Agri-food projections
AGMEMOD
for EU member states

Regionalisation in EU milk production and its environmental implications

Application of AGMEMOD to Dairy

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REU Conference "The Environmental Sustainability Dimension of Short-term Outlooks for Agricultural Markets", Budapest, 9 May 2017

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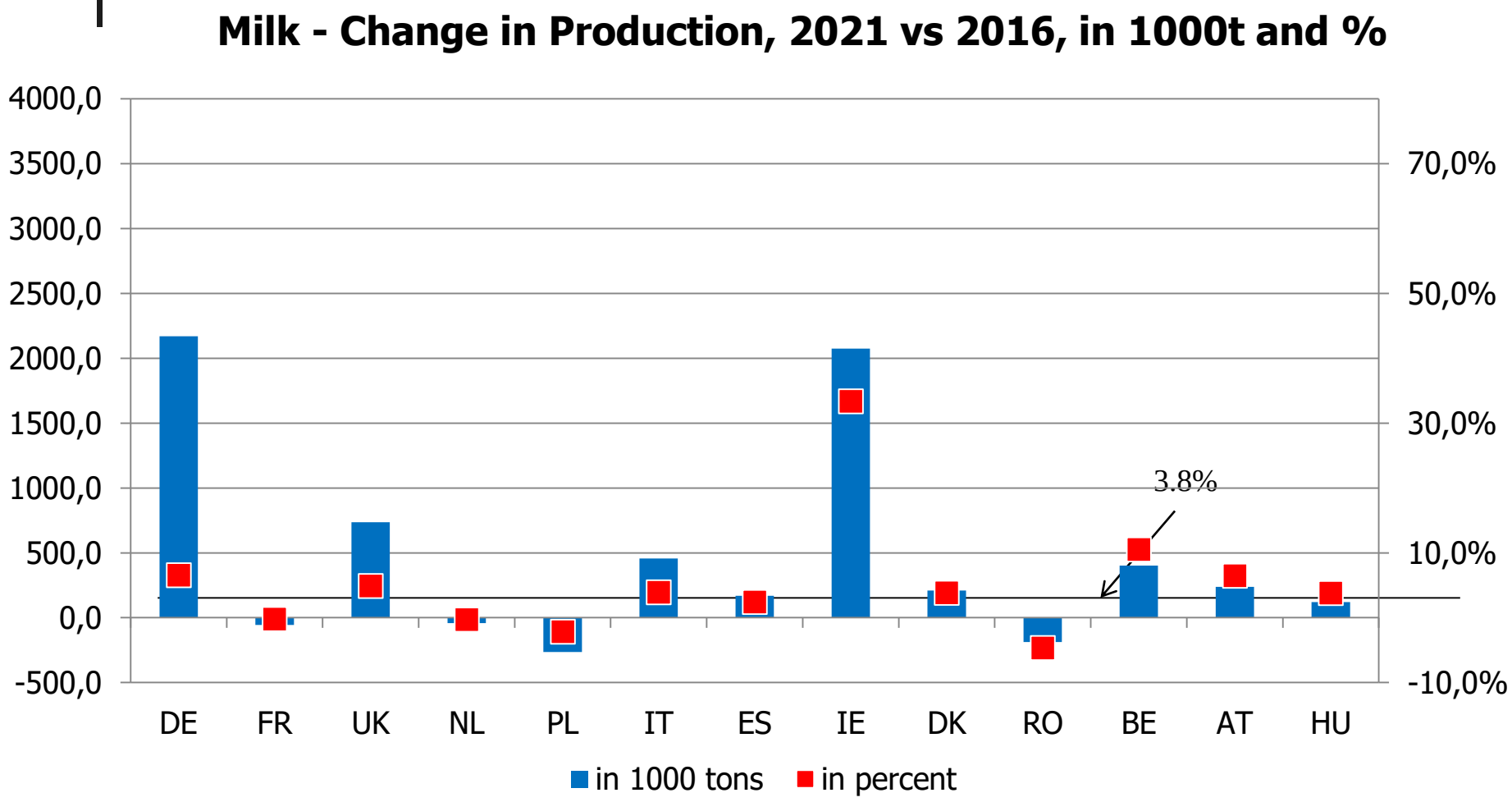
Highlights: Sustainability and Dairy

- **Production:**
  - Production increase in short run (2021) is limited due to recovery period after milk crisis
  - About 75 percent of EU's medium term (2026) milk supply increase (+14 Mil.ton) is realised by 5 MS (DE, IE, UK, FR, NL)
  - Resumption in the decline in dairy herd across EU is expected (IE an exception)
- **Consumption & trade:**
  - Dairy is servicing growing consumer demand, with both EU intra and extra trade of similar importance
- **Environment (COP21):**
  - It will be a major challenge for dairy to satisfy 30% reduction requirement (2030 - 2005)
  - COP21 creates undesired policy uncertainty and can have a serious negative impact on the future development of the EU dairy sector
  - The EU Commission and MSs need to come as quickly as possible with a specific climate change policy (including specific targets) for the EU dairy sector

Policy environment

- Environmental restrictions (e.g. NL P-reduction plan/quota)
- Short term: exceptional measures aimed at voluntary milk supply reduction / farm restructuring:
  - Doubling intervention ceilings for skimmed milk powder and butter in 2016
  - Payment (e.g. €0.14/kg of milk not produced) / slaughter premium / liquidity support
  - Expected milk supply reduction in 2016 estimated to be 1%
  - Has some expected prolonged effects (farm exits)
- Voluntary coupled support is applied to dairy as well as beef (see beef presentation)

MS increase in raw milk production 2016-2021 (short term)



- In short-run milk production seems to be relatively stable (exceptions DE, UK, IR)

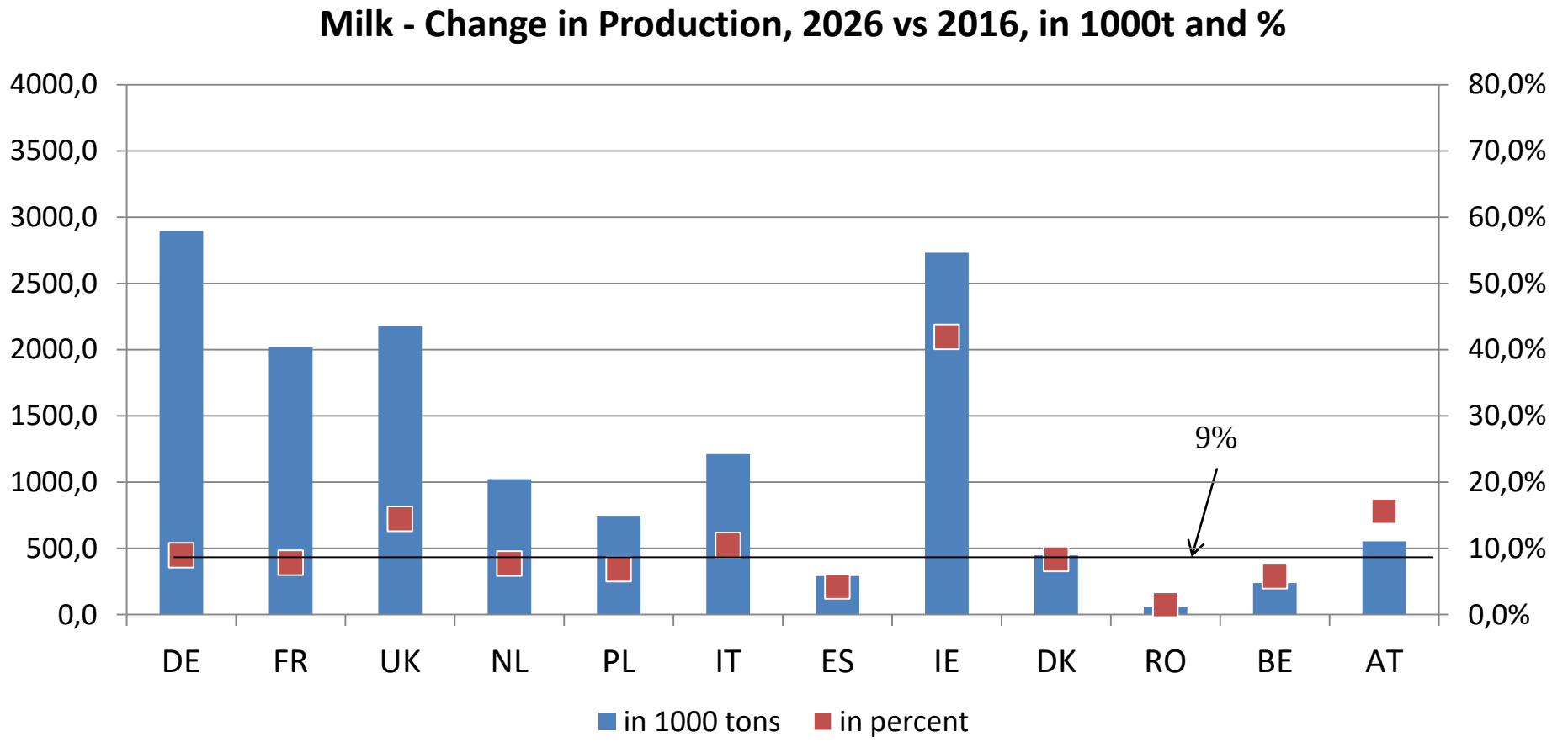
Drivers of Raw Milk production, 2016 - 2021

	DE	FR	UK	NL	PL	IT	ES	IE	DK	RO	BE	AT	HU
Estimated supply growth (%)	4.5	-0.2	4.9	-0.3	-2.2	3.9	2.4	33.3	3.8	-4.7	6.5	6.5	3.8
Yield growth													
Dairy herd													
Competitiveness													
Environment													

- Strong yield growth in some MS (ES, PL) and low growth in others (UK, IT)
- Resumption in herd decline across the EU is expected (IE, UK an exception)
- Which MS can expand in low price situation (2015/16 milk crisis) ?
    - IE, NL and DK show strong performance (growth in 2015 and 2016)
- NL production constrained from 2017 due to P-reduction plan and P-quota (2018)
- Environmental constraints potential future concern for IE, DE (reg), FR (reg), DK

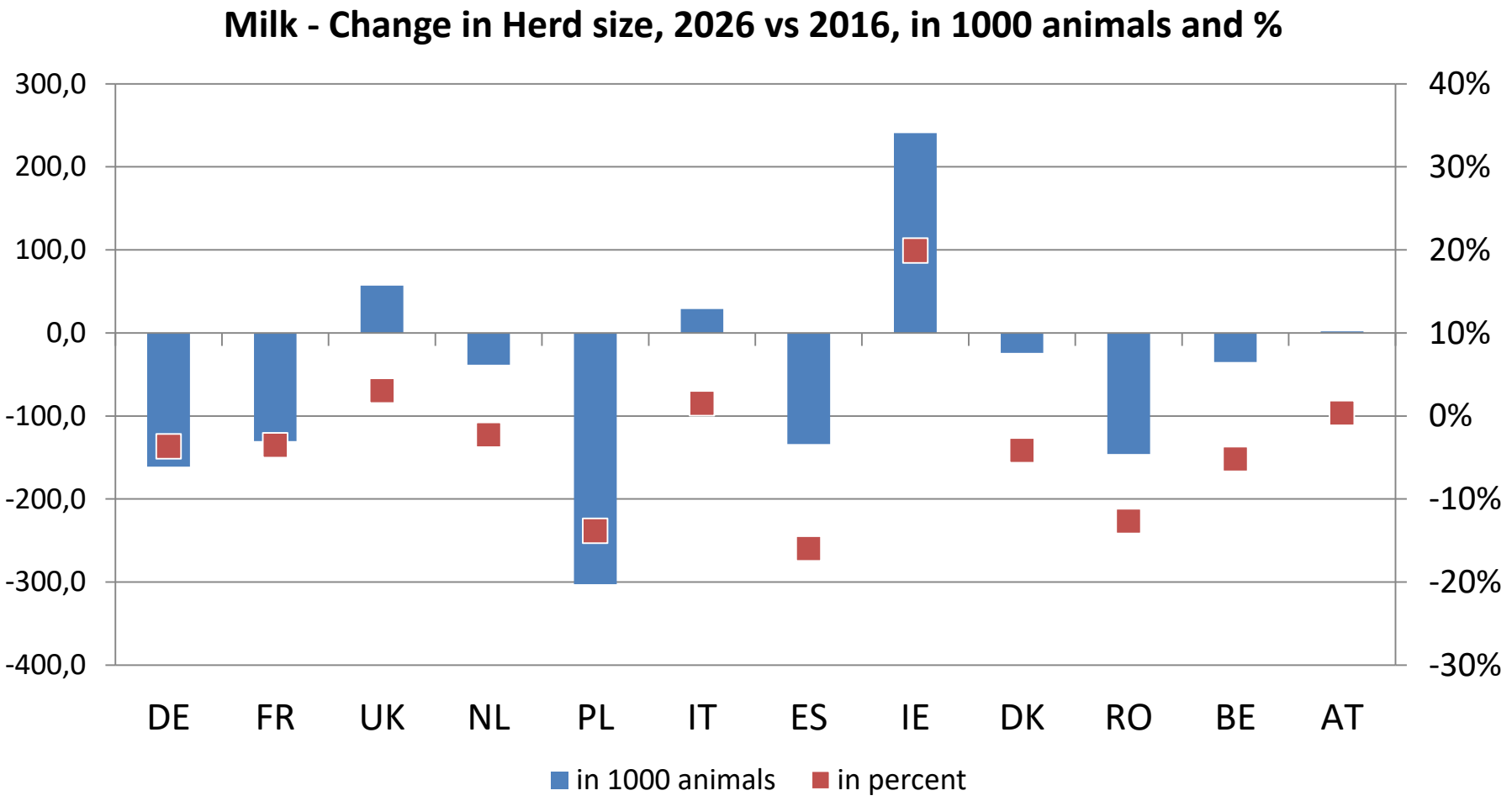
*) Legend: traffic light colour code used to indicate "strong" (green), "average" (orange), or "weak" (red) performance or "positive"(green), "average"(orange), or "negative" (red) impact on dairy production

MS increase in raw milk production 2016-2026 (medium term)



- About 75 percent of the EU's milk supply increase (+14 Mil.ton) is realized by 5 MS (DE, IE, UK, FR, NL); Special uncertainty exists w.r.t. UK

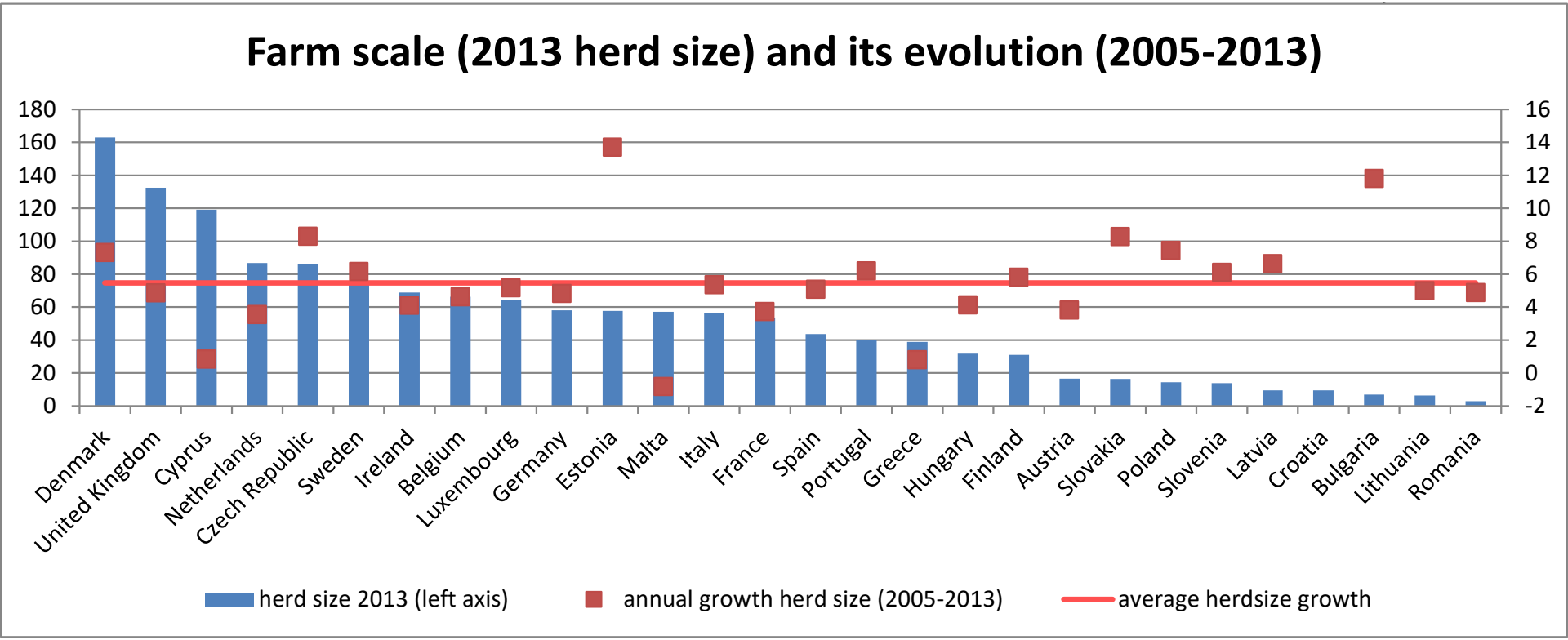
MS change in dairy cow herd



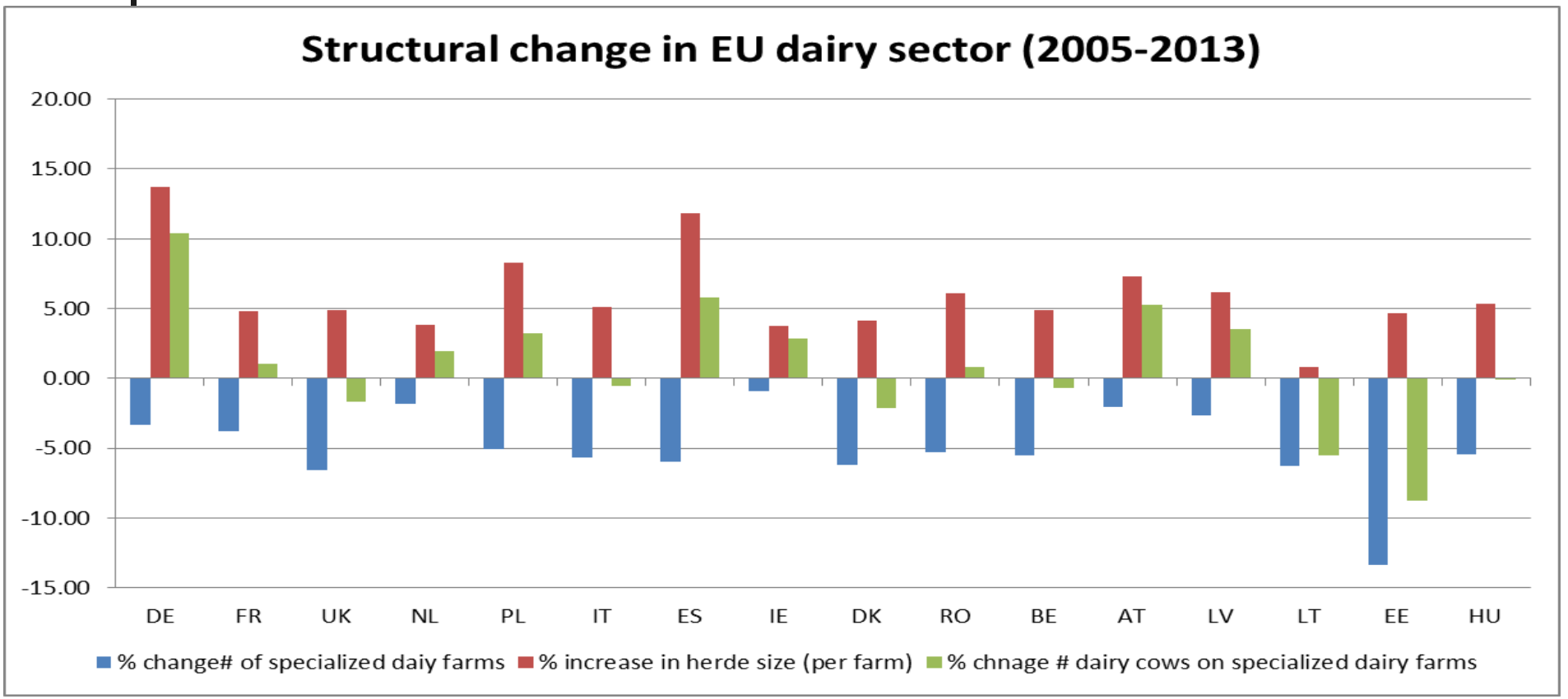
- Dairy herd declines in most EU-28 MS, except for Ireland (and possibly IT and UK)

Herd evolution and structural change (hist)

- Dairy farm structure: specialized vs non-specialized
- Herd equation: h = dc/f x #f

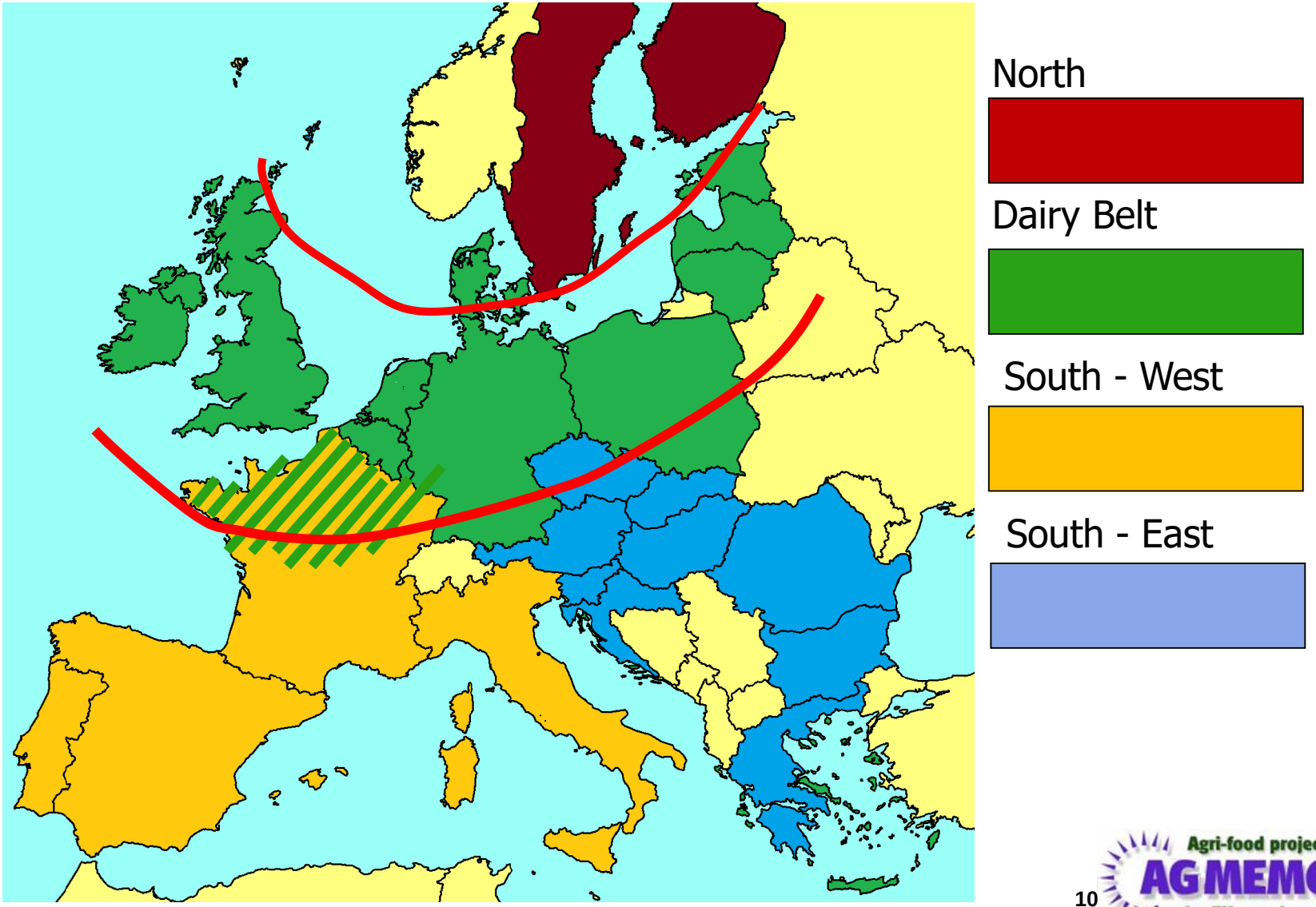


Structural change and dairy herd evolution



- Farm exit rates differ strongly by MS (in past 2005-2013 period; and have changed further) and are together with farm scale increase, a key driver behind the herd evolution and increasing specialization (updated information needed)

Regional Typology of Milk Producing MS



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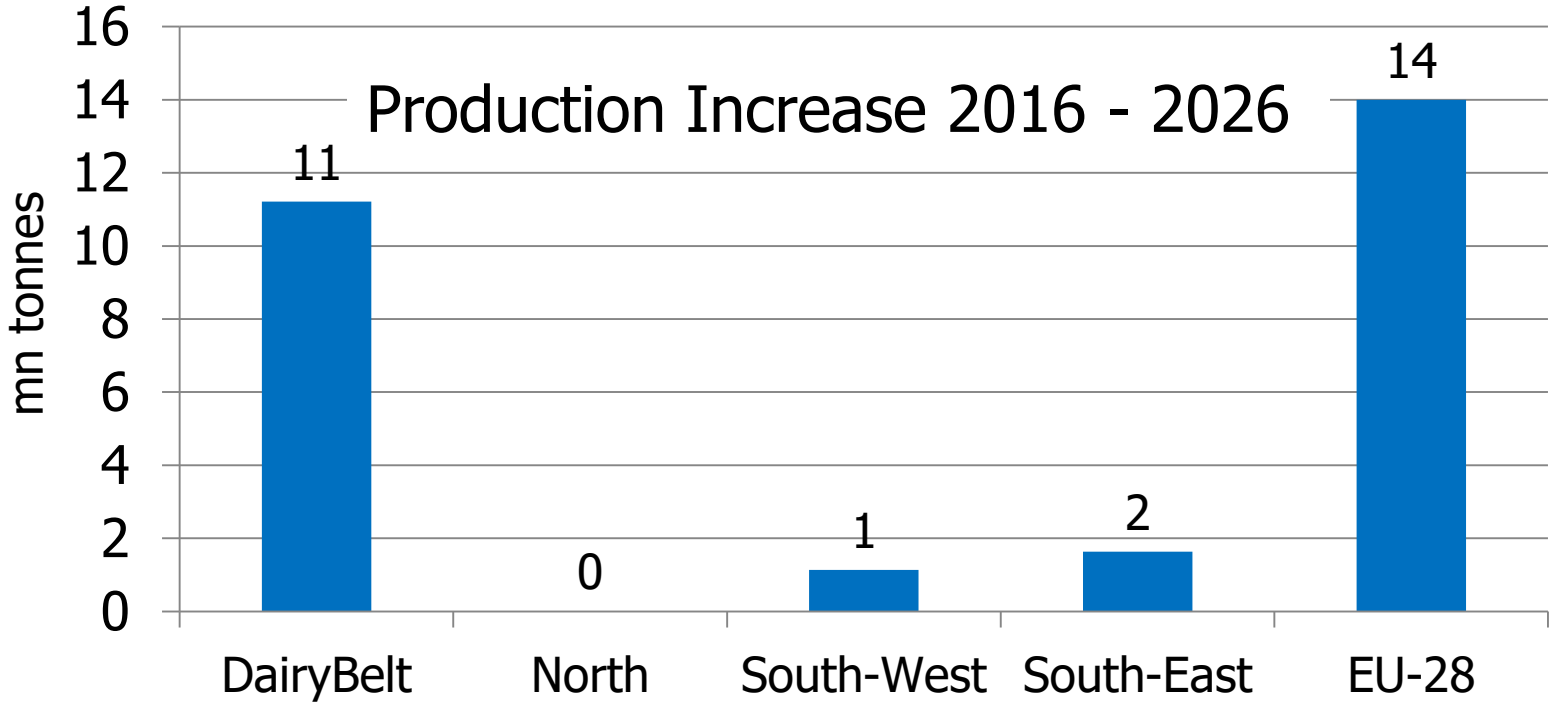
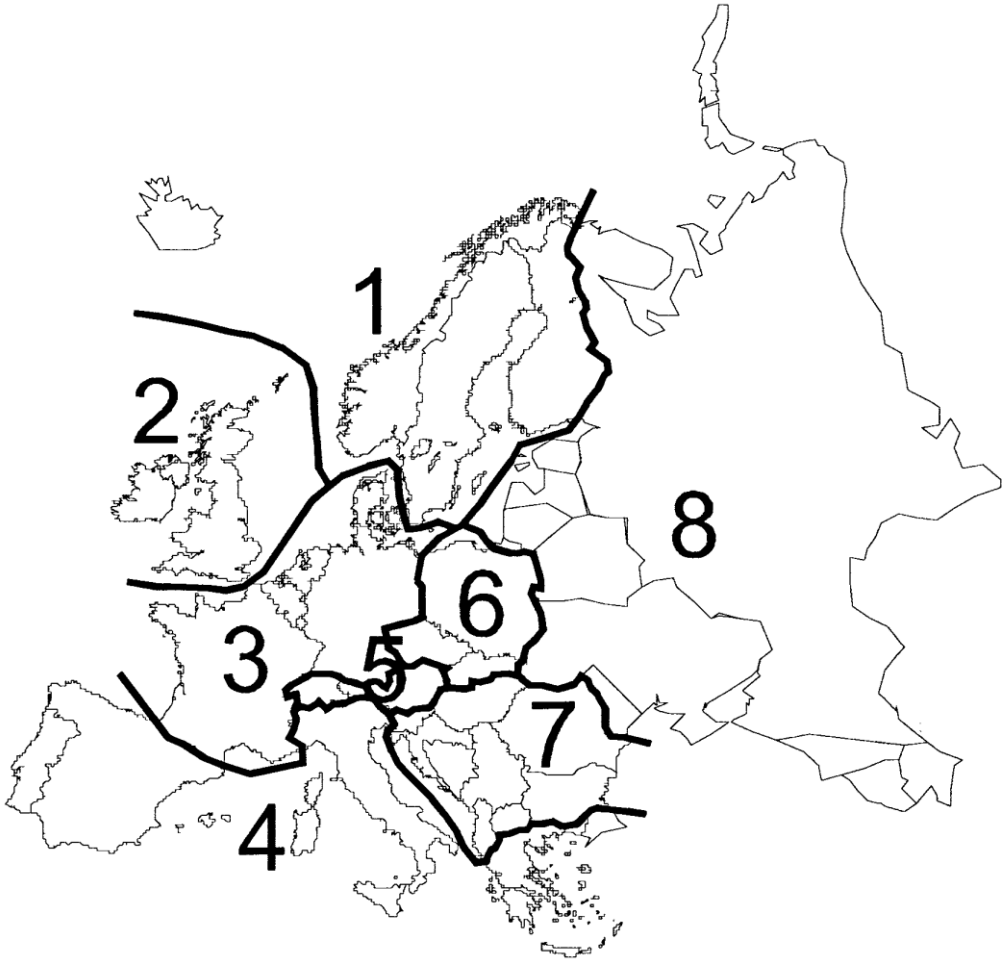


- Dairy Belt produces 80% of milk production increase in period to 2026
- Dairy Belt produces 68% of EU milk production by 2026 (67% in 2015)
- Milk Production in Dairy Belt growing only slightly faster than elsewhere in EU

Environmental issues

- The milk quota as an"automatic brake"
- Further impetus to farm scale increase and increase in production intensity (85% milk coming from high input/output farming systems
- Manure (nutrient imbalances; N-Directive, 1.7 LU/ha)
- GHG emissions
  - Enteric fermentation ruminants CH4
  - N_2O and CH_4 emissions from (stored) manure
  - Grassland & forage area: soil emissions N_2O

Agricultural zones



Major agricultural regions (% pasture)

1) Nordic (11)
2) British Isles (65)
3) Western (33)
4) Mediterranean (37)
5) Alpine (62)
6) North eastern (22)
7) South eastern (34)
8) Eastern (37)

Source:: Olesen and Bindi (2002) E.J. of Agronomy

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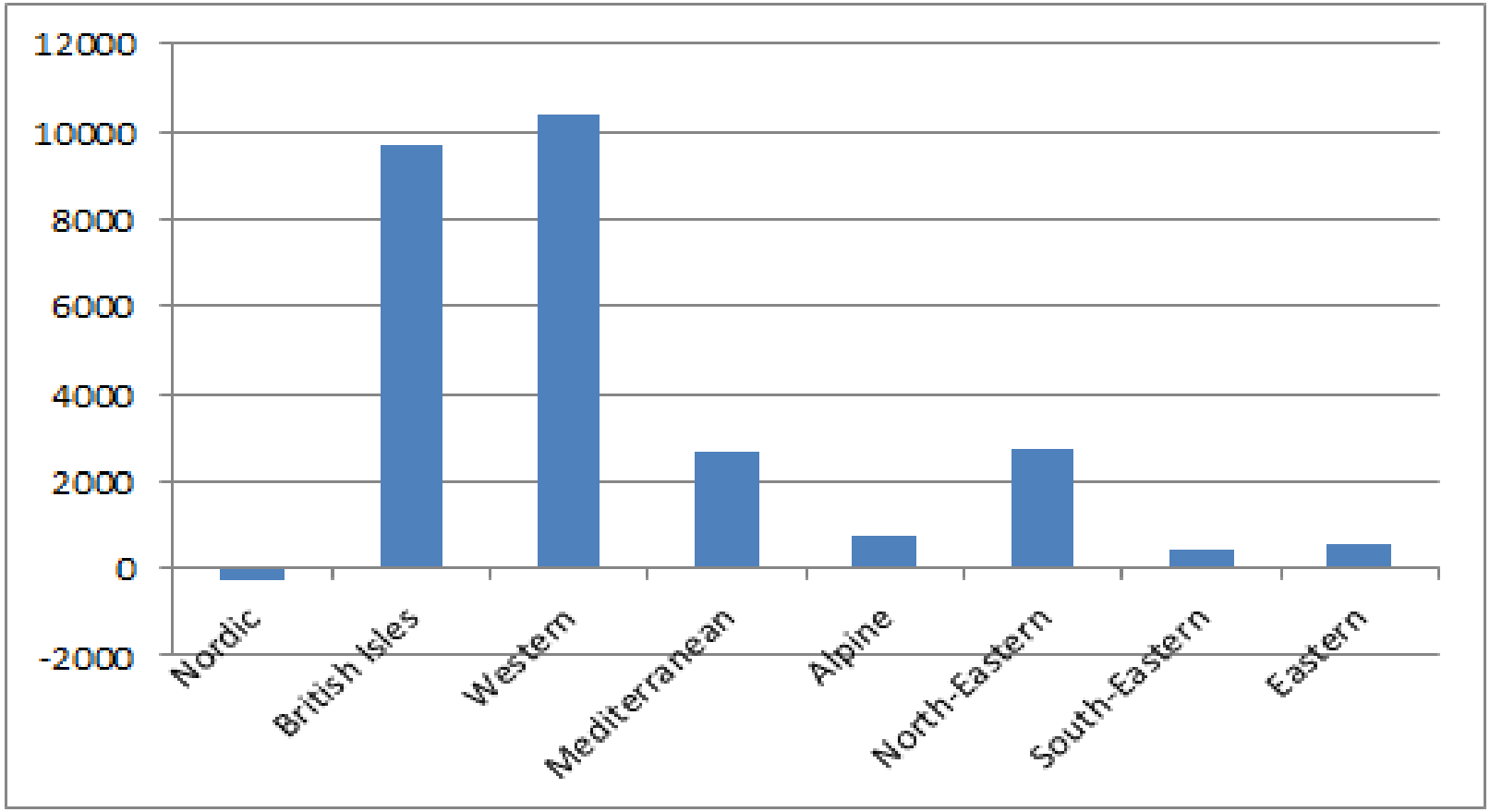
Dairy CO2 emission and Agric. Zones



- The contribution of dairy expansion to GHG emissions 26.8 thousand tons CO_2 (2015-2030) (+13%)
- Increase is concentrated in British Isles and Western agricultural regions (75%)

Environmental policy challenges

- COP21 (in 2030 -40%) impose challenges also to dairy (Agr=5th largest contributor)
- Trend to specialization, scale increase, intensification of production (high I/O)
- Policy measures
  - Feed management (private?, pol.incentives)
  - Land management: AECS (CAP)
  - Sustainable dairy production (chain)

... but clear targets still lacking

Dutch sustainable dairy chain (SDC/DZK) program

- 20% reduction of GHG emissions in 2020 (relative to 1990; Kyoto/EU; craddle to gate-approach) and climate-neutral growth (2011-reference)
- 16% production of renewable energy in 2020
- Increasing energy-efficiency 2% per year in 2005-2020

In Summary: What do the results suggest ?

- Production is most countries is either stable or increasing
  - The numbers of MS where production is falling is relatively few (medium run)
  - Structural change (farm scale increase, farm exits, specialization) is continuing
  - Steady milk yield increase (ranging from 1 to 2 percent per annum)
  - Intensive dairy production regions will face environmental constraints and societal concerns (especially in Dairy Belt)
- Greenhouse gas emissions of dairy will increase, irrespective of the projected decline in dairy herds
  - Increase is concentrated in British Isles and Western agricultural zones
  - CAP climate schemes should address especially the dairy sector with attention paid to animals (diets) as well as soils (optimizing manure storage & application)
- Quick clarity w.r.t. to specific EU dairy climate change policy is needed