

3rd SUPREMA Stakeholder Workshop 'Future Prospects'

The 3rd SUPREMA workshop 'Strategic Prospects' built on the outcome of the two previous workshops 'Needs' and 'Narratives'. It aimed to capture feedback of stakeholders based on outcomes of the selected narratives with respect to (i) a long-term baseline and climate related scenarios and (ii) a medium-term baseline and stylized CAP related scenarios. Additionally, first insights of model improvements and linkages were presented. Participants' feedback captured on flipcharts or in discussion rounds. During a last time slot, a running world café took place under the heading 'Ways forward - where are we now, what remains to be developed, and what is missing?' Here, participants presented their opinions, proposals and preferences on six posters. Discussions and feedbacks were used input to define the strategic prospects for future model-based support of policies related to European agriculture.

Concerning the modelling and selected draft results on long-term baseline and climate related scenarios, first conclusions can be summarized as following:

1. Modellers face high challenges when addressing economic, environmental and social issues, while linkages across farming and other sectors also need to be considered.
2. Consumers' behaviour needs to be considered in more detail, and especially more emphasis should be on consumers' behaviour towards a more climate-friendly food diet and on measures to achieve it (price, information, nudging)). This will require collaboration with other areas like sociology and psychology (behavioural economics).
3. For the climate scenarios, the modellers should consider quite different economic systems. In particular, social and environmental externalities should be internalized.
4. SDGs should be implemented in a way that the achievement of different targets can be captured. Due to their complexity, integration might only be achieved stepwise.
5. Model linkages can improve model outcomes, and multidisciplinary approaches as well as links to biophysical and household models should be pursued. Those linkages have to consider different terminologies within science.
6. Technology and innovation processes are, until now, mostly exogenous in models, while both are also connected with changes in climate and offer opportunities to address changes in climate (e.g. mitigation options).
7. In the past, agricultural policies were designed with a focus on economic and social dimensions and at the expense of ecology. Under the current policy debate, environmental dimension might become more dominant, possibly at the expense of social aspects. Therefore, in future, an integration of social together with environmental- and climate change-related aspects in model-based assessments will probably become important.

With regard to modelling and selected draft results on medium-term baseline and stylized CAP related scenarios, the following draft conclusions can be outlined:

1. With respect to dietary adjustments some concrete proposals were made:
 - a. Scenarios are currently focused on EU countries; however, they should also include changes in diets and in preferences in non-EU countries.
 - b. Assessments should consider the impacts of meat taxes.

- c. Consumption patterns may change by buying fewer products of better qualities.
 - d. Consumers can also pursue buying products with environmental consciences.
2. Future models improvements should consider
 - a. To internalise external effects and
 - b. To include innovations and uncertainties.
 3. Considering CAP-related issues:
 - a. Farmers' adoption of eco-schemes is difficult to be captured as schemes are voluntary and there is a lack of data. Also, the heterogeneity of farms does not enable an easy implementation so that a sensitivity analysis might alleviate the problem.
 - b. An assessment of impacts on biodiversity is seen as helpful.

Draft conclusions from the first insights of model improvement and linkages within the SUPREMA model family:

1. When linking MAGNET and GLOBIOM, it remains unclear how outcomes are translated between the models. One model provides quantities while the other expresses the items in values.
2. It is important with respect to forestry that afforestation and its respective impacts on yield are covered.
3. Replication of e.g. organic farms of IFM-CAP in CAPRI is quite significant.
4. Defining the type of linkage between the models is an issue. Soft or hard linkage may not be most relevant distinction. A stronger focus could be put on other ways to characterize linkages like e.g. the degree of linkage, or whether it is one way, two ways, or circular.
5. Harmonisation between models is perceived as an area for further research especially if models are linked. Due to their differences in nature and structure models are often based on different databases, so attempts of harmonise face limits. Nevertheless, models should be harmonised as far as possible.
6. Linking different types of models will also be a strong point in future because policies will get more complex.

The world café provided outcomes to the questions: 'What is the way ahead? Where are we, what do we need and what is missing?' in separated posters:

Poster 1: Farmers' decision and their reactions to a changing environment?

Stakeholders criticized that models were not representing individual behaviour and thus, agent based models may reflect better the heterogeneity of farmers and their response to policies. The representation of alternative technologies and structural changes require some improvements. Risk aversion of farmers towards volatile EU policies should be stronger reflected. In general, the coverage of heterogeneity among farmers requires more emphasis.

Poster 2: Demand side adequately reflected?

Participants asked for a better representation of the whole bio-economy, including bio-materials as well as bio-energy reflecting innovations not considered, yet. New outlets for bio-based prod-

ucts were perceived as missing. Consumer behaviour in models should represent both, changes in preferences for products and qualities. Although green CAP is covered as a scenario, this does not include citizens or consumers' response on green CAP and their potential backlash.

Poster 3: Supply chain - what is missing?

Participants considered that price transmissions are not very well reflected along the supply chain. The model design should capture the material flows of products and also product quality should be taken into account. Another topic is to reflect properly the coordination within the supply chain and the impacts of market power on the different levels. Some attention should also be given to contracting, all three affecting the market outcomes.

Poster 4: Are SDGs addressed efficiently?

It was stated that many SDGs indicators would need a higher resolution than currently available and that to cover SDGs in more detail more biophysical and household level models should be employed. SDGs that address inequality and which deal with poverty, food security and gender issues are underrepresented in the current models. For the better integration of SDGs in models, a matrix on SDGs, indicators, sectors and their respective importance would be required.

Poster 5: Testing on CAP and climate change policies - what are we missing?

The representation of biodiversity, ecosystem services and the topic of the CAP budget are regarded as only marginally pursued. Also the employment and job creation, technology adoption and volatility aspects are perceived as missing. Modelling the circular economy includes residues and waste and to represent the food system perspective are seen as not really covered.

Poster 6: What else - additional issues?

The participants considered that although CAP policies are included in the models, it does not consider its whole complexity. As an example, the modelling of uptake/participation decisions of farmers with respect to eco-schemes and other voluntary measures needs more research and better representation in models. Important considerations about consumers such as health impacts of diets are still missing together with how health is reflected in consumer preferences. Further, social issues as e.g. inequality are not captured. With respect to farmers, the models do not cover the land use markets, investment required and the finance channels used. Also permanent crops and minor (niche) products should be represented better.

References:

- Salamon, P., Banse, M., Angulo, L., Zirngibl, M., Blanco, M., Brouwer, F., Havlik, P., Jongeneel, R., Gonzalez Martinez, A., van Meijl, H., Witzke, H.-P. (2020) Deliverable 1.9: Stakeholders' Workshop Strategic Prospects. Project Support for Policy Relevant Modelling of Agriculture (SUPREMA). Online: <https://www.suprema-project.eu>.
- Salamon, P., Banse, M., Angulo, L., Zirngibl, M., Blanco, M., Brouwer, F., Havlik, P., Jongeneel, R., Gonzalez Martinez, A., van Meijl, H., Witzke, H.-P. (2020) Deliverable 1.8: Report on the prospects for research. Project Support for Policy Relevant Modelling of Agriculture (SUPREMA). Online: <https://www.suprema-project.eu>.