economics

1. Change in national grain prices
2. Purchase feed prices and costs rise
3. Land value increases
4. Land rents + costs change
5. Opportunity costs own land rise

=> Farms that suffer first:

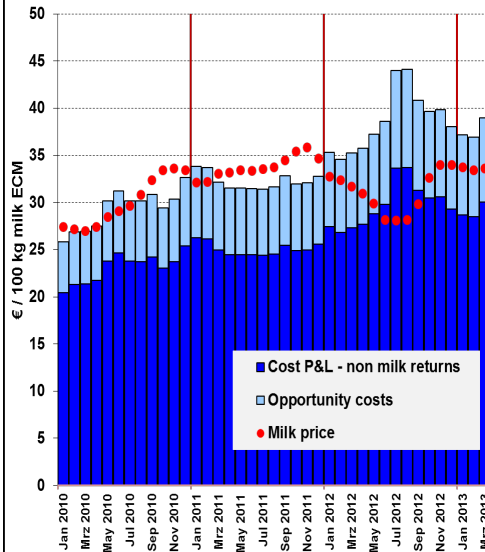
- a) High share purchase feed
- b) High intensity / yield
- c) High share cash crop land
- d) High share rented land
- e) Business perception on farm

=> Cost in other farms rise later

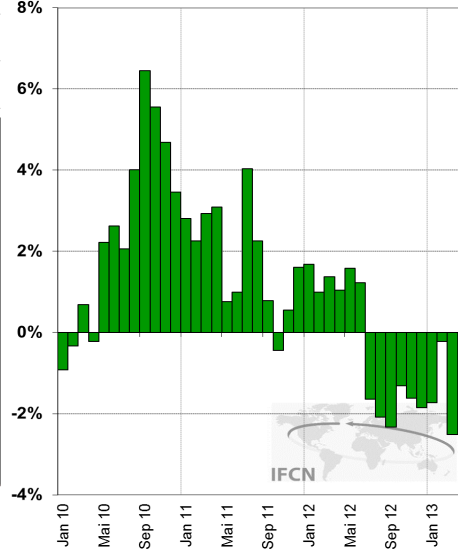
Source: IFCN Dairy Research Center

Real time farm economic 2010 - 2013

Monthly farm economics
A German 100 cow farm type



EU-15 Milk production growth
leap year + ECM adjusted



Summing up

- 1. World milk price** – a 2nd rollercoaster ride like 2007 – 2009 ?
Key driver – the milk supply side this time !!
- 2. USA competitiveness in milk production 2011**
The large farms are quite competitive cost but show the highest sensitivity to feed price increases especially those in the west.
- 3. What to do once the dairy economics do not work:**
 - Option 1: Ask policymakers for help – (old European way)
 - Option 2: Wait + pray for better milk / feed prices
 - Option 3: Improve the existing system (efficiency)
 - Option 4: Find ways to get better input prices (factor price)
 - Option 5: Move to a better fitting dairy system (system shift)
 - Option 6: Close down the farm or relocate (farms + dairy plants)
- 4. IFCN approach to support the dairy industry:**
Use real time farm economics to predict milk supply in the future.



This presentation is the result of a large number of people working together in IFCN since 2000



Researchers from 90 countries – June event



Researchers at the IFCN Center



People representing 95 dairy related companies – September event

Outlook of the world milk price

in US-\$ per 100 kg milk ECM 4% fat; 3,3% protein

