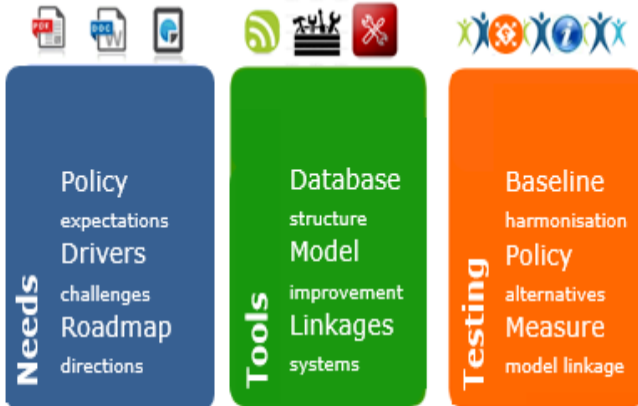


Support for Policy Relevant Modelling of Agriculture (SUPREMA)

SUPREMA

SUPREMA: A meta-platform for agricultural modelling supported by 3 main pillars based on a stakeholder foundation to bridge the gap between expectations of policy makers and capacity of models

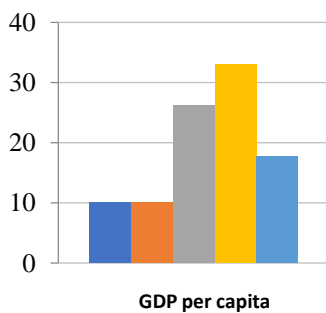


Stakeholder engagement on needs in coping with future challenges, assess toolbox enhancements and explore future directions of modelling

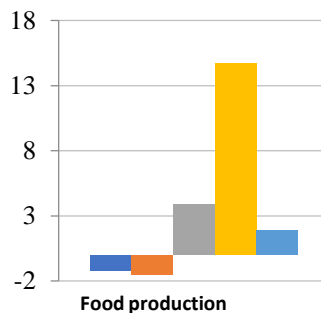
- SUPREMA has four coherent objectives:
- ❖ SUPREMA roadmap of future directions for modelling will be developed.
 - ❖ An enhanced and strengthened SUPREMA model family will be created.
 - ❖ Future directions of modelling in agriculture will be explored and tested.
 - ❖ A SUPREMA meta-platform will be established, to share and discuss the findings of the work with existing model platforms, research communities, and policy makers.

Examples of the current modelling capacity are presented in this factsheet

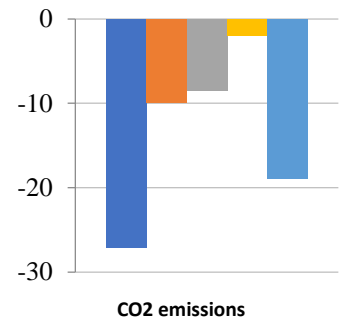
MAGNET: Reference scenario 2015–2030 and sustainable development goals (SDGs)



GDP growth expected in all regions of the world, peaking at +33% in Africa



Food production (value) stagnates in the EU and North America, while it grows by 14% in Africa



Substantial CO2 emission reductions expected in the EU28 (-26%) and the ROW region

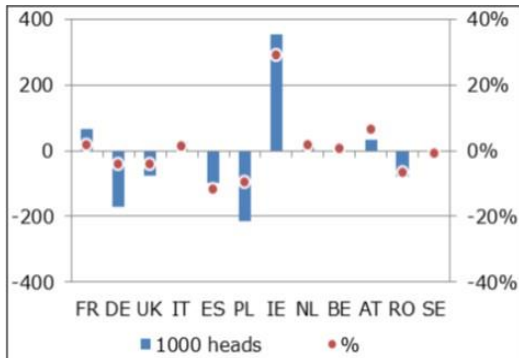
2015 - 2030 % change

- European Union
- North America
- South & Central America
- Africa
- Rest of World (ROW)



Source: MAGNET model, JRC 2017, forthcoming study

AGMEMOD: Change in dairy cow herds for selected Member States, 2030 compared to 2014-2016



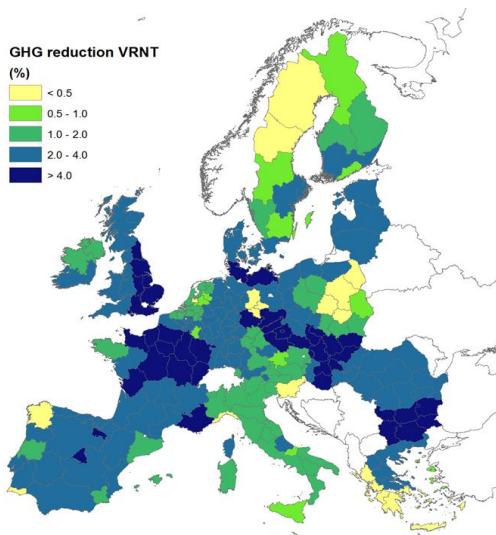
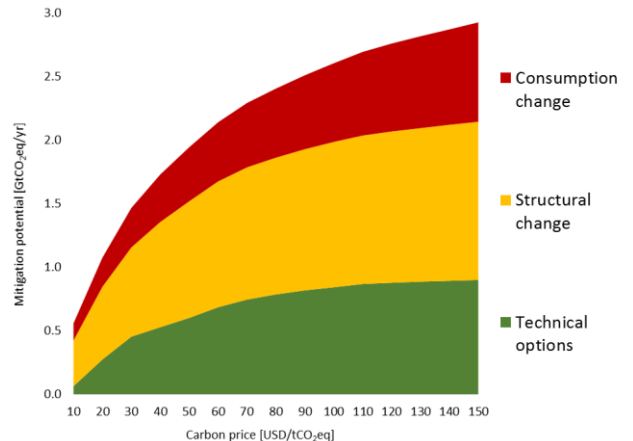
- ❖ Milk production driven by dairy cow herd, prices, costs, animal regulations, environmental obligation
- ❖ Dairy cow herd expansion in IE (29%), AT (6%), FR (2%) and NL (2%)
- ❖ Dairy cow herd stable or decline in other selected EU countries

Source: EU agricultural outlook for the EU agricultural markets and income 2017-2030 (December 2017)

GLOBIOM: Agricultural non-CO₂ emission mitigation potentials in 2050

- ❖ Consumption changes due to price signals
- ❖ Structural options such as livestock and crop system transition, reallocation of production through intra and international trade
- ❖ Technical options such as anaerobic digesters, nitrogen inhibitors, animal supplements.

Source: Frank et al. (2018) Structural change as a key component for agricultural non-CO₂ mitigation efforts. Nature Communications 9, 1060



Variable Rate Nitrogen Application

MITERRA: Greenhouse gas mitigation options

Reducing N₂O emissions by precision agriculture – Variable Rate Nitrogen Technology (VRNT)

Other mitigation options:

- ❖ Soil carbon measures (reduced tillage, cover crops, compost application)
- ❖ Reducing N₂O emissions (nitrification inhibitors)
- ❖ Manure management (anaerobic digestion, manure separation)
- ❖ Feed options

Source: Wageningen Environmental Research, JP Lesschen