

37th ICAR Conference
2nd of June 2010, Riga, Latvia

Competitiveness of different dairy production systems

Kees de Roest Research Centre for Animal Production, Italy

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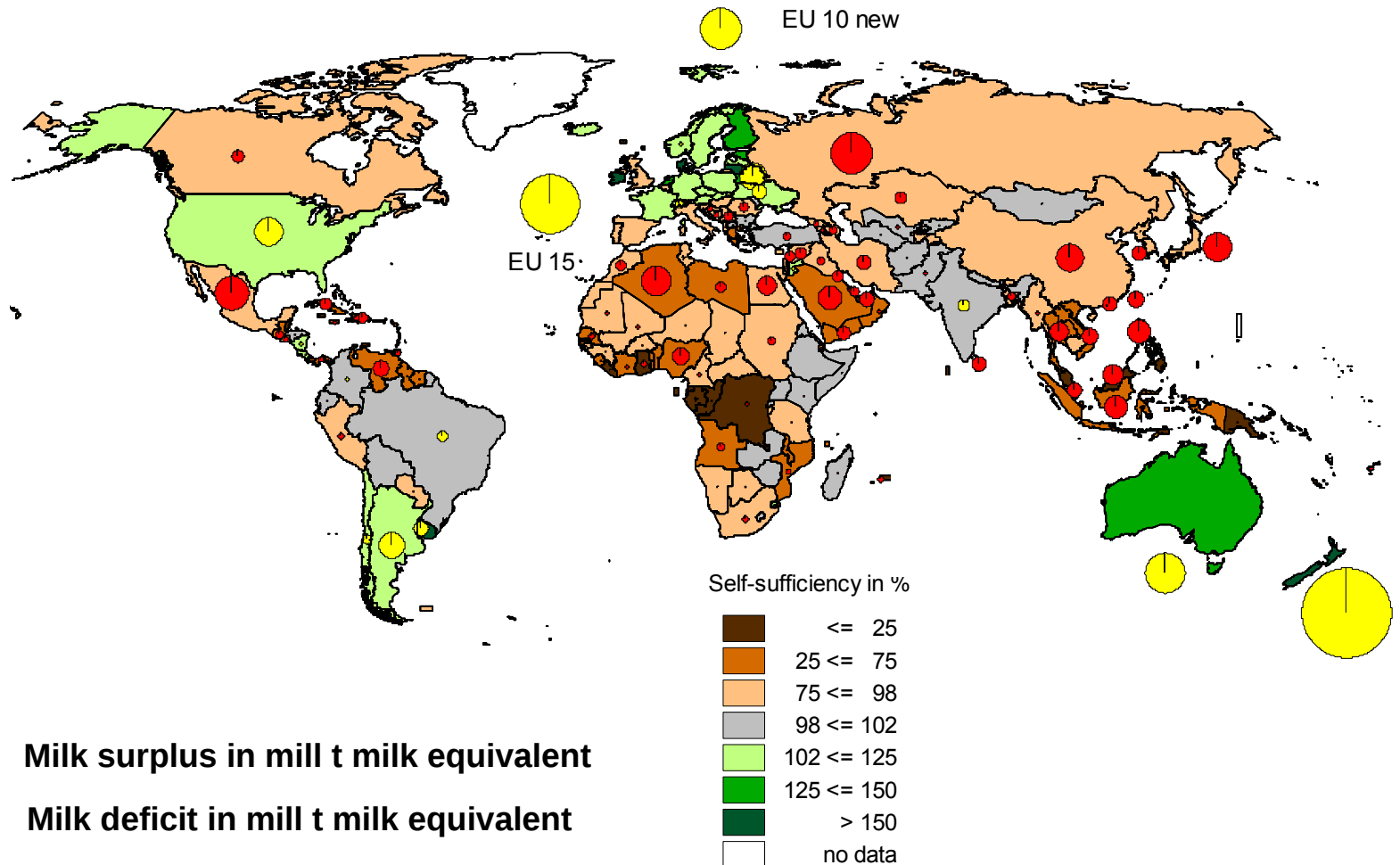
Agenda points

- World milk production and world market price
- IFCN concept
- Supply and demand of dairy products
- Competitiveness of dairy systems (production costs and returns to labour)
- Special cases: Parmesan cheese, dual purpose breeds and robust/high yielding COWS

World milk production (mln t)

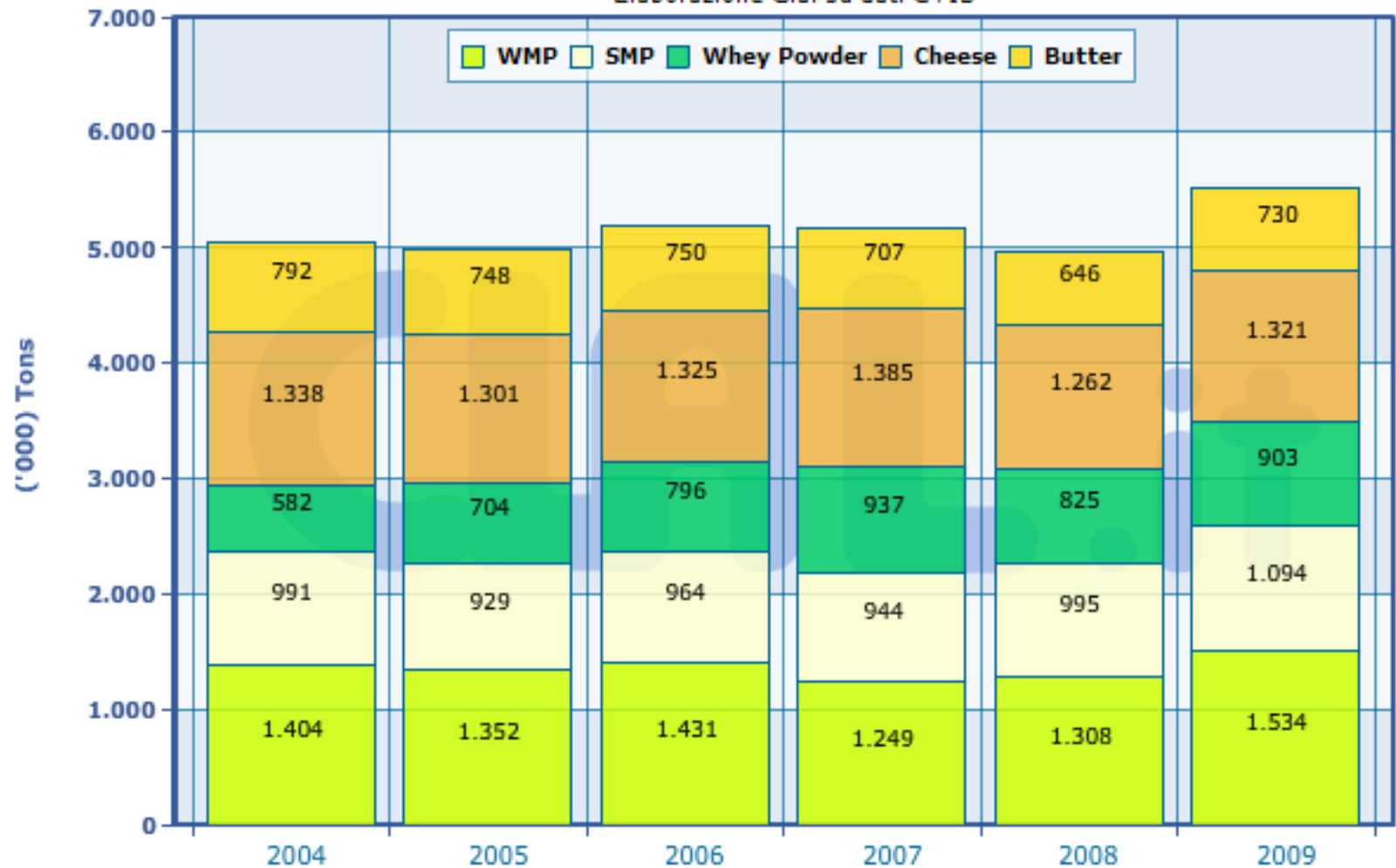
	2004	2009	var %
EU - 27	153,2	150,9	-1,5
India	91,1	108,8	19,4
Usa	77,5	85,5	10,3
China	27,0	44,4	64,4
Pakistan	28,6	37,3	30,4
Russia	32,2	32,8	1,9
Brazil	24,3	29,5	21,4
New Zealand	15,0	16,2	8,0
Ukraine	13,7	11,1	-19,0
Turkey	10,7	12,3	15,0
Argentina	8,1	10,6	30,9
Australia	10,1	9,4	-6,9
Mexico	10,0	11,2	12,0
Others	126,9	139,0	9,5
Total	628,4	699,0	11,2

Milk surplus and deficit areas



WORLD DAIRY EXPORT STATISTICS

Elaborazione Clal su dati GTIS



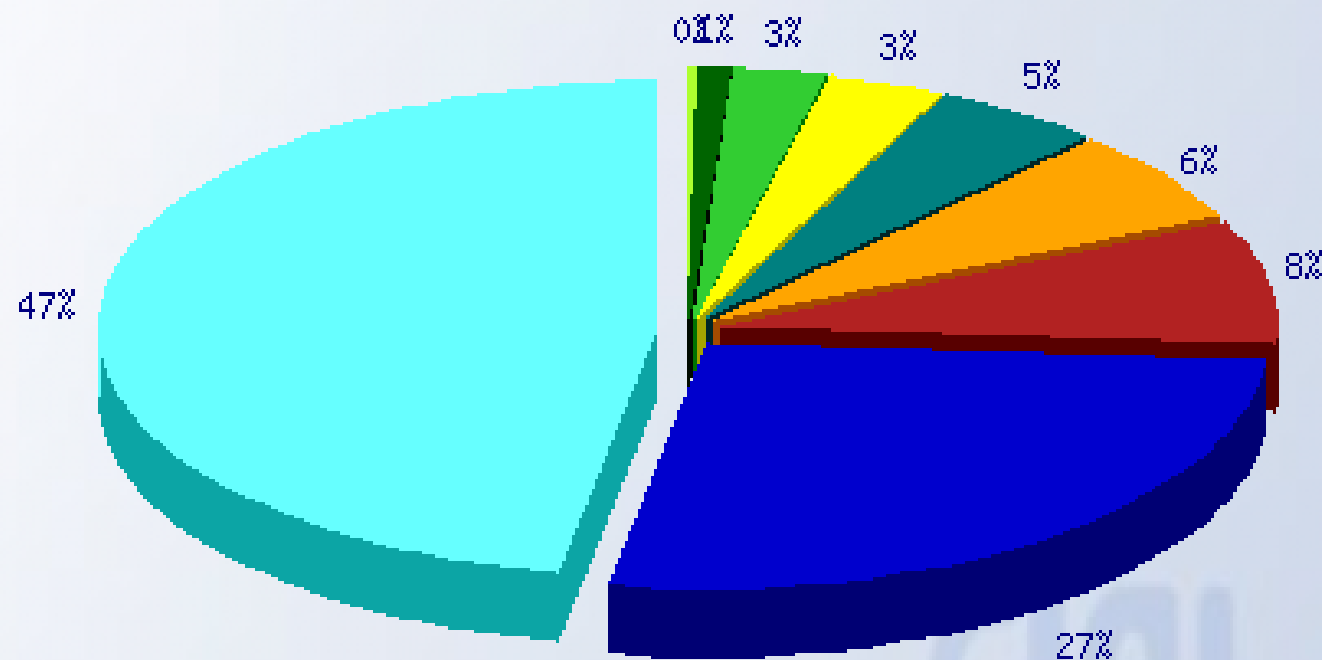
Import dairy products China

	Share in world trade	var. 2009/2008	var. 2010 Jan-Apr
SMP	6,4%	28%	87%
WMP	8,8%	301%	64%
Butter	3,8%	109%	80%
Cheese	1,3%	22%	88%

Source: CLAL

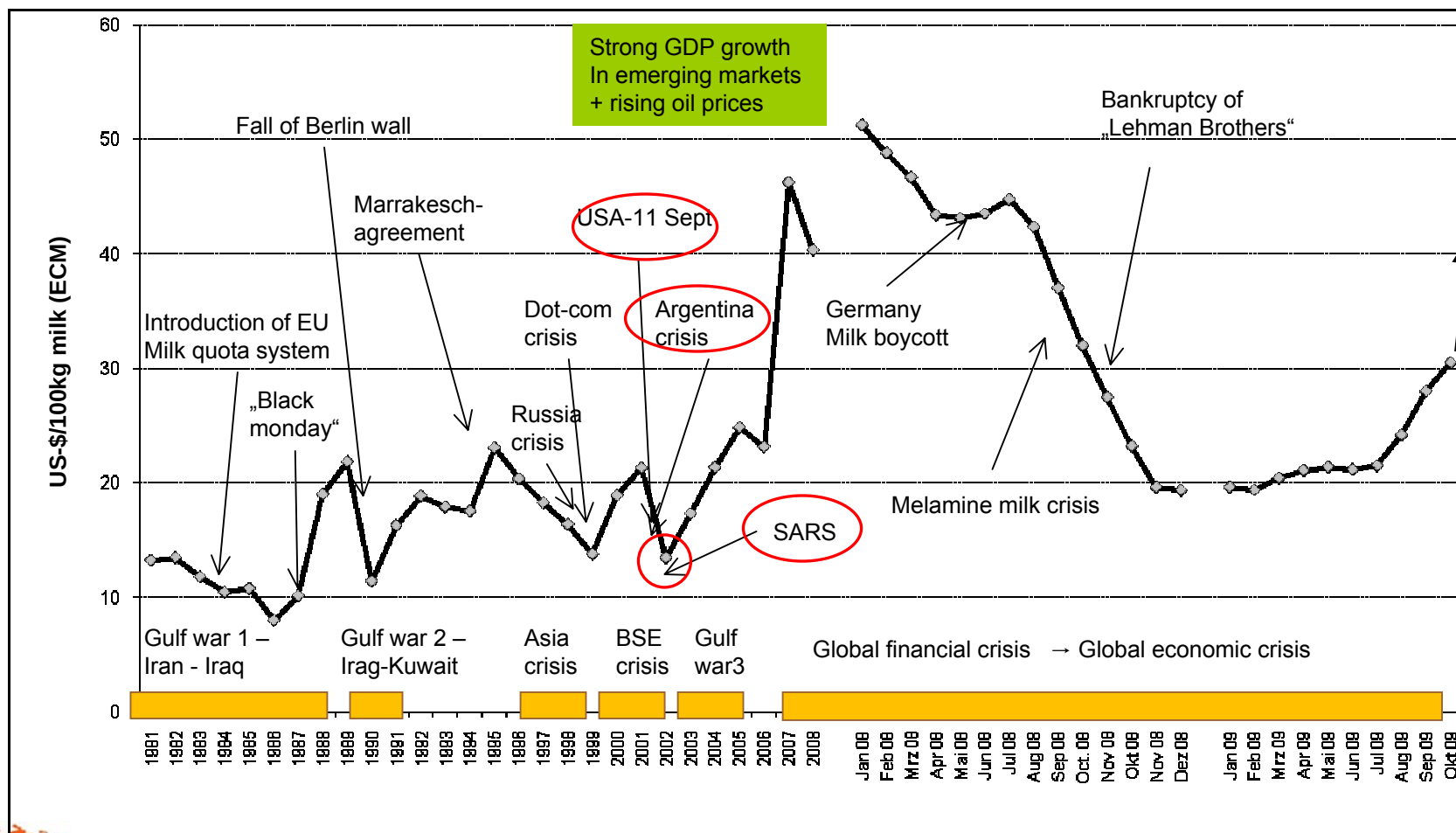
World: Share Dairy Products - 2009 in ton

	OCEANIA	47%
	EUROPA - UE 27	27%
	AMERICA del NORD	8%
	AMERICA - CENTRO SUD E CARAIBI	6%
	EUROPA (Altri - EXTRA UE 27)	5%
	AFRICA	3%
	ASIA - SUD EST	3%
	ASIA	1%
	ASIA MEDIO ORIENTE	0%



What drives the world milk prices?

Crisis and shocks



Explanations: *2008 Average from Jan08-Nov08; BSE: Bovine spongiform encephalopathy; SARS =Severe acute respiratory syndrome

IFCN a way to understand a complex, fast changing, global dairy world



The IFCN is a global dairy research network - founded in 1997 – focus on milk production

www.ifcndairy.org



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„Create a better understanding of
milk production worldwide.“

Torsten Hemme
Chairman of the IFCN Dairy Network

Home

Welcome to the IFCN Dairy Network

In a rapid changing dairy world the IFCN acts as an ongoing knowledge creation system. It represents 95% of milk production volume. Via a unique combination of partnerships the IFCN represent the whole dairy chain from the farmer towards the consumers.

The IFCN Network

IFCN is offering win-win partnerships for:

- Dairy researchers
- Dairy related companies
- Dairy related institutions
- Dairy farmers
- Students



Join the Network!

Dairy Report 2009

Our annual report is used as a standard reference book to understand global dairy trends and drivers. A must have for your strategic planning.



Report Details

The latest news & dates

Dairy policy impacts on Bangladesh & EU15 dairy farmers' livelihoods

11. Jan 2010

The historic low price of milk in 2009 has significantly affected million's of dairy... [Read more »](#)

IFCN at the IDF World Dairy Summit in Berlin 2009

08. Oct 2009

At this years IDF world dairy summit the IFCN presentation was focussing on the question... [Read more »](#)

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21. Sep 2009

This year dairy researchers from over 80 countries compiled the 10th IFCN Dairy Report, which... [Read more »](#)

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4 Main supporting Partners

71 Supporting Partners

Dairy Farmers



Zakaria Abd
Rahman
Malaysia



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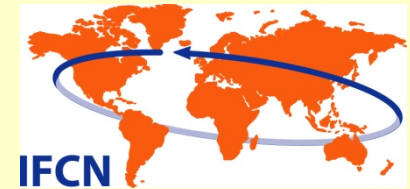
JOHN DEERE



Mexico



USA



**Our Mission: Create
a better understanding
of milk production
world-wide**



India



China



Ethiopia



Brazil



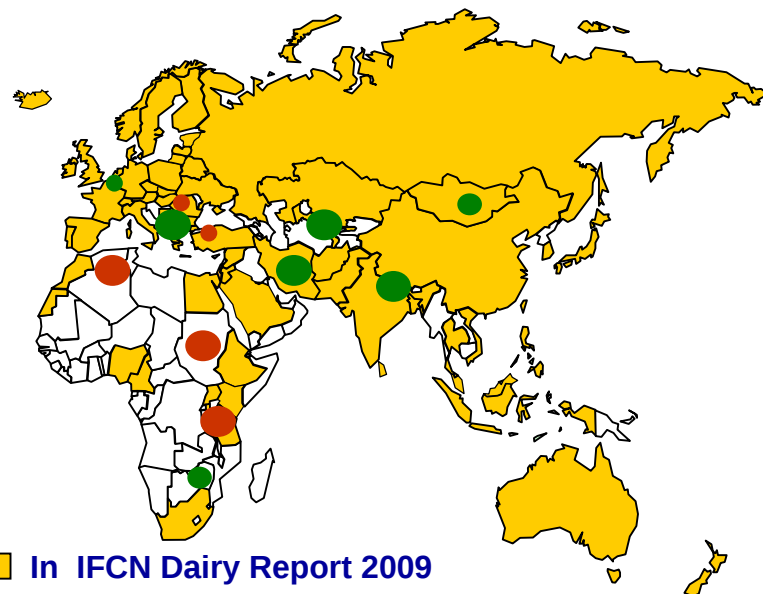
Status of the IFCN 2010

The IFCN represents **95%** of world milk production

Institutional Partners



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In IFCN Dairy Report 2009



Process in 2010 (expected)



Working on progress

Research Partners

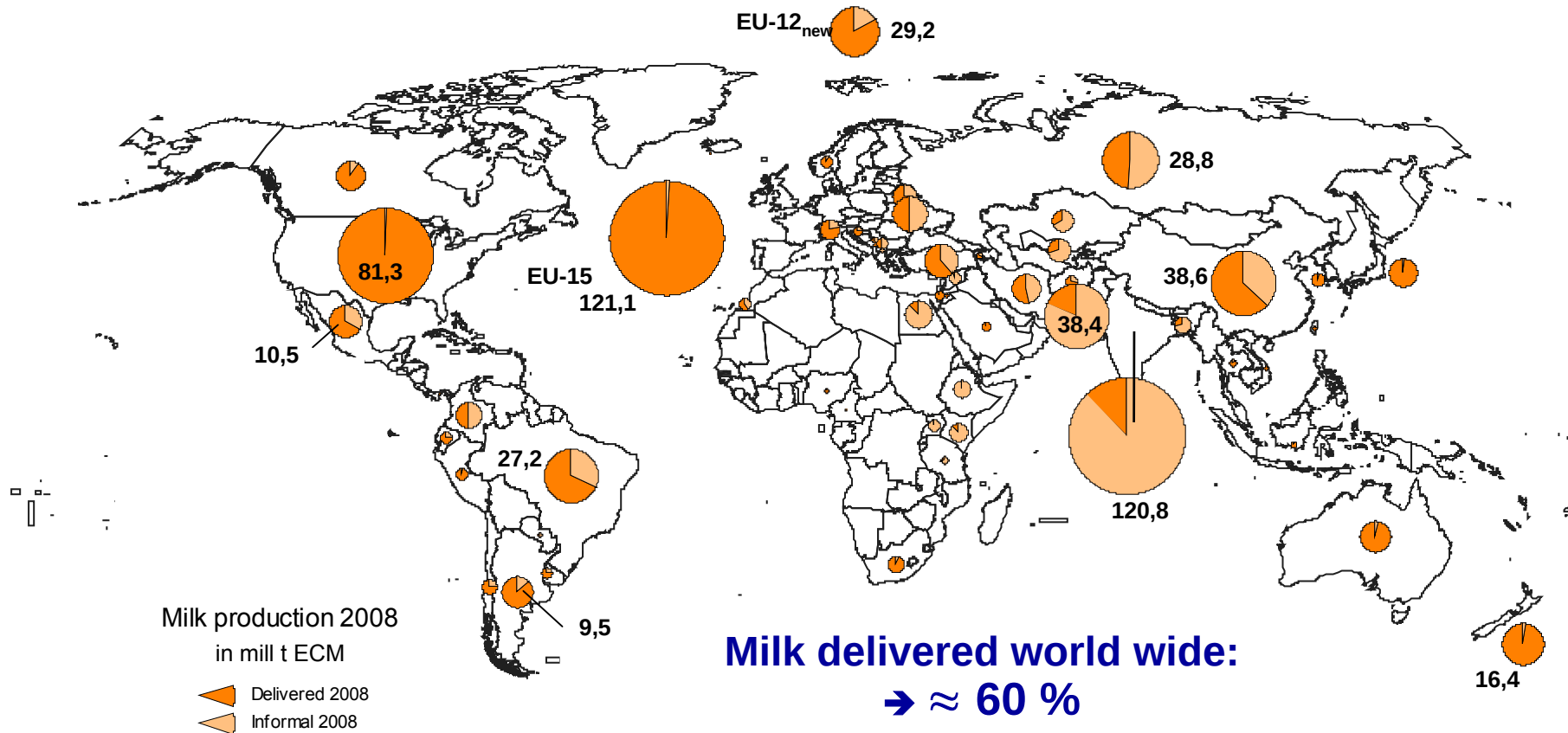




Milk supply

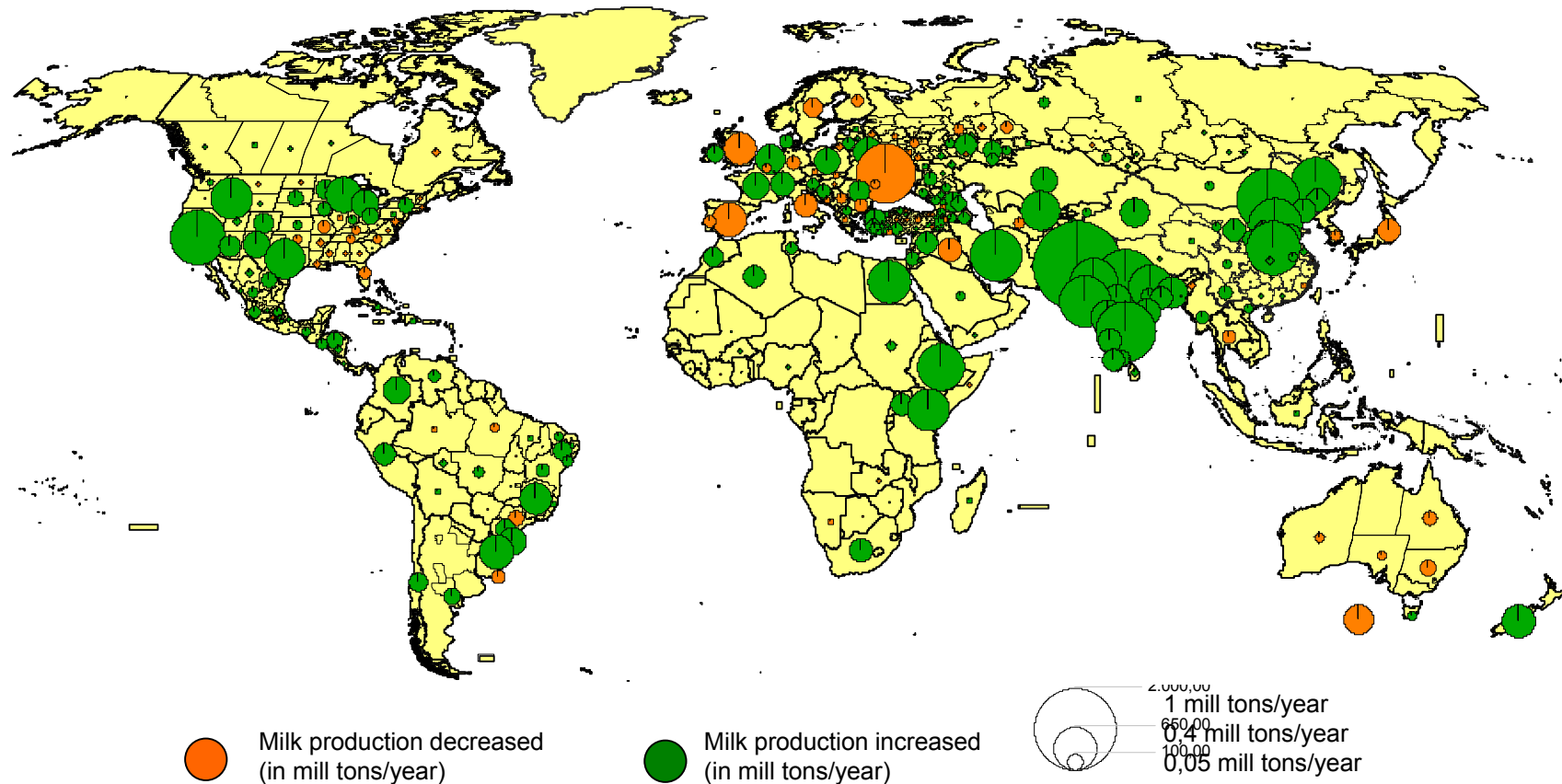


Milk production volume 2008 & shares of delivered and informal milk



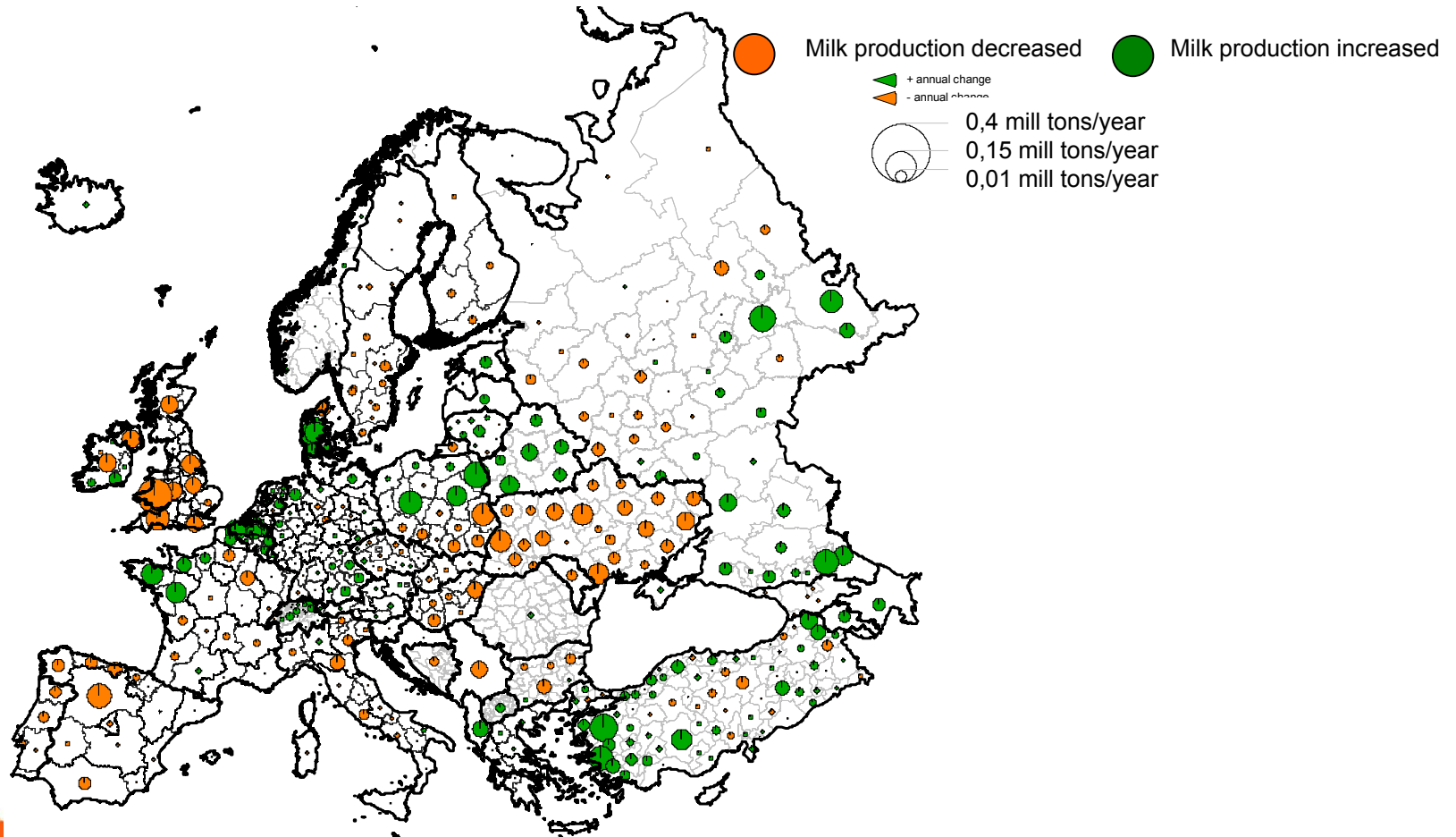
Change in milk production 2005-2008

Countries and regions in US, CA, MX, BR, RU, TR, CN, IN, PK, AU



Winning and losing regions in Europe

2005 - 2008

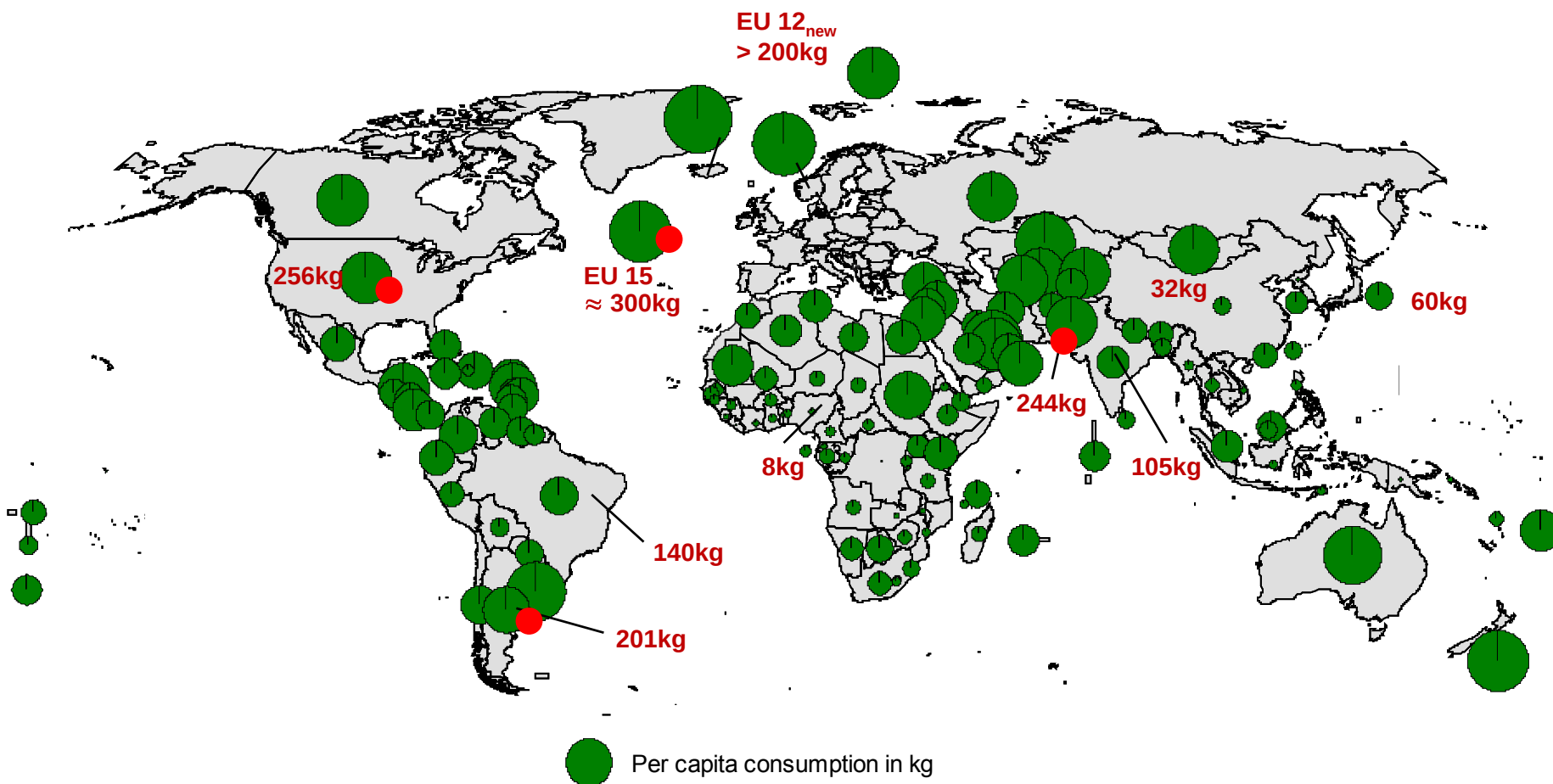




Dairy demand

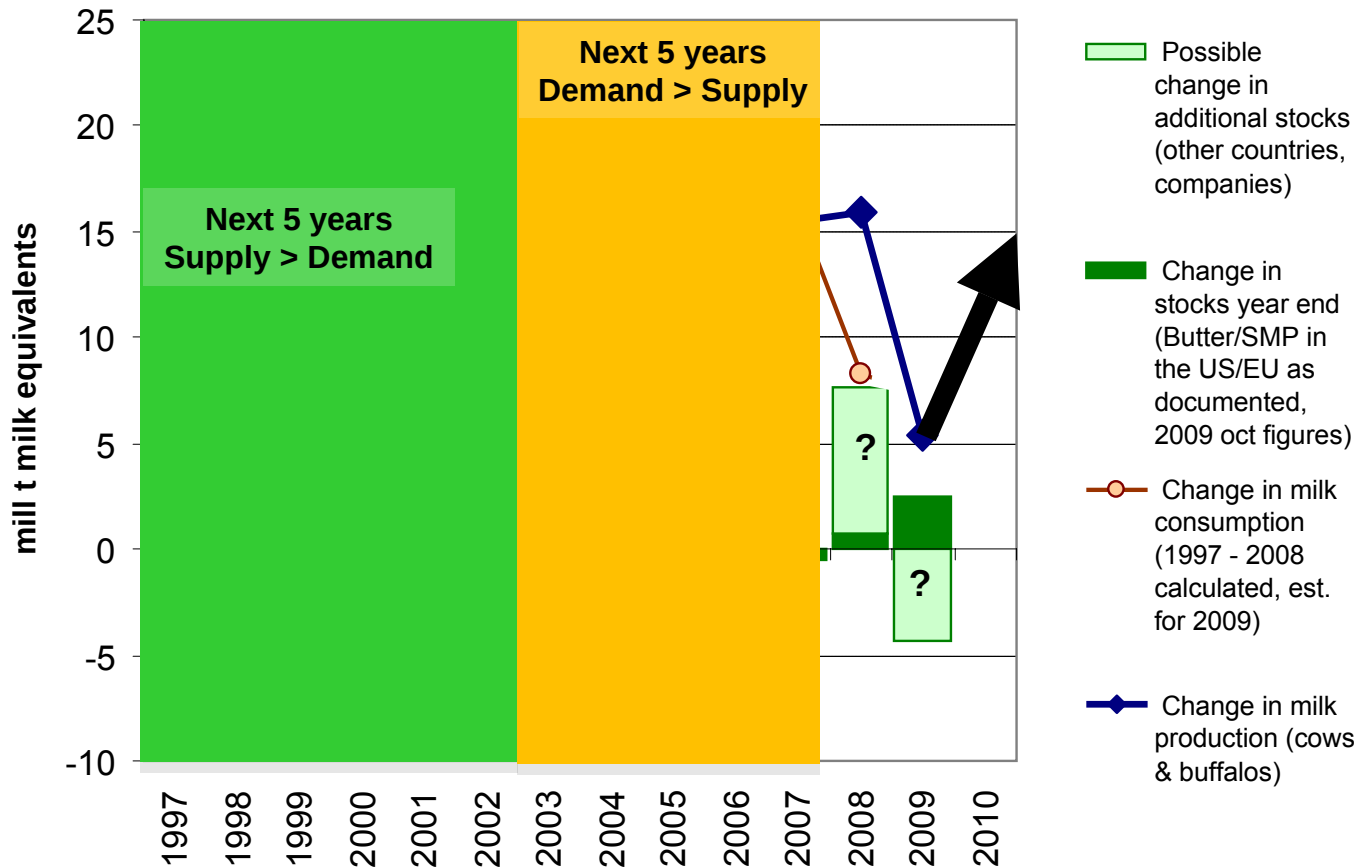


Per capita consumption of milk - 2008



Growth in milk supply and demand

Status what we knew in February 2010



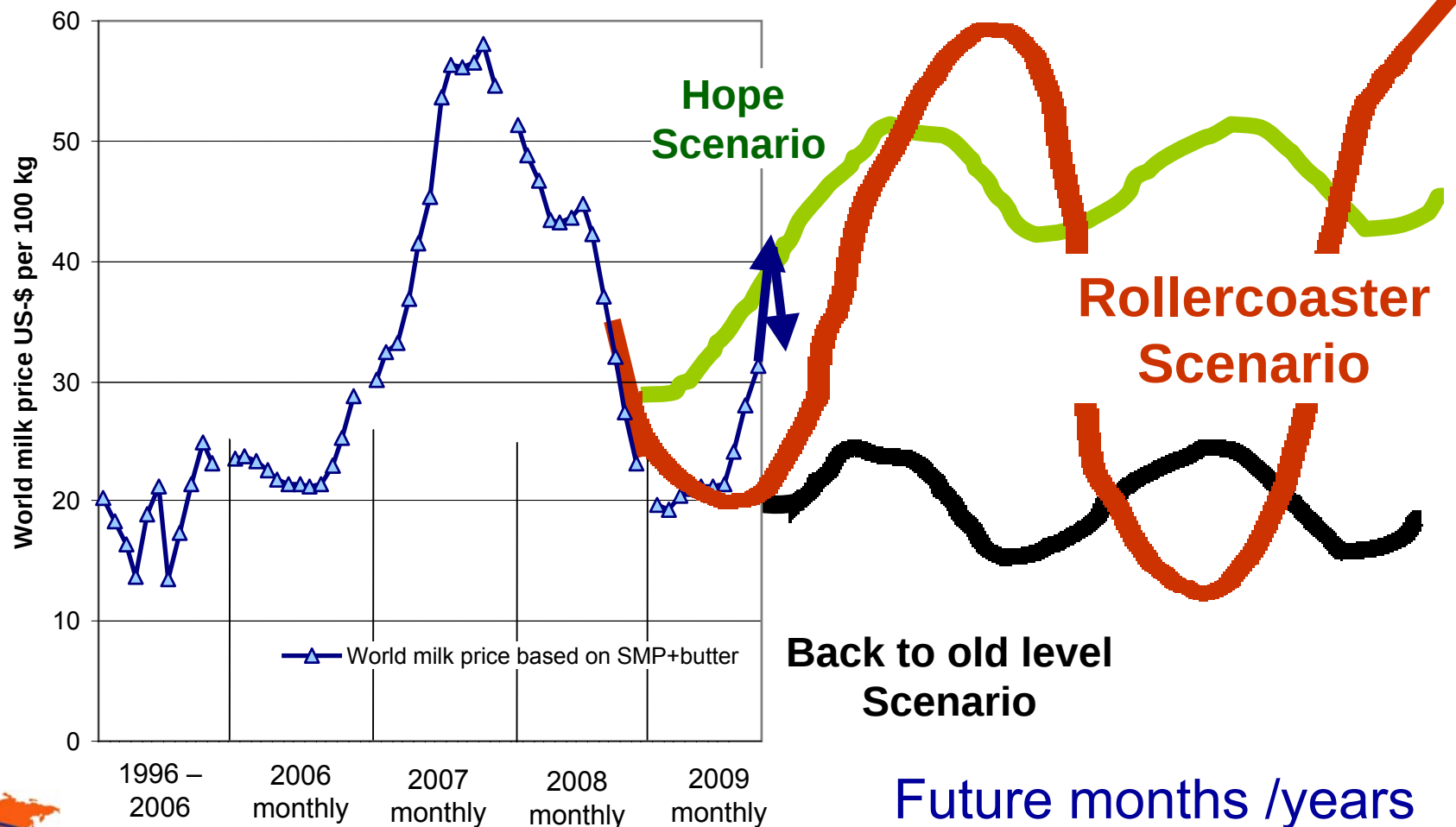
Scenario for 2010: world market milk price 35 US-\$/100 kg, world market feed price: 24 US-\$/100 kg, no shocks

Sources: IFCN Dairy Research Center, stock change beyond EU/US public once very difficult to measure



IFCN forecast done in 11/2008

IFCN conference 2008



IFCN

Factors determining competitiveness

1. Production costs

- Farm size
- Technical efficiency

2. Farm gate price

- Valorisation of milk in the supply chain
- Market protection (external market barriers), milk quota

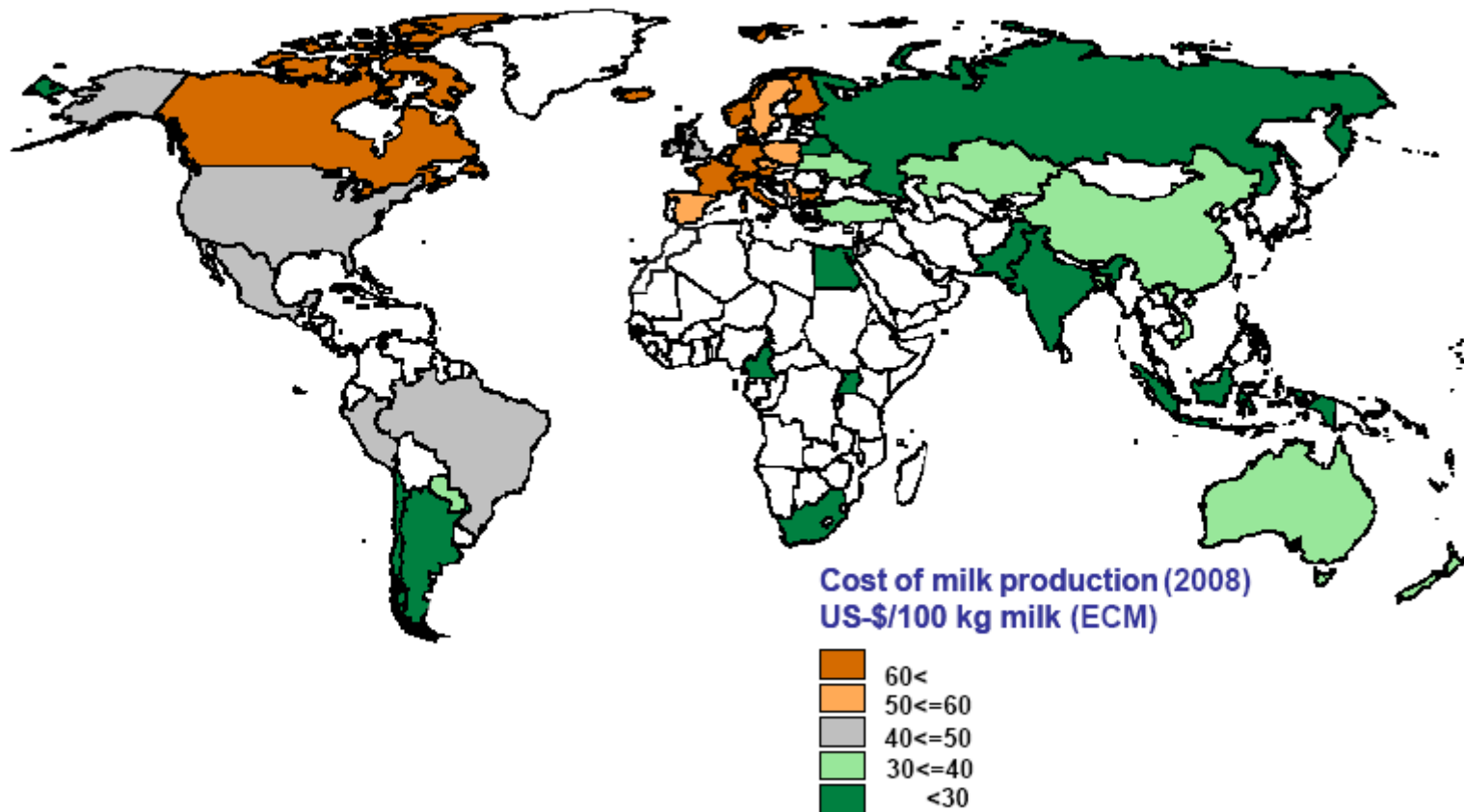
3. Returns to labour and capital invested compared to other sectors in the economy

Dairy farming systems

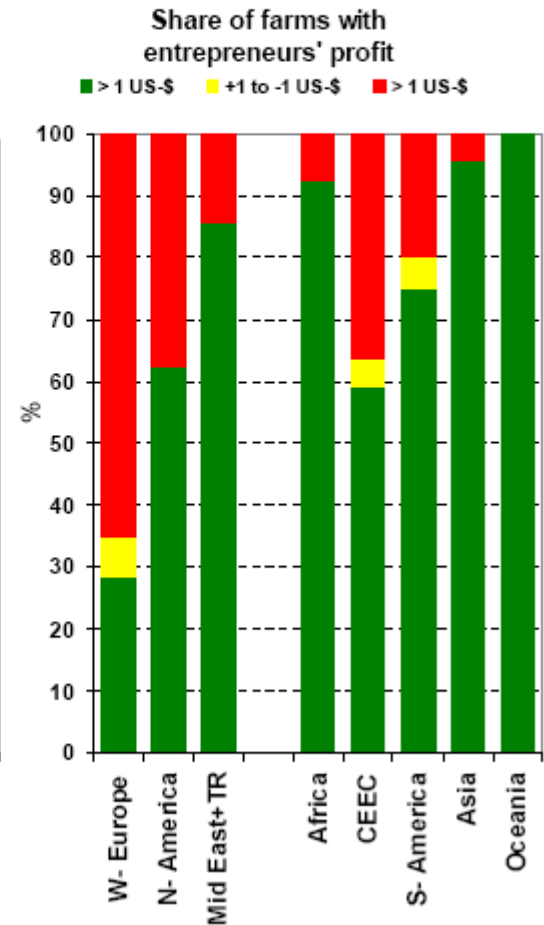
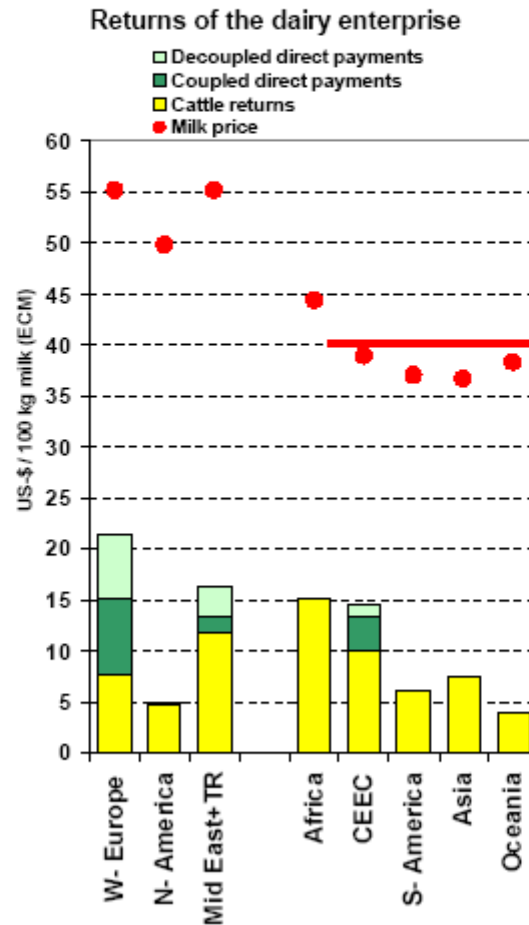
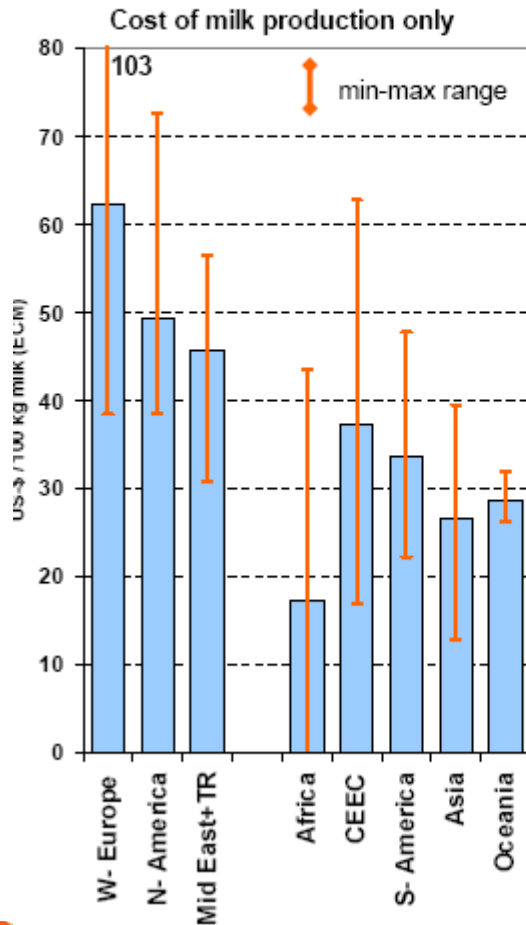
- Grazing systems, regular rainfall, low concentrate use (New Zealand, Ireland, Brittany)
- High tariff protected systems with or without milk quota (Canada, Norway, Switzerland and EU-27)
- Unevenly distributed rainfall, high use of concentrate, zero grazing (feedlot) (California-Idaho, Italy)
- Very small scale production primarily for informal markets (India, Pakistan, other Asian countries, Africa)
- Special cases: Protected Designation of Origins (Parmesan cheese, Comté etc. etc)

IFCN milk cost map 2008

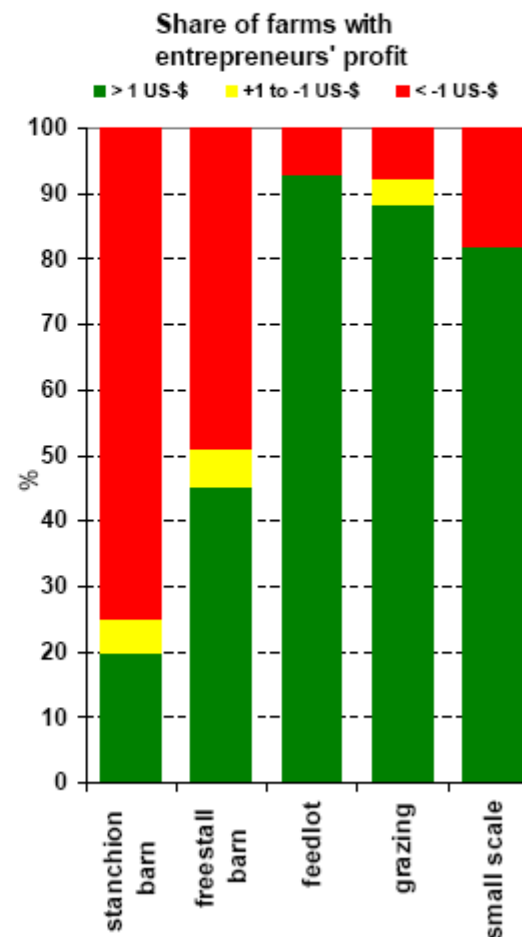
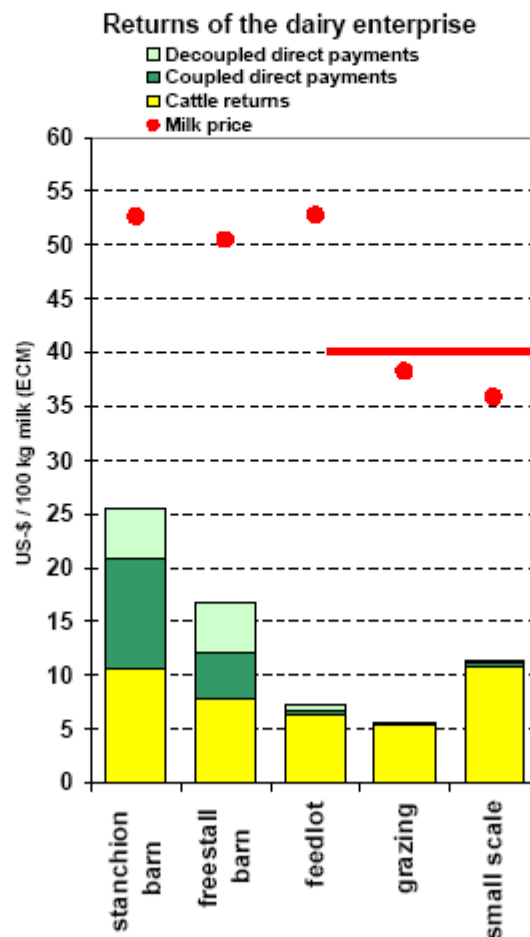
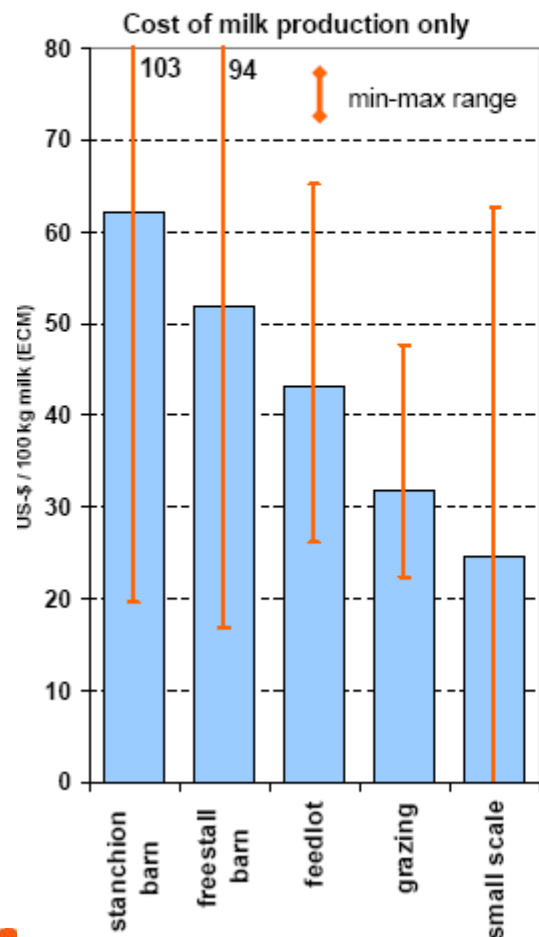
Results for the average size farms types in 2008



Results of world region clusters



Results of production system clusters



Oceania



Ø/++ Farms: Costs of milk production only



in US-\$/100 kg ECM

Western Europe

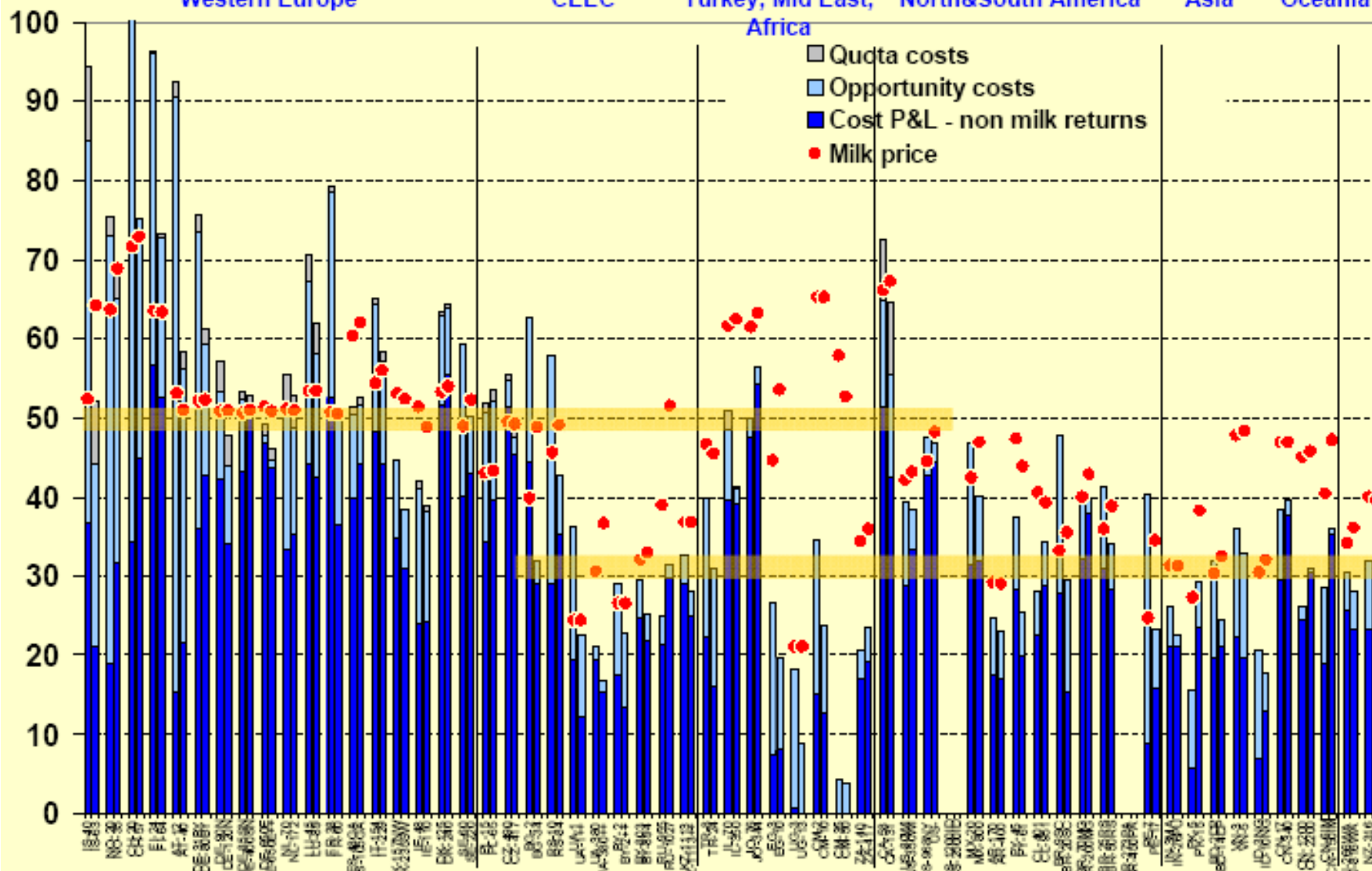
CEEC

Turkey, Mid East, Africa

North&South America

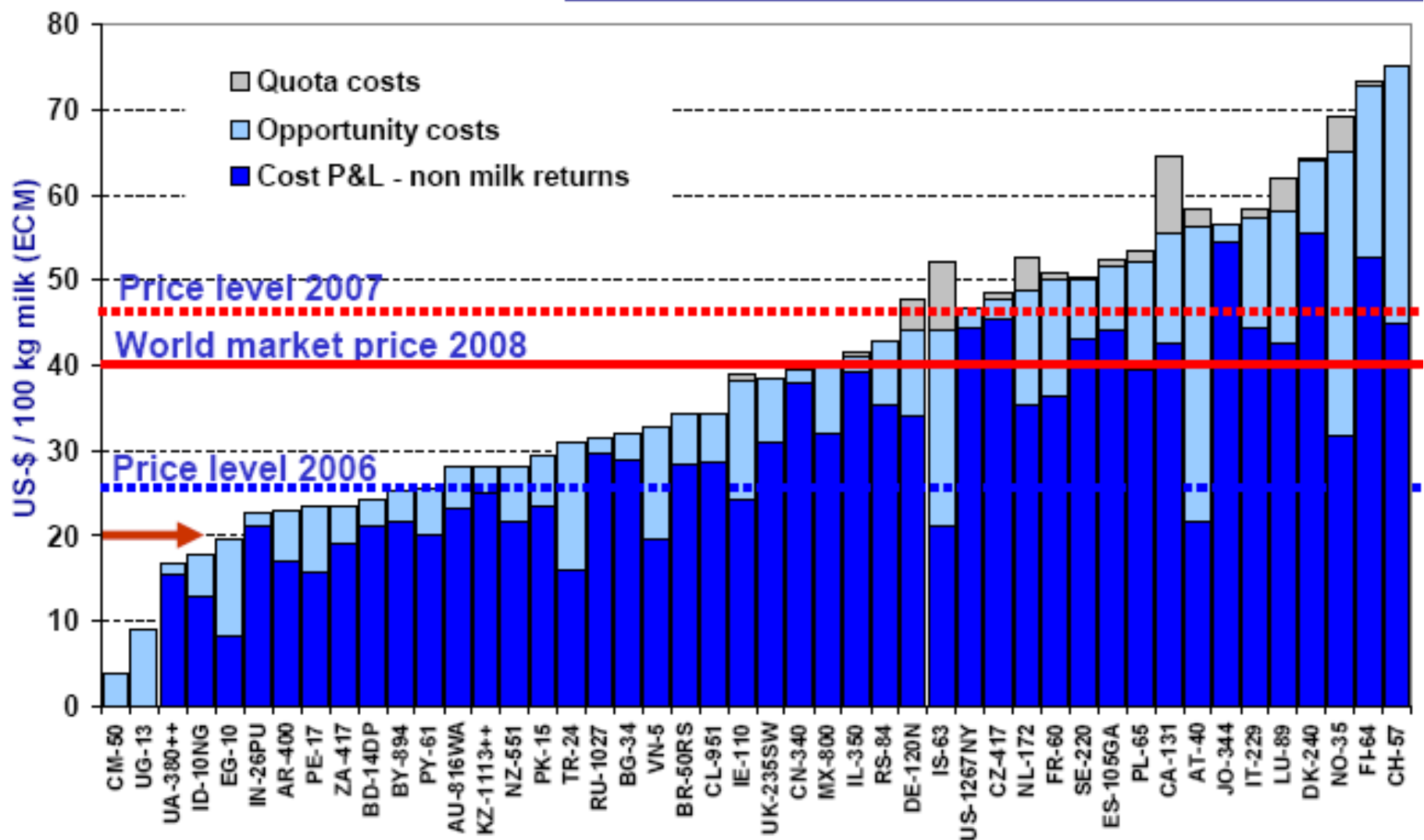
Asia

Oceania



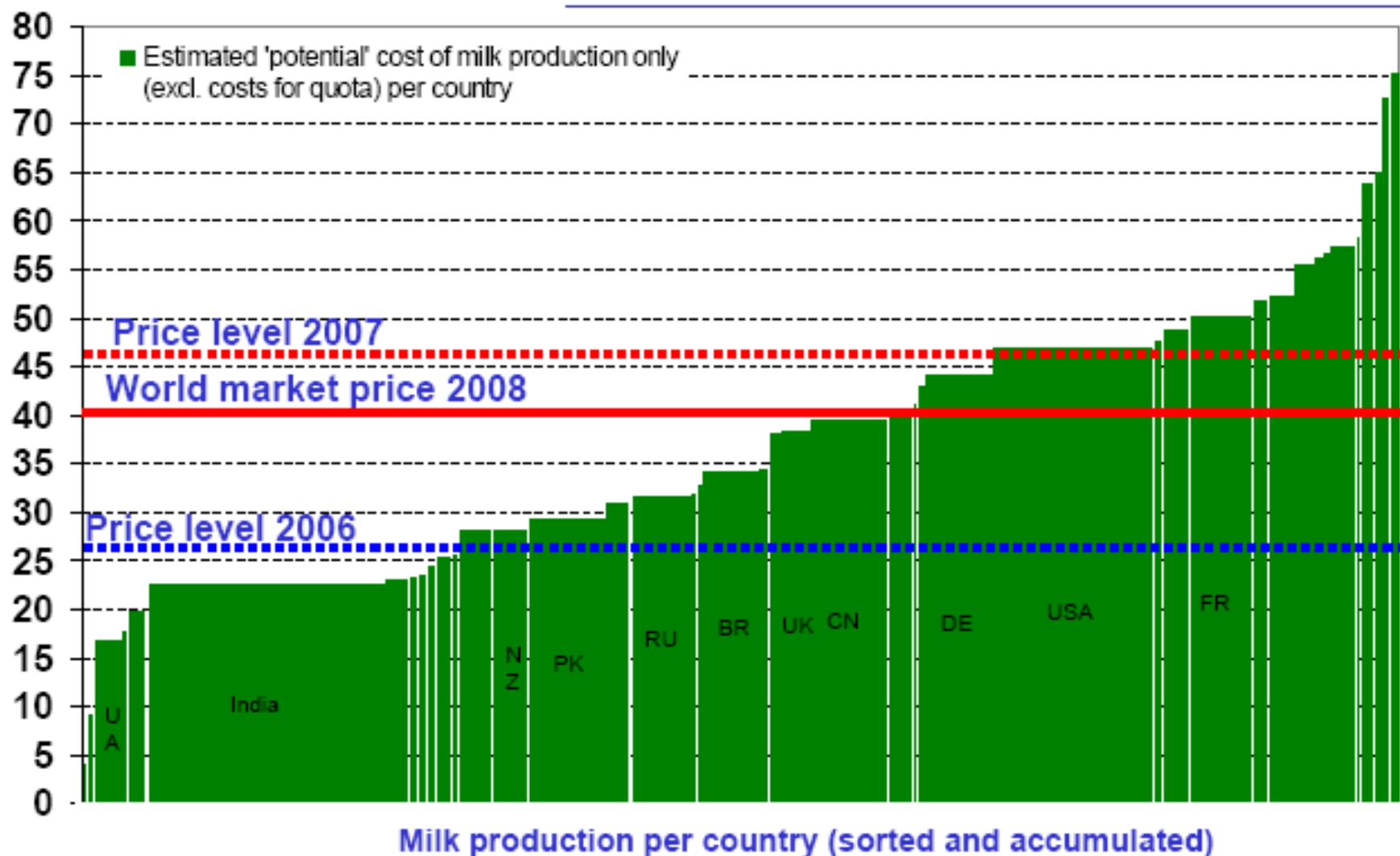
IFCN comparison of “larger” farm types

Cost of milk production only in 2008



„IFCN world milk supply curve 2008“

Estimate based on the larger / better farm types



Special cases:

1. Parmesan cheese production
2. Dual purpose vs High yield cows
3. Robust cows vs High yield cows

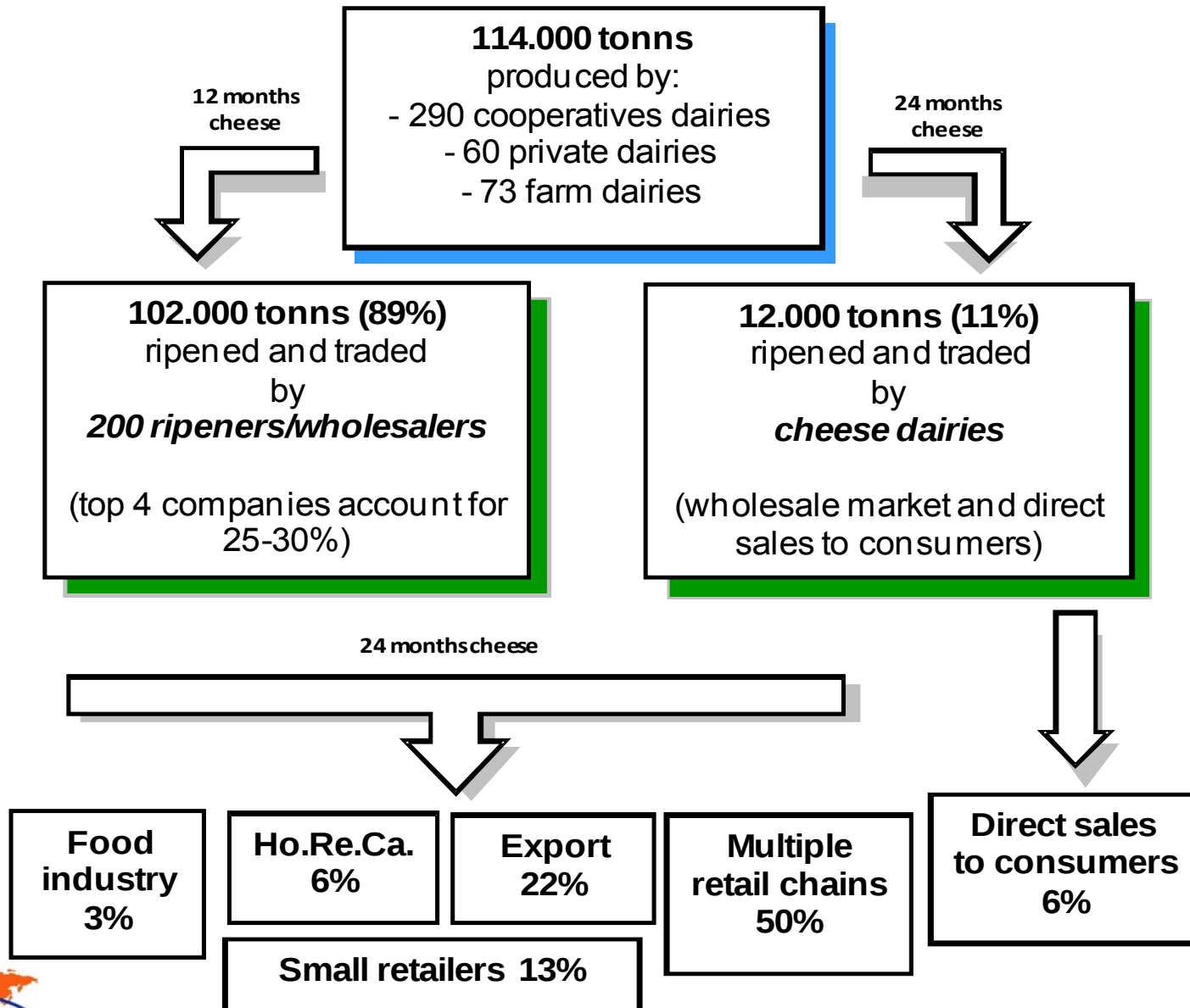
PDO's shares on the whole cheese production in Italy

	Production (tonnes)	% production	% milk
Grana Padano	159,621	14.1	22.9
Parmigiano-Reggiano	118,979	10.5	16.9
Gorgonzola	48,481	4.3	3.9
Mozzarella Campana	29,590	2.6	1.3
Pecorino Romano	23,855	2.1	1.4
Asiago	23,616	2.1	2.0
Provolone Valpadano	12,745	1.1	1.2
Taleggio	9,196	0.8	0.7
Other PDO cheese	27,505	2.4	2.3
TOTAL PDO	453,588	40.0	52.6
Other cheese	680,600	60.0	47.4

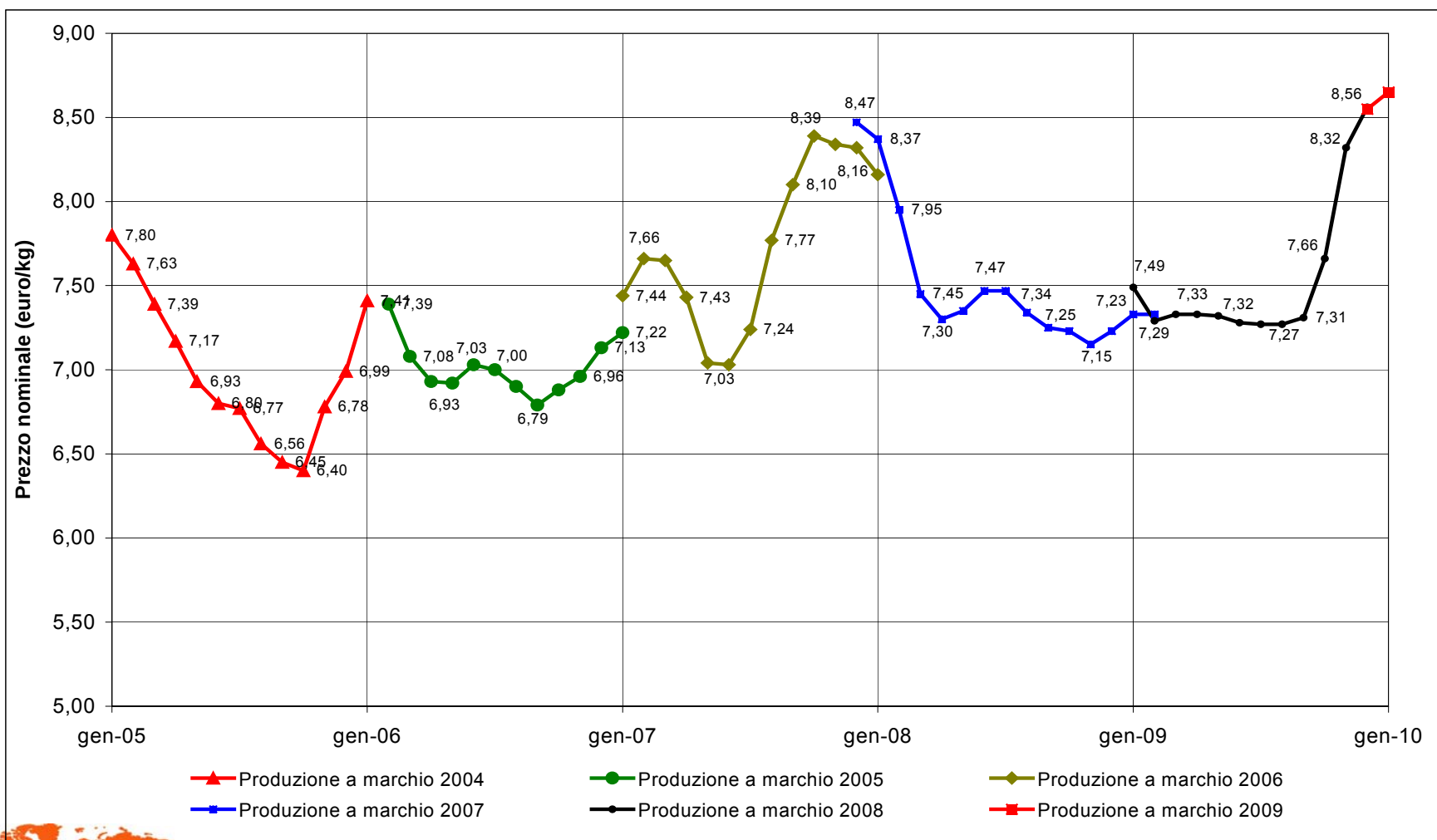
Product specification of Parmigiano-Reggiano cheese

- Milk only from a delimited area
- Feed regime of cattle does not allow use of silage
- At least 70% of roughage should come from delimited area
- Limited list of concentrates can be used
- Milk cannot be cooled below 18° C
- Only raw milk can be used for processing to cheese
- *Milk is collected twice a day*
- *Cheese is being produced 365 days a year*

Parmigiano-Reggiano supply chain



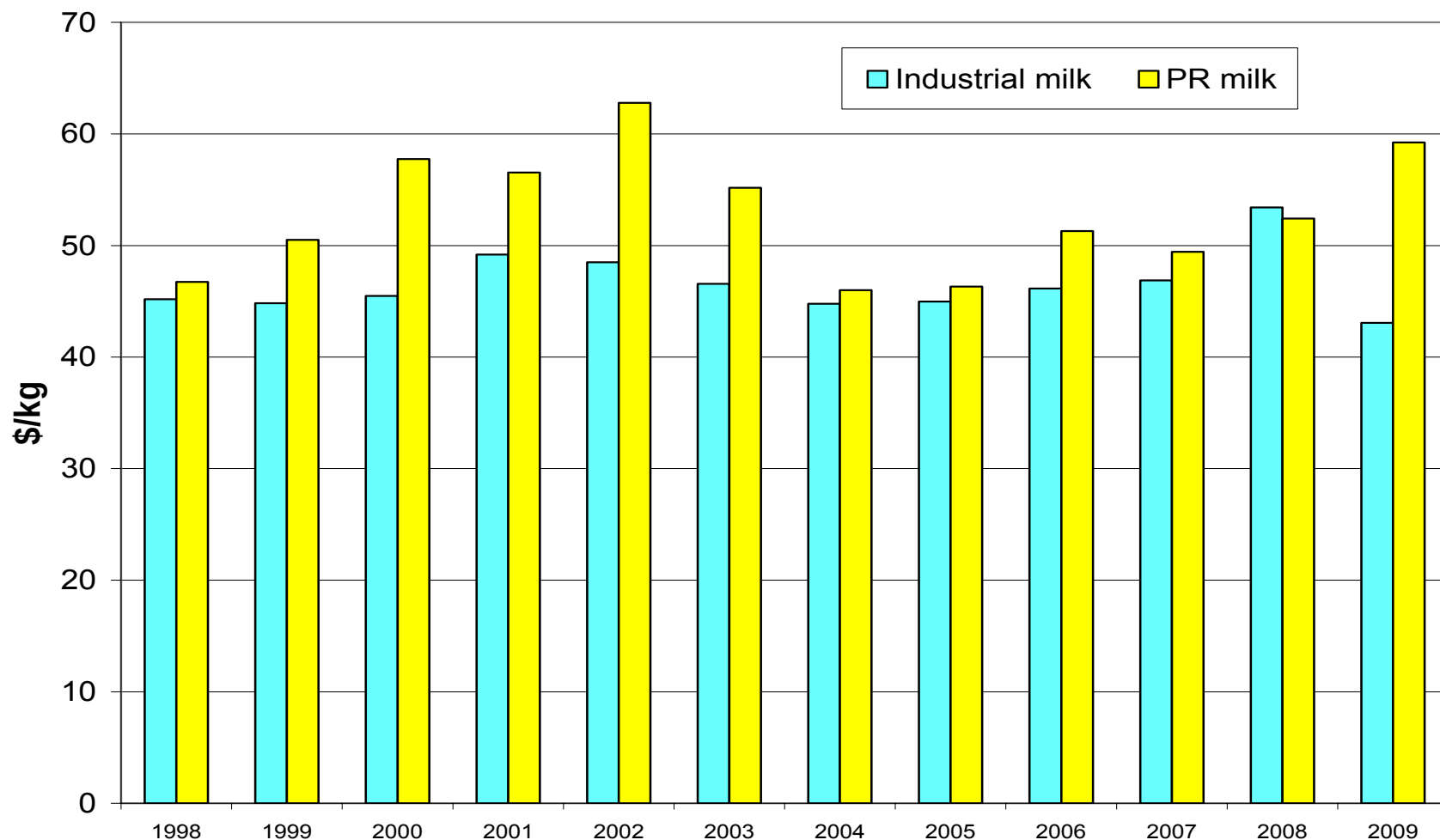
Price development of PR cheese



Milk price for milk destined to PR cheese

	€/kg	contracts		
Price PR	8,83	225		
Prezzo butter	1,15			\$/kg
Milk price calculation				
<i>Cheese yield</i>	<i>kg/100 kg</i>	7,0	61,81	
<i>Butter</i>	<i>kg/100 kg</i>	1,5	1,73	
<i>Totale</i>			63,53	
<i>Proc. Costs</i>	<i>€/100 kg</i>		15,36	
<i>Milk price</i>	<i>€/100 kg</i>		48,17	
Milk reference price 2009			48,17	59,24

Milk price for industrial and PR milk



Two different dairy systems in one region (Friuli)

Milking cows	110	70	63%
Breed	Holstein Friesian	Simmenthal	
Milk production per cow (kg/cow)	8.827	7.137	81%
Total milk production in kg	991.092	500.646	51%
Land area (ha)	62	48	77%
Fat content in %	3,86	3,92	101%
Protein content %	3,43	3,46	101%
Labour productivity (kg milk/h)	117	73	63%

Profit/loss account of two dairy systems

	FRIULI V.G. 110 Holstein Friesian		FRIULI V.G. 70 Simmenthal		
	€/100 kg	Totale	€/100 kg	Totale	
Total returns	50,55	494.769	57,87	288.983	114%
Gross production costs	54,38	514.768	68,24	318.646	125%
Net production costs	46,46	441.258	51,79	239.273	111%
Profit/Loss	-3,83	- 19.999	-10,36	- 29.663	
Direct costs	35,87	364.868	35,60	172.853	99%
Margin (Returns - Direct costs)	14,69	129.901	22,28	116.130	152%
Returns to labour (Euro/h)	8,19		5,91		72%

Comparison between dual purpose and high milk yield cow (1)

	ROBUST DUAL PURPOSE COW			HIGH OUTPUT COW		
Milk income	Milk sold	Calving interval	Annual £/cow	Milk sold	Calving interval	Annual £/cow
Lactation income	6.800	395	1.621,83	8.765	431	2.015,76
Annual income	6.284		1.498,65	7.423		1.707,08
Feed costs						
DMI 19 kg	t DM/cow	Costs per ton		t DM/cow	Costs per ton	
Concentrates	2.000	200	400,00	2500	200	500,00
Forage (DM)	4.935	81	399,53	5165	95	491,55
Margin over feed			699,12			715,53

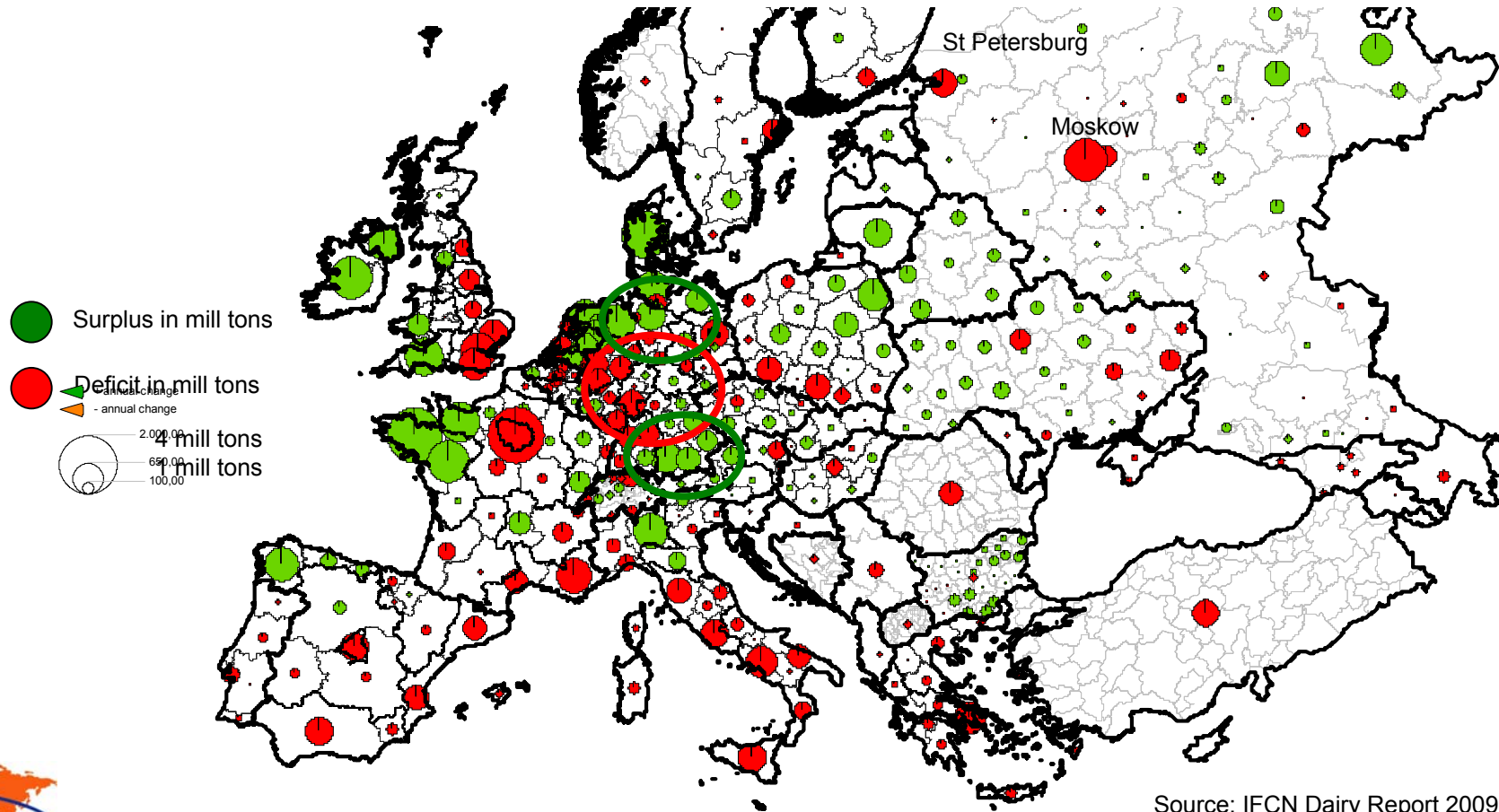
Source: Neil Darwent, European Farmers Network

Comparison between dual purpose and high milk yield cow (2)

	ROBUST DUAL PURPOSE COW			HIGH OUTPUT COW		
Calf sales	Calves sold	Value per head	Annual £/cow	Calves sold	Value per head	Annual £/cow
	66	147	96,80	50	84	42,00
Replacement costs	Culling rate	20%		Culling rate	28%	
	Heifer costs	1.000		Heifer costs	1.000	
	Cull value	600		Cull value	400	
	Net cost	400		Net cost	600	
Net margin per cow			715,92			589,53
100 Cow herd			71.591,83			58.952,97

Source: Neil Darwent, European Farmers Network

Europe – Question is in what region you are in?



Thank you for your attention

