



## Potential development of the dairy sector in the context of price volatility

Vincent Chatellier, Catherine Lascurettes, Jaime Castaneda, Kobus Mulder

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## « European Dairy Ambition » - Session 2 :

# Potential development of the dairy sector in the context of price volatility

France, Ireland, USA, South Africa (and Africa)

Vincent CHATELLIER - National Institute of Agronomic Research (INRA), France

Catherine LASCURETTES - Irish Farmers Association (IFA) - Executive Secretary Dairy, Ireland

Jaime CASTANEDA - CEO/National Milk Producers Federation (NMPF, Washington DC), USA

Kobus MULDER - Dairy Consultant, South Africa

# Introduction

*Vincent Chatellier, INRA France*

# Introduction <sup>(1/3)</sup>

## ➔ An increase in demand for dairy products...

- Approximately +20% at world level by 2025
- A sharp rise of consumption in developing countries (mainly in big Asian cities)
- A necessary adaptation of products to the heterogeneity of expectations (types of consumption)
- A saturation of demand in many industrialized countries
- Innovation is an important lever for the future level of consumption

## ➔ ...but the development of milk production is not always easy

- Many countries are already in deficit for dairy products (Africa, Asia ...)
- Forage areas and water are not equally distributed across countries
- A competition for land occupation between agricultural productions
- In some countries, milk production induces some imports for feeding livestock
- Sanitary requirements and traceability are heterogeneous at world level

# Introduction (2/3)

## → International trade of dairy products is increasing

- Dairy trade represents 9% of the world supply (excluding intra-EU trade)
- Oceania, EU and USA are the main exporters
- Asian countries (Africa tomorrow ?) represent a major part of this growth
- The strategies of the main buyers (China and Russia) are not always clear
- Need to distinguish trade in volume (milk equivalent) *versus* trade in value

## → The volatility of international prices

- Not specific to the dairy sector
- Key factors: oil price, stocks, supply growth, economic growth, etc.
- Price volatility has a greater impact for producers and dairy firms than for consumers
- Sometime difficult to invest without visibility on price level

# Introduction (3/3)

➔ 4 speakers from 4 countries : France, Ireland, USA and south Africa (15 minutes each)

<p><b>Moderator</b></p>  <p><b>Vincent Chatellier</b> Director of LERECO/INRA-Nantes, France</p>	<p><b>Speaker</b></p>  <p><b>Catherine Lascurettes</b> Executive Secretary Dairy, Irish Farmers Association (IFA) Ireland</p>	<p><b>Speaker</b></p>  <p><b>Jaime Castaneda</b> Senior Vice President of National Milk Producers Federation (NMPF, Washington DC) USA</p>	<p><b>Speaker</b></p>  <p><b>Kobus Mulder</b> Dairy Consultant, Cape Town South Africa</p>
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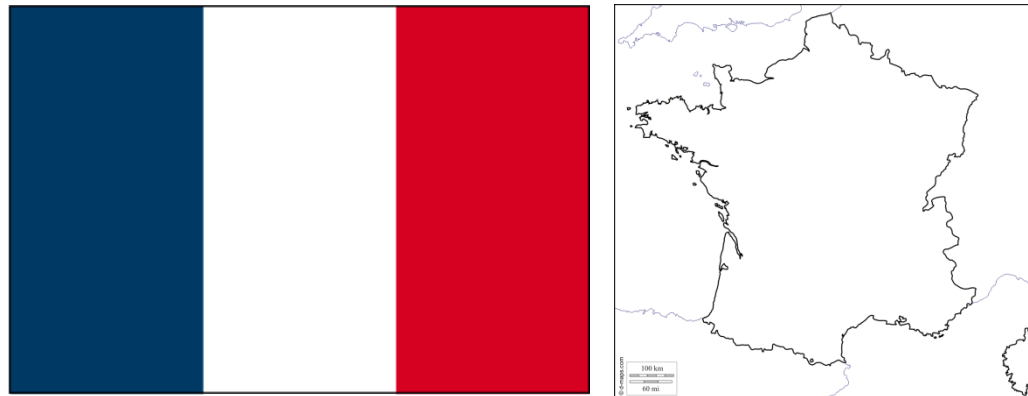
➔ 3 questions to each speaker

- What are the main trends for the dairy sector in your country (production, consumption, trade, etc.)?
- How to deal with price volatility?
- Is there any potential for the development of dairy sector in your country?

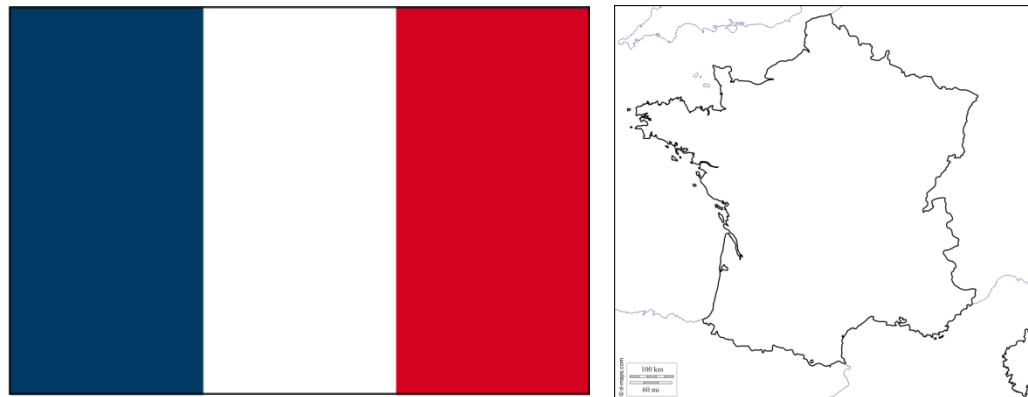
➔ Discussion with the audience + Conclusion

# 1- The French case

*Vincent Chatellier, INRA France*

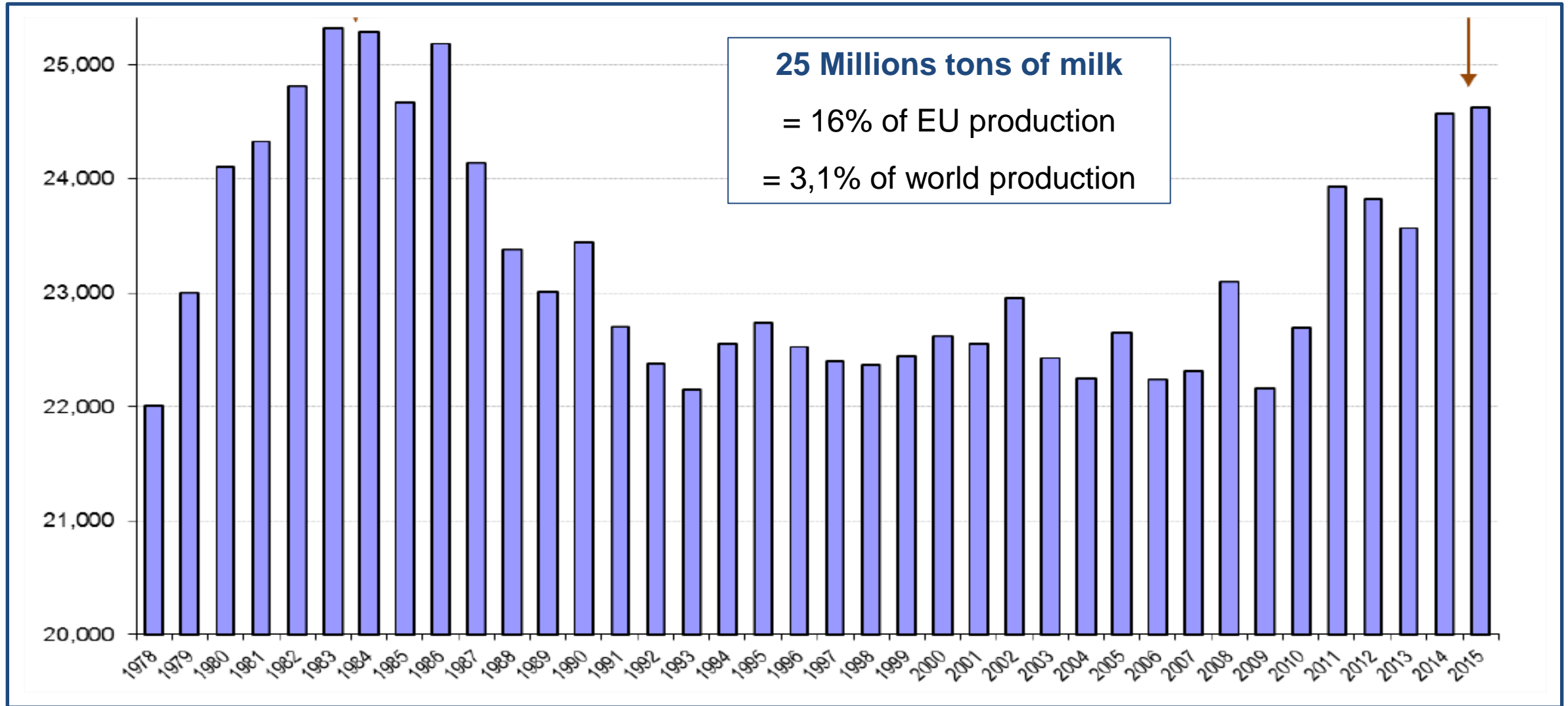


## 1-1- Key dynamics in the dairy sector





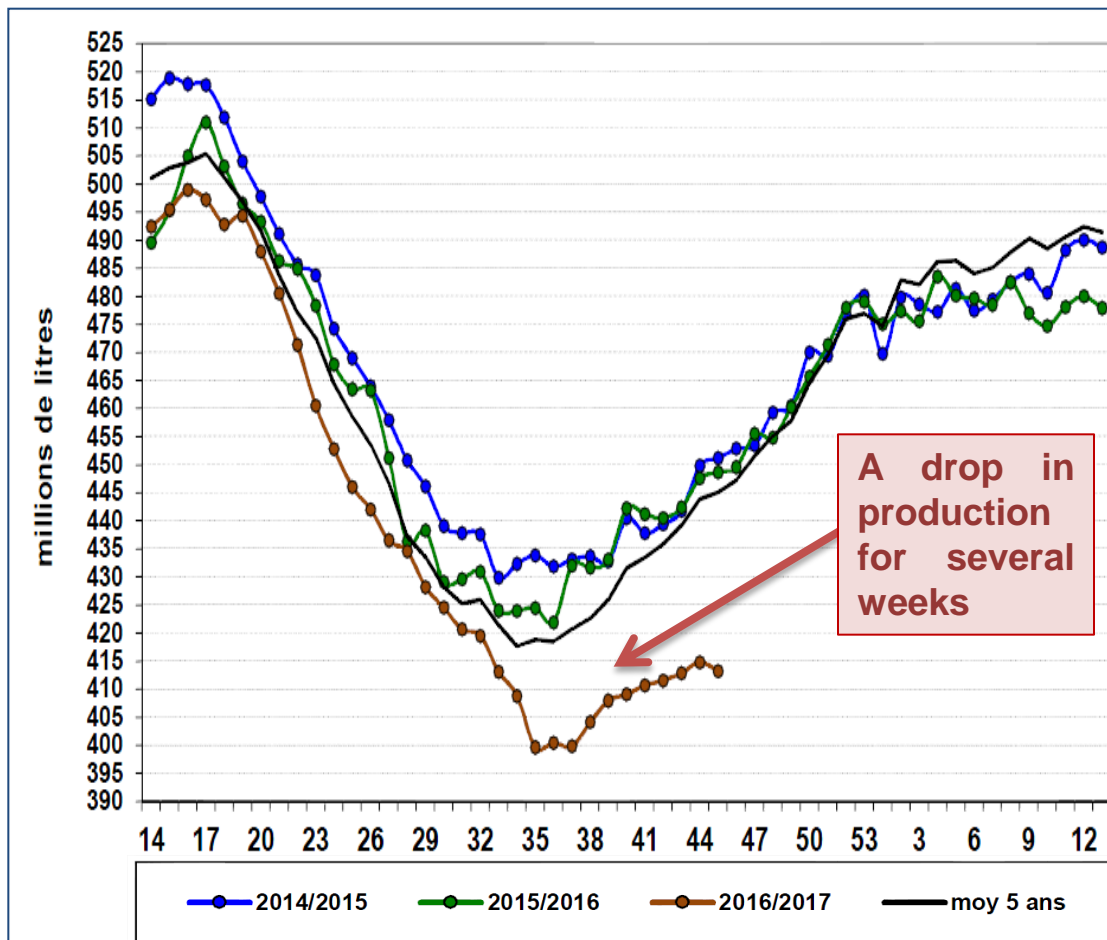
# Milk deliveries in France (thousand tons)



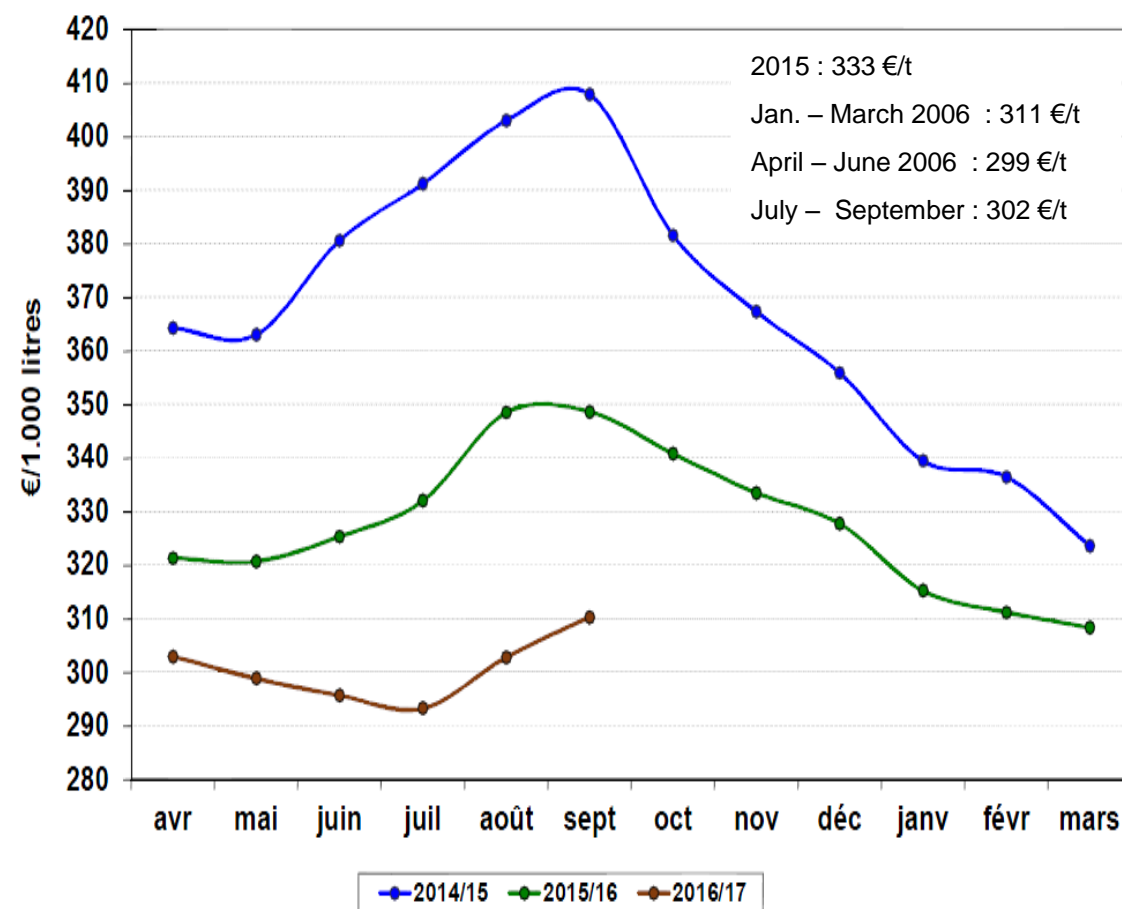
FranceAgriMer

# 2016 : it is clearly not a good year, but not only for French producers !

## Milk deliveries in France per week



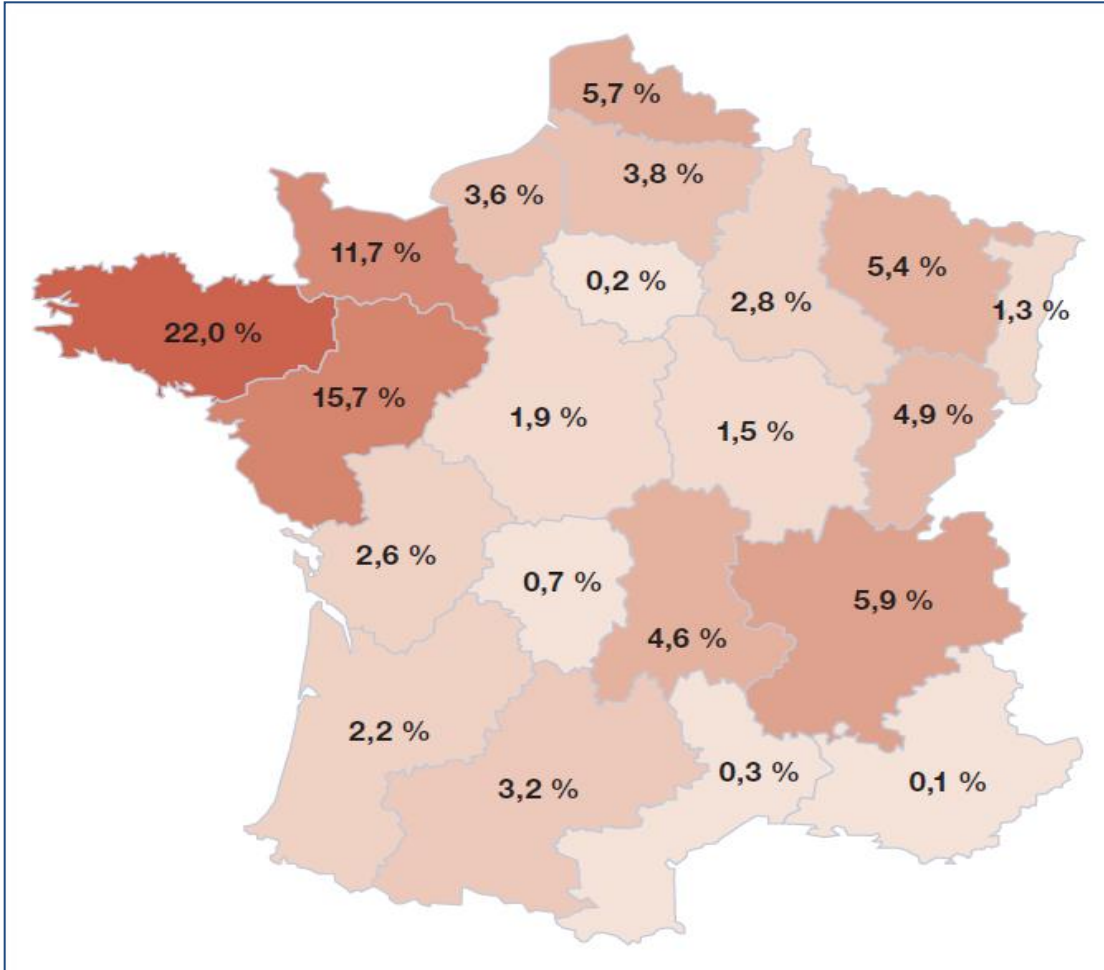
## Real milk price (€/t) at French farms level



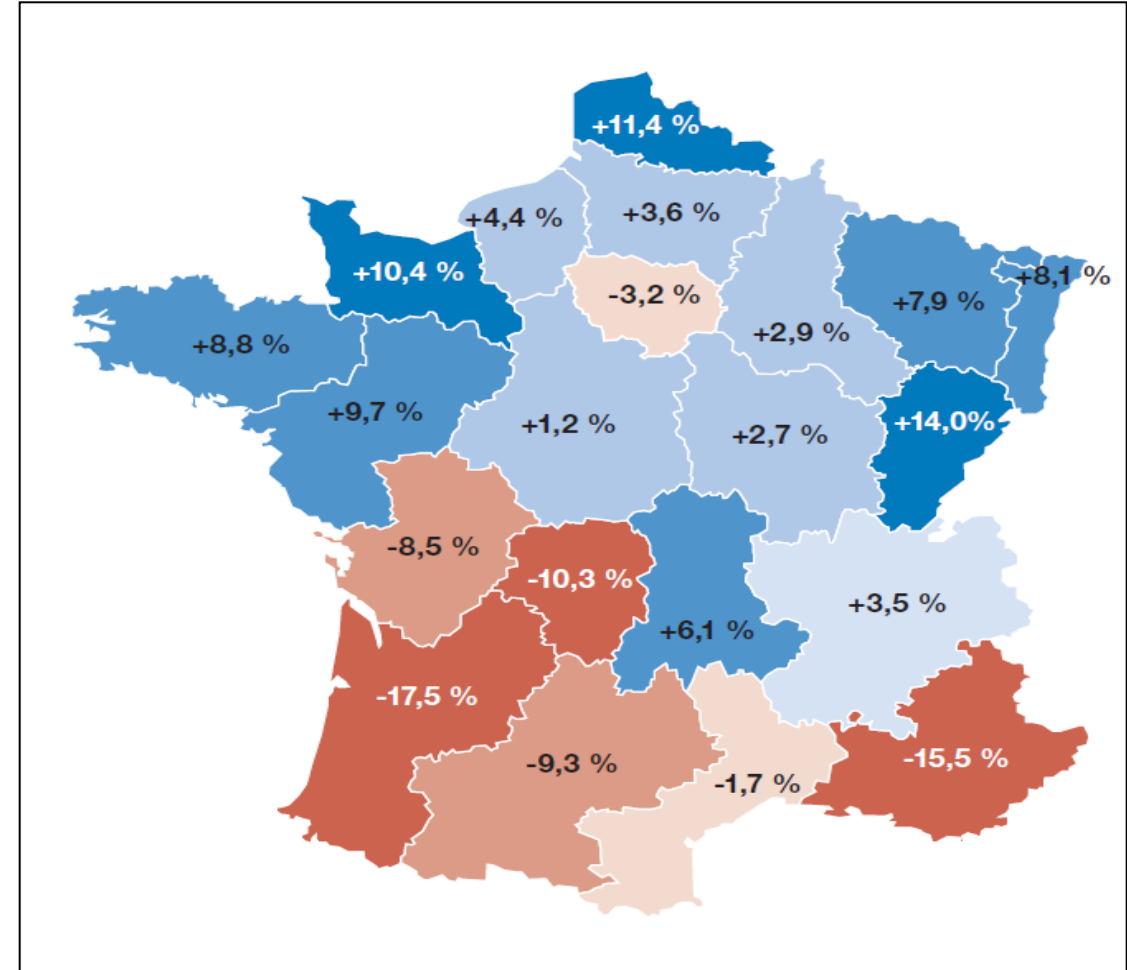
Enquête mensuelle laitière SSP/FranceAgriMer

# Milk deliveries in French regions and variation since 2008

**Milk deliveries (% France in 2014)**

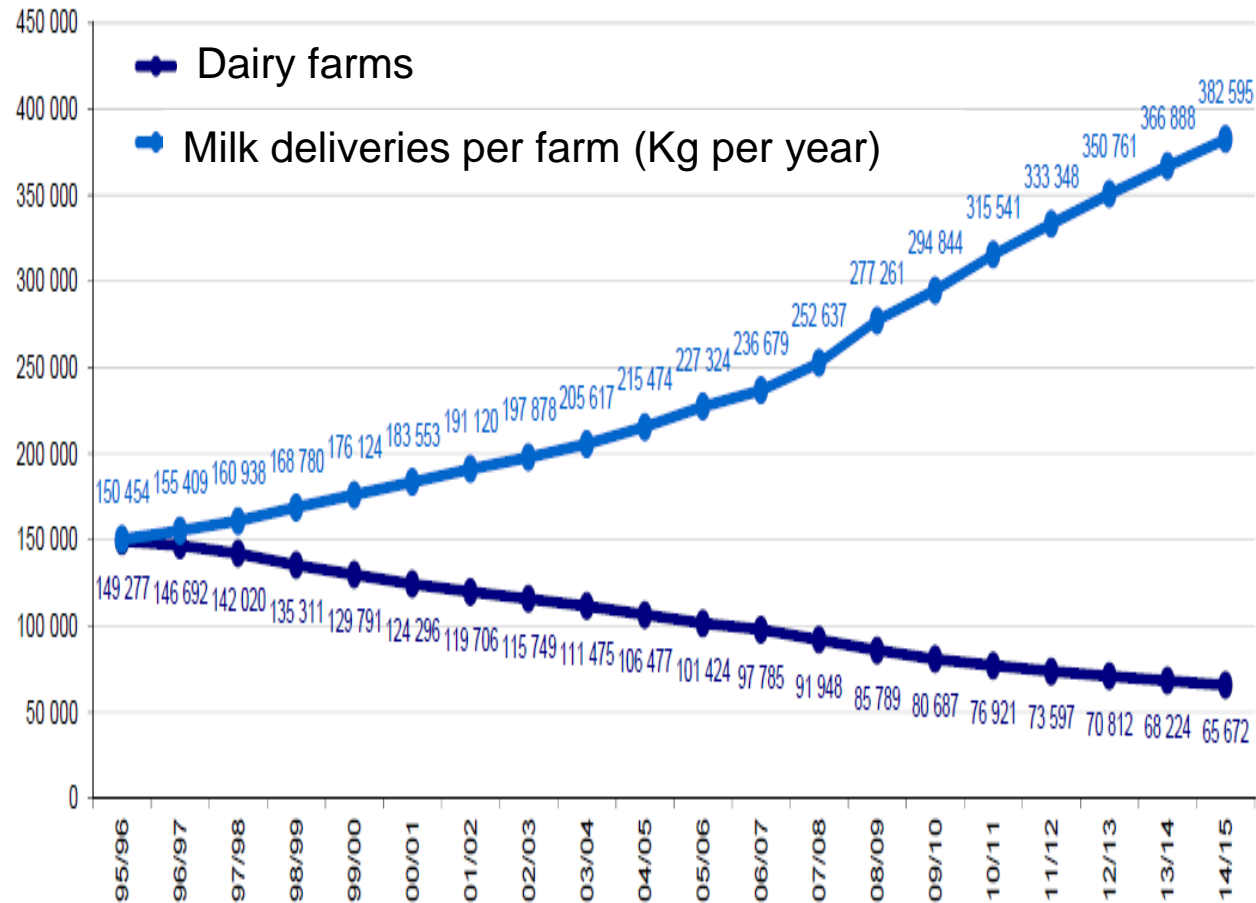


**Variation 2014/2008**

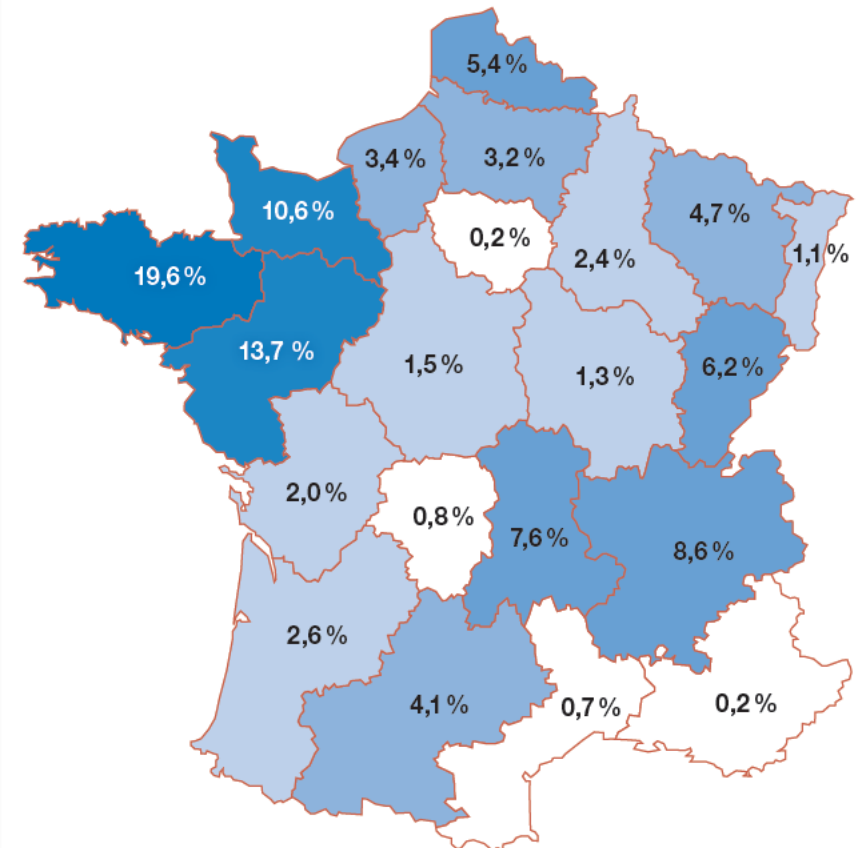


FranceAgriMer

# Dairy farms in France

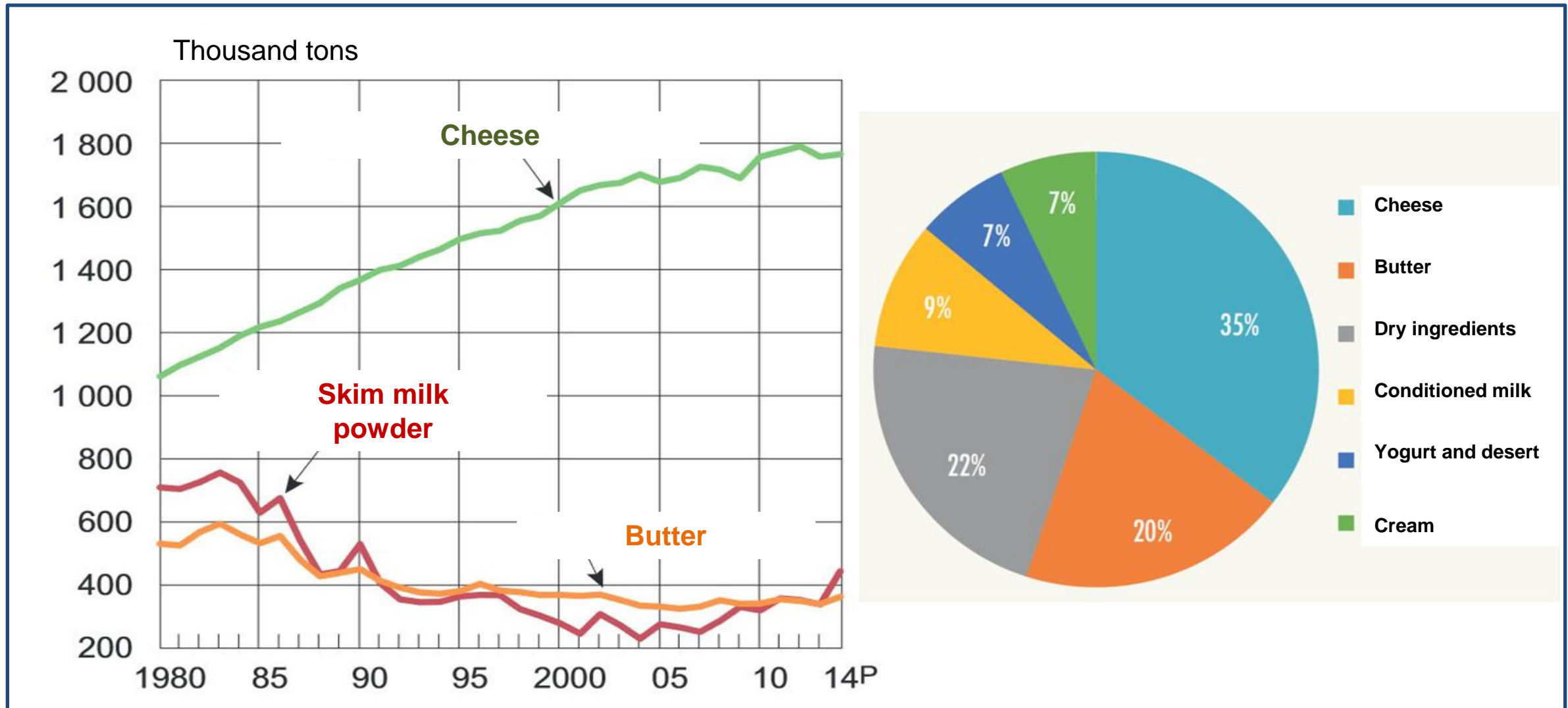


Dairy farms (% of France)



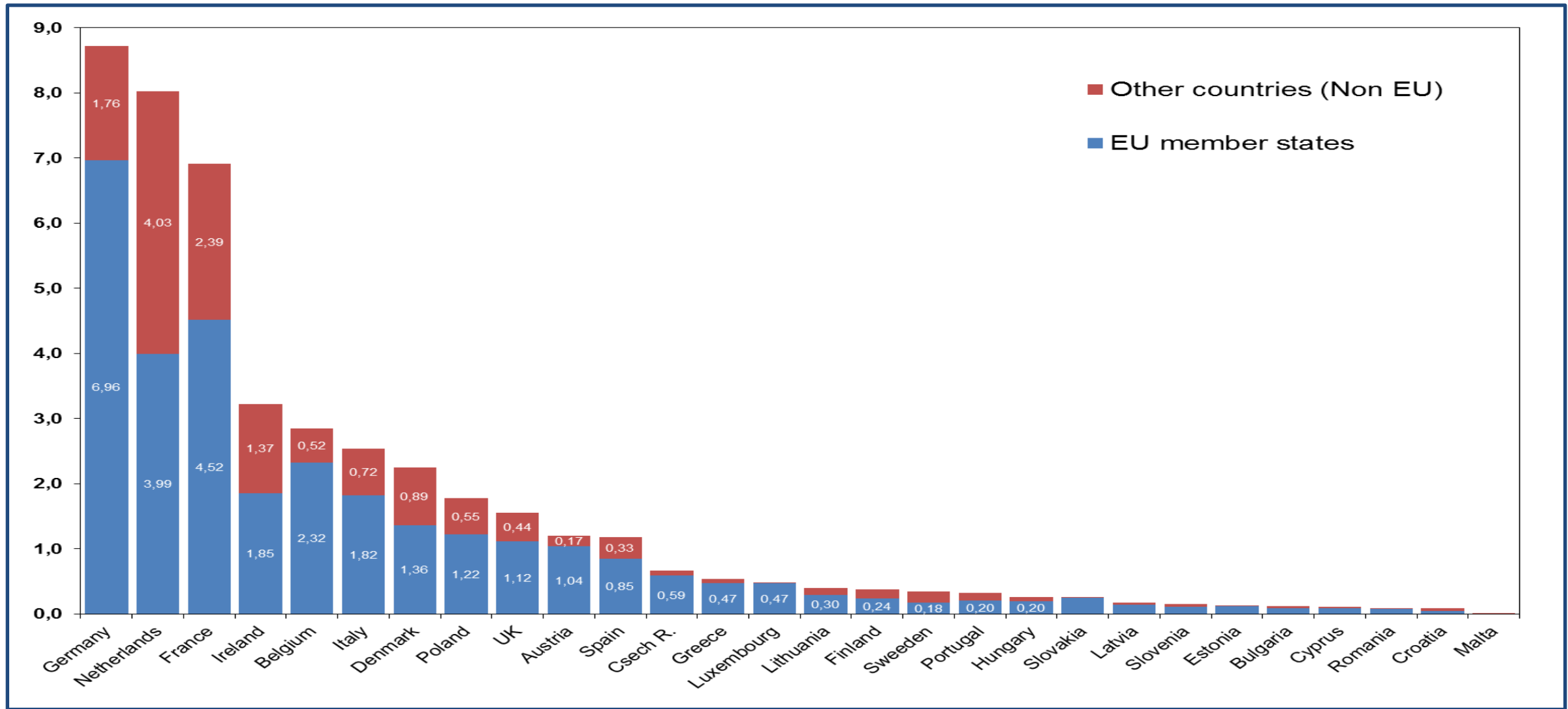
CNIEL from SSP

# How is the milk produced in France used ?



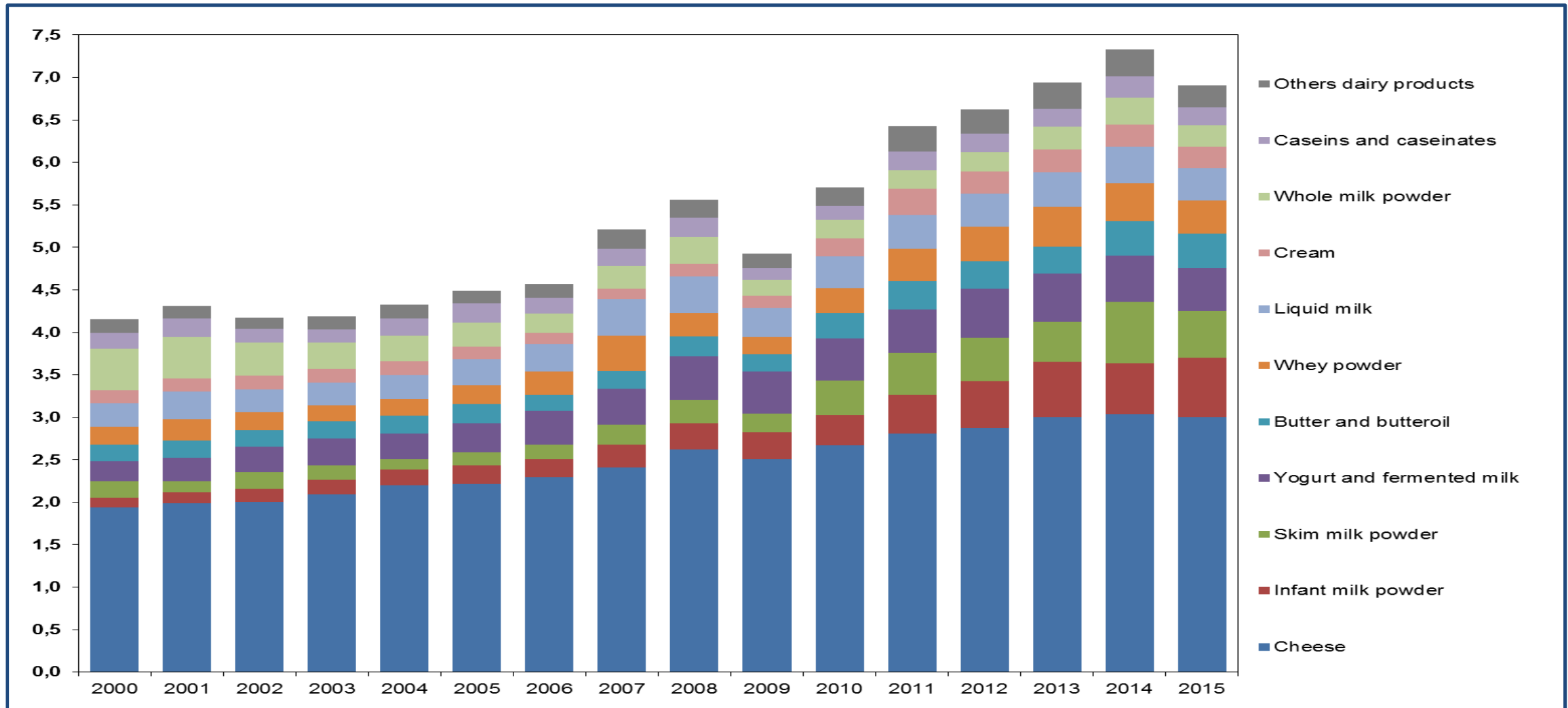
CNIEL from SSP

# French exports of dairy products in EU member states (Billion euros, 2015)



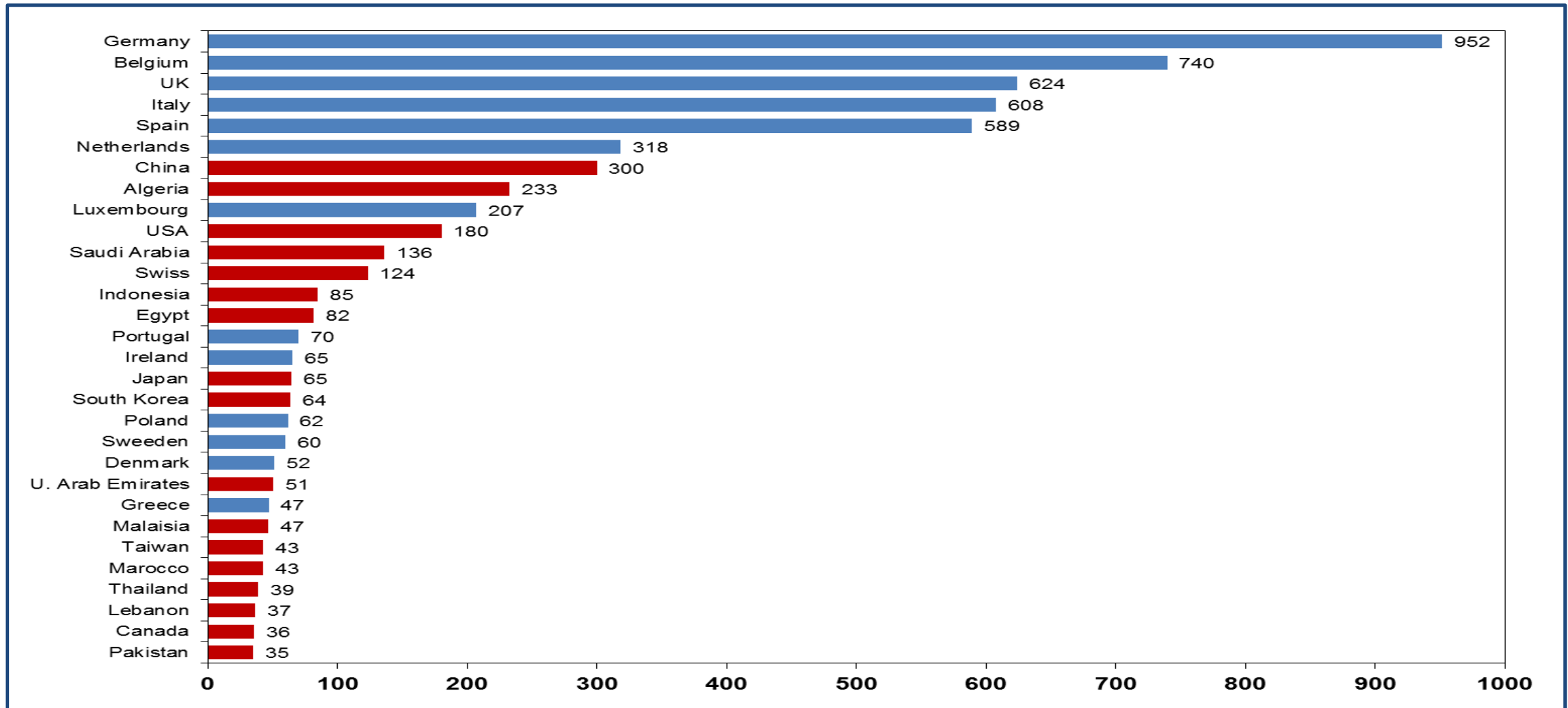
INRA, SMART-LERECO by COMEXT

# French exports of dairy products (Billion euros, 2015)



INRA, SMART-LERECO by COMEXT

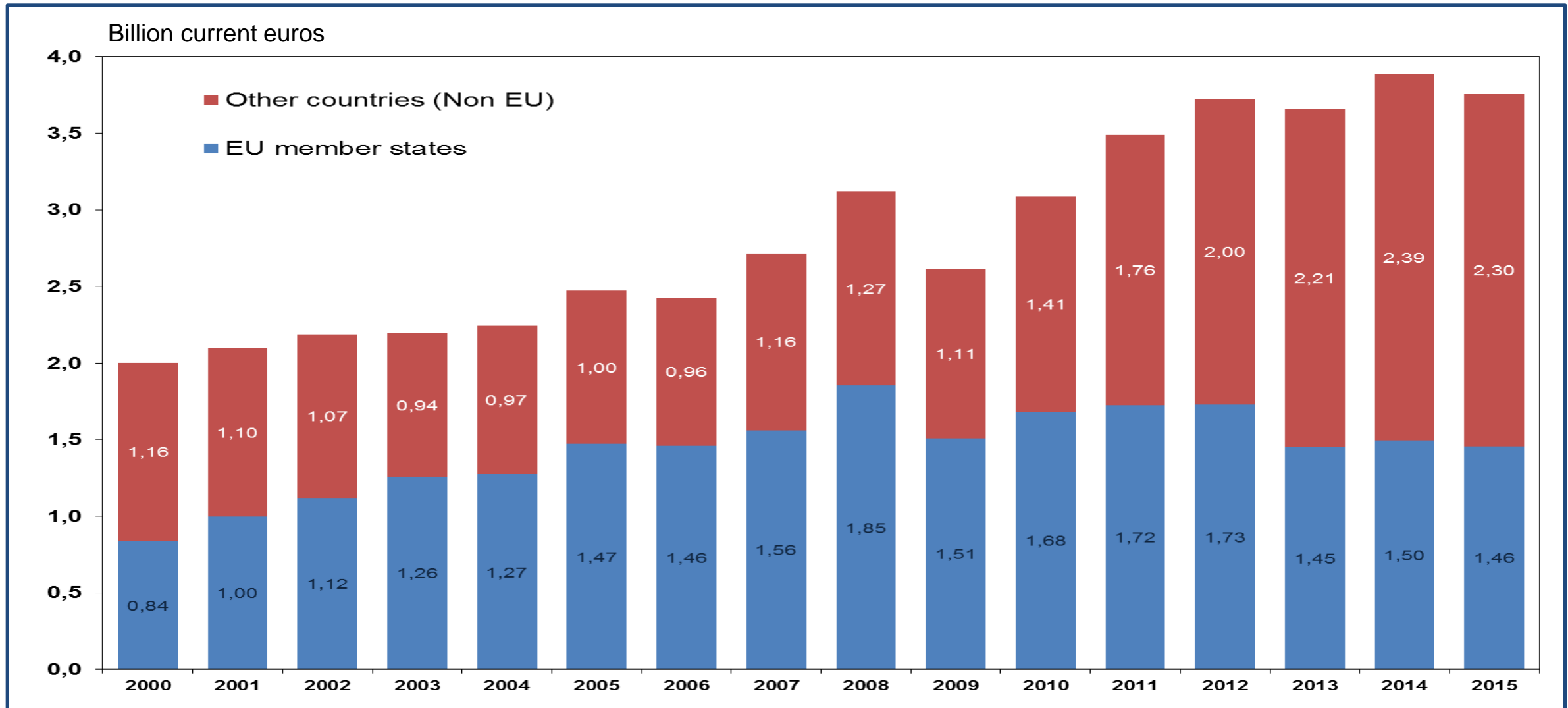
# French exports of dairy products (Billion euros, 2015)



INRA, SMART-LERECO by COMEXT

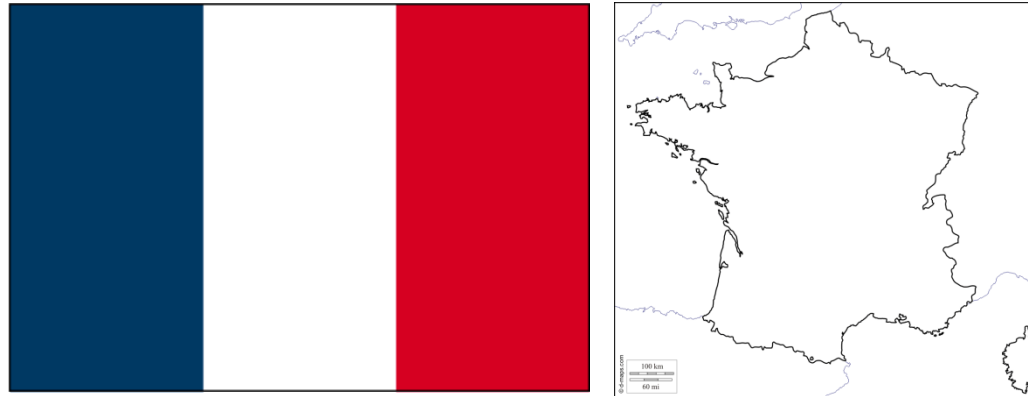


# The trade balance of France in dairy products (Billion current euros)



INRA, SMART-LERECO by COMEXT

## 1-2- How to deal with price volatility ?



# It is useful to distinguish between two types of policy measures

## ➔ Reducing price volatility

- By stabilising the prices that farmers receive for their products, such as market intervention measures.

## ➔ Reducing the negative consequences of price volatility

- By stabilizing the incomes of farmers, including direct payments or risk management tools (insurance schemes, mutual funds and futures).

# Market intervention measures

## → Market intervention mechanisms

- Market interventions now play the limited role of **safety net measures** which are only activated when prices drop below certain (low) levels. Public interventions can be made for butter and milk powder at a fixed price and during certain periods.
- **Private storage** aid can be granted for butter, cheese and milk powder.

## → The European Commission (EC) may also take exceptional measures

- In the case of **serious market disturbances** caused by plant or animal diseases, natural disasters or health risks.
- These measures can be supported by a newly created **crisis reserve** which involves an annual amount of €400 million for the 2014–2020 period (in constant 2011 prices).

## → The EC can also authorise producer organisations to take temporary measures

- Under certain circumstances, the EC can also authorise **producer organisations** to take temporary measures to manage supply in order to stabilise agricultural markets, for instance through Article 222 of Regulation No 1308/2013.
- Article 222 was activated for the first time in 2016, enabling producer organisations, inter-branch organisations and cooperatives in the dairy sector to establish **voluntary agreements to temporarily reduce their production and supply**.

# Risk management tools in rural development programmes

## → Insurance (and mutual funds)

- These losses should be higher than 30% of the average annual production in the last three or five years and should have been caused by animal and plant diseases or adverse climatic and environmental events.
- To be insured, farmers need to pay a fee (called a 'premium') to the insurance company. The rural development measure promotes the use of these forms of insurance by financing up to 65% of the premium costs.

## → The Income Stabilisation Tool (IST)

- The rural development measure can be used to create an IST and compensate farmers.
- In order to be classified as a 'green box' measure by the WTO, farmers' compensation can be triggered only for losses higher than 30%, with a maximum compensation of up to 70% of lost income.
- The share of the CAP budget spent on risk management is still very low, as it represents only 2% of the Pillar II budget and 0.4% of the total CAP budget for the 2014–2020 period.

# Other measures to deal with price volatility

## → Price volatility: from producers to consumers?

## → Direct payments

- Direct payments, which reduce income volatility for farmers by providing them with a stable form of revenue, will probably **continue to play a role in the CAP after 2020**.
- But the amount of financial support farmers receive remains the same regardless of whether prices are high or low.

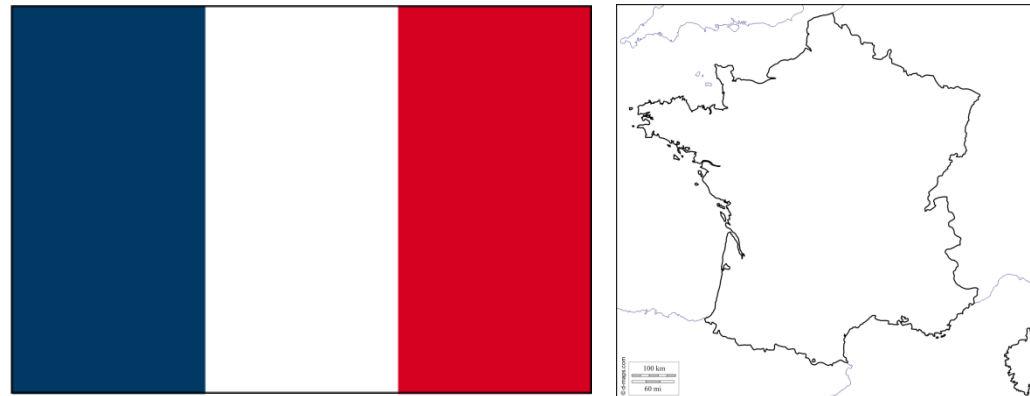
## → New financial management tools

- Borrowings with an annuity adjustable according to agricultural market conditions.

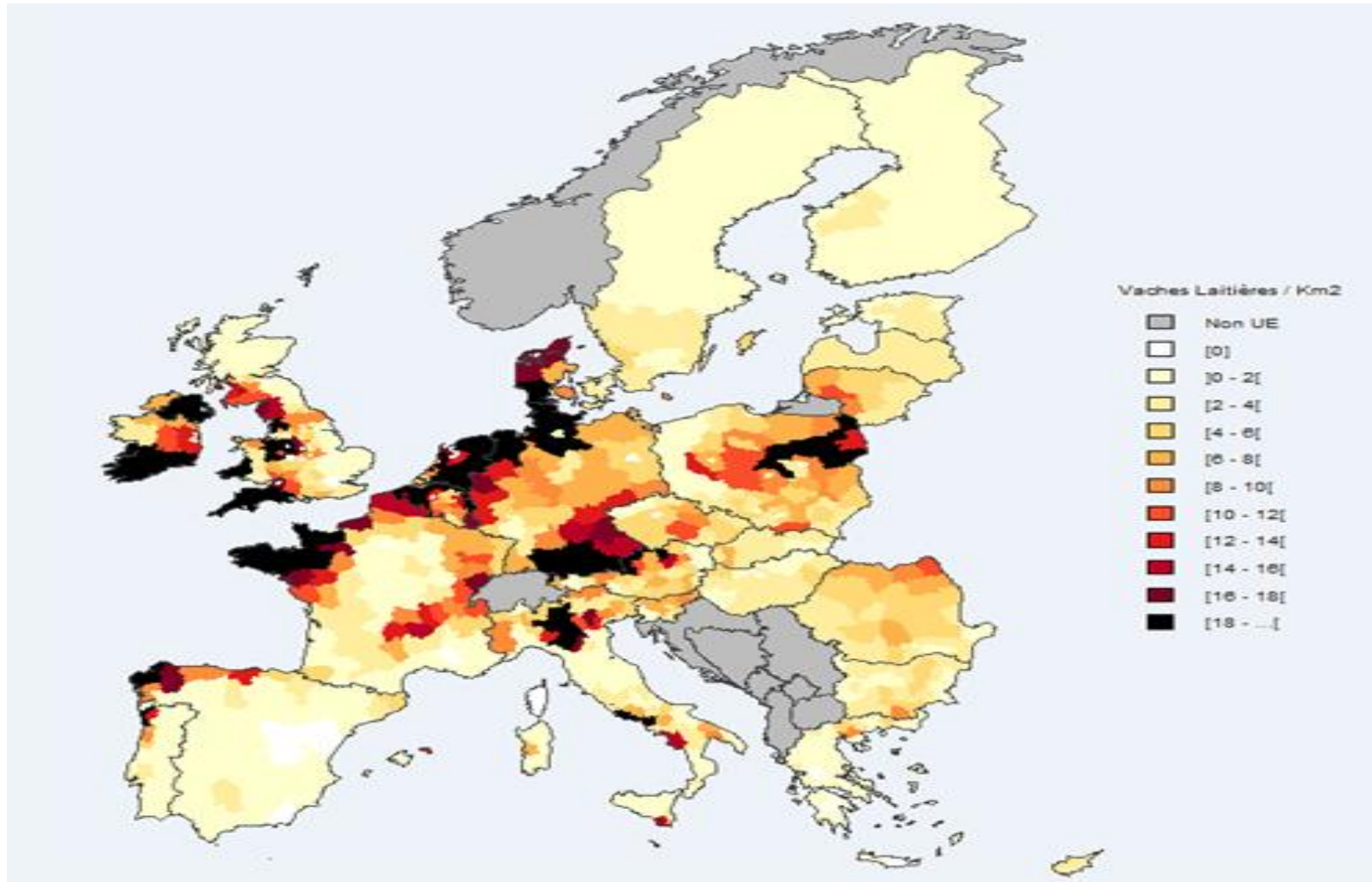
## → Precautionary savings

- It is desirable that part of the direct aid received by farmers be set aside during the good years to constitute a reserve that can be mobilized in difficult years. This tool make it possible to introduce a countercyclical character to the CAP without calling into question the principle of budget annuality.

# 1-3- What potential for the development of the dairy sector?



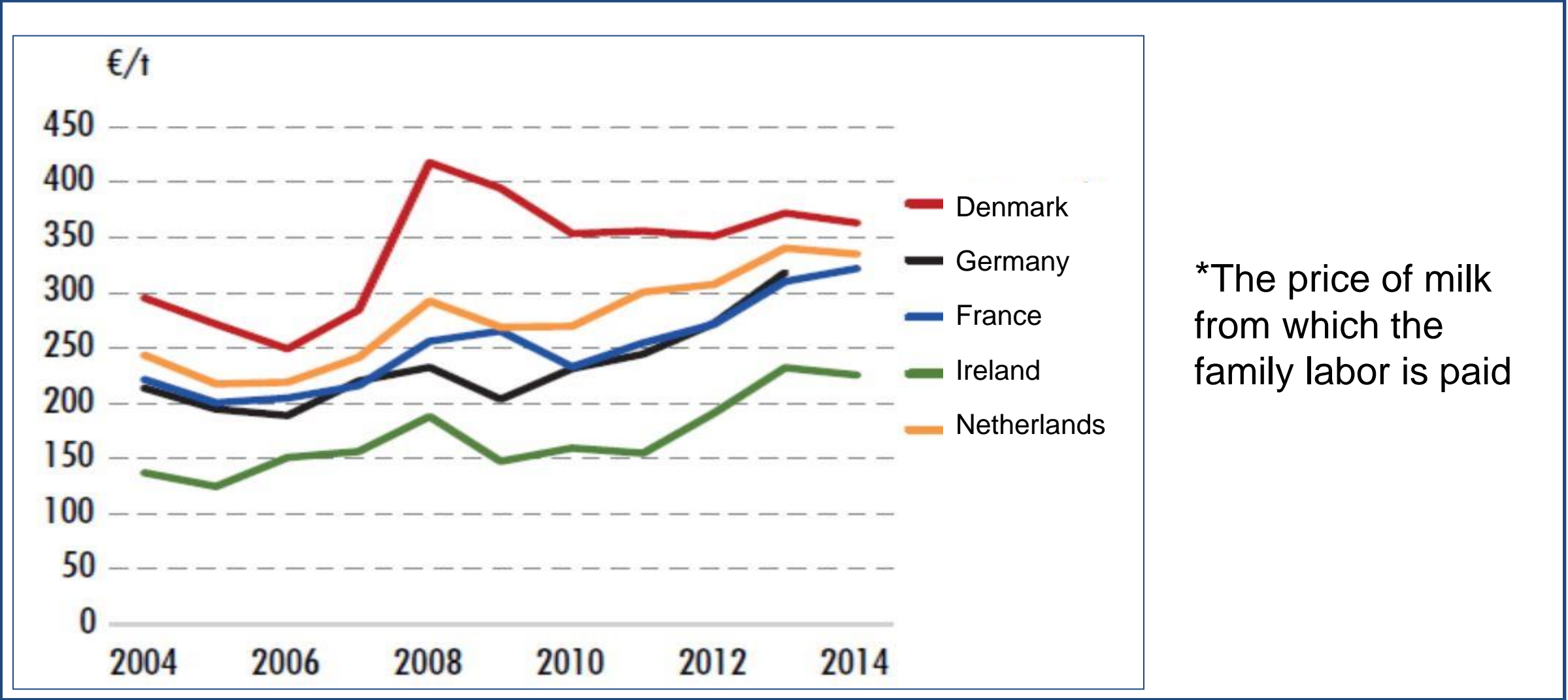
# Dairy cows per KM2: France has so many available fodder surfaces !



INRA, SMART-LERECO



# The average milk production cost\* is not so bad in France

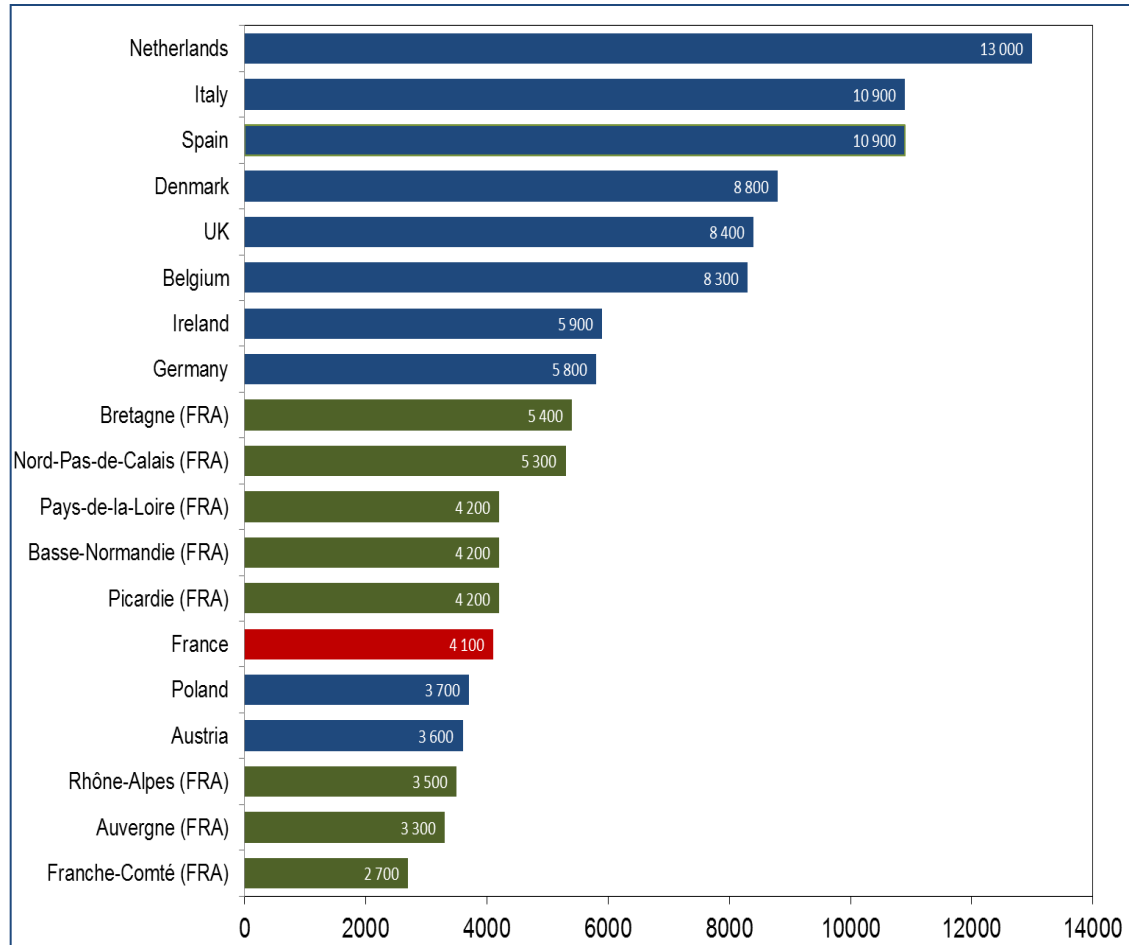


\*The price of milk from which the family labor is paid

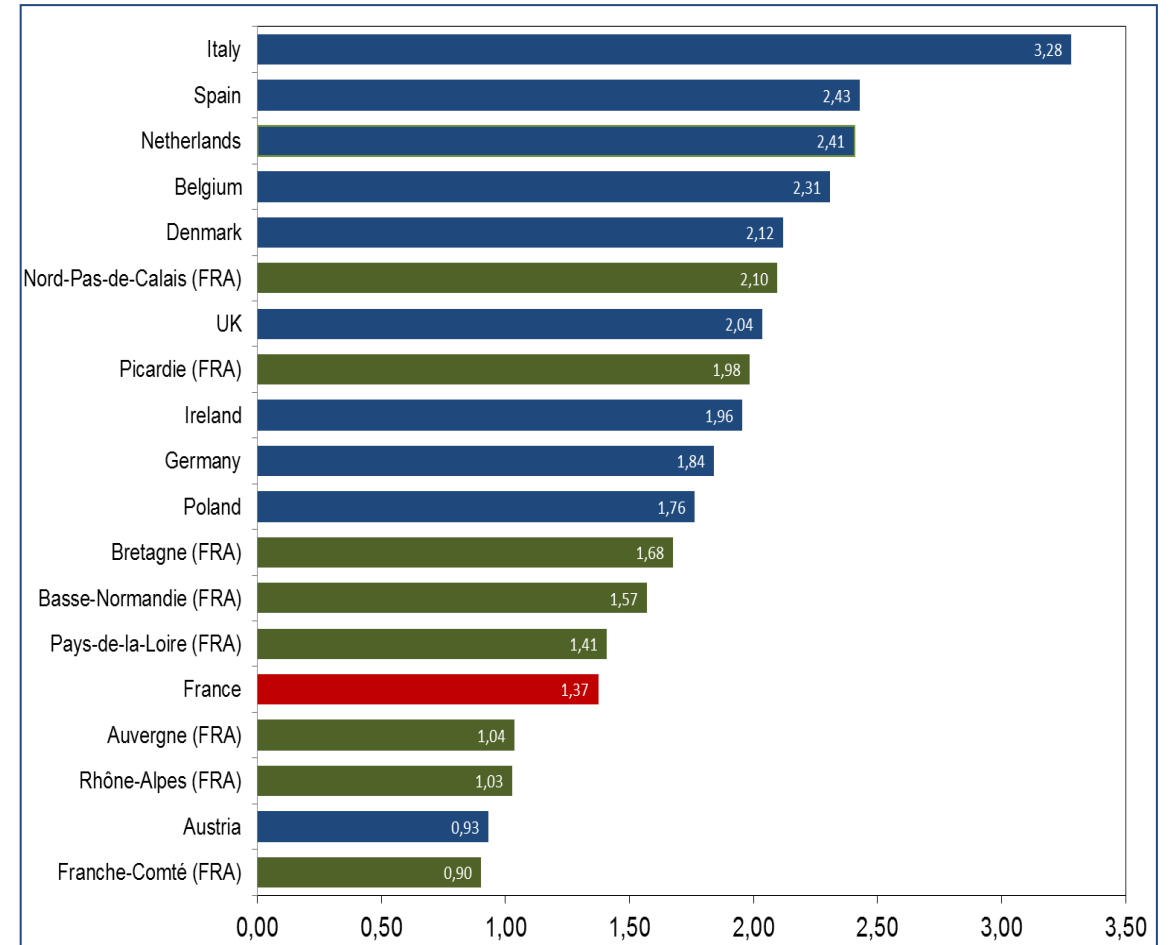
Perrot, Chatellier, Mercier-Gouin, Richard, You, et al, 2016. Download this publication : <http://tinyurl.com/5rve5u>

# A low level of intensification in French dairy Farms

Milk production (Kg) per ha (Usable Agricultural Area)



Herbivorous LU (livestock Unit) per ha of fodder surface



FADN / INRA SMART-LERECO

# What potential for the development of the French dairy sector?

## → Some competitive advantages

- A favorable geographical location (climate, proximity to the sea and deficit countries)
- A good forage production with high yields
- A low price of the land
- Productivity reserve (sometimes) due to a low level of intensification ; possible substitution cereals/dairy production
- A high level of consumption of dairy products (but a stable/decreasing global market)
- Innovative companies, with a strong experience in technologies and exportations

## → How to succeed?

- Optimize production costs by diluting fixed costs at farm and firm level
- Promote long-term financing of structuring investments
- Boosting product innovation to appeal to tomorrow's consumers and find new markets abroad
- Strengthening the links between the different players in the agri-food chain
- Towards a better communication with citizens on the useful role of agriculture for society

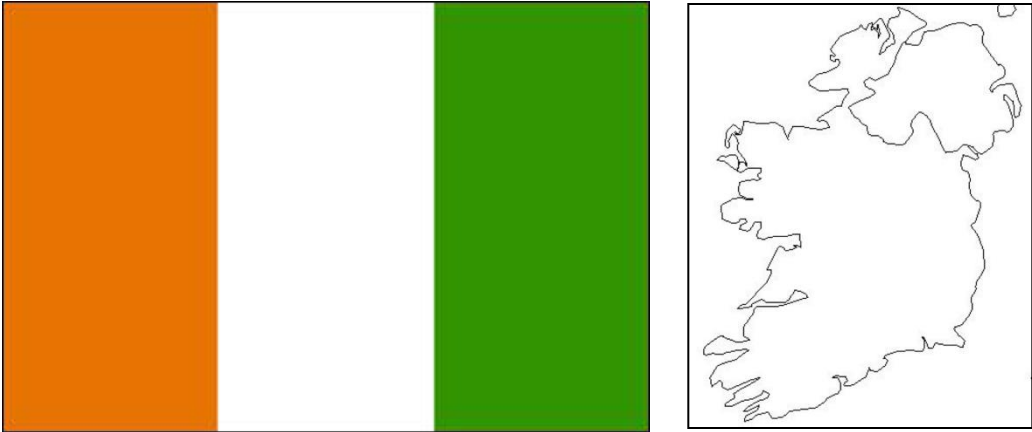


# Dairy cows in France !

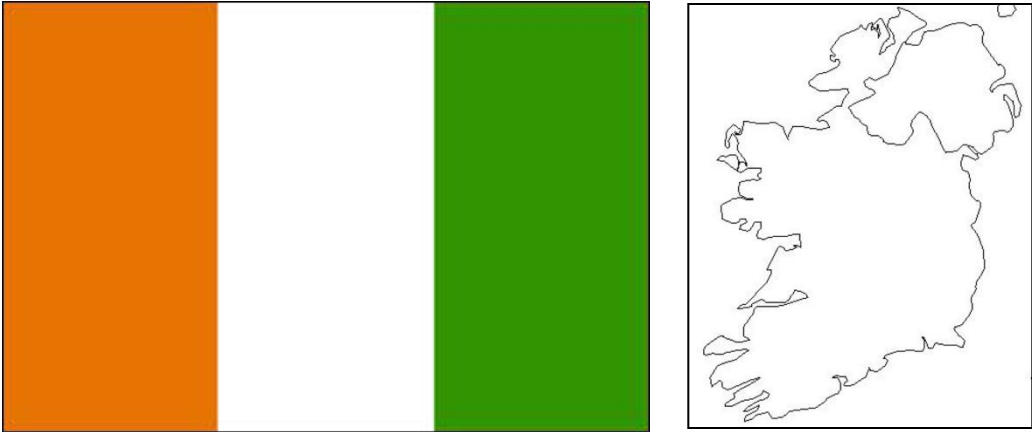


# 2- The situation in Ireland

*Catherine Lascurettes*



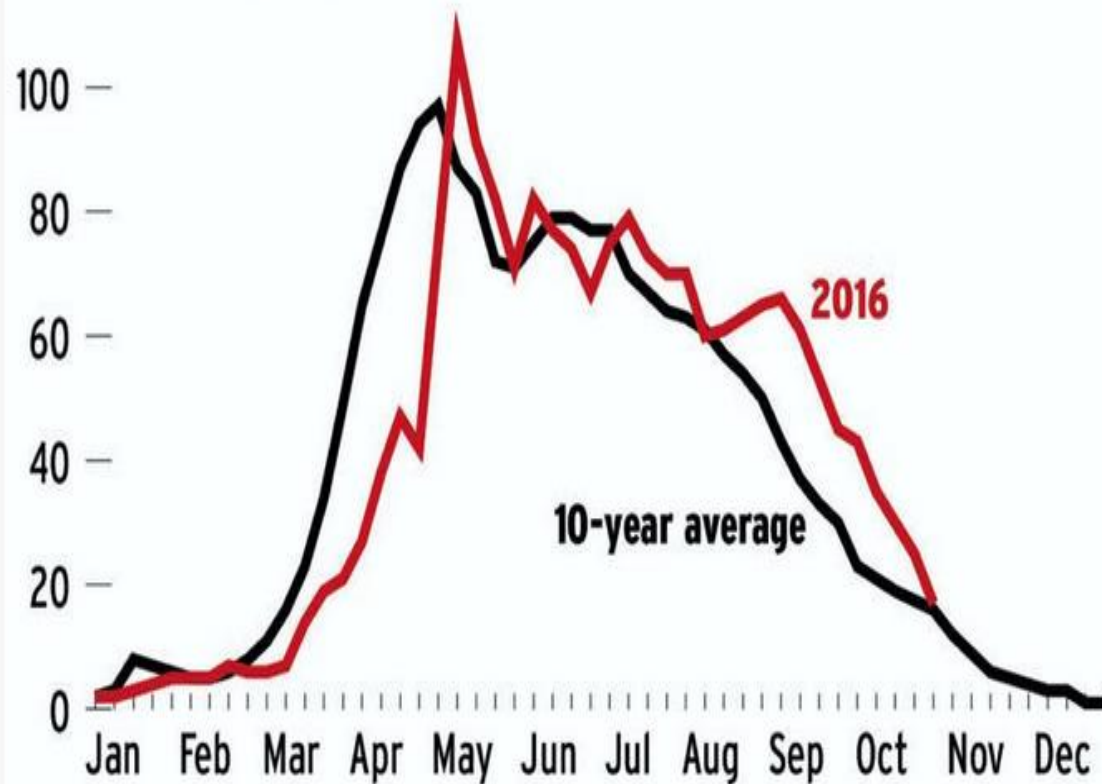
# 2-1- Key dynamics in the dairy sector





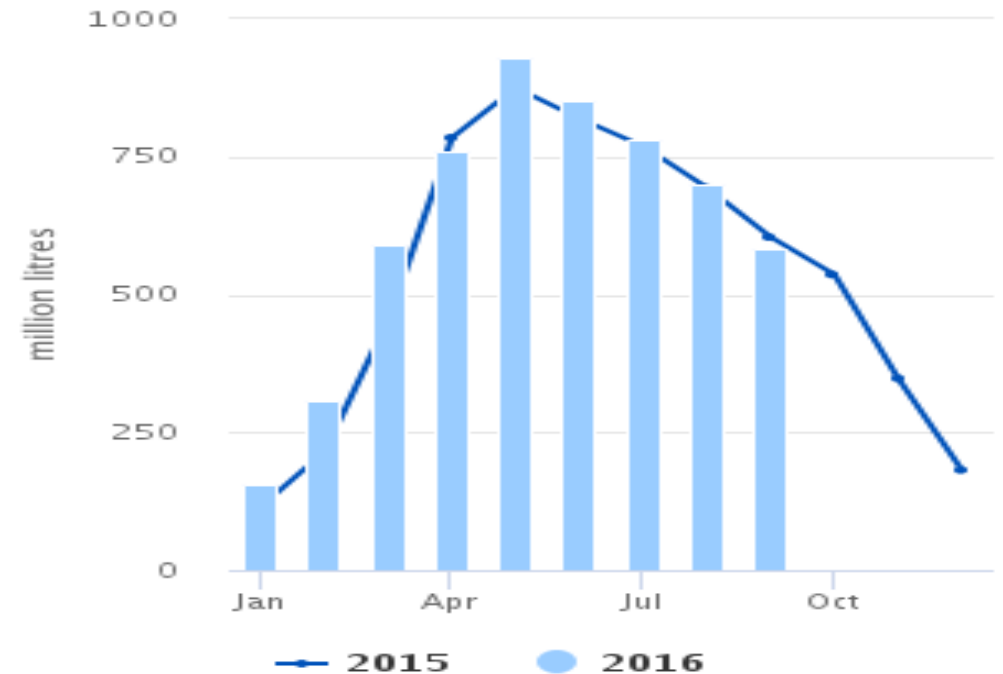
# Grass growth underpins milk production

## 10-year average grass growth kg DM/ha/day



- ☐ Lower Costs
- ☐ Higher environmental credentials
- ☐ Implications for product mix

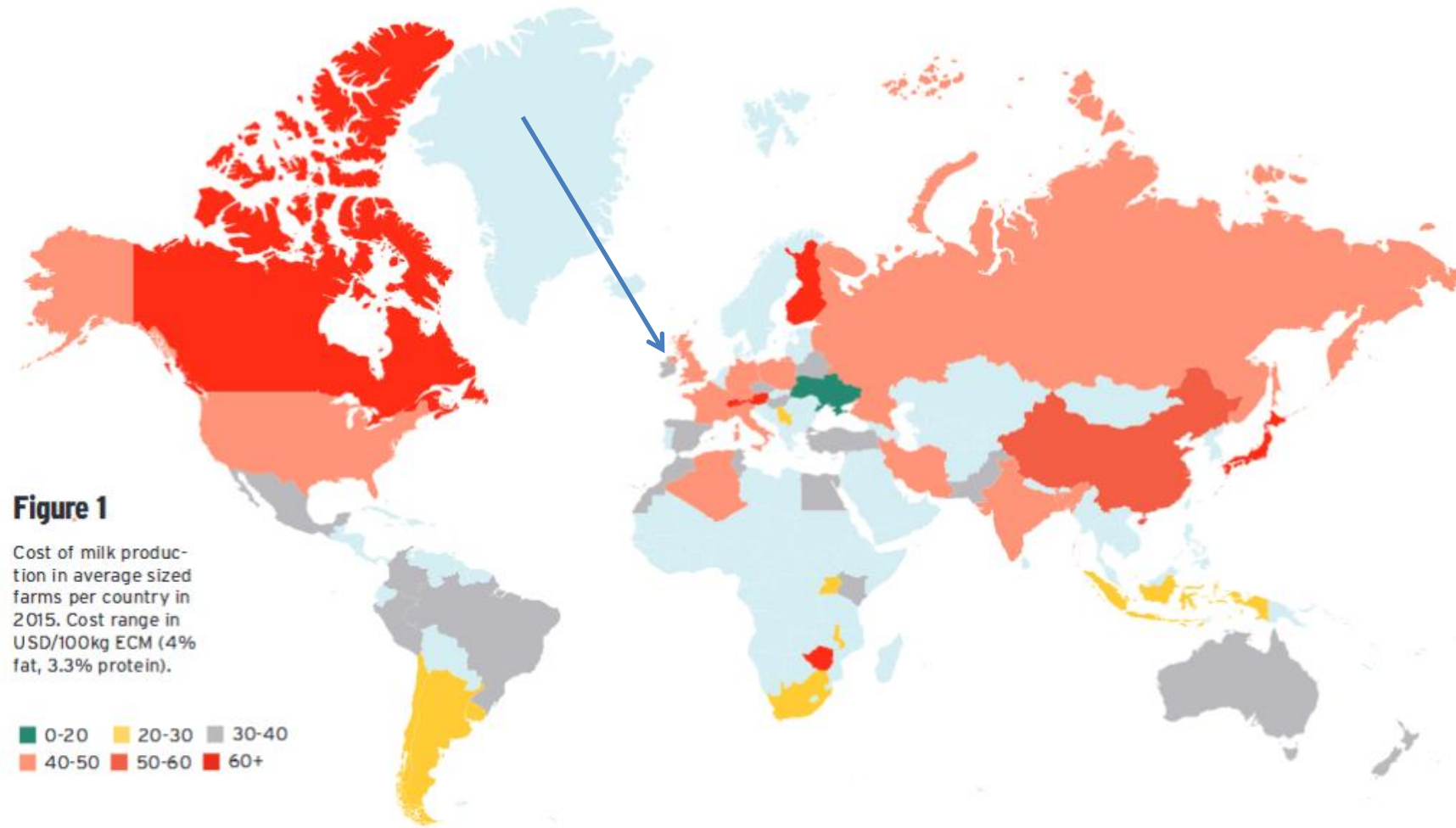
## Domestic Milk Intake



Source: CSO Ireland

IFJ & CSO

# Ireland is a low cost milk producer

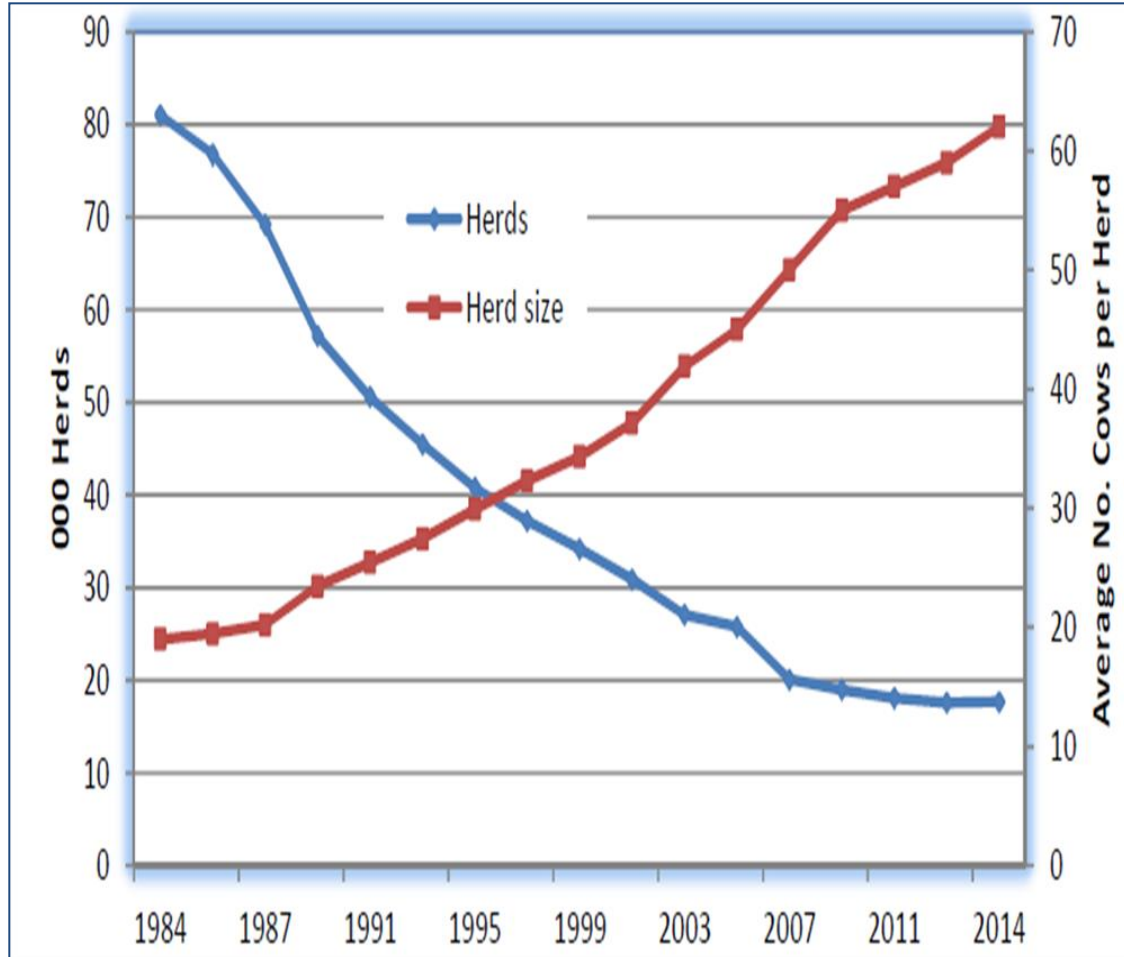


IFCN & IFJ, November 2016



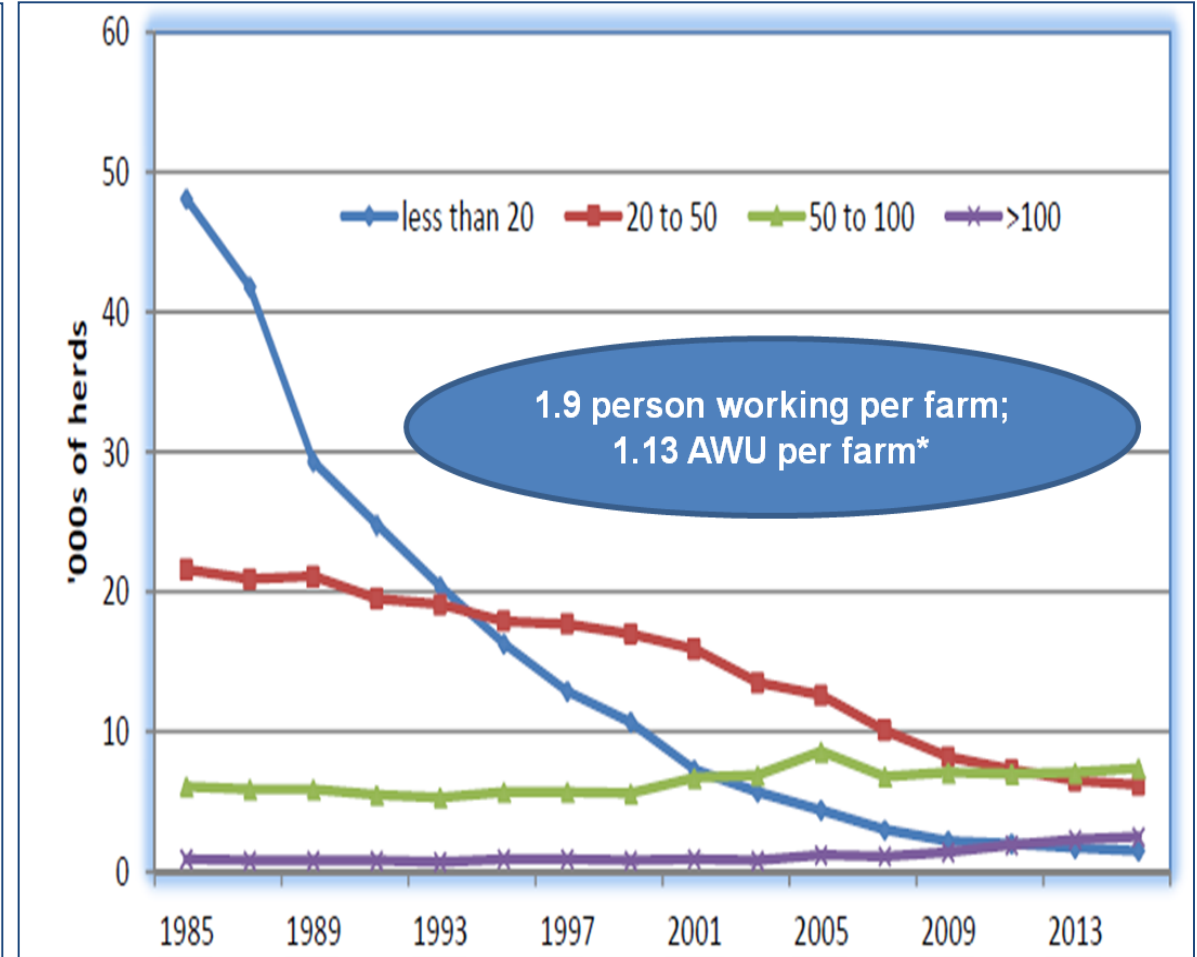
# Family farms are the norm in Ireland

Number of dairy herds and average herd size



Annual Work Unit = >1800 Hr per person, per annum

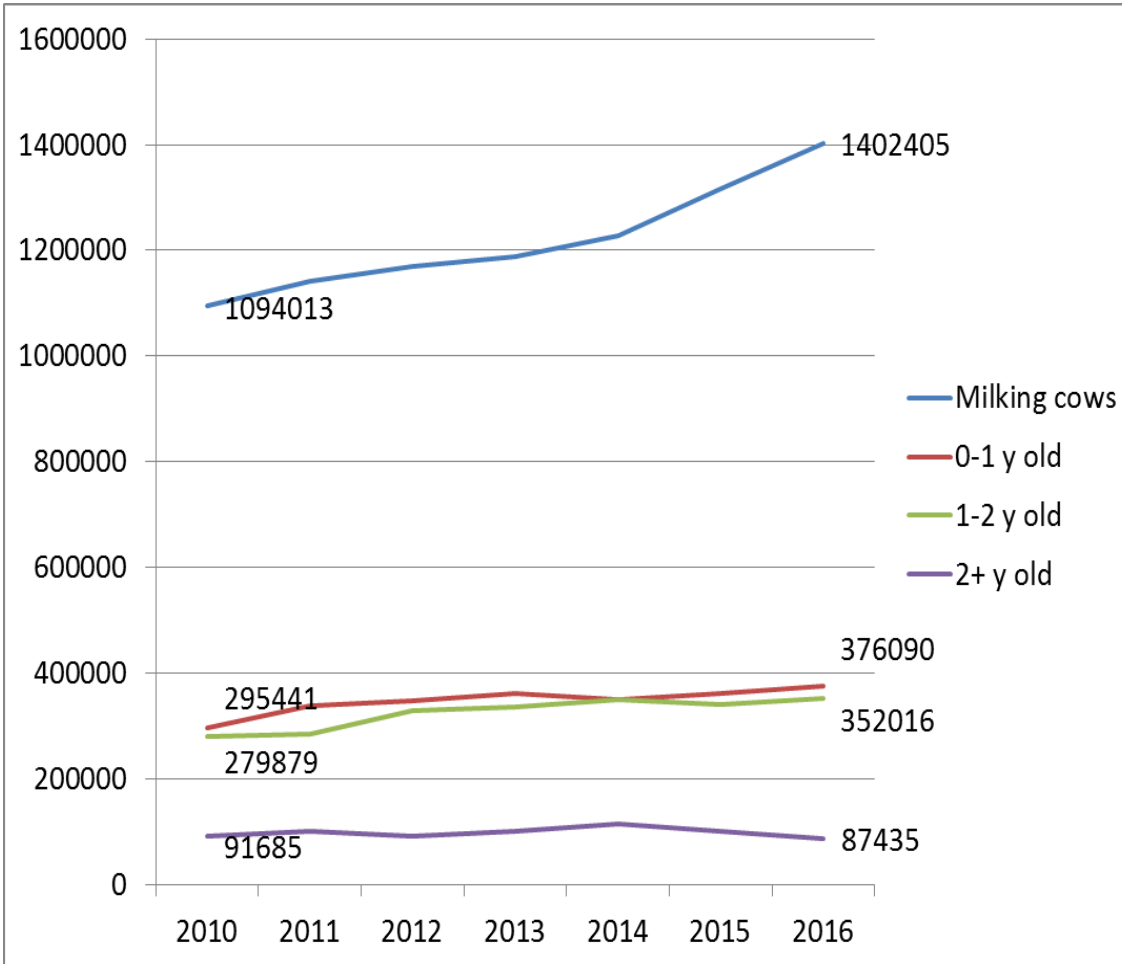
Number of dairy herds by herd size



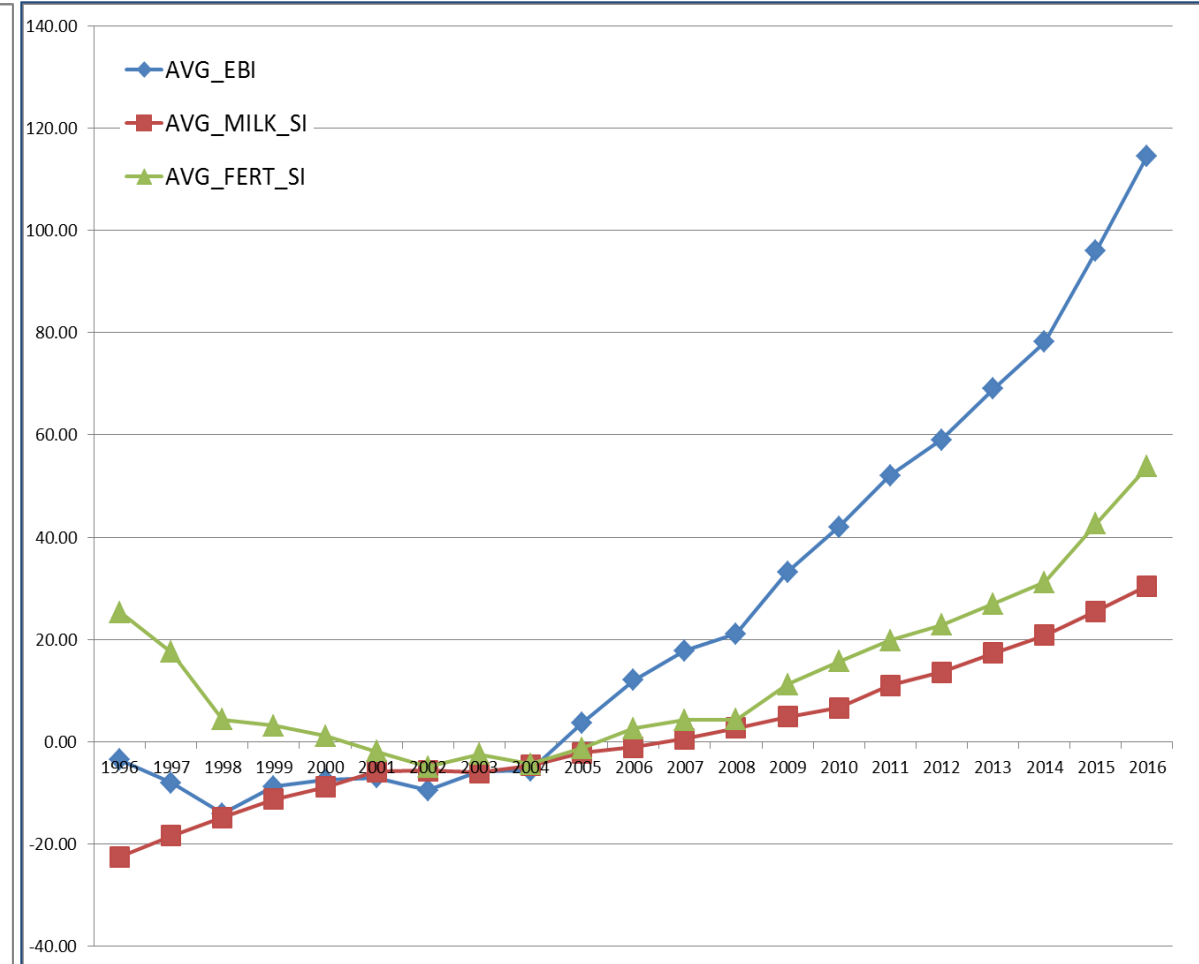
Central statistic office and Department of Agriculture, Food and Marine

# Herd size growing; genetic merit improving

Number of milk cows and non milking heifers on dairy farms



Evolution of EBI value



Irish Cattle Breeding Federation

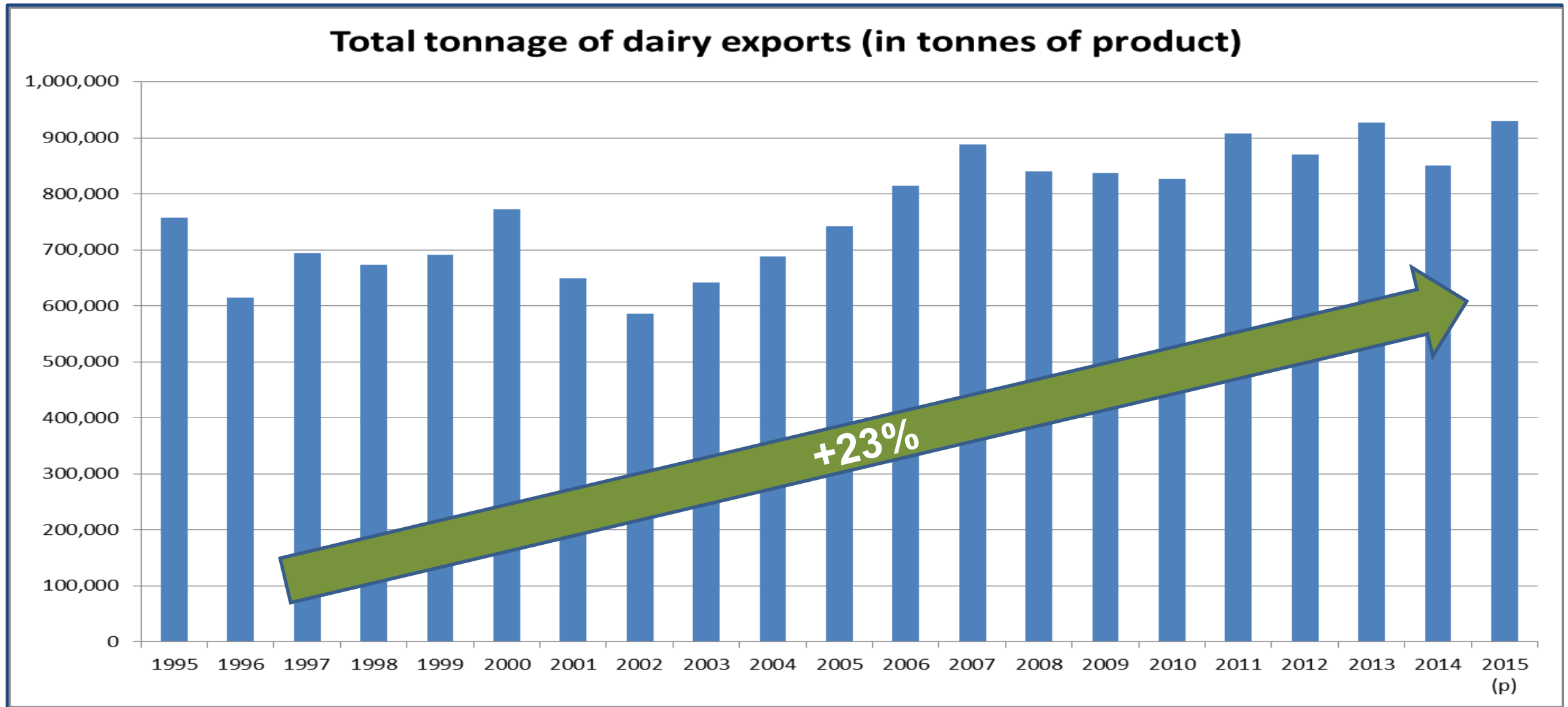
# Ireland's dairy export vocation

- ❑ Ireland's domestic market has only 4.5 million consumers
- ❑ Ireland produces enough milk/beef to feed 20-50m consumers
- ❑ Ireland's dairy export vocation is long standing:
- ❑ Butter and cheese to England since 18<sup>th</sup> century – butter was main export into 19<sup>th</sup> century
- ❑ Routes to markets developed since 1960's by Irish Dairy Board (now Ornuia)

Photograph of interior of Cork Butter Exchange, c.1900  
(CCCA U401/C42-51 Cork Butter Market)



# Ireland's dairy export vocation

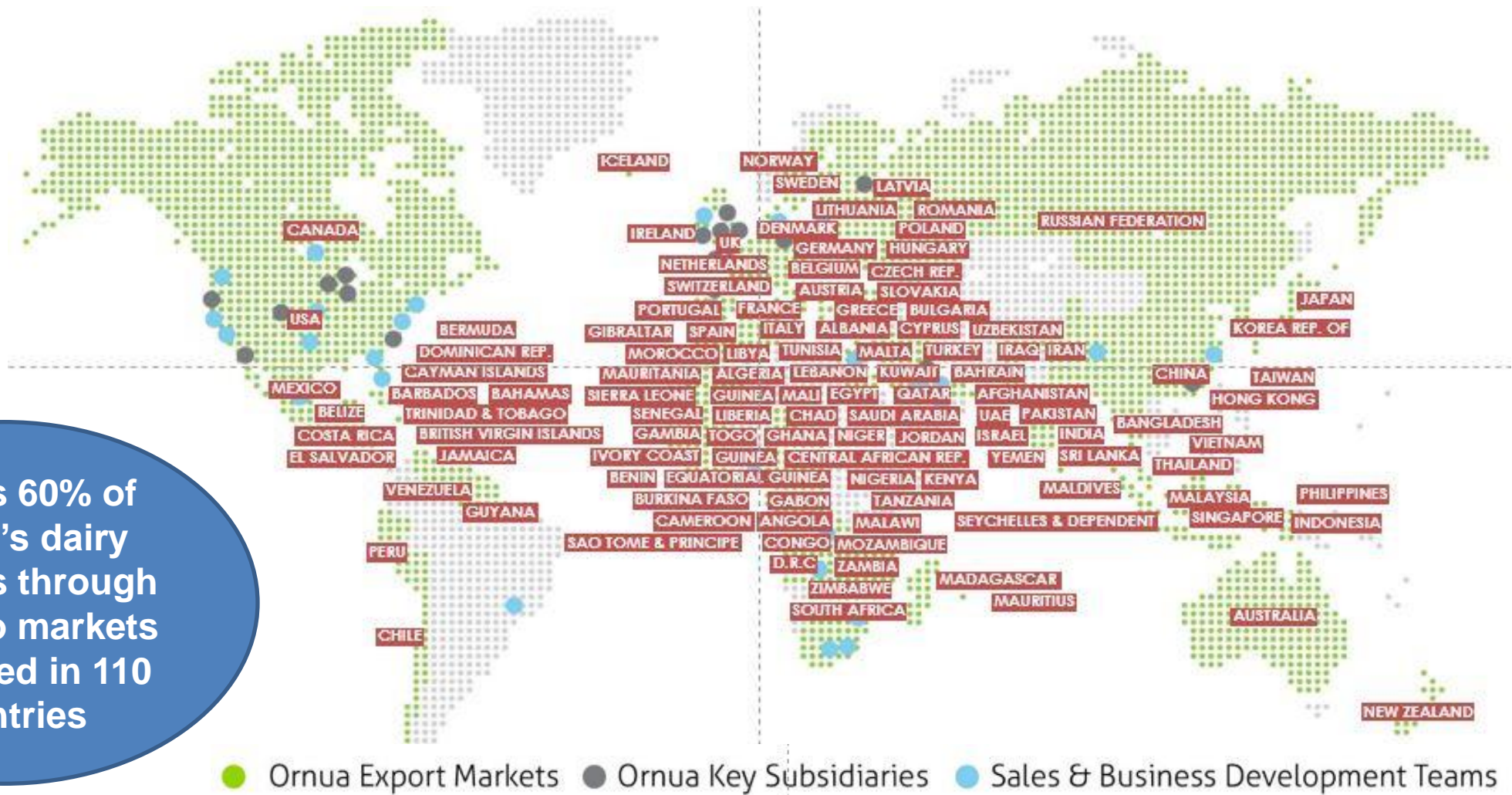


CSO



# Ornua – Ireland's largest exporter

Exports 60% of  
Ireland's dairy  
products through  
routes to markets  
developed in 110  
countries



## Origin green

# Irish Dairy: Our Journey to Sustainability



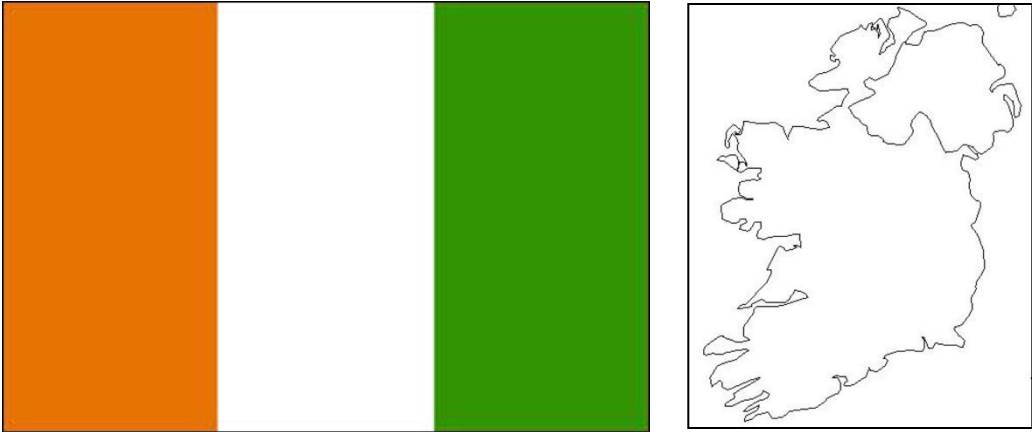
Working  
with nature

*Bord Bia*  
Irish Food Board

- ➔ Ireland among the most sustainable producers of milk in the world  
– we are setting out to prove it.
- ➔ Sustainable Dairy Assurance Scheme (SDAS) first national dairy scheme of its kind.
- ➔ Rigorous, independently verified and accredited (ISO 17065: 2012)
- ➔ Animal health, welfare, land management, biosecurity, safe farming practices, production of safe milk.
- ➔ Framework for measuring continuous improvement of each farmer.
- ➔ Calculates GG emissions for each herd (carbon navigator)
- ➔ Detailed feedback to each farmer to improve sustainability performance of farm.
- ➔ Traceability - follows movements animals from birth to end of life.



# 2-2- How to deal with price volatility ?





# How to deal with price volatility?

## → Improving production efficiency

## → Improving financial management skills

## → Risk management tools

- Fixed price contracts ; Hedging based on national index ; Other forms of risk management

## → Flexibility in income averaging for taxation purposes

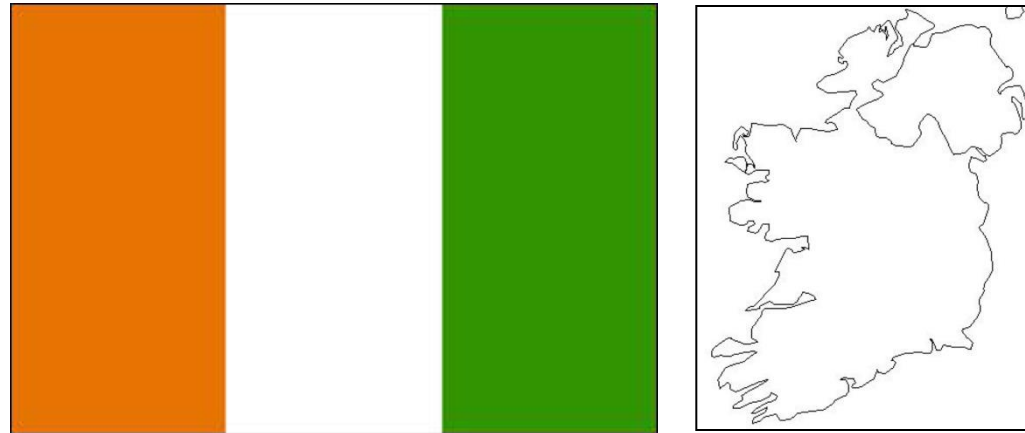
- From this year, 1 year out of 5, tax on current (low income) year

## → Flexible financial instruments

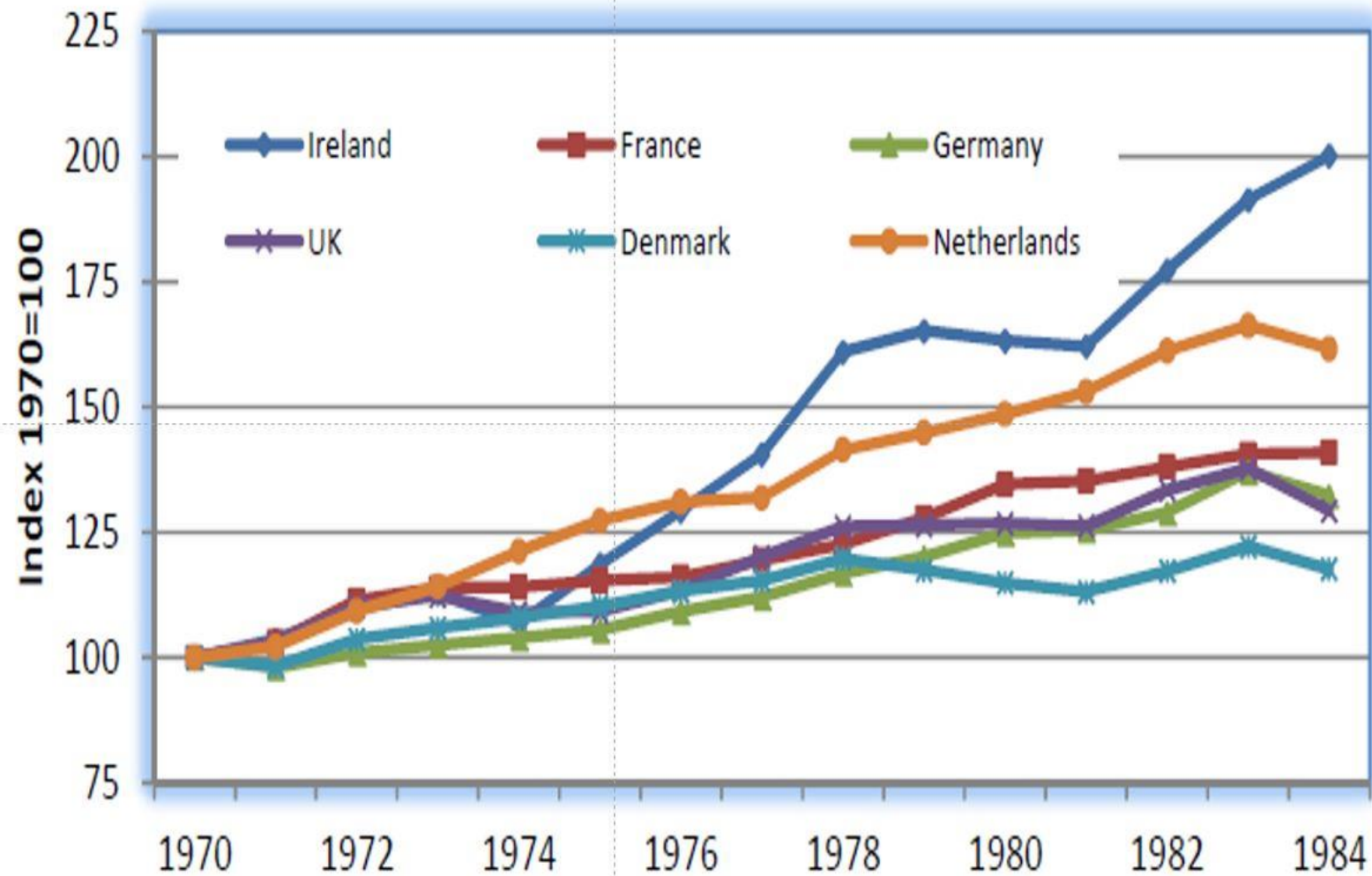
- Loan packages for cash flow and investment purposes with variable repayments reflecting milk price levels (Glanbia's Milk Flex and GAP)
- Extending the concept to pillar banks and other lenders
- Use of EU adjustment aid to provide low cost liquidity loans – setting a precedent

## → Role of CAP post 2020?

## 2-3- What potential for the development of the dairy sector?



# Ireland's potential interrupted by quotas in 1984



Aggregate milk deliveries Ireland and selected EU member states 1970 to 1984

Eurostat

# Ireland, a sustainable milk producer?

- ➔ Ireland had no industrial revolution  
=> agriculture carries disproportionate emission liability.
- ➔ COP 21 = lowering emissions w/o threatening food production  
=> focus on emission efficient production.
- ➔ No complacency: this is a challenge for Ireland (and others!).
  - 87% of measures in Ireland's RDP have climate reducing elements.
  - SDAS (Origin Green farm audits).
  - Smart Farming initiative – emphasis on economic win-win.
  - Significant research on emission reduction from grass-based production, land use and nutrient management (Teagasc)
  - Need for greater support for renewable energy production and forestry plantation by farmers.



# Challenges: our world is changing!

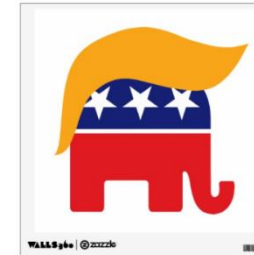
## → Brexit?

- 1/3 of Ireland's dairy exports to UK
- Currency, uncertainty
- Ireland the only country with a land border



## → Future of TTIP, FTAs and world trade?

- DGAgr / JRC study\* says positive for dairy
- Political atmosphere of retrenchment



## → Global economy?

- Geopolitical shocks, including migration crisis
- Oil prices
- Economic performance (China, EU, US, rest of world?)



(\*) [http://publications.jrc.ec.europa.eu/repository/bitstream/JRC103602/lb-na-28206-en-n\\_full\\_report\\_final.pdf](http://publications.jrc.ec.europa.eu/repository/bitstream/JRC103602/lb-na-28206-en-n_full_report_final.pdf)

# Conclusion

- ➔ Ireland has a real potential to sustainably supply growing global dairy demand with high quality dairy products.
- ➔ Climate change issues are a major challenge, which must, and is being faced.
- ➔ Sustainability must be understood to include economic sustainability of primary producers.
- ➔ Global political, economical developments will continue to affect trade and feed into volatility and uncertainty.
- ➔ The consequent price and margin volatility needs a greater variety of solutions to help farmers cope and sustain dairy supplies – including in future CAP.



# Dairy cows in Ireland !





### 3- The U.S. perspective

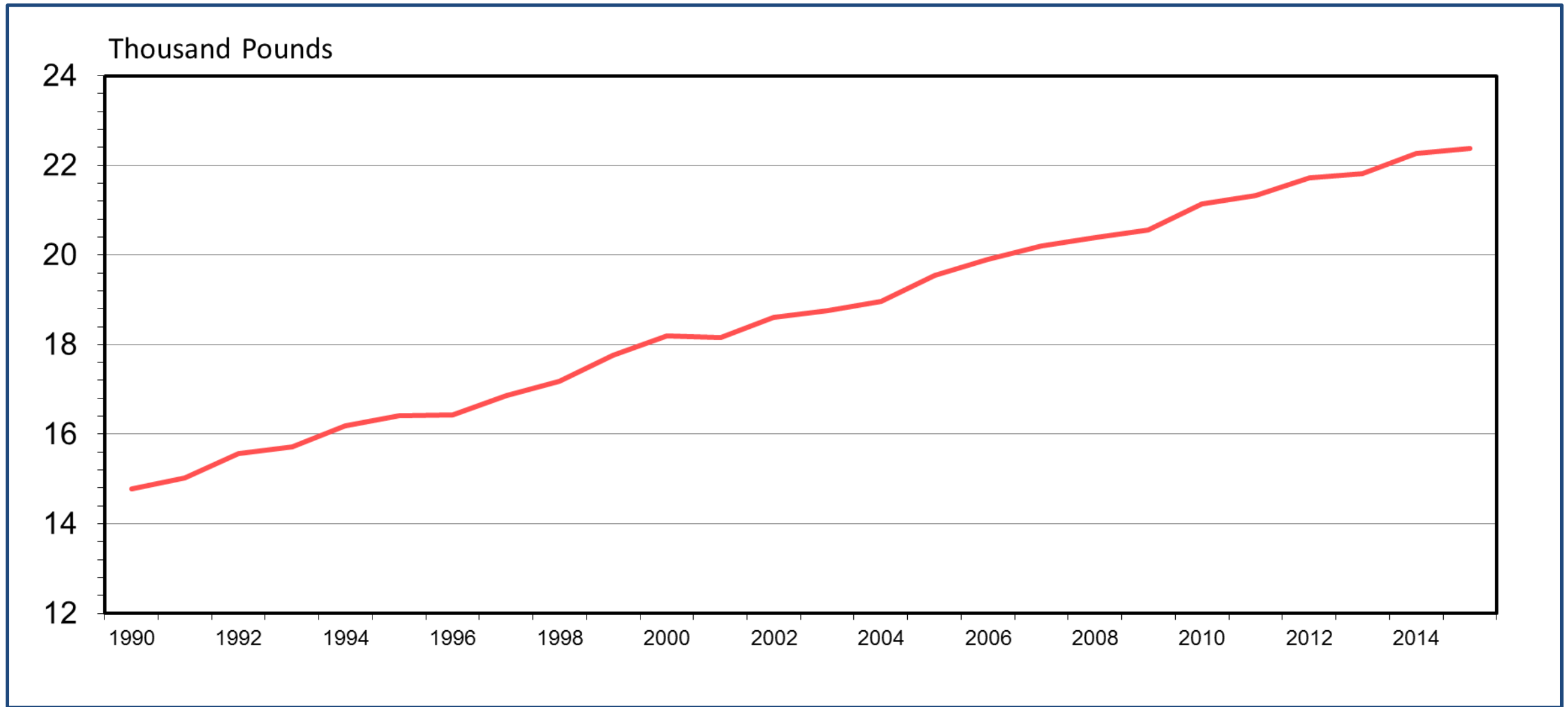
*Jaime Castaneda*



## 3-1- Key dynamics in the dairy sector

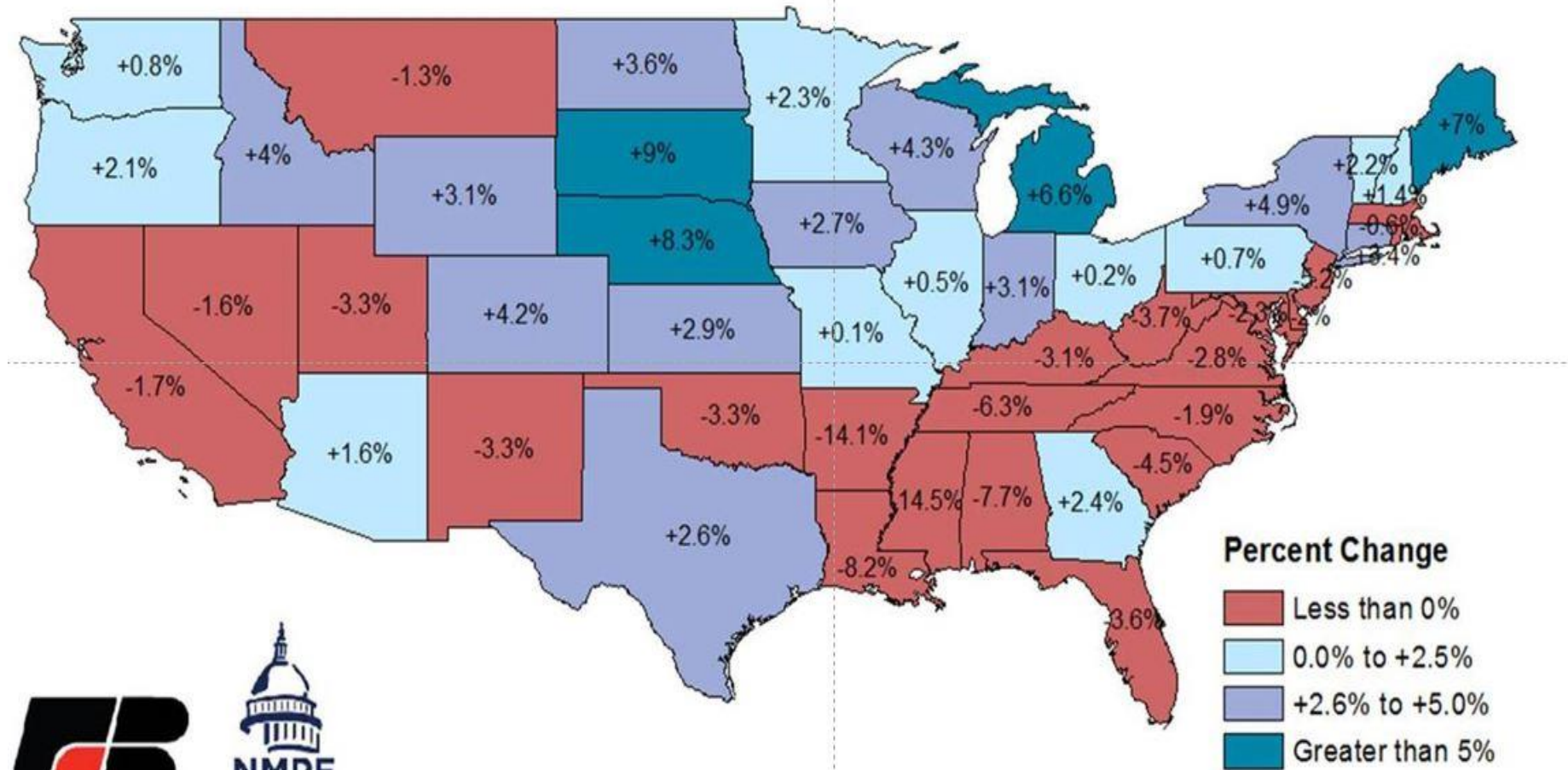


# Milk production per milk cow (1989-2014, annual)



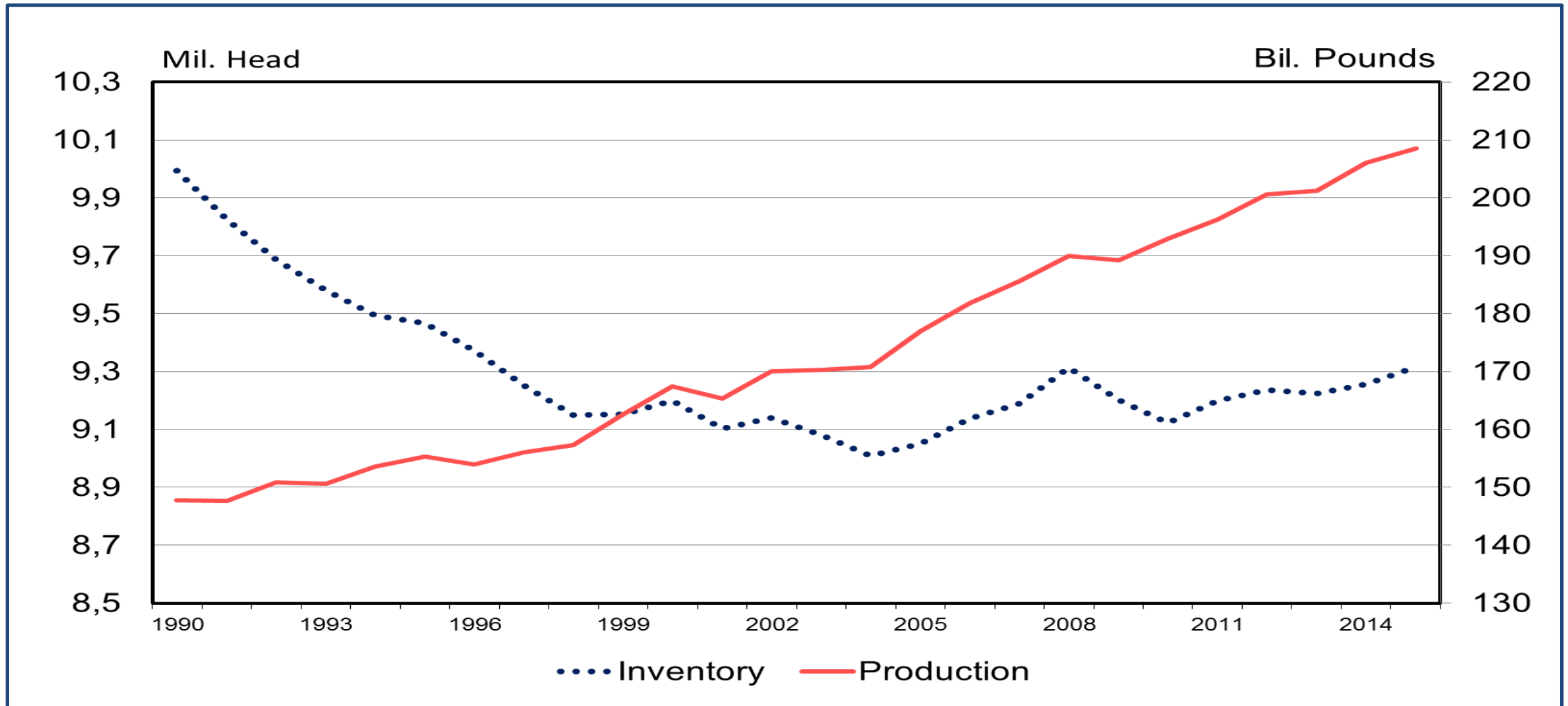
USDA/NASS Livestock Marketing Information Center

# 2016 Year-to-date change in milk production (Jan-Sep) – U.S. +1.7%



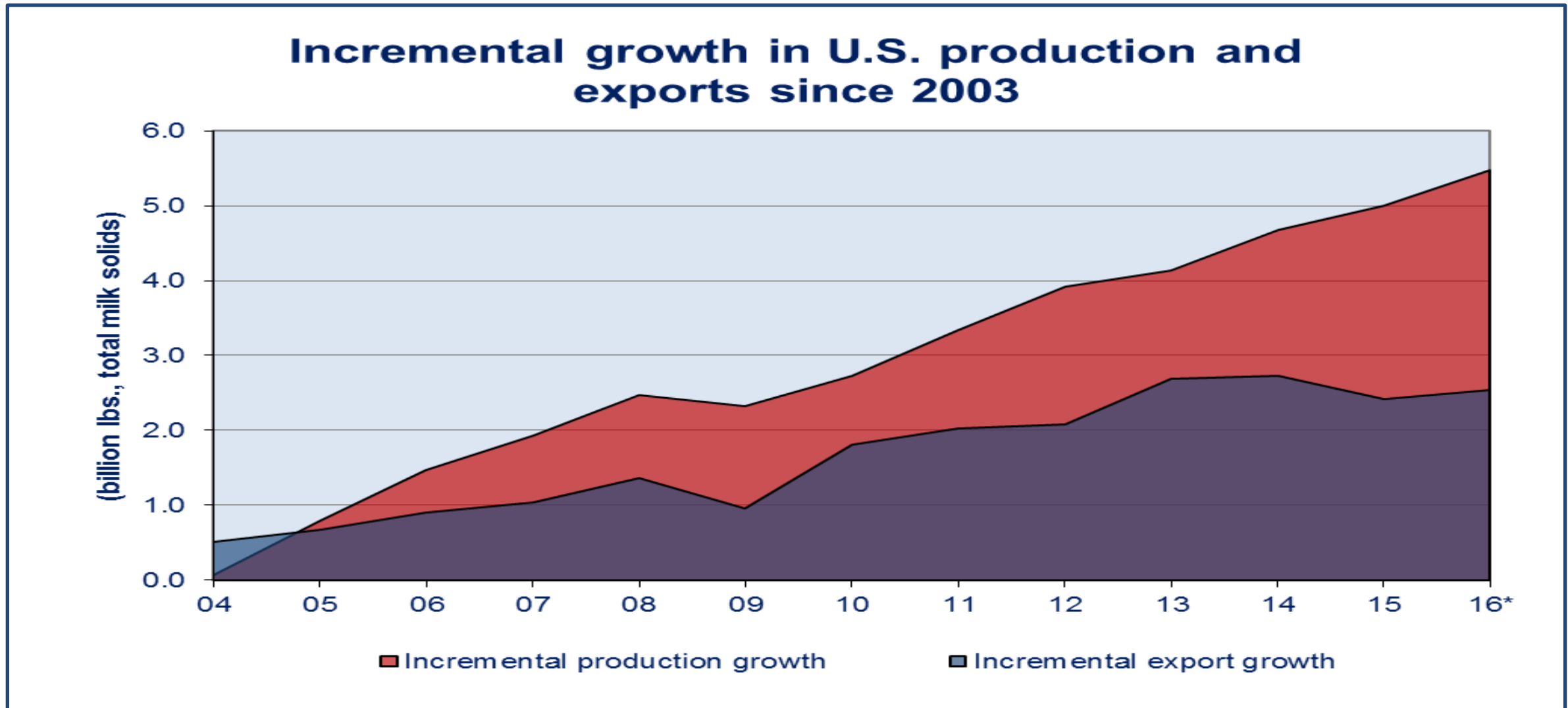
Prepared by John Newton (AFBF) & Peter Vitaliano (NMPF)

# Milk production vs. milk cow inventory average annual inventory, US



USDA/NASS Livestock Marketing Information Center

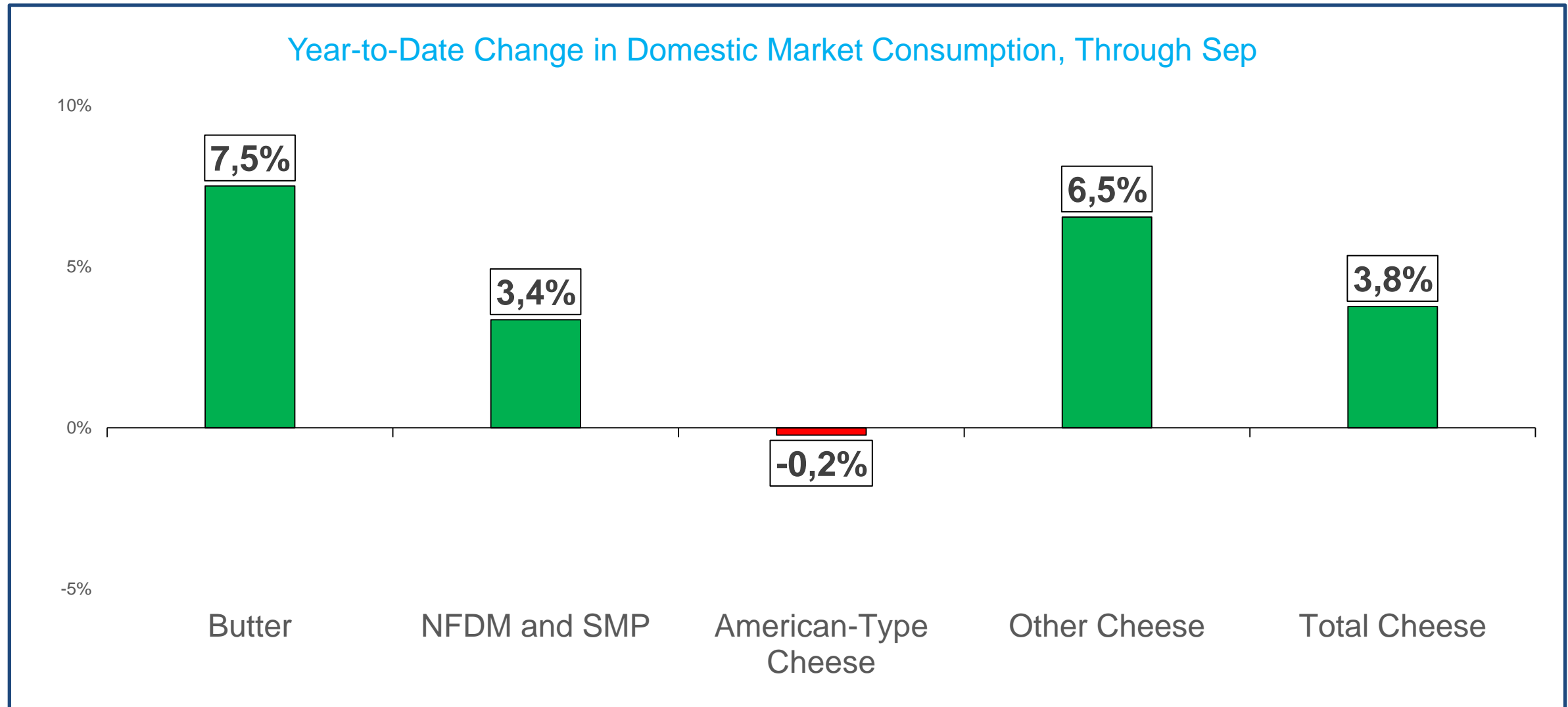
# Since 2003, Nearly Half of the 'New' Milk Has Gone to Exports



2016 is USDEC projection. Source: USDEC, USDA

# Domestic Consumption Remains Robust

Butter and Other Cheese Showing Strong 2016 Year-to-Date Consumption Improvement

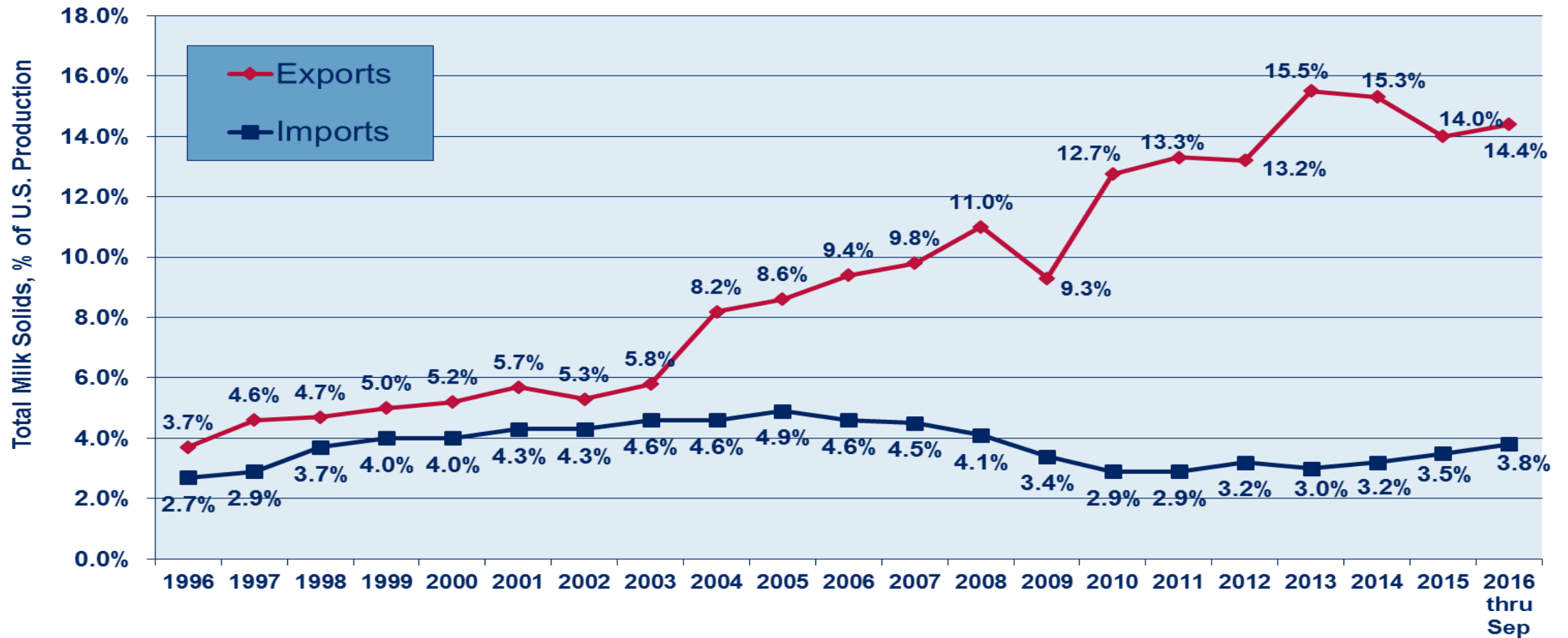


USDA



# Trade Balance Slowly Recovering

U.S. DAIRY TRADE BALANCE, 1996-2016 (thru July)



## 3-2- How to deal with price volatility ?



# Volatility No Clear Solution

- ➔ Volatility is here to stay
- ➔ Heavy government intervention will only mask volatility & make it worse
- ➔ Processors and producers should work together to find common interests
- ➔ Hedging Prices, Forward Contract, insurance programs
- ➔ No one want to leaves anything on the table
- ➔ Our program is trying to protect equity not profit, but not doing a good job yet

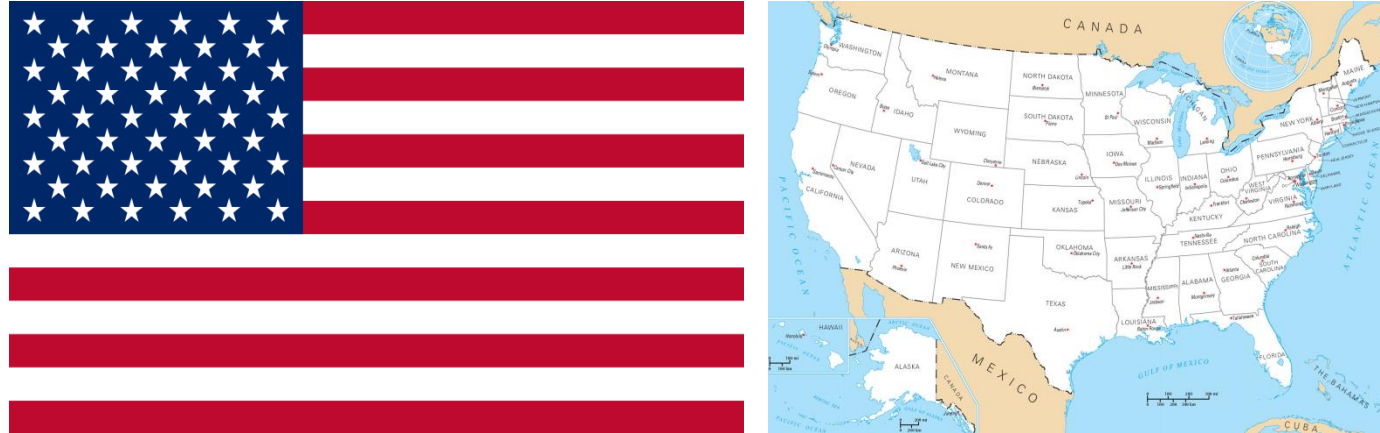
# MPP Statistics 2015 premiums and payments by coverage level

Coverage Level	Farms Covered	Premiums and Fees Paid	Cwt of Milk Covered	Average Payment Per cwt. Current Formula	Payments Current Formula	Net Payments Current Formula
\$8.00	264	\$3,369,992	5,833,437	\$0.12	\$727,831	-\$2,642,161
\$7.50	1,430	\$7,744,556	30,196,319	\$0.00	\$0	-\$7,744,556
\$7.00	501	\$1,468,205	8,258,948	\$0.00	\$0	-\$1,468,205
\$6.50	6,397	\$24,008,345	171,192,614	\$0.00	\$0	-\$24,008,345
\$6.00	3,850	\$31,284,784	245,910,889	\$0.00	\$0	-\$31,284,784
\$5.50	506	\$1,726,101	23,679,428	\$0.00	\$0	-\$1,726,101
\$5.00	743	\$2,101,739	57,473,579	\$0.00	\$0	-\$2,101,739
\$4.50	136	\$71,693	4,264,294	\$0.00	\$0	-\$71,693
\$4.00	10,939	\$1,093,900	873,821,637	\$0.00	\$0	-\$1,093,900
<b>Total</b>	<b>24,766</b>	<b>\$72,869,315</b>	<b>1,420,631,145</b>		<b>\$727,831</b>	<b>-\$72,141,484</b>

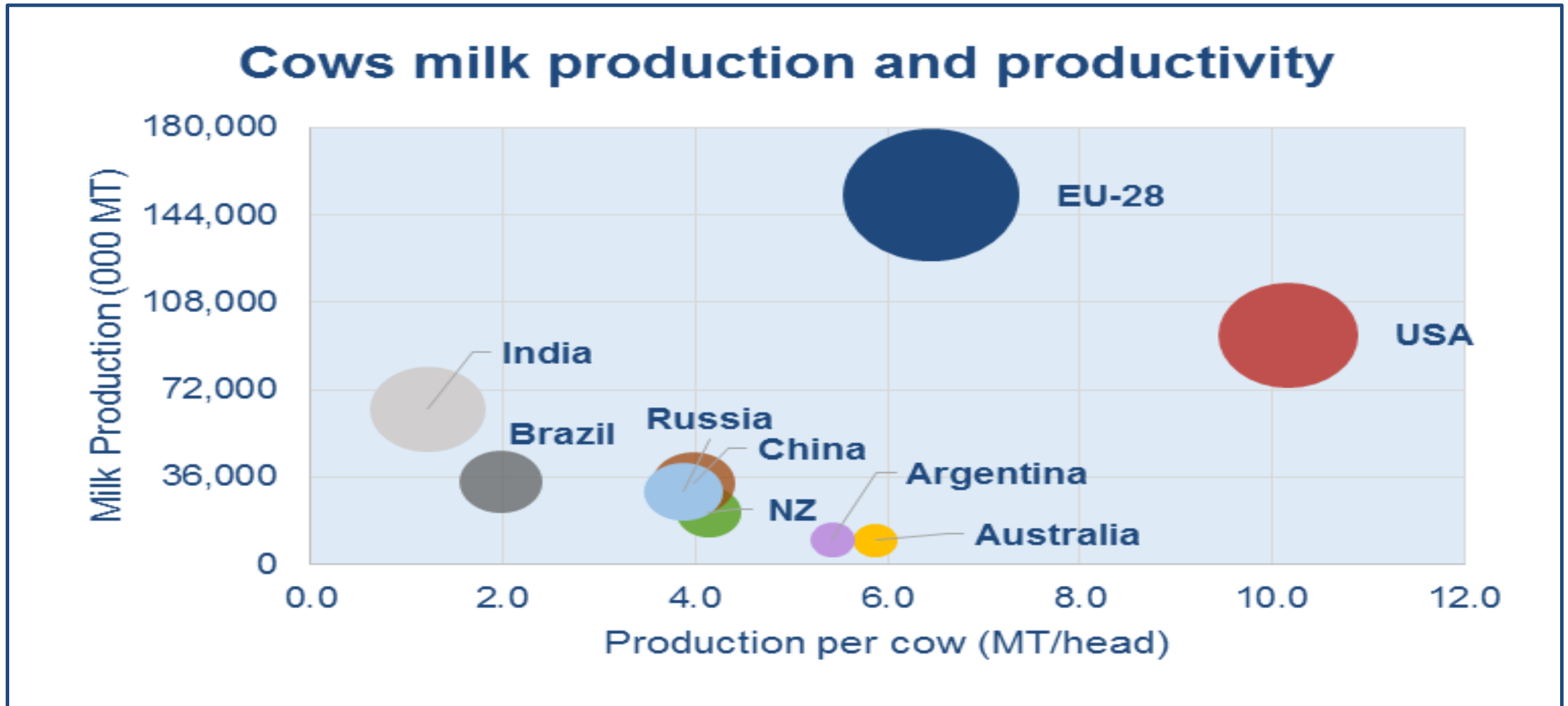
# MPP Statistics 2016 premiums and payments by coverage level

Coverage Level	Farms Covered	Premiums Paid	Percent of Premiums @ < 4 mil lb rate	Cwt of Milk Covered	Average Payment Per cwt. Current Formula	Payments Current Formula	Net Payments Current Formula
\$8.00	149	\$993,642	100%	2,226,944	\$0.51	\$1,146,352	\$152,710
\$7.50	236	\$1,152,933	100%	3,890,775	\$0.35	\$1,354,371	\$201,438
\$7.00	169	\$530,630	100%	2,475,958	\$0.21	\$510,571	-\$20,059
\$6.50	2,307	\$5,982,426	83%	47,977,118	\$0.12	\$5,895,330	-\$87,096
\$6.00	1,991	\$10,006,728	46%	91,606,613	\$0.04	\$3,622,549	-\$6,384,179
\$5.50	357	\$509,718	67%	8,502,784	\$0.00	\$0	-\$509,718
\$5.00	482	\$1,148,319	21%	31,085,066	\$0.00	\$0	-\$1,148,319
\$4.50	108	\$2,635	64%	2,381,913	\$0.00	\$0	-\$2,635
\$4.00	19,864	\$0	NA	1,401,953,981	\$0.00	\$0	\$0
<b>Total</b>	<b>25,663</b>	<b>\$20,327,031</b>		<b>1,592,101,152</b>		<b>\$12,529,173</b>	<b>-\$7,797,858</b>

## 3-3- What potential for the development of the dairy sector?



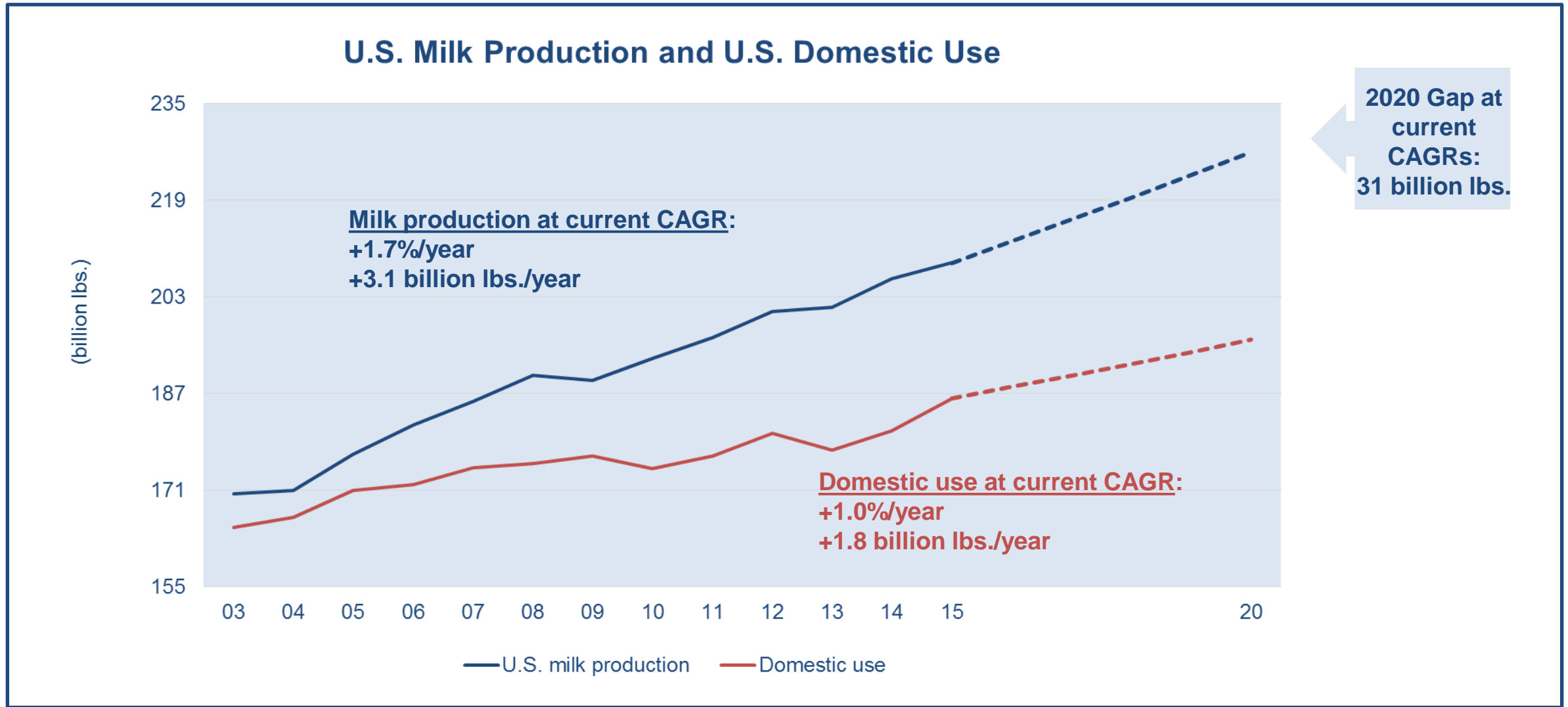
# U.S. Has Large and Productive Herd



FAS/USDA, USDEC. (Size of circle corresponds to milk production volume)



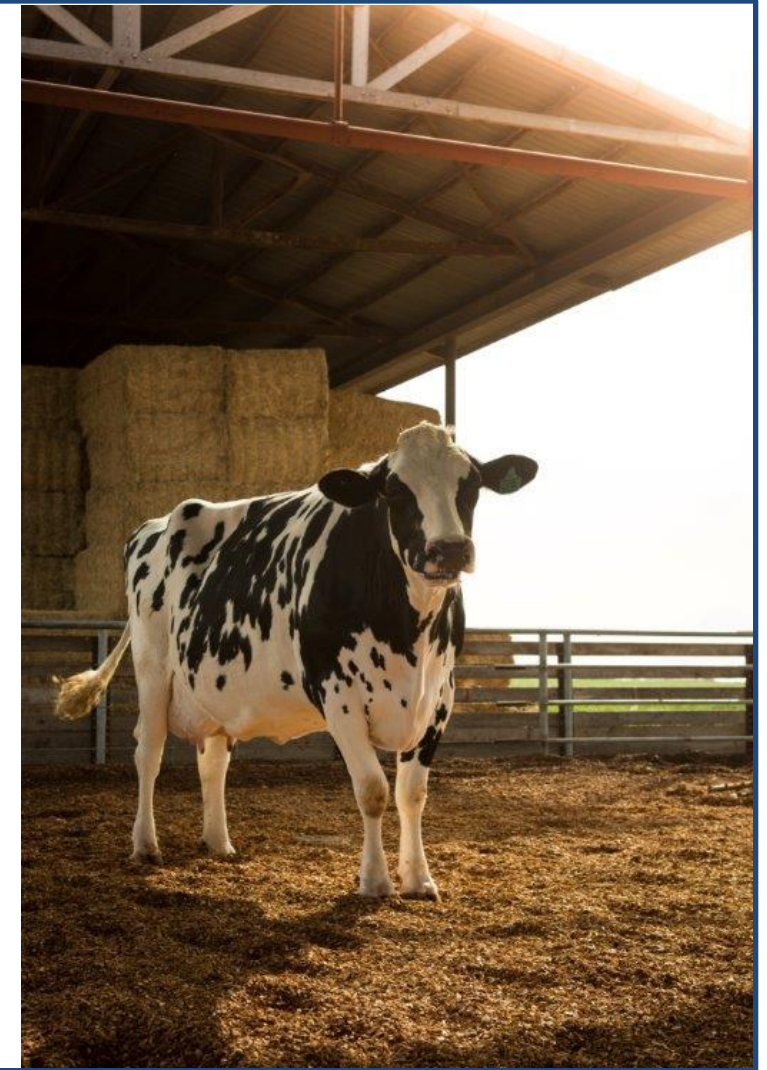
# The U.S. Strategic Imperative to Export



USDEC, USDA

## Our vision

**Transforming The World's  
Largest Dairy Industry Into  
A Truly Adaptive Customer-  
focused, Global Business  
Partner**

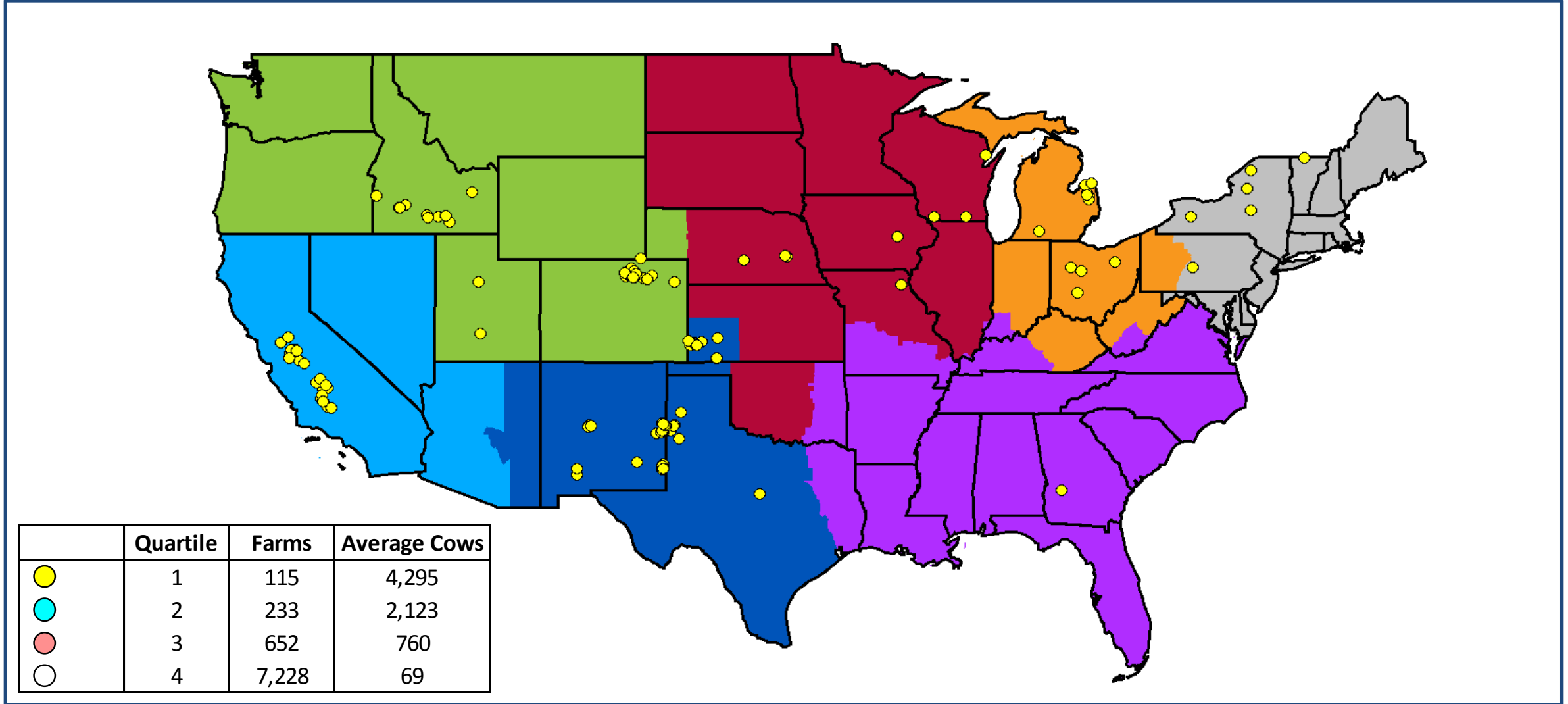


# U.S. Dairy Farming Today



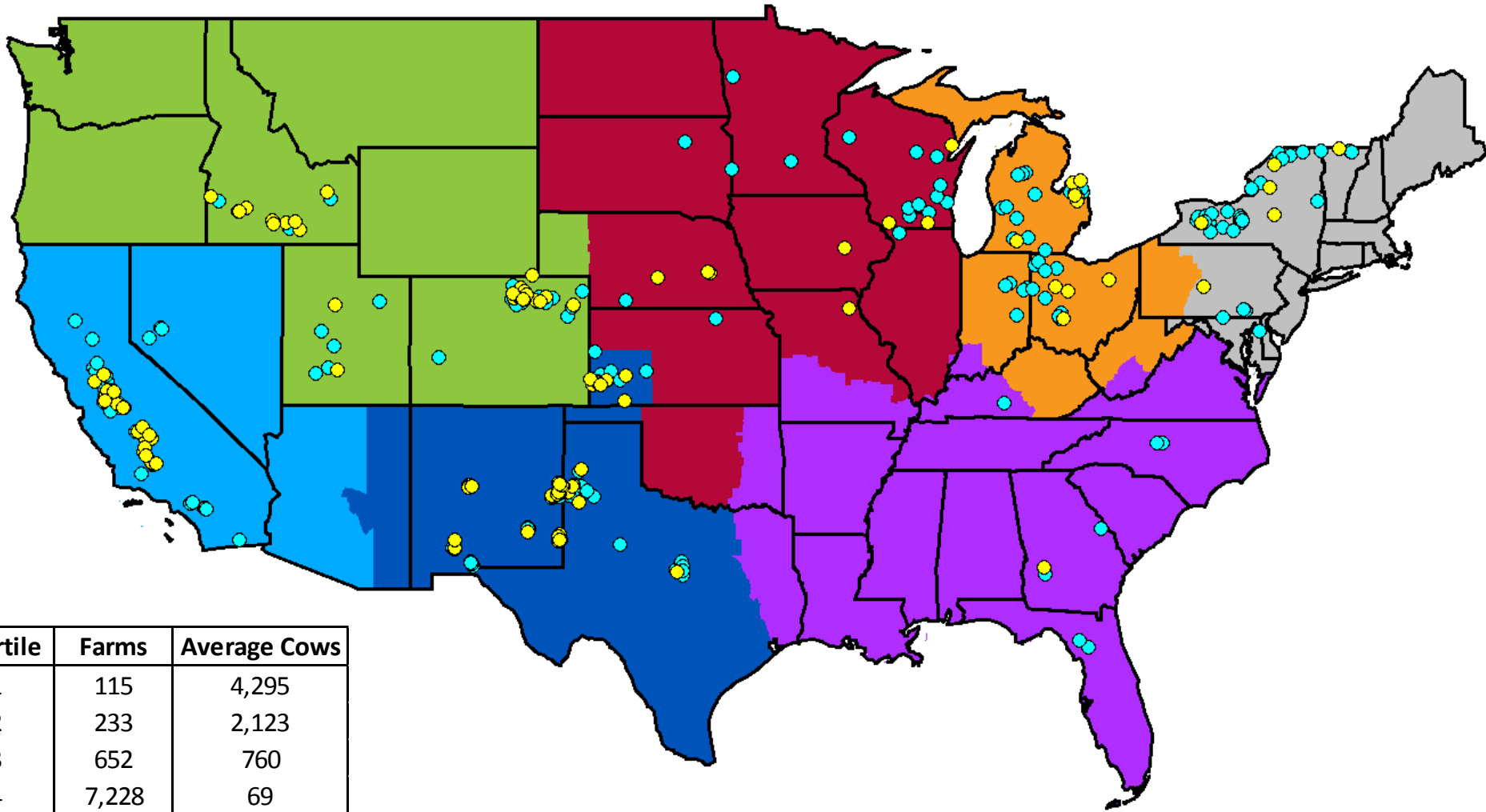
- ➔ Year-round production with little seasonal variance
- ➔ Modern farming practices
  - Optimized feed rations
  - High-tech milking operations
  - Enhanced reproduction
  - Attention to cow comfort
- ➔ Rigorous and multi-layer quality and safety protocols from farm to fork
- ➔ Focus on environmental stewardship and sustainability

# Quartile 1



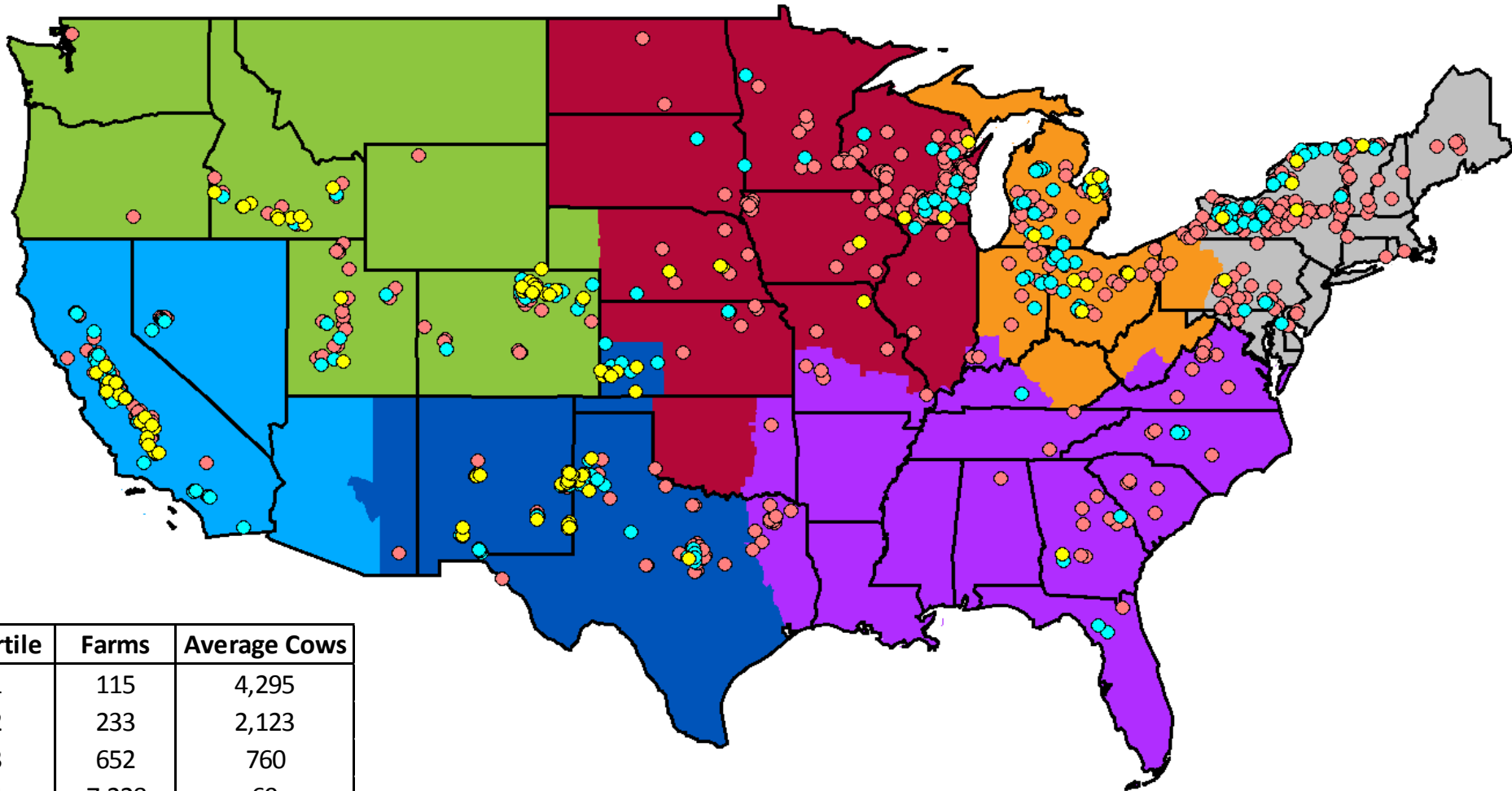
Data is a 12-month total (February 2014-January 2015)

## Quartile 1, 2



Data is a 12-month total (February 2014-January 2015)

# Quartile 1, 2, 3

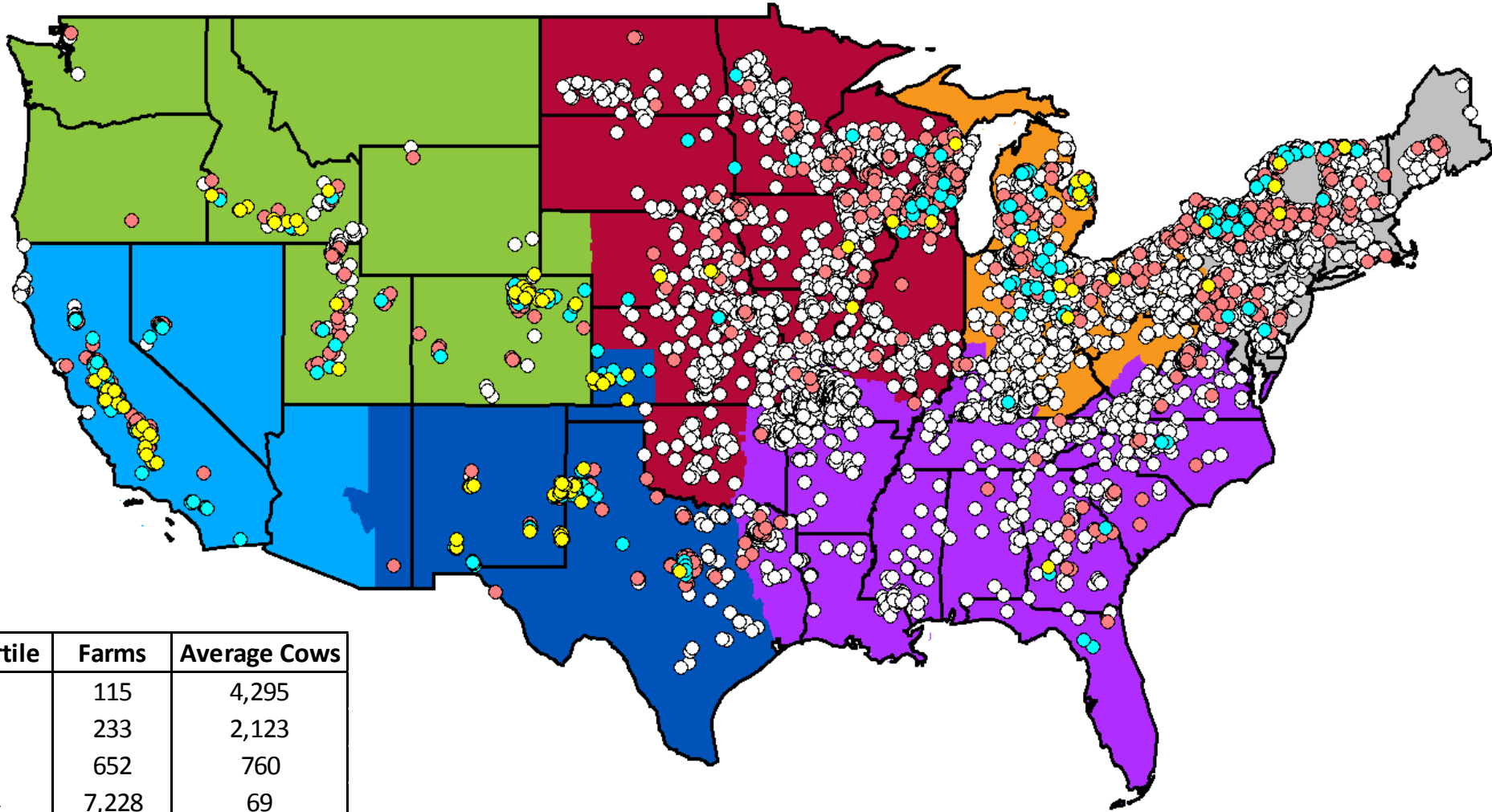


	Quartile	Farms	Average Cows
●	1	115	4,295
●	2	233	2,123
●	3	652	760
○	4	7,228	69

Data is a 12-month total (February 2014-January 2015)



# Quartile 1, 2, 3 & 4



	Quartile	Farms	Average Cows
●	1	115	4,295
●	2	233	2,123
●	3	652	760
○	4	7,228	69

Data is a 12-month total (February 2014-January 2015)



# Election 2016: county-Level Results





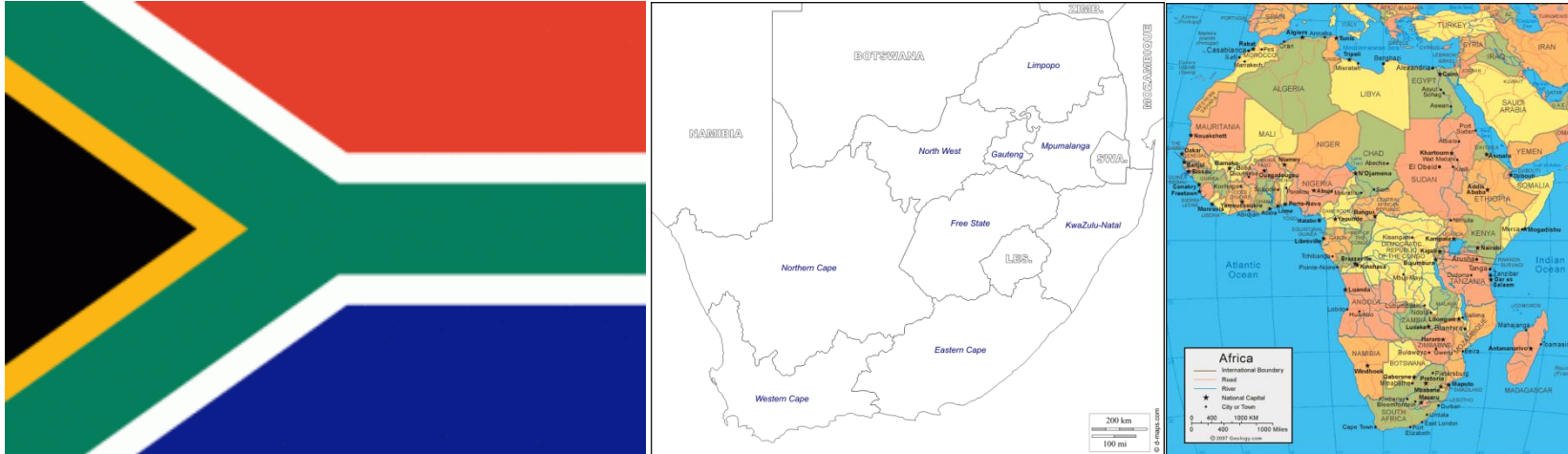
# Dairy cows in USA !



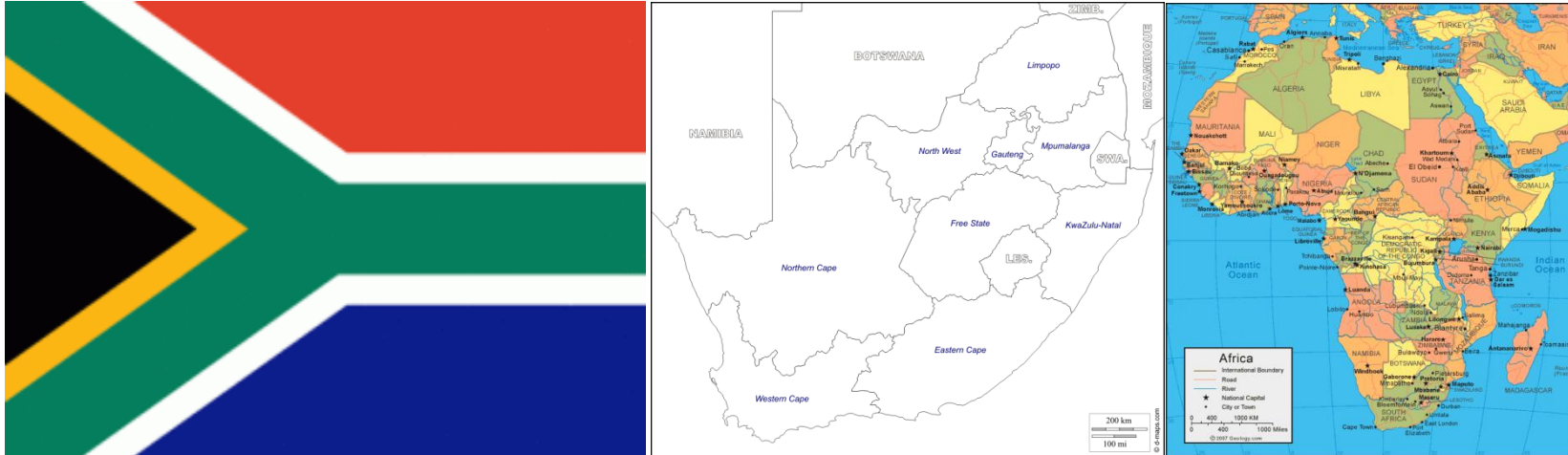


## 4- Focus on South Africa and Africa

*Kobus Mulder*



## 4-1- Key dynamics in the dairy sector



# World population projection

Geographical area	2015	2040	2065
World (,000)	7 284	8 874	9 731
S-S Africa	13.3%	18.6%	25.0%
Americas	13.5%	13.1%	12.6%
Asia	60.1%	57.0%	52.2%
Europe	10.1%	7.4%	5.9%

United Nations

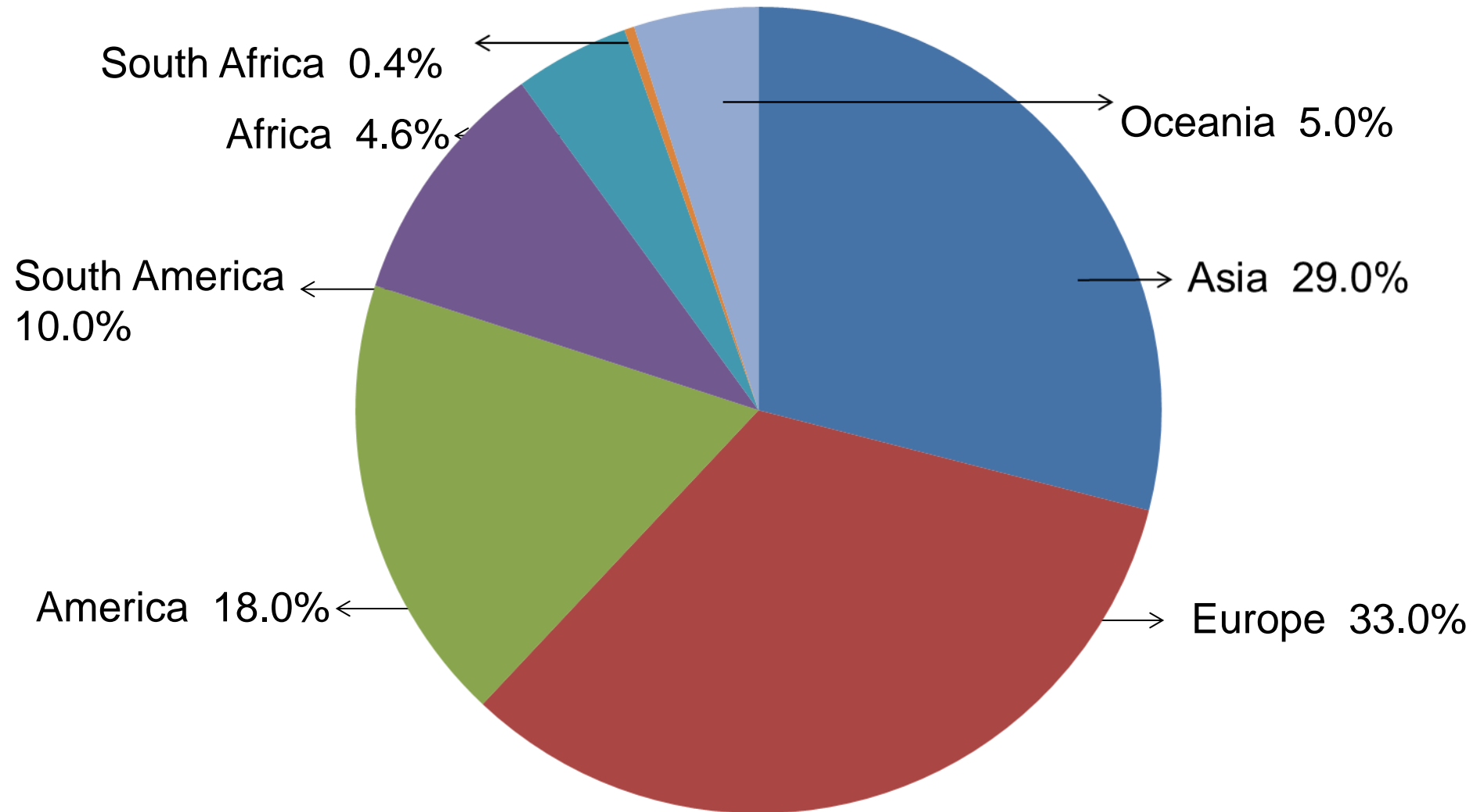
# Age demographics

Region	Age	Percentage
	0 – 14 years	15 – 64 years
Sub Saharan Africa	43%	52%
EU	16%	65%
World	26%	66%

United Nations



# World milk production



# South African primary dairy industry

- ➔ 1 650 dairy farms
- ➔ 3.2 million tonnes per annum
- ➔ 400 cows average in milk per farm
- ➔ 1 000 cows in milk on farms in coastal areas
- ➔ 20 litre per cow per day
- ➔ 31% more milk Sept – Nov than April – July
- ➔ Large highly efficient producers
- ➔ Milk price euro 0.30 per litre (May 2016)

# South African secondary industry

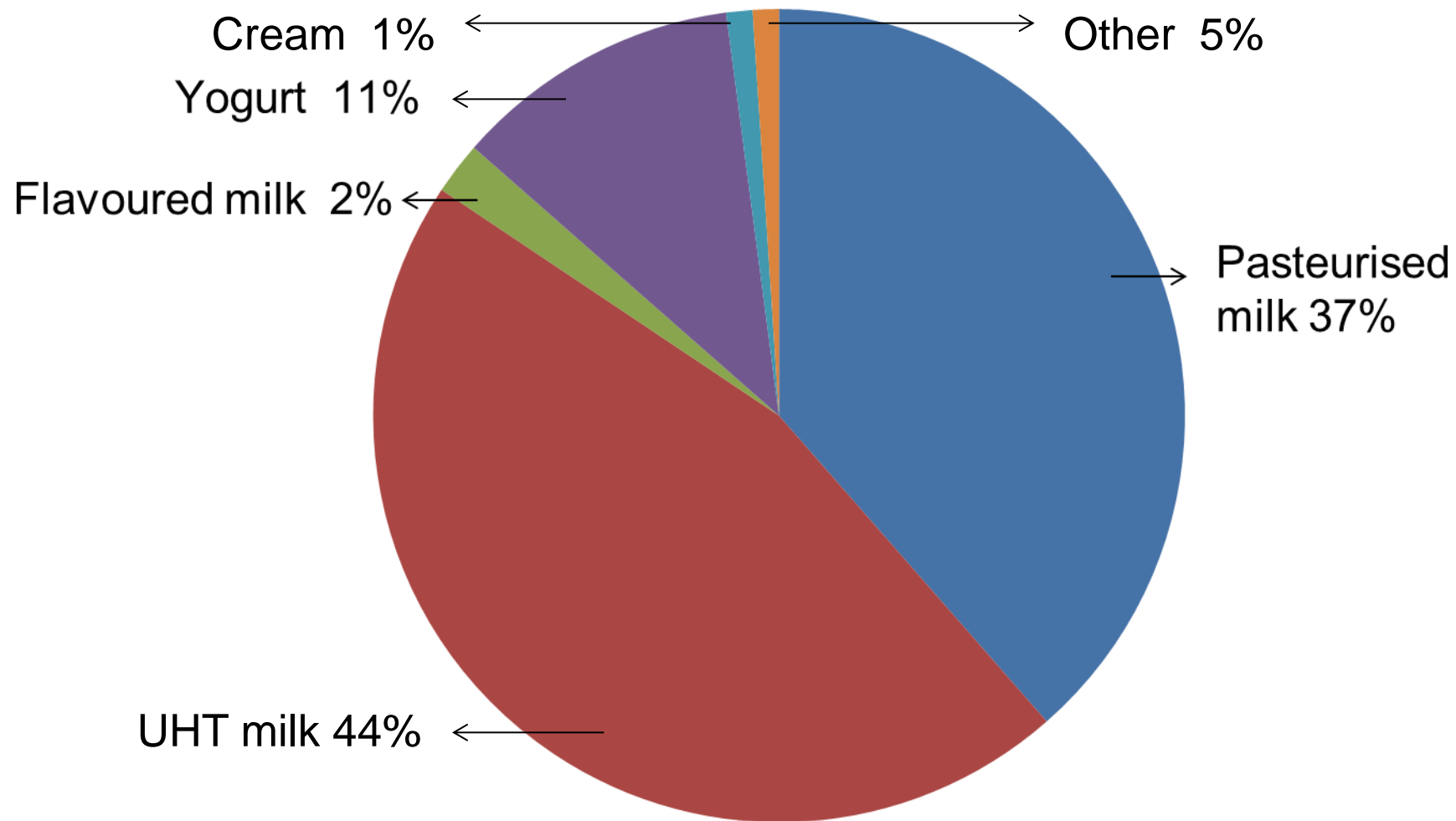
- ➔ 5 Large processors
- ➔ 145 Small to medium processors
- ➔ 113 producer-distributors
- ➔ 63% of milk into liquid dairy products
- ➔ 37% of milk processed into concentrated products
- ➔ 4 Retail groups handle 80% of total sales
- ➔ Total dairy demand value euro 2.5 billion
- ➔ Cheese contributes 25% of dairy market total value

# South Africa market opportunities

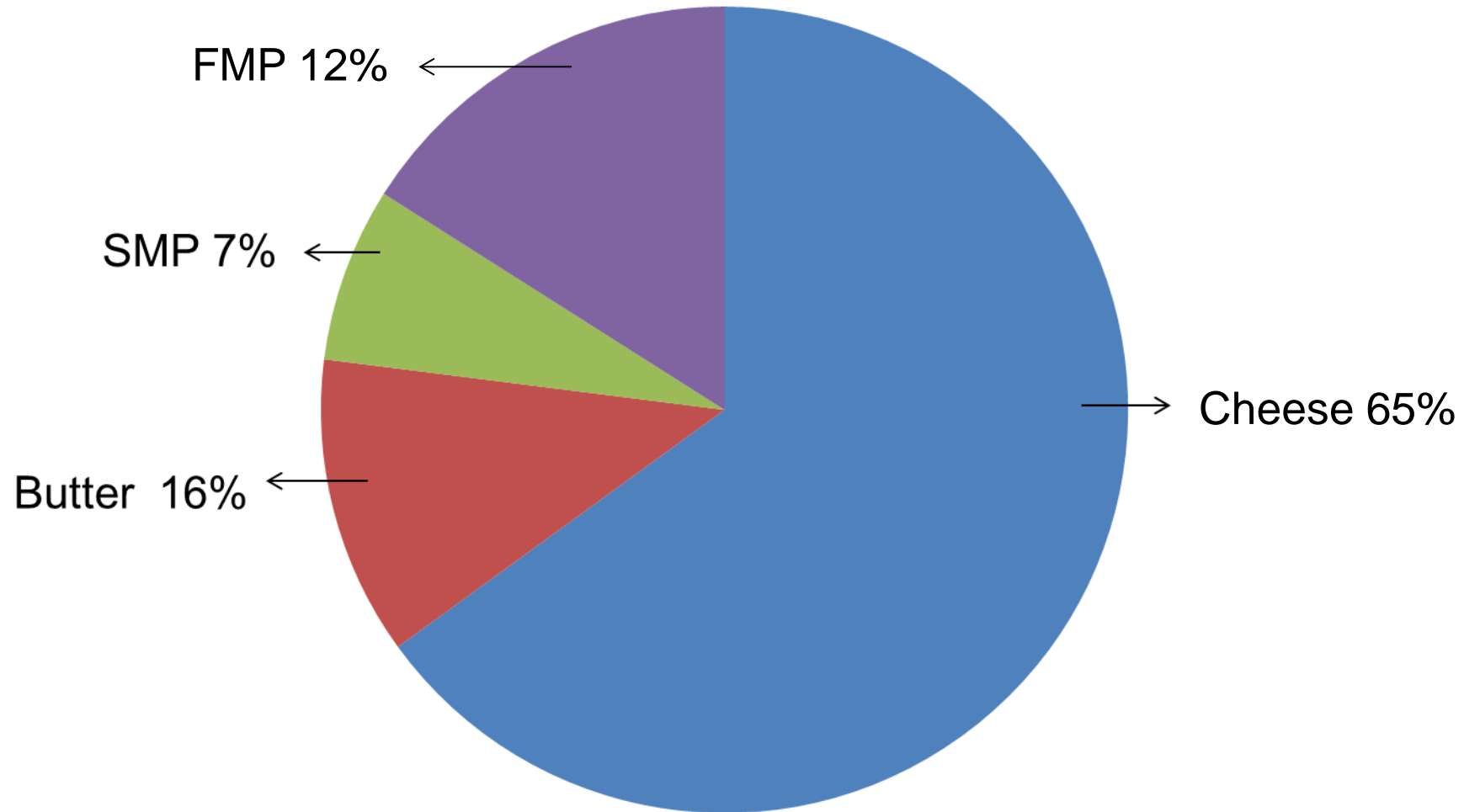
## ➔ Free market system

- No national quota system
- No pricing structure
- No minimum prices
- No subsidies
- Various trade agreements
- Relative low import tariffs

# Composition of liquid products market



# Composition of concentrated product market



# South Africa market opportunities

- ➔ Dairy sales growth of 10% per year for past 5 years
- ➔ Per capita consumption of cheese only 2kg
- ➔ Per capita dairy consumption 64 litres
- ➔ Net importer of powders, butter and cheese
- ➔ Cross border exports to net dairy import countries



# South Africa and its neighbours



Neighbouring  
markets

Population  
200m

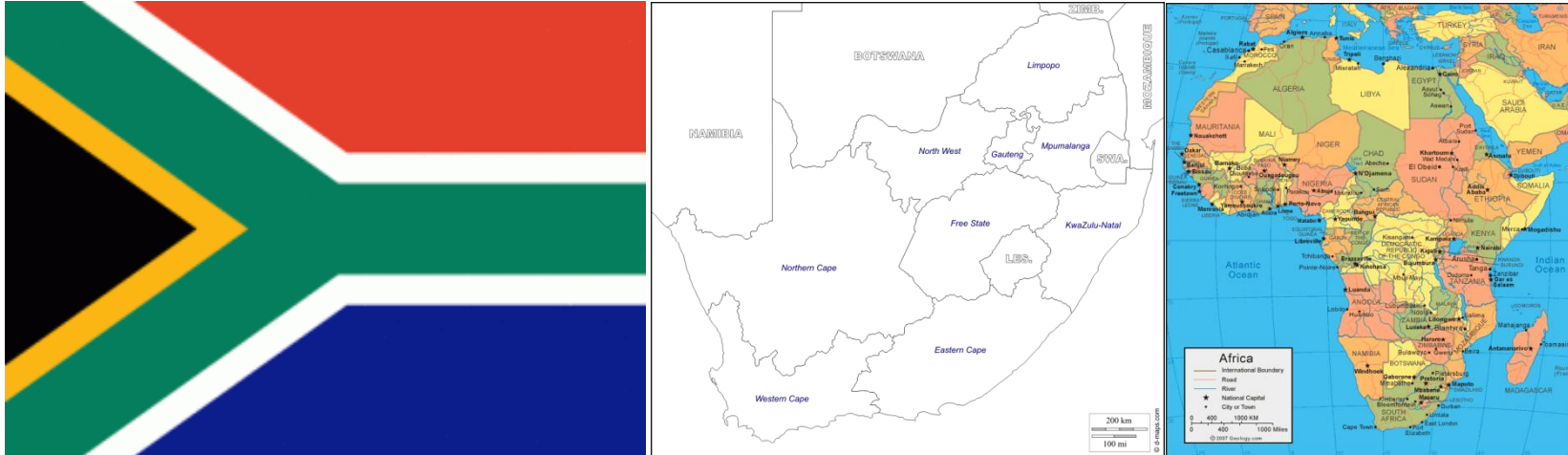
## Sub-Saharan Africa summary

- ➔ Sub-Saharan African market is growing
- ➔ Growing middle class consumers
- ➔ Availability of raw milk
- ➔ Various challenges
- ➔ 6 of top10 dairy companies active
- ➔ Growth of retail sector
- ➔ Many challenges

# Key dynamics in the dairy sector

- ➔ Potential for more raw milk production
- ➔ Limited supply of value added dairy products
- ➔ Limited technological knowledge
- ➔ Uneconomical processing of milk
- ➔ Low consumption of processed milk products
- ➔ Increase in retail outlets
- ➔ Increasing imports of concentrated dairy products

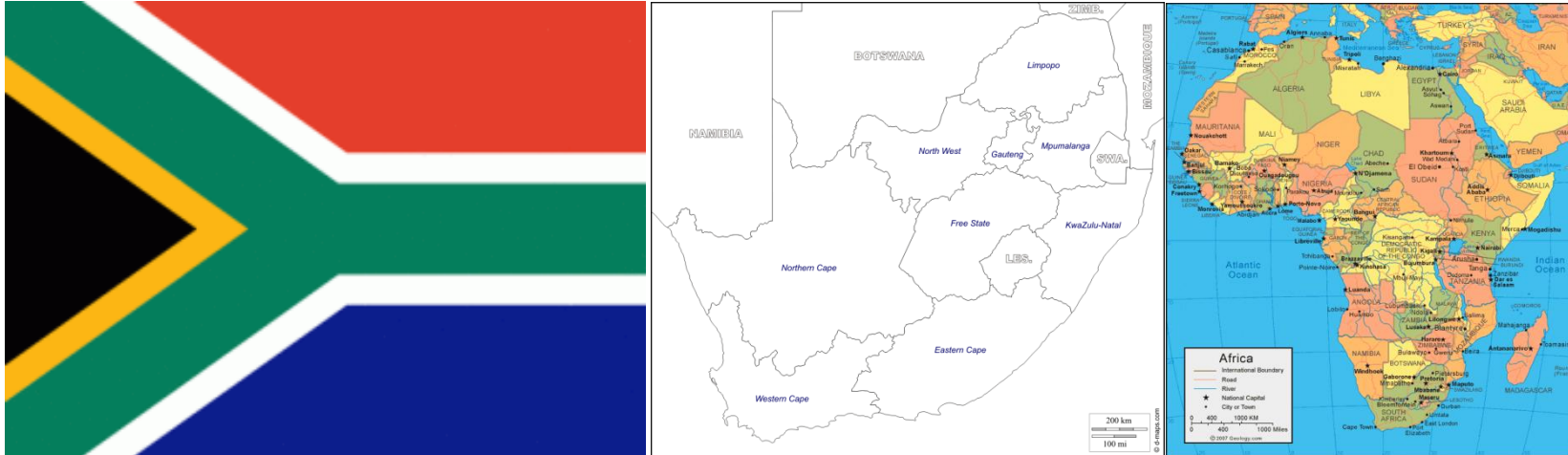
## 4-2- How to deal with price volatility ?



# How to deal with price volatility?

- ➔ No known effective method
- ➔ Producer / Processor relationship
- ➔ Supply of raw milk follows demand
- ➔ Hedging of producer input costs
- ➔ Influence of global market prices

## 4-3- What potential for the development of the dairy sector?



# What potential for the development of the dairy sector?

- ➔ Dairy powders
- ➔ Cheese varieties
- ➔ Processing technology
- ➔ Unutilized processing capacity
- ➔ Local and cross border demand growth
- ➔ Cross border exports
- ➔ Low consumption of dairy products



# Dairy cows in South Africa !





# Your questions are now welcome !

