'Support for Policy Relevant Modelling of Agriculture' – How to achieve it?

Sectoral policies are becoming increasingly interrelated which requires to be reflected in impact assessments in all agriculture related areas. To achieve this SUPREMA needs:

- to improve the capacity of current models;
- to connect them to deliver on an increasing variety of policy objectives; and
- to explore future directions for agricultural model-ling in Europe.

SUPREMA

- addresses challenges by a meta-platform that supports modelling groups linked already through various other platforms and networks;
- helps to close gaps between expectations of actors and actual outcomes of models by organizing i.e., Workshops for Stakeholders to define their "Needs", to capture their ideas for "Narratives" and to discuss outcome and future developments in "Strategic Prospects".

SUPREMA

- includes a set of 'core models' already used in key European impact assessments in agriculture, trade, climate and bioenergy policies;
- enhances harmonization and data exchange across distinct models;
- strengthens and establishes linkages among SU-PREMA models by modelling improvements;
- tests the enhanced system of core models for a Baseline, a medium-term assessment of European agricultural policies, and a long-term assessment of climate change goals
- condenses outcomes of those simulations with key requests of Stakeholders into a "Roadmap for Futu-re Directions" for agricultural modelling in Europe.

Sources of greenhouse gasses
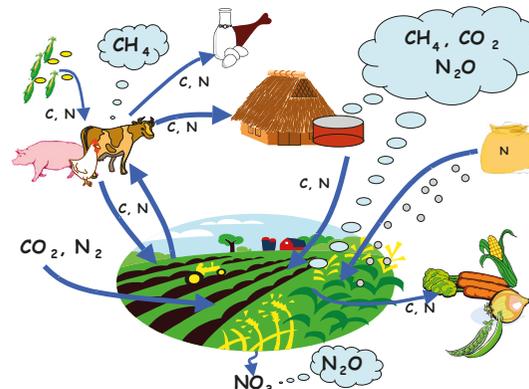

Source: Alterra, Wageningen UR

Partner:

Stichting Wageningen Research
EuroCARE
Sveriges Lantbruksuniversitet
European Commission
IIASA
Universidad Politécnica de Madrid
Thünen Institute

Contact:

Thuenen-Institute of Marketanalysis
Bundesallee 63
38116 Braunschweig
Tel.: +49 (0)531 596 5302
ma@thuenen.de

suprema

Support for Policy Relevant Modelling of Agriculture
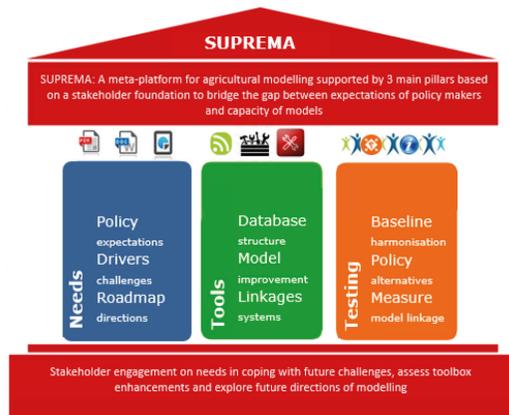

SUPREMA has four coherent objectives:

- to develop a SUPREMA "Roadmap of Future Directions" for modelling;
- to enhance and to strengthen the SUPREMA model family;
- to test future directions of modelling in agriculture;
- to establish a meta-platform for sharing and discussing findings of SUPREMA with existing model platforms, research communities, and policy makers.

www.suprema-project.eu

Suprema Toolbox

MAGNET
all sectors, ag. focus, static, global

AGLINK-COSIMO
agriculture, dynamic, global

GLOBIOM
agriculture and forestry, global

AGMEMOD
agriculture, dynamic, EU Member States

CAPRI
agriculture, static, EU-regional, global

MITERRA-EUROPE
Farming and emissions, EU

IFM-CAP
agriculture, static, EU farms, supply

- CGE model
- PE model, dynamic
- PE model, comp. static
- Technological model

- iterative link
- hard link
- soft link
- database link
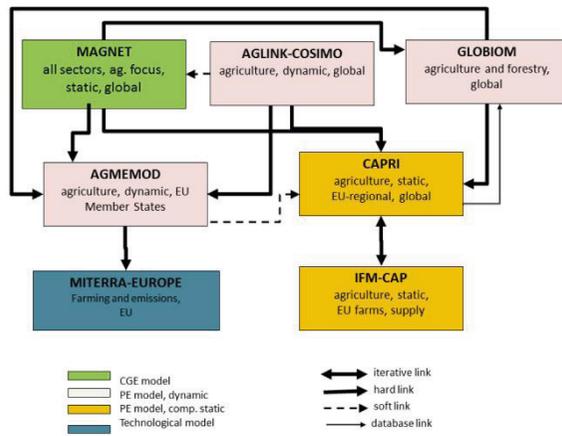
MAGNET: Reference scenario 2015-2030 and sustainable development goals (SDGs)

GDP per capita in SSP2 scenario 2011 - 2050 % change

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

8 DECENT WORK AND ECONOMIC GROWTH
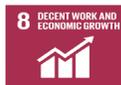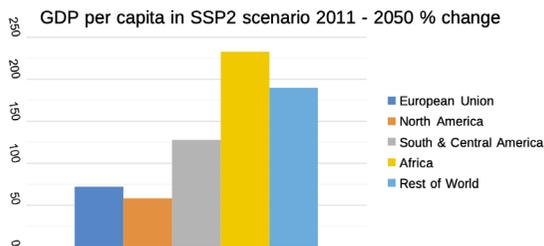
GDP per capita growth expected in all regions of the world in SSP2 scenario, peaking at 232% in Africa

GDP, volume (% change) (per capita)) (SSP2) (2011-2050)

|	
European Union	71,5
North America	57,8
South & Central America	127,3
Africa	232,3
Rest of World	189,2

GLOBIOM: Agricultural non-CO2 emission mitigation potentials in 2050

Uni-lateral EU policy to increase global GHG emissions?

- Scenarios: Differentiated carbon price in the EU and in RoW [USD/tCO$_2$e] applied on **non-CO2 emissions from agriculture**
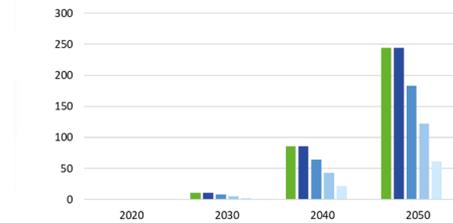

AGMEMOD: Impact of voluntary coupled support (VCS) on beef and veal production

Beef & veal production [1000 ton] 2020 EU28 regions

At EU level, VCS has led to a 1.4% increase in production volumes

Scenario: CAP **including** Ecological Focus Areas and Voluntary Coupled Support (VCS)

- VCS scenario
- Baseline

Source: agmemod projections
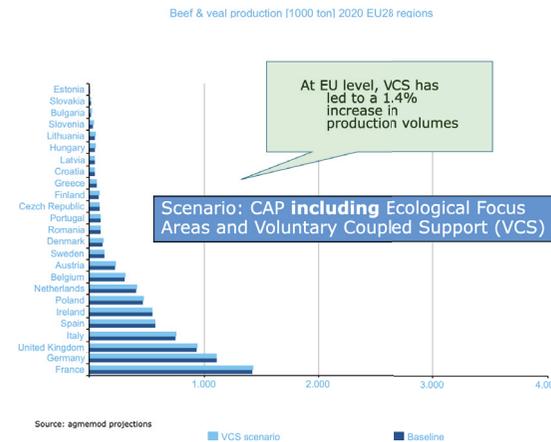
- Voluntary coupled support of beef and veal increases total EU beef and veal meat production by 1.4%;
- in about half of the Member States, their voluntary coupled support has a positive impact on production.

CAPRI: Mitigation potentials of different measures

- CRP Tech
- LSP Tech
- CRP Strc
- LSP Strc
- CRP Prod
- LSP Prod
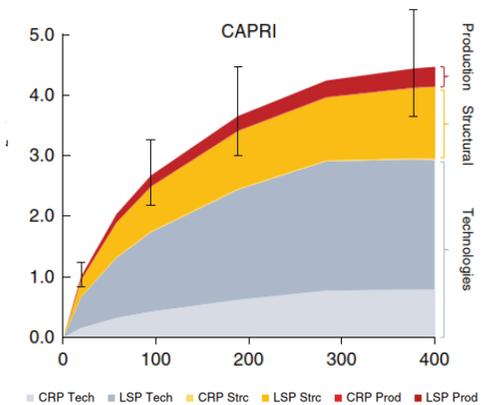
Source: AGCLIM50, Frank et al. 2018 NCC

MITERRA: Greenhouse gas mitigation options

GHG reduction VRNT (%)
- < 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 4.0
- > 4.0
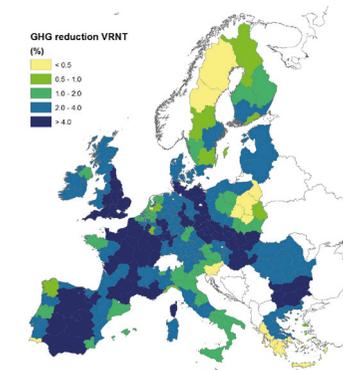
Variable Rate Nitrogen Application

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