D4.1: INTERNAL PROGRESS REPORT AND MINUTES OF THE FIRST MEETING OF EAB AND EB

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0.1	Version 0.1	3/4/2018	Send minutes of meeting EAB for approval by EAB.
0.2	Version 0.2	8/4/2018	Send to partner representatives, for comments.
1.0	Version 1.0	23/4/2018	Send to WP leads for comments
2.0	Version 2.0	30/4/2018	Final version

Table of Contents

Executive summary

This section needs to be 1-1.5 page long. It will be followed by four subsections. These subsections are part of the Executive Summary

Changes with respect to the DoA

No changes

Dissemination and uptake

This report has been written to support the work in SUPREMA for the remaining part of 2018. It is primarily aimed at WP2 and WP3. The deliverable is public and will be released through the website of SUPREMA.

Short Summary of results

This deliverable reports on the progress in SUPREMA during the first three months of the project. It includes a summary of the discussions during the kick-off meeting of the project team (January 23 & 24, 2018), the meeting of the Executive Board (24 January 2018) and the first meeting of the External Advisory Board (March 1, 2018). The challenges to SUPREMA include:

- Policies have had to widen the scope of their main objectives to take account of new challenges: (i) climate change (Paris agreement, COP21); the Sustainable Development Goals (SDGs); and (iii) new issues of interest (e.g. the working of supply chains)
- Policies be informed by model outputs (Impact Assessment)
- Current models are not able to deal with the increasingly complex environment (interlinkages) and the broader scope.
- Research needed to reduce the gap between the expectations of policy makers and the capacity of existing models.

SUPREMA delivers a roadmap for future directions for agricultural modelling in Europe. Our solution is:

- SUPREMA establishes a meta-platform that supports modelling groups linked already through various other platforms\networks.
- The SUPREMA model family includes a set of established 'core models'. The models are policy relevant and offer the perspective for model enhancement and an enhanced linked system in a few focus areas to answer new policy questions and therefore better meeting the expectations by policy makers.
- Future directions of modelling will be explored and tested through coordinated scenario applications (baseline, policies).

Section 2 includes the summary of the kick-off meeting held in the Hague on 23 & 24 January 2018, including the meeting of the partner representatives. The presentations from the kick-off meeting are included in Annex B of the report. Section 3 includes the minutes of the first meeting of the Executive Board of SUPREMA, held in Brussels on 1 March 2018. This meeting of the advisory board was held immediately following the first workshop 'Needs'.

Evidence of accomplishment

The deliverable itself can act as the evidence of accomplishment.

Glossary / Acronyms

CAP	COMMON AGRICULTURAL POLICY
DG	DIRECTORATE-GENERAL
DG AGRI	DIRECTORATE-GENERAL FOR AGRICULTURE AND RURAL DEVELOPMENT
DG CLIMA	DIRECTORATE-GENERAL FOR CLIMATE ACTION
DG ENV	DIRECTORATE-GENERAL FOR ENVIRONMENT
EAB	EXTERNAL ADVISORY BOARD
EB	EXECUTIVE BOARD
EC	EUROPEAN COMMISSION
GDP	GROSS DOMESTIC PRODUCT
IFPRI	INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
IIASA	INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS
JRC	JOINT RESEARCH CENTRE
LULUCF	LAND USE, LAND-USE CHANGE AND FORESTRY
OECD	ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
PCT	PROJECT COORDINATION TEAM
REA	RESEARCH EXECUTIVE AGENCY
SDG	SUSTAINABLE DEVELOPMENT GOAL
SUPREMA	SUPPORT FOR POLICY RELEVANT MODELLING OF AGRICULTURE
WR	WAGENINGEN RESEARCH

1 Introduction

This deliverable reports on the progress in SUPREMA during the first three months of the project. It includes a summary of the discussions during the kick-off meeting of the project team (January 23 & 24, 2018), the meeting of the Executive Board (24 January 2018) and the first meeting of the External Advisory Board (March 1, 2018).

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2 Kick-off meeting SUPREMA project

2.1 Kick-off meeting

The project team had their kick-off meeting on January 23 and 24, 2018. Participants of the meeting: Martin Banse (Thünen Institut), Jesus Barreiro (JRC), Maria Blanco (UPM), Floor Brouwer (WR), Arnaldo Calvano (JRC, 23 January), Hyung-sik Choi (SLU), Berien Elbersen (WR, January 23), Stefan Frank (IIASA), Alexander Gocht (Thünen Institut), Petr Havlik (IIASA), Torbjorn Jansson (SLU), Robert M'Barek (JRC), Petra Salamon (Thünen Institut), Marianne Selten (WR, start), Myrna van Leeuwen (WR), Hans van Meijl (WR), Peter Witzke (Eurocare). The European Commission was represented by Ben Doorslaer (DG AGRI) and Marc Duponcel (DG AGRI).

2.1.1 Project overview

Hans van Meijl does introduce SUPREMA. A key objective of the meeting is to reconfirm the relevance of SUPREMA in current research and the political environment. The challenge to SUPREMA include:

- Policies have had to widen the scope of their main objectives to take account of new challenges: (i) climate change (Paris agreement, COP21); the Sustainable Development Goals (SDGs); and (iii) new issues of interest (e.g. the working of supply chains)
- Policies be informed by model outputs (Impact Assessment)
- Current models are not able to deal with the increasingly complex environment (interlinkages) and the broader scope.
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SUPREMA delivers a roadmap for future directions for agricultural modelling in Europe. Our solution is:

- SUPREMA establishes a meta-platform that supports modelling groups linked already through various other platforms\networks.
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- Future directions of modelling will be explored and tested through coordinated scenario applications (baseline, policies).

The objectives of the meeting are (i) to restate objectives; (ii) establish good understanding of the deliverables; (iii) identify interactions (in data and research) in each pillar and establish interdependencies of WPs across the pillars; and (iv) establish management\review\monitor procedures.

We also examined the contribution towards DG AGRI. SUPREMA is aimed to create a place to discuss modelling. Impact assessments are supported by modelling, as well as evaluation studies to review policies. Policies need to be tested against their objectives, including environmental and social objectives. Social objectives difficult and gain importance. The recent Communication is important for SUPREMA, as well as a link towards the SDGs. The biophysical part is important as well, represented by MITERRA, CAPRI and GLOBIOM. Policy is moving towards farm level and biophysical conditions.

2.1.2 WP1 – Challenges, needs and communication, topics for model improvements, application and dissemination

Task 1.1 – The challenges for modelling and scope for future areas of impact assessment (M1-M5)

An initial list of topics (societal challenges under consideration), input for scoping paper, is discussed:

- climate change and low carbon economy
- land and water constraints
- sustainable development goals (SDGs)
- international integration of the agri-food sectors
- integration of agriculture with up- and downstream sectors
- societal concerns and ethical issues
- adoption of new technologies, including remote sensing, robotics
- new mitigation technologies related to climate change
- open topic

The general scope of the workshop:

- Estimated 25-30 external participants
- General intro with overview what we want to achieve
- General discussion on needs from participants perspective
- Use flip chart to formulate needs
- Add or steer to needs/challenges we see as important
- 3 different groups to discuss needs, improvements and challenges which will have been identified (30 min) on 3 flip charts. After 30 min change of participants
- General discussion with all to come to a consensus

Task 1.2 – Narratives for impact assessment approaches (M5-M14)

This task is due to start in Month 5.

Task 1.3 – Documentation and training (M9-M20)

This task is due to start in Month 9. The following comments are made:

- Model improvements are documented.
- Students receive credits for participation in training sessions. This will be considered when designing the training sessions. Workshop could address comparing model outcomes from a single scenario. This is primarily for PhD students. GLOBIOM and MAGNET might organise for this.
- The timeline of the workshops remains to be agreed. Probably after M20 (summer 2019). Workshop to be held when the scenarios are available. Sessions on 'demistifying economic models' were held in DG AGRI, and several presentations available with JRC.
- The three partners (UPM, WR, IIASA) develop a plan for their training before the summer.
- It is proposed to think communication with less detailed documentation.

Task 1.4 – Communication and dissemination activities (M3-M30)

- Website is operational. Requests to change are invited to Martin Banse and Petra Salamon.
- Martin Banse will explore whether we could launch an EAAE Seminar on Agricultural Policy Modelling (e.g. in 2019), and to check the options for a Special Issue (including an open call for papers) for the European Review of Agricultural Economics or the Journal of Economic Modelling.

Task 1.5 – Strategic prospects (M20-M26)

This task is due to start in Month 20.

2.1.3WP2 – The tools – Model enhancement and integration

Task 2.1 – Infrastructure for database improvements and model interaction (M3-M12)
The following considerations are made by Myrna van Leeuwen (WR, leading the task):

- Database maintenance occupies often major part of modelling
- Database comparison and data sharing requires mapping tables between items. This is already Partly available, at least in part (Agricistrade, Agmip, AgCLim50). However, it remains to be updated for better communication. Draft requirements will be shared by Myrna. AGMEMOD, MAGNET, GLOBIOM all part of Agricistrade; to be included : CAPRI, IFM-CAP, MITERRA, AGLINK
- Deliverable D2.1 (database comparisons) rather early in M12.

Task 2.2 – Strengthening existing and establishing new linkages among SUPREMA models (M3-M27)
Lead: Alexander Gocht (THUENEN). Different methods for modelling linkages will be considered:

- Model chains without calibration of the interlinked models (soft linkage)
- Models with one-way calibration ("semi" hard linkage)
- One model is calibrated to results generated by another model
- bottom-up: behavioural function of the market models is calibrated to economically estimated micro-models (MAGNET-CAPRI)
- top-down approaches: often necessary for linkage and harmonisation of biophysical models with economic models
- Sequential calibration (hard linkage)
- Each model uses and produces its own results, there is iterative feedback among the models, e.g. CAPRI market model and the supply part (farm types, Nuts2), GTAP model with the CAPRI model, FARMIS with ESIM

Task 2.3 – Targeted modelling improvements (M6 – M16)
Improving models in view of gaps and needs of WP3, possibly:

- AGMEMOD: market network (tools for validation), price transmission
- GLOBIOM – MAGNET: land use, extreme events, SDGs
- CAPRI: Expanding land use modelling and carbon effects modelling to non-European regions
- MITERRA: Adjusting to LULUCF (land use, land-use change and forestry) accounting rules
- Modified focus based on WP1?

Possible lead for Petra Salamon, given AGMEMOD examples.

Task 2.4 – Model testing and versioning (M3 – M27)
Lead: Torbjorn Jansson (SLU). There is an infrastructure already in place. Next stable release cycle to begin under SUPREMA. Versioning could be an iterative process. Torbjorn will present his perspective in the next meeting (November 2018), for consideration by MAGNET, AGMEMOD and GLOBIOM. During the discussion, there was a comment on validation and sensitivity analysis to be important in the work. It remains to be clarified whether there is a fixed version that a reviewer could use to test the results.
There is a Particular need for CAPRI for versioning, due to use and development in network across agencies. Some infrastructure for testing is embedded in CAPRI GUI (Graphical user interface). Next stable release cycle to begin under SUPREMA. Focus topics and supported features to be decided, but only after completion of current release cycle. Release cycle involves: Selection of trial version – testing – improving or reporting – maintenance release – minor improvements.

2.1.4WP3 – Testing the SUPREMA model family

The overall approach of WP3 is (i) to explore future directions applying scenarios in a coordinated fashion, (ii) improve understanding at different scales, and (iii) showcase potential and limitations with respect to needs. WP lead: Jesus Barreiro-Hurle (JRC-D4 Economics of Agriculture).

There might be more models in the activities of WP3 (Task 3.2 and Task 3.3). Jesus will follow-up to strengthen collaboration between the modelling teams, to link, compare, improve and make accessible. Jesus Barreiro will follow-up on this. This will also reflect on how far the different models are able to cover the different variables identified.

Task 3.1 – Inter-model baseline comparison and harmonization (JRC) (M3-M28). Task leader: Jesus Barreiro-Hurle

Baseline assumptions for external drivers are chosen during the first year. All models will:

(i) Present a list of external drivers and current values, while JRC will cross-check and choose common ones. The policy baseline might include European policies (e.g. CAP) 2014-2020 or some other assumptions. The baseline will be for a common time-frame (probably 2030). The baseline scenario may be calibrated to AgMIP, with projection until 2030. GLOBIOM and MAGNET will have a similar baseline to 2030, which could be extended to 2050.

(ii) Select parameters for comparison (e.g. area, production, yield, trade, etc.).

(iii) A common reporting and data hosting will be offered through the JRC Data Team (Arnaldo Caivano, JRC). DataM is the JRC Data portal of agro-economic Modelling. Focus is on integration, analysis and "active" dissemination of modelling results. Its technology is Oracle-based / Python / Qlik-Sense; hosted through a JRC small team of IT/data science professionals. Work is starting to implement a system for the data quality check of model outcomes.

Task 3.2 – Using SUPREMA for a medium-term assessment of European agricultural policy alternatives (WR). Task leader: Roel Jongeneel.

It is proposed to dig more in the paper of Karl Falkenberg setting out some reflections on sustainability in European agriculture. One of the five priorities for research is integrated ecological approaches. There were reservations about the titles of the two scenarios. It is proposed to start with a detailed narrative; this could be fairly complex, including innovations. They might remain only tested partially.

Task 3.3 – Using SUPREMA for the long-term assessment of climate change goals (IIASA). Task leader: Petr Havlik.

Petr Havlik will develop a concept note in advance of the next project meeting, to guide a long-term assessment of climate change goals. Focus will probably be on mitigation policies.

2.1.5WP4 – Project coordination and management

Task 4.1 – Contract management (M1-M30)

Contract management relates to the execution of the Consortium Agreement, the financial management and reporting, as well as to prepare and deliver periodic reports.

- The Consortium Agreement is signed by all partners and this version is distributed by e-mail on 24 November 2017.
- Regarding the financial management, a letter was received on 17.1.2018 from the Research Executive Agency (REA) regarding the pre-financing payment, which will be transferred without delay. The consortium is informed by letter of January 17 a pre-financing payment of €799859 will be made. We will receive €707774.06 (because of the contribution to the Guarantee Fund and because the share of the Joint Research Centre (JRC) will be paid directly. This payment will be distributed by WR without delay. The H2020 participant portal

notified the consortium on January 25 the pre-financing payment for the above project has been processed.
- Federica Gebbia is the project officer with REA.
- The first Project Review is tentatively planned for Month 15 (March 2019), with the first Reporting Period report due for the end of February 2019. The second Project Review is tentatively planned for Month 33 (September 2020), with the second Reporting Period due until end of August 2020. WP leads are available to be present, likely for one day in Brussels.

Task 4.2 – Coordination (M1 – M30)
We plan for two meetings of the Executive Board (EB) (meeting with the partner representatives), as well as regular meetings of the Project Coordination Team (PCT). The meetings are organised by WR, and they also report on these meetings.

Task 4.3 – Setting-up and maintenance of a project website (M1-M30)
A branded website (www.suprema-project.eu) is established as a platform to support external communication, and actions targeted on existing platforms. The website is launched by Thüenen Institut. Website is active, but is still a draft. Text may have to be squeezed down. There is a text on the partnerships; taken from the GA. It will be updated if partners wish to do. Additional ideas on content: for example on models, announcements of upcoming workshops. Additional discussion of outcomes. Feedback box on 'needs'. Requests to change are invited to Martin Banse and Petra Salamon.

Task 4.4 – Data management (M1-M30)
SUPREMA will participate in the Pilot on Open Research Data in Horizon 2020. Data will be released in open formats like JSON or XML, with proper documentation to support their use in other research. After the project completion, and if there is no objection by any of the project partners and use anonymization is preserved, the data may be published in an Open Data portal (for example in http://open-data.europa.eu) for future research. The data bases that will be part of the Data Management Plan will be discussed in the deliverable, due for Month 6 (June 2018).

Task 4.5 – Future governance structures of the models (M26-M30)
This task is due to start in M26.

2.2 Outcomes of SUPREMA

SUPREMA delivers:
- A medium-term assessment (until 2030), with CAP as a main policy area, and CAPRI-IFM CAP, as well as AGMEMOD-MITERRA being the tools we use at least
- A long-term assessment (until 2050), with climate policies as the main policy domain; and GLOBIOM and MAGNET being the tools we use at least

But there are many topics we could consider in these assessments: SDG, land use, technology, food chain, circular economy. Identifying relevant topics is part of the first workshop ('Needs'). During the workshop, we might wish to discuss also the time-line for the topics (medium-term and/or long-term).

Climate change policies (Task 3.3) has many dimensions, which we try to elaborate ('potential case studies'): technical options, soil organic carbon, mitigation potentials in Europe. During the workshop, we wish to discuss climate policies to support the long-term assessment:
a. How could it look like? To be briefly elaborated by the consortium (before the workshop)
b. Which topics to cover
    i. climate change and low carbon economy

ii. land and water constraints
iii. sustainable development goals (SDGs)
iv. international integration of the agri-food sectors
v. integration of agriculture with up- and downstream sectors
vi. societal concerns and ethical issues
vii. adoption of new technologies, including remote sensing, robotics
viii. new mitigation technologies related to climate change

Following the workshop in March, we design scenarios and internally in the consortium to what extent that can be implemented in the current modelling capacity of SUPREMA. Three levels:

1. Operational and ready to compare the outcomes with other models. This is important to support priorities for future model development.
2. Testing, with first results from the work in WP2 (model linking and model improvements)
3. Future development could relate to productivity, biodiversity and adoption of technology.

SUPREMA to give inspiration to the gaps in our existing modelling capacity. We already know the gaps from CAP reform policies.

2.3 Meeting Executive Board (EB)

The EB is the meeting of the partner representatives. All partners are represented. Available are Hans van Meijl (WR), Peter Witzke (Eurocare), Martin Banse (THUENEN), Torbjörn Jansson (SLU), Jesus Barreiro (JRC), Petr Havlik (IIASA) and Maria Blanco (UPM). The following topics are agreed:

- Consortium Agreement is signed and shared with the consortium
- Process to review and submit deliverables (is agreed). Templates for deliverables will be provided shortly (27 February 2018); important to have a clear Executive Summary; an introduction section which clearly outlines the purpose and scope of the deliverable, and a conclusions section. Author of deliverable will develop a plan, to be confirmed by the WP lead. Draft of the deliverable is send to the WP lead (also to check against the work plan) and approved. Quality check of the deliverable by the PCT (i.e. WP leads). Author to send the final version (word and pdf) to WR in time (M4 means submission by April 30 at the latest).
- Process to review and submit milestones is agreed. Milestones typically are short reports that are kept internal in the consortium, and verified by the Project Coordination Team. This verification will be completed before the end of the due date. Draft reports are confirmed by the WP leads. WR will upload a short text in the H2020 portal to justify the process. The project officer may request to receive the internal reports as part of the review process (and share with the external reviewers).
- Open access data and open access papers will be developed during the first year of the project.
- Implementation of Ethics Agreement (to be signed by consortium partners). Appendix A includes the text of the 'Information Consent Form for Stakeholder engagement, communication and outreach'. It will be signed by the consortium partners to justify our Ethics in sharing information. Action: WR to follow-up.

3 Meeting EAB

3.1 First meeting of EAB

The External advisory board (EAB) includes 6 persons from research, business, civil society and policy. We also propose to add some representatives of the different DGs in the EC, linked to the topic of SUPREMA. In addition, we refer to DG AGRI, DG CLIMA, DG ENV. The role of the EAB will be to provide feedback on the project interim and draft final results, and also to share relevant information about relevant topics for modelling European agriculture. The EAB will convene three times in a regular meeting: Month 4 (to present existing modelling capacity and discuss modelling needs), Month 24 (to present achievements in the project and initial discussion on future modelling needs) and Month 28 (to discuss a draft of the Roadmap with future directions for agricultural modelling in the EU). In addition, the members of the EAB will be consulted for ad-hoc advice and reviews. The EAB will be assisted by the coordinator of SUPREMA.

The External Advisory Board (EAB) met in Brussels on 1 March 2018, immediately following the workshop, 16 – 18 pm at the Representative of Lower Saxony to the European Union, Brussels. The objectives of the first meeting are to reflect on the findings from the workshop and to offer advice for follow-up actions in SUPREMA. Related to this, members of the EAB are invited to comment on relevant topics for modelling European agriculture.

The participants of the first meeting include: Francesca Bignami (FoodDrink Europe), Alan Matthews (Trinity College), Mark Rosegrant (IFRPI), Dominique Van der Mensbrugghe (Purdue University), Ben Van Doorslaer (European Commission, DG AGRI), Martin von Lampe (OECD), Peter Wehrheim (European Commission, DG AGRI). Participants from the SUPREMA consortium include Martin Banse (Thünen Institute), Jesus Barreiro-Hurle (JRC), Floor Brouwer (Wageningen Research), Petra Salamon (Thünen Institute), Hans van Meijl (Wageningen Research), Peter Witzke (EuroCARE).

3.2 Feedback on specific topics

Different topics are covered during the meeting with the EAB.

- The Sustainable Development Goals (SDGs)
- Land in agricultural modelling
- Regulatory policies in agricultural modelling
- Distributional issues
- Consideration of risks in agricultural modelling
- Models and data

3.2.1 The Sustainable Development Goals (SDGs)

The business sector is also active towards the SDGs (e.g. http://sdg.fooddrinkeurope.eu/). It is proposed SUPREMA does take stock of the capacity of the seven models in covering the different SDGs. Some SDGs (e.g. SDG2 – zero hunger) might be well covered in these seven models. However, some indicators might remain a challenge. It will be important to know where agricultural models are strong in covering certain SDGs. It could also support future assessments related to the Common Agricultural Policy (CAP) beyond 2020 with a performance-based approach.

3.2.2 Land in agricultural modelling

It is considered important land needs to be a more central role in agricultural models, among others related to achieving climate goals. Understanding changes in land patterns relate to the CAP, as well as environmental and climate policies. Similarly, the EAB recommends a focus on the mid-century topics is important. Negative emissions become important around 2050. Not only land, but the management of land is important (e.g. urgent for achieving environmental objectives). Similarly, trade-offs between food, fibre and the provision of public goods are to be better understood. EAB recommends to clarify what could be delivered by the models regarding farming practices and farm management.

3.2.3 Regulatory policies in agricultural modelling

In addition to the CAP, the regulatory part of policies remain fairly underdeveloped in existing modelling, especially regarding their ability how they impact the value chain. Regulatory policies in themselves become increasingly complex over time (e.g. the nitrates directive). Modelling climate policies – with increasing complexity – is considered important. It is recommended regulatory constraints are better captured in modelling, which probably requires detailed and local knowledge. Related to this topic, any lack of cross-country collaboration could be a doomsday (e.g. drop out of the US from the Paris Agreement) and worth to elaborate in future modelling.

3.2.4 Distributional issues

Distributional issues are addressed in MAGNET. Some topics are discussed during the EAB:

- Consider changes of margins within the value chain, and try to explain them.
- Consider territorial balance within the EU, and cover the distribution of CAP subsidies.
- Creation of jobs and keeping jobs in rural areas is an important topic for investigation (which could be part of the IFM-CAP model), also addressing the distribution of GDP across rural areas, as well as the distribution of land and the distribution of food across rural areas.

3.2.5 Consideration of risks in agricultural modelling

It is important to distinguish between short-term and long-term risks. In the context of the CAP, there is a great interest to better understand short-term risk management, e.g. through insurance products. Volatility remains missing in existing climate modelling, with focus on long-term averages. If there a change of risks to happen from 1:100 years to 1:30 years, among others it becomes persistent in flooding. Such a topic is worth to consider for a medium-term assessment for 2030.

Considerations of risks and uncertainty are important in climate adaptation, and less of an issue in climate mitigation. EAB requests to learn whether costs of non-adaptation, in terms of productivity losses, are considered in the models. As an alternative, the introduction of new varieties is an adaptation option in crop modelling. Disruptive technologies seem more appropriate to cover through micro analysis rather than the major modelling tools covered in SUPREMA.

3.2.6 Models and data

So far, the existing capacity in agricultural modelling does focus on quantity of food, while topics related to food quality (including health and nutrition) are not adequately reflected yet. It is also concluded data need to be reliable, being aware that some data (e.g. related to prices and market transparency) remain confidential.

The EAB discussed models have contradicting results, which is shocking. It is important to understand differences in models outcomes, their main drivers, and make some improvements in the models. This could enable the project to come with a similar range of key model outcomes (e.g. related to food

prices). SUPREMA will develop an agreed baseline for the seven models. In any case model results need to be communicated to society.

3.3 Follow-up actions

1. Members of the EAB will receive the overall plan of activities in SUPREMA (Section 1 – Excellence)
2. SUPREMA will take stock of which models are able to cover SDGs, and which indicators remain a real challenge.
3. EAB will be regularly updated on progress in SUPREMA, important to have summaries in the reports, showing transparency and not to ignore the complexity of the topics.

Appendix A: Information Consent Form for Stakeholder engagement, communication and outreach

Your involvement as a participant is entirely voluntary and you may withdraw your participation at any given time. SUPREMA research includes the involvement of natural persons through participatory events like today's event. With respect to the nature of the activities to be conducted, these will involve group discussions of different sorts. SUPREMA anticipates to provide both immediate and long-term benefits for the involved participants and their associated networks.

To organise it, SUPREMA partners may have collected some **personal data** which could be for instance your name, your professional/personal email address or your professional/personal telephone number (most often from publicly available sources). Furthermore SUPREMA research activities may indirectly result in collecting other personal data information as part of the wider consultation process, e.g. through interviews.

It should be noted that the collection of personal data per se is not the main purpose of SUPREMA, but personal data may be information necessary to the research (e.g. the Member State/region in which you are located) or to carry out mandatory communication activities (e.g. publication of an attendance list). As part of the research project, we will need to be able to attribute your position/view to the organisation you are representing or to you as an independent expert - depending on what capacity you have been invited to contribute to this event.

If you do not wish your contact details to be made available to other participants, please let the event organiser know in advance.

During this event, **photos and/or videos** may be taken to contribute to the communication objectives of this Horizon 2020 research project. During the performance of these activities, care will be taken to minimise the potential collection of personal data such as name tags.

The collection and processing (e.g. creating a list of invitees for future events) of any personal data will otherwise remain strictly confidential - unless it is relevant for this study, in which case it will be anonymised, unless specifically discussed and agreed with you in advance.

As a general rule, the SUPREMA team will ensure that all presentations and reports are made available to all of those attending workshops and participating in the research.

Appendix B: Presentations from kick-off meeting

SUPREMA - Support for Policy Relevant Modelling of Agriculture

Project Overview: Objectives, Workflow and Impact

Hans van Meijl, Wageningen Economic Research

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

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Congratulations!

SUPREMA

Official start

1st January 2018

Thanks to all of you!!

Objective of meeting

Ambition: to Make a Difference!

Reconfirm relevance of SUPREMA in current research and political environment

Highly Integrated project requires strong interconnections

suprema

The Challenge

- **Policies** have had to **widen the scope** of their main objectives **to take account of new challenges:**
  - climate change (Paris agreement, COP21)
  - the Sustainable Development Goals (SDGs)
  - new issues of interest (e.g. the working of supply chains)
- Policies be **informed** by **model outputs** (Impact Assessment)
- Current **models are not able** to deal with the increasingly complex environment (interlinkages) and the broader scope.
- Research needed to **reduce the gap** between the expectations of policy makers and the capacity of existing models.

THE CONTRIBUTION OF THE CAP TO THE SDGs

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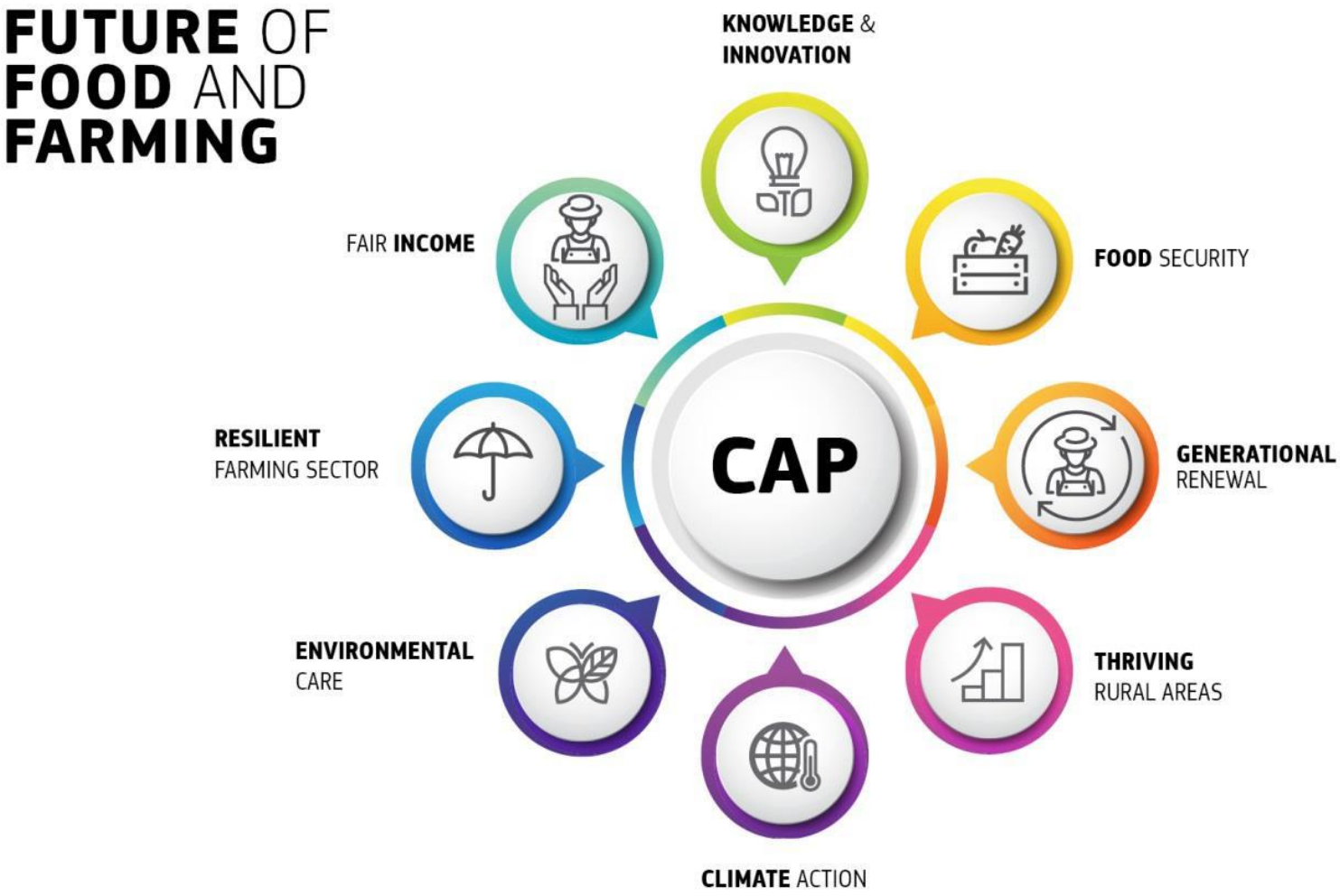
EU communication (Nov 2017)



Needs and Objectives

Needs:

- The research modelling community needs to **support impact analyses** regarding agriculture, sustainable management of natural resources, food chains, the bio-based and circular economy, climate change and SDGs in general.

Objectives:

- There is a need to **improve** the capacity of current models, **connect** them or **redesign** them to deliver on an **increasing variety** of **policy objectives**
- To explore **future** directions for modelling.

The SUPREMA solution

- SUPREMA establishes a **meta-platform** that supports modelling groups linked already through various other platforms\networks.
- The SUPREMA **model family** includes a set of established 'core models'. Models are policy relevant and offer the perspective for **model enhancement** and an **enhanced linked system** in a few focus area's to answer new policy questions and therefore better meeting the expectations by policy makers.
- Future directions of modelling will be **explored and tested** through coordinated scenario applications (baseline, policies)

=> A roadmap for future directions for agricultural modelling in Europe.

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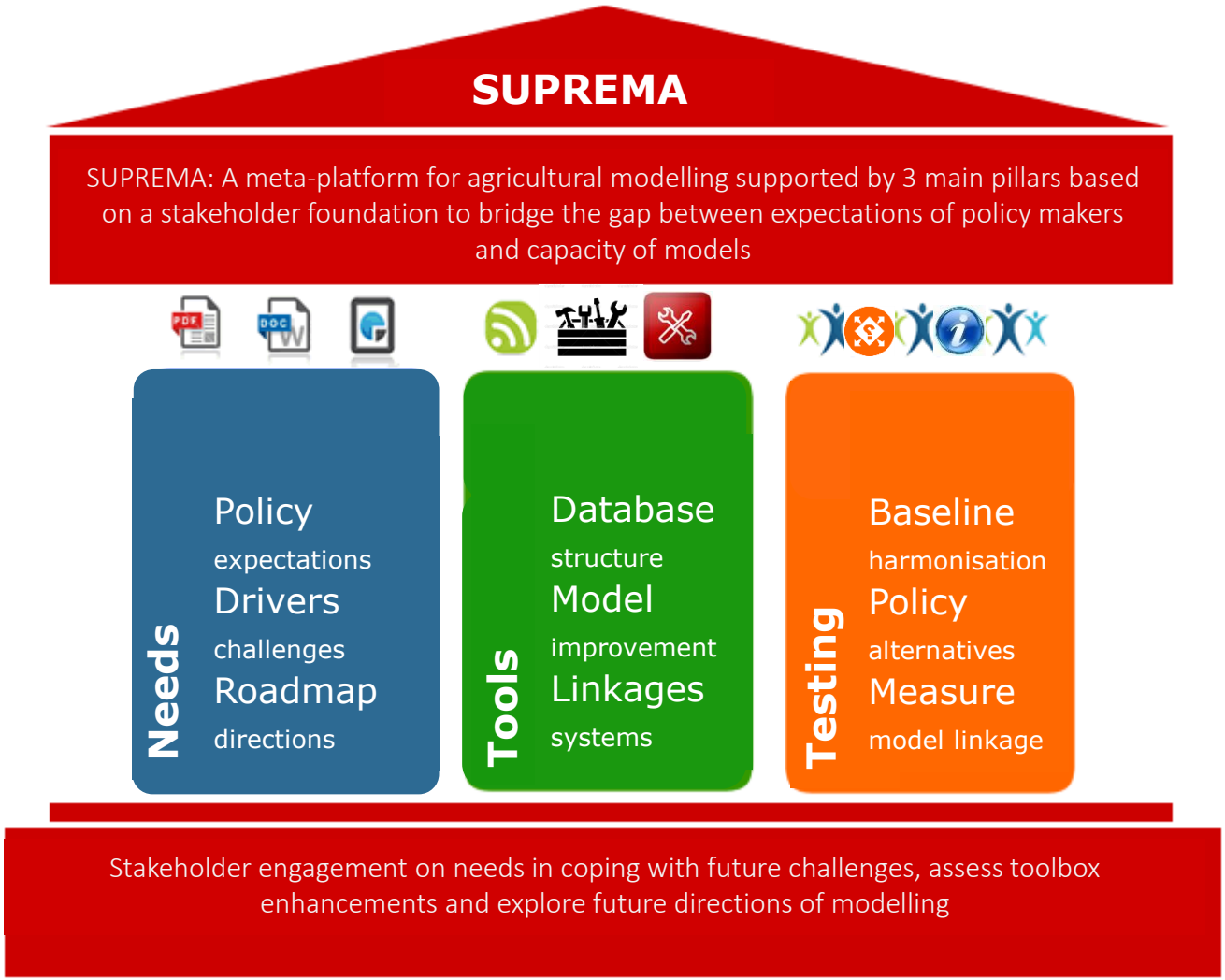
SUPREMA: Meta-platform supported by three pillars



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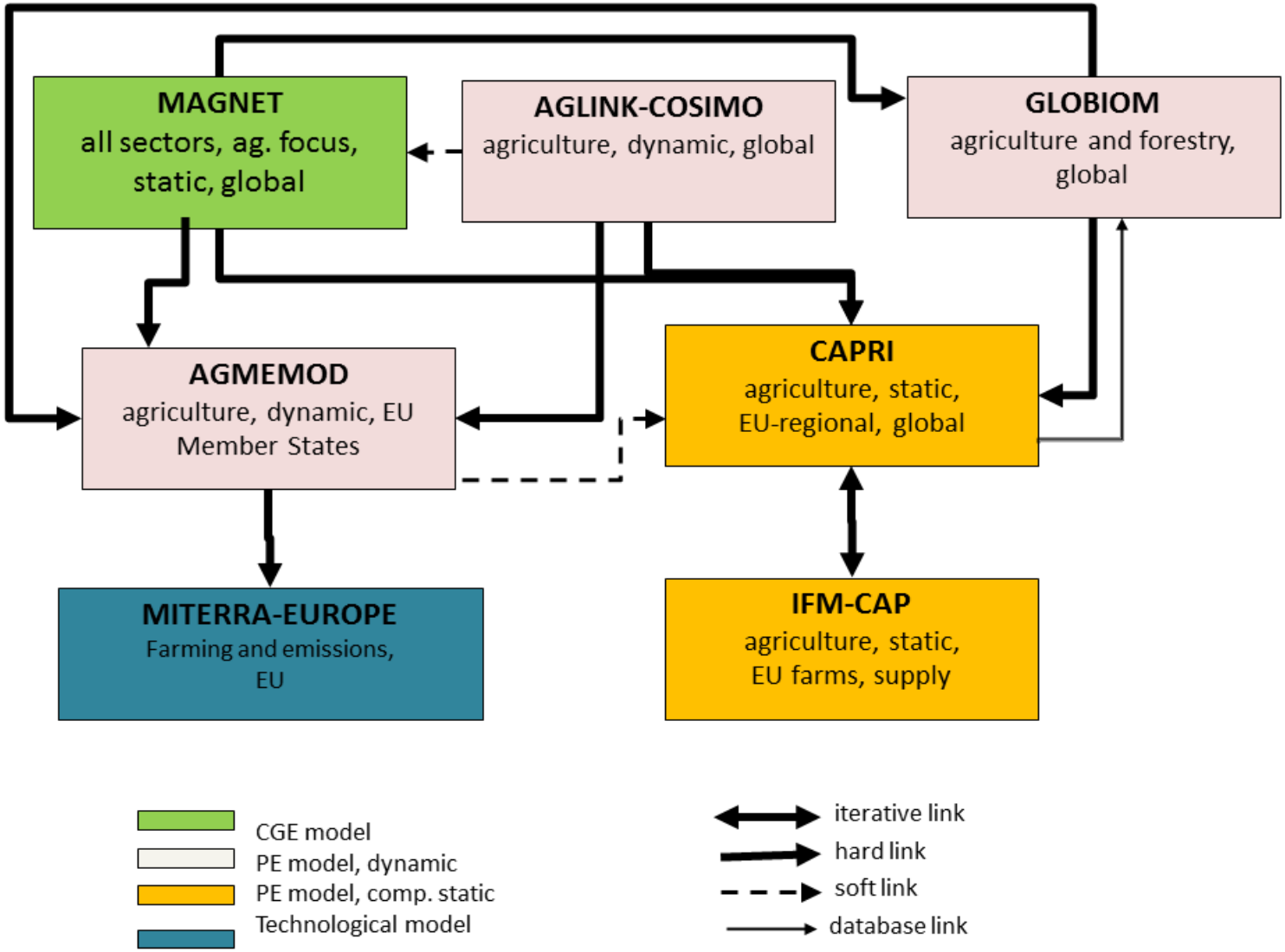
SUPREMA Models and their linkages



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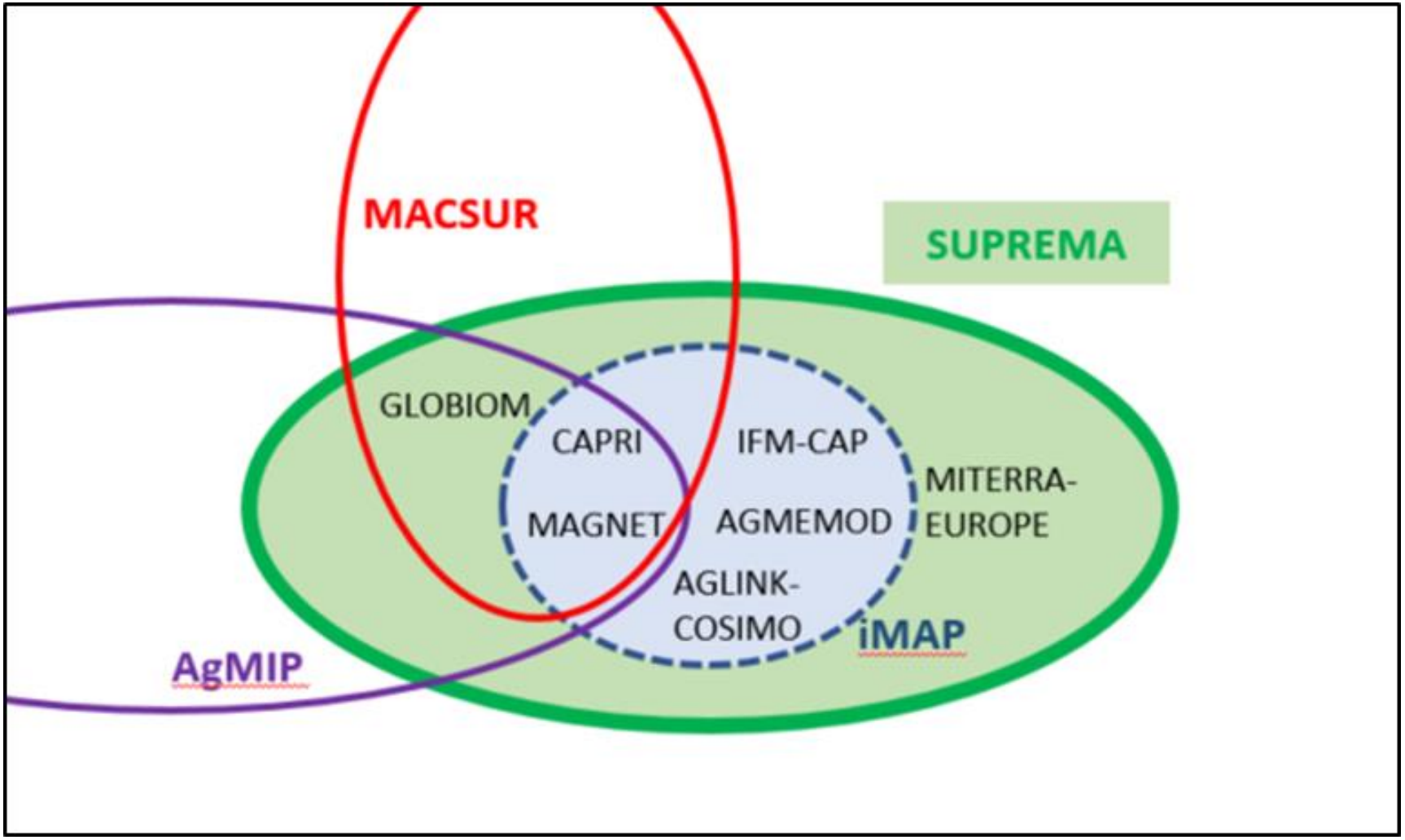
SUPREMA & other existing modelling groups and platforms



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Objective of Kick-off meeting

- Restate **objectives**
- Establish good understanding of the **deliverables**
- Identify **interactions** (in data and research) in each Module and establish **interdependencies** of WPs across the Modules
- Establish management\review\monitor **procedures**

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Have a nice meeting

Introduction of partners

- Role in project (e.g. WP leader)
- Crucial parts of project
    - Needs: Stakeholder interaction
    - Tools: Enhancing and\or linking models
    - Testing: Scenario applications

Introduce yourself

- Name, institution, role in project

SUPREMA (Horizon 2020)

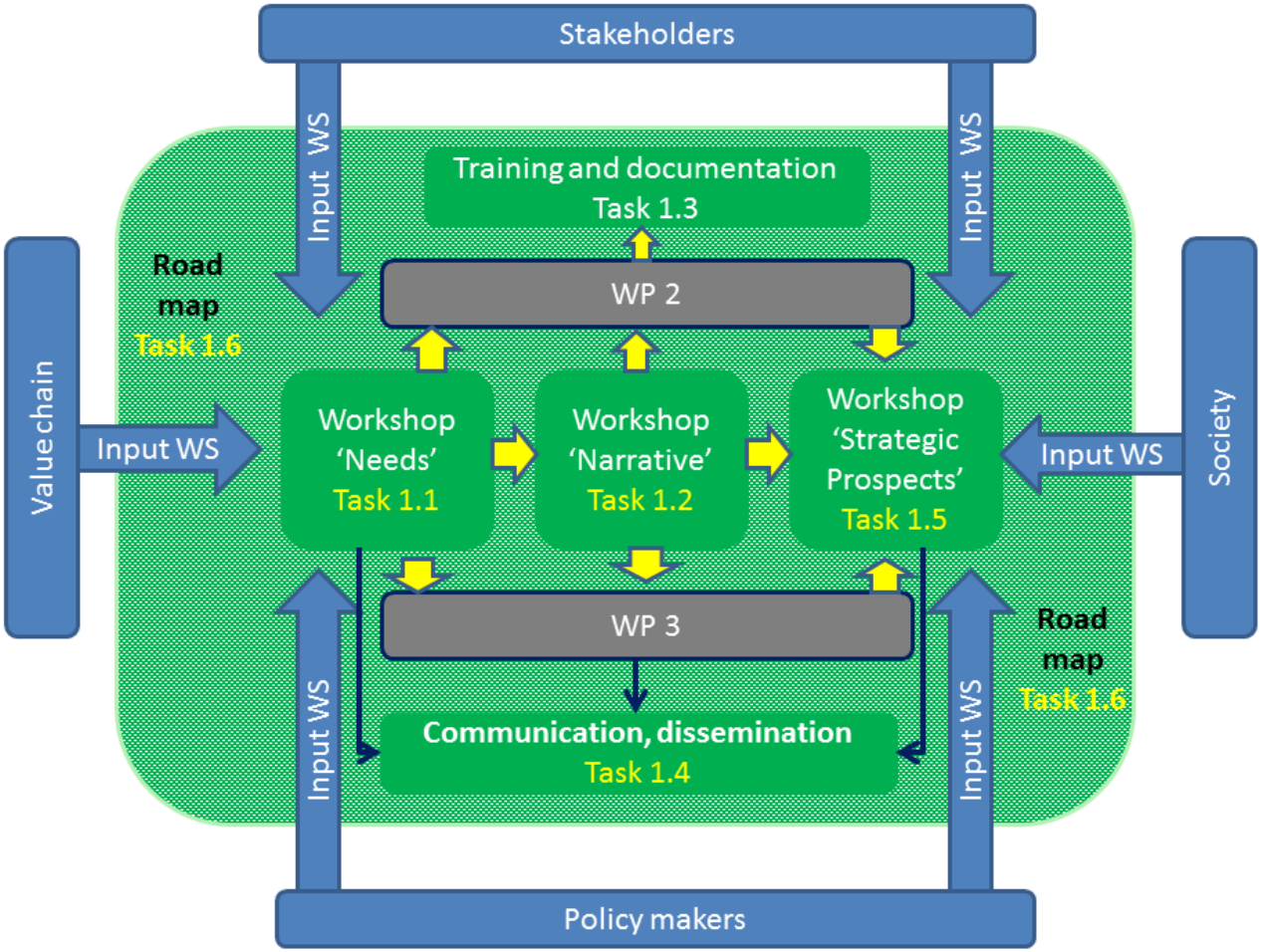
WorkPackage 1

Petra Salamon and Martin Banse, Thünen-Institute of Market Analysis

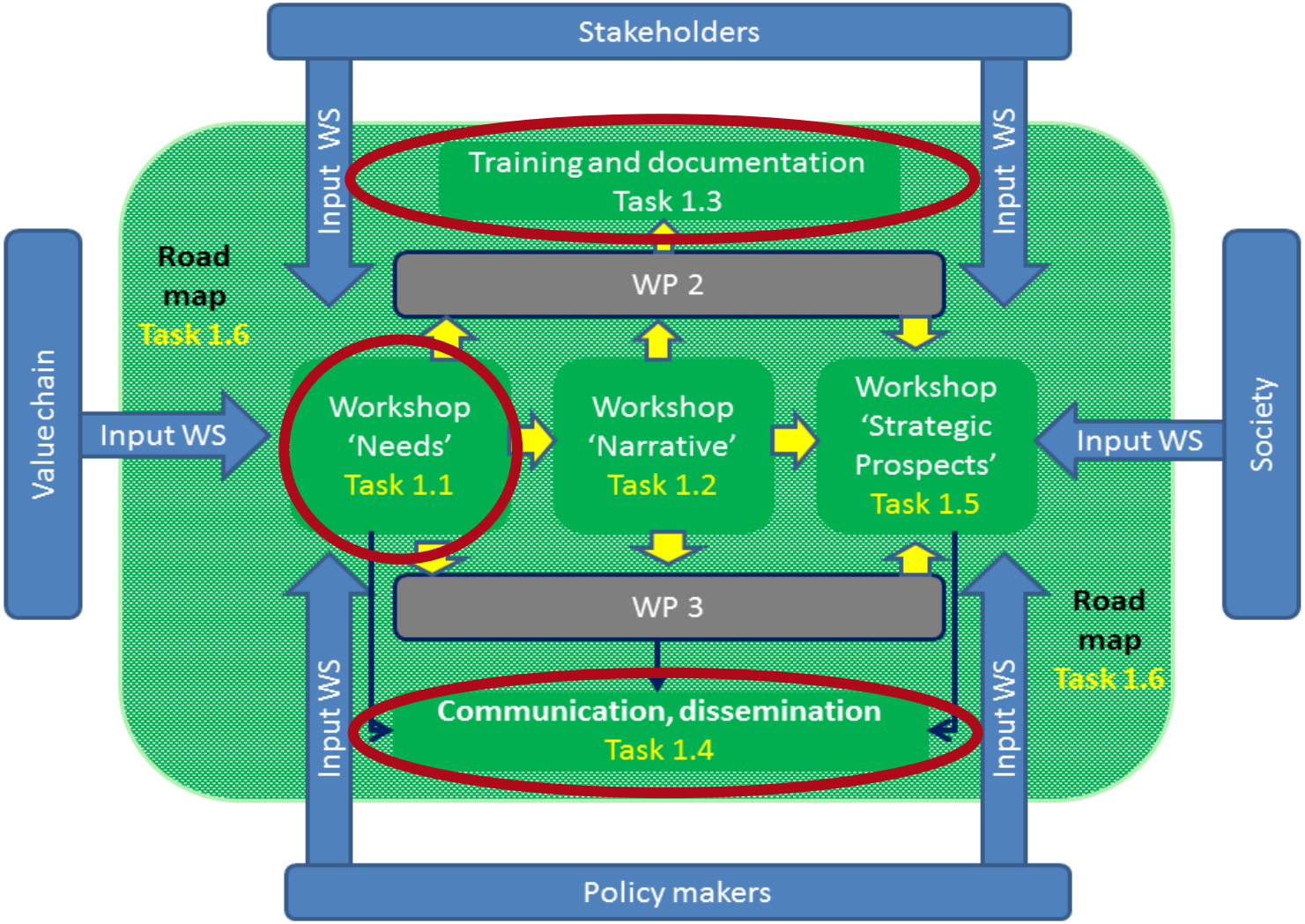
23-24 January 2018

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

Structure of SUPREMA



Structure of SUPREMA



Elements of WorkPackage 1

Content

Challenges, needs and communication – topics for model improvements, applications and dissemination

Activity	Task	Lead	Month	Deliverable/ Milestone	Timing
Workshop „Needs“	1.1	TI	1-5	D1.1, M1, M2	M5
Workshop „Narratives“	1.2	TI	5-10	D1.2	M10
Training and documentation	1.3	UPM	9-20	D1.3, M4,M11	M15
Communication, dissemination	1.4	TI	3-30	D1.4	M30
Workshop „Strategic Prospekts“	1.5	TI	20-26	D1.5, M12	M26
Roadmap	1.6	WR	26-30	D1.6	M30

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Communication, dissemination (M3-M30)

Objective

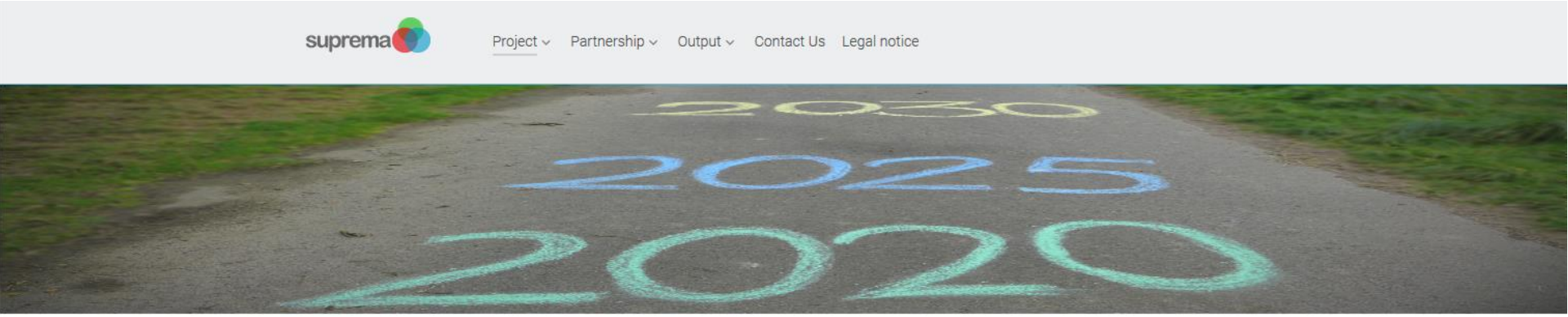
- to communicate concepts and outputs
- to promote engagement between partners and platforms
- to involve policy makers
- to ensure use most relevant channels and communication tools

Activities

- automated and adaptive website
- automated validation procedures
- presentations at Conferences, Seminars and Workshops,
- scientific publications
- policy brief

Selection of SUPREMA logo by poll

Website (www.suprema-project.eu)



Overview

Impact assessments in the areas of agriculture are (partly) based on projections delivered by models. Sectoral policies are becoming more and more interrelated. Hence, there is a need to improve the capacity of current models, connect them or redesign them to deliver on an increasing variety of policy objectives, and to explore future directions for agricultural modelling in Europe.

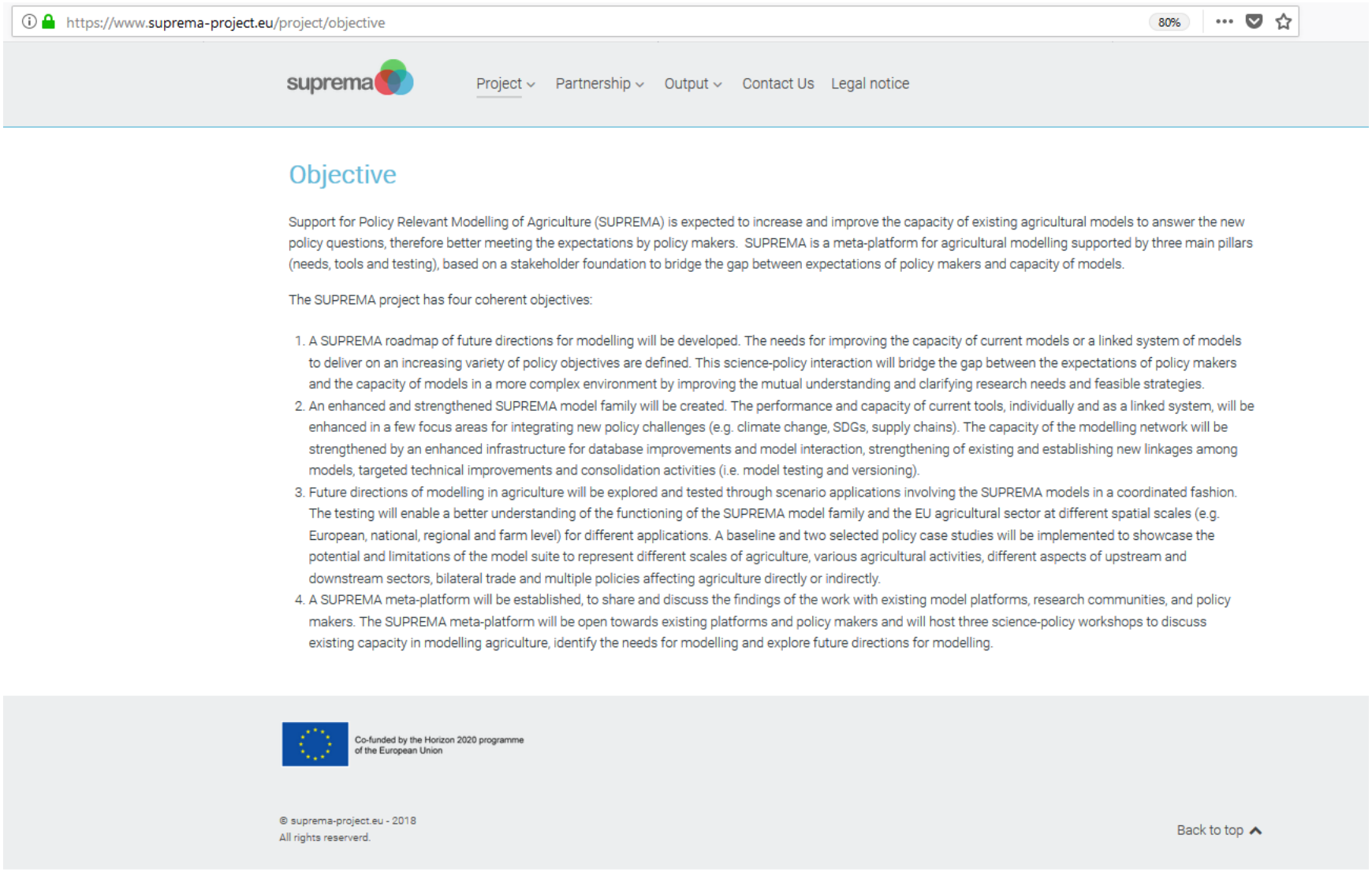
SUPREMA comes to address this challenge by proposing a meta-platform that supports modelling groups linked already through various other platforms and networks. SUPREMA should help close the gaps between expectations of policy makers and the actual capacity of models to deliver relevant policy analysis. The SUPREMA model family includes a set of 'core models' that are already used in support of key European impact assessments in agriculture, trade, climate and bioenergy policies. The meta-platform, the enhanced linked system of existing core models and some key applications melt down in a Roadmap for future directions for agricultural modelling in Europe.

The project has four coherent objectives:

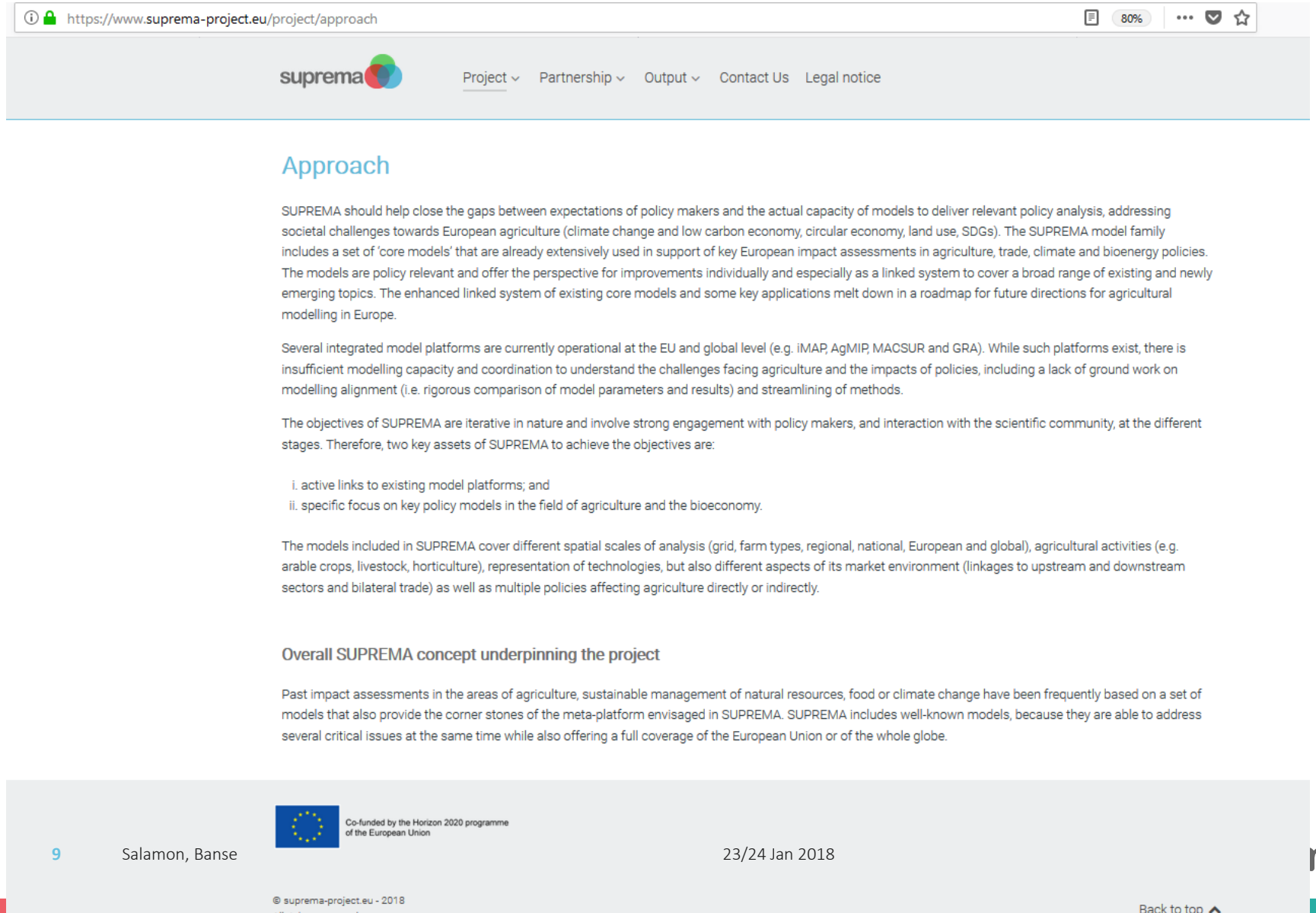
1. A SUPREMA roadmap of future directions for modelling will be developed.
2. An enhanced and strengthened SUPREMA model family will be created.
3. Future directions of modelling in agriculture will be explored and tested.
4. A SUPREMA meta-platform will be established, to share and discuss the findings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

The objectives of SUPREMA are iterative in nature and involve strong engagement with policy makers, and interaction with the scientific community, at the different stages. The models included in SUPREMA cover different spatial scales of analysis, agricultural activities, representation of technologies, but also different aspects of its market environment as well as multiple policies affecting agriculture directly or indirectly.

Website (www.suprema-project.eu)



Website (www.suprema-project.eu)



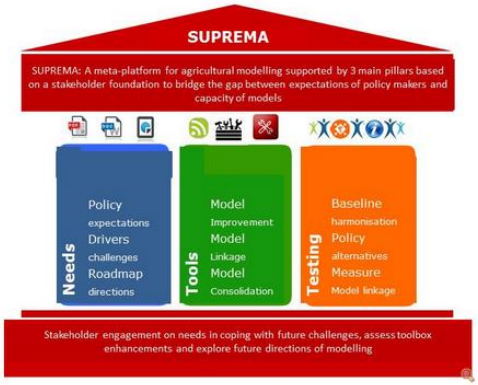
Website (www.suprema-project.eu)

https://www.suprema-project.eu/project/solution 80%

Solution

Support for Policy Relevant Modelling of Agriculture (SUPREMA) comes to address these challenges by proposing a meta-platform that supports modelling groups linked already through various other platforms and networks. SUPREMA should help close the gaps between expectations of policy makers and the actual capacity of models to deliver relevant policy analysis, addressing societal challenges towards European agriculture (climate change and low carbon economy, circular economy, land use, SDGs). The SUPREMA model family includes a set of 'core models' that are already extensively used in support of key European impact assessments in agriculture, trade, climate and bioenergy policies. The models are policy relevant and offer the perspective for improvements individually and especially as a linked system to cover a broad range of existing and newly emerging topics. The meta-platform, the enhanced linked system of existing core models and some key applications melt down in a roadmap for future directions for agricultural modelling in Europe.

Several integrated model platforms are currently operational at the EU and global level (e.g. IMAP, AgMIP, MACSUR and GRA). While such platforms exist, there is insufficient modelling capacity and coordination to understand the challenges facing agriculture and the impacts of policies, including a lack of ground work on modelling alignment (i.e. rigorous comparison of model parameters and results) and streamlining of methods.



Meta-platform supported by three pillars

SUPREMA is expected to increase and improve the capacity of existing models to answer the new policy questions, therefore better meeting the expectations by policy makers. The project has four coherent objectives which respond to key operational challenges of the call:

1. A **SUPREMA roadmap** of future directions for modelling will be developed. The needs for improving the capacity of current models or a linked system of models to deliver on an increasing variety of policy objectives are defined. This science-policy interaction will bridge the gap between the expectations of policy makers and the capacity of models in a more complex environment by improving the mutual understanding and clarifying research needs and feasible strategies.

2. An enhanced and strengthened **SUPREMA model family** will be created. The performance and capacity of current models, individually and as a linked system, will be enhanced in a few focus areas for integrating new policy challenges (e.g. climate change, SDGs, supply chains). The capacity of the modelling network will be strengthened by an enhanced infrastructure for database improvements and model interaction, strengthening of existing and establishing new linkages among models, targeted technical improvements and consolidation activities (i.e. model testing and versioning).

3. Future directions of modelling in agriculture will be **explored and tested** through scenario applications involving the SUPREMA models in a coordinated fashion. The testing will enable a better understanding of the functioning of the SUPREMA model family and the EU agricultural sector at different spatial scales (e.g. European, national, regional and farm level) for different applications. A baseline and two selected policy case studies will be implemented to showcase the potential and limitations of the model suite to represent different scales of agriculture, various agricultural activities, different aspects of upstream and downstream sectors, bilateral trade and multiple policies affecting agriculture directly or indirectly.

Website (www.suprema-project.eu)

- Additional ideas on content
  - Models (link to model sites)
  - Chats to certain times
  - Announcement of workshops
  - Additional discussion of outcomes
  - Box to validate outcomes
  - Feedback box on “Needs”
- Layout?
- Additional requirements?
- Contributions?
- Wishes?

Workshop „Need“ (Task 1.1) - Aim

- Objective
  - stock-taking of new challenges -> in interaction with EAB
  - to define needs for future model development
  - to set priorities for model improvements

Workshop „Need“ (Task 1.1) - Aim

- Societal challenges under consideration
  - climate change and low carbon economy
  - land and water constraints
  - sustainable development goals (SDGs)
  - international integration of the agri-food sectors
  - integration of agriculture with up- and downstream sectors
  - societal concerns and ethical issues
  - adoption of new technologies, including remote sensing, robotics
  - new mitigation technologies related to climate change

Workshop „Need“ (Task 1.1) - Organization

- Date and location
  - March 1, 2018; 9:00-15:30 with lunch break
  - On the following day after the AGMEMOD Outlook Workshop at DG Agri
  - Representation Lower Saxony at the EU, Rue Montoyer 61 in Brussels
- Invitation
  - Sent out on January 16, 2018
- Stakeholders (around 50 invitations)
  - Policy – administration
  - Value chain and market experts (mostly from the Outlook Workshop)
  - Business representations in the area of agri-food
  - Society – NGOs
- Partners
  - How many per Project partner, names

Workshop „Need“ (Task 1.1) – Input for scoping

- Short (written) questionnaire for partners
  - Option 1 per partner or
  - Option 2 per participant
- Topics
  - climate change and low carbon economy
  - land and water constraints
  - sustainable development goals (SDGs)
  - international integration of the agri-food sectors
  - integration of agriculture with up- and downstream sectors
  - societal concerns and ethical issues
  - adoption of new technologies, including remote sensing, robotics
  - new mitigation technologies related to climate change
  - open topic

Workshop „Need“ (Task 1.1) – Input for scoping

- Per topic
  - Name the 5 most pressing challenges from your perspective
  - Which of the challenges can be already addressed/which difficult addressed/which not at all
  - Which are the most important obstacles to address the challenges
  - What priorities do you see
  - How would you address the issue
- What would you aim at in general
- Additional topics

Workshop „Need“ (Task 1.1) – Workshop

- Estimated 25-30 external participants
- General intro with overview what we want to achieve
- General discussion on needs from participants perspective
  - Use flip chart to formulate needs
  - Add or steer to needs/challenges we see as important
- 3 different groups to discuss needs, improvements and challenges which will have been identified (30 min) on 3 flip charts
- After 30 min change of participants
- General discussion with all to come to a consensus

Who would like to contribute?

Activity	Task	Names
Workshop „Needs“	1.1	TI (MB, PS, …
Workshop „Narratives“	1.2	TI (MB, PS, …
Training and documentation	1.3	UPM (MBl, ….
Communication, dissemination	1.4	TI (MB, PS, …
Workshop „Strategic Prospekts“	1.5	TI (MB, PS, …
Roadmap	1.6	WR (HvM, …

Task 1.3 – Documentation and training

Maria Blanco

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

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Task 1.3 – Documentation and training

- Task 1.3 – Training and documentation of model improvements (M9 – M20)
- Objectives:
  - Improve communication between modellers within the platform and beyond it
  - Increase the transparency of models and model results, their reliability and the acceptance in the scientific community
  - Increase model interactions on a common infrastructure

Task 1.3 – Documentation and training

- **Documentation of model improvements**
  - Improvements of SUPREMA model tools are documented => Results of WP2 will feed into this task
  - **D1.5:** Documentation of the SUPREMA model tools **(M15)**
- **Training**
  - Three training sessions are organized for the platforms covered by SUPREMA and targeted towards research, policy and business
  - Organized by UPM, WR and IIASA
  - **MS11:** Three training sessions are organised **(M20)**

Training sessions – Planning

- Three training sessions, organized by UPM, WR and IIASA
  - Participants and trainers cover their costs for travel and accommodation
- Target audience
  - Research, policy and business
  - University students ?
- Focus
  - Focus on one model per session ?
- Timing (M9 – M20)

Training sessions – Planning

Training session	Focus	Target audience	Where	When
TS 1 (WR)	AGMEMOD			
TS 2 (UPM)	CAPRI			
TS 3 (IIASA)	GLOBIOM			

WP 2: Tools: enhancement and integration

Peter Witzke

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

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Main Objectives of WP2

- Improving capacity of existing modelling network
- Via activities that are light investments but have high pay off
- Guidance:
  - Policy objectives and challenges (WP1),
  - but also feasibility of implementation (WP3)
- Combines heterogeneous elements
  - Infrastructure for improvements (Task 2.1)
  - Strengthening linkages (Task 2.2)
  - Targeted improvements (Task 2.3)
  - Model testing and versioning (Task 2.4)

Main discussion points

- Clarifying content and responsibility
  - Any need for shifting focus or new elements?
- Agreement on WP procedures + next steps for each task
  - Specific for each Task
- Model fact sheets
  - Useful for website etc
  - Example from sim4nexus on next slide
  - Doable in short run for all?

Model fact sheet example (CAPRI, sim4nexus)

Model CAPRI

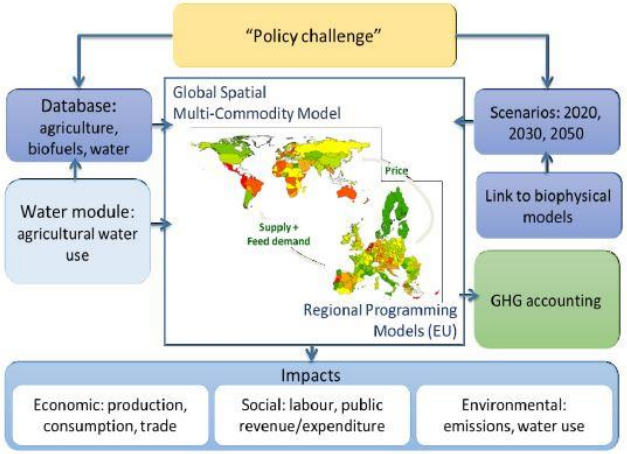
SIM4NEXUS

The model

CAPRI

The Common Agricultural Policy Regionalised Impact modelling system (CAPRI) is a global agro-economic model designed for the **ex-ante impact assessment of agricultural, environmental and trade policies with a focus on the European Union.** It is a global spatial partial equilibrium model, solved by sequential iteration between supply and market modules. The unique combination of regional supply-side models with a global market model for agricultural products provides simulated results for the EU at subnational level, whilst, at the same time, simulating global agricultural markets.

The main strength of the CAPRI modelling system is the fact that it is based on a **unified, complete and consistent data base,** and integrates economic, physical and environmental information in a consistent way.



Spatial and temporal coverage

Spatial coverage: Global

Spatial resolution: National and regional within the EU

Temporal scale: Until 2050 in flexible time steps

CAPRI

SIM4NEXUS

Nexus coverage

Food-water links: The water module in CAPRI accounts for agricultural water use all over the EU. Both irrigation and livestock water use are included. The water module enables the CAPRI model to simulate the potential impact of climate change and water availability on agricultural production at the regional level, as well as assessing the sustainable use of water, the implementation of the Water Framework Directive or other water related policies (water pricing).

Food-energy links: Biofuel markets as well as their interlinkages with biofuel feedstock are represented in CAPRI.

Inputs

CAPRI exploits wherever possible well-documented, official data sources from EUROSTAT, FAOSTAT, OECD and extractions from de Farm Accounting Data Network (FADN).

Specific modules of the model ensure that the data used are compatible and complete in time and space

Outputs

- Areas , herd sizes, income and environmental indicators (NPK balances, GHE) for each agricultural activity and each region
- Producer and consumer prices, bilateral trade flows, transport costs and tariffs globally for each trade block
- Spatial downscaling part to 1x1 km, which covers crop shares, yield, the environmental indicators.

Recent applications

CAPRI is **extensively used** to assess agricultural policy measures, GHG emissions from the agricultural sector, food-water-energy linkages and climate change impacts.

- Blanco M., Witzke H.P., Perez-Domínguez I., Salputra G., Martínez P. (2015). Extension of the CAPRI model with an irrigation sub-module. Luxembourg: Publications Office of the European Union, EUR 27737 EN. doi: 10.2791/319578.
- EC (2013). Impact Assessment Accompanying the Communication "An EU Strategy on adaptation to climate change". European Commission, Brussels, SEC(2011) 1153 final/2. http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_132_2_en.pdf

Further information

Get CAPRI model
Technical documents
Training material

Contact:
Maria Blanco
maria.blanco@upm.es
Pilar Martinez
mpilar.martinez@upm.es
POLITÉCNICA

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WP 2.1 Infrastructure (Myrna Leeuwen)

- Database maintenance occupies often major part of modelling
- Database comparison and data sharing requires mapping tables between items
- Partly already available (Agricistrade, Agmip, AgCLim50)
- To be updated for better communication
- Myrna presumably diseminating draft requirements
  - AGMEMOD, MAGNET, GLOBIOM all part of Agricistrade
  - To be included : CAPRI, IFM-CAP, MITERRA, AGLINK
  - D2.1 (database comparisons) rather early in M12

WP 2.2 Linkages

Task 2.2: Strengthening existing and establishing new linkages among SUPREMA models (M3 – M27)

Task leader: TI-BW; involved partners; WR, EuroCARE, IIASA

Background:

- Complexity, questions to answer, manageability limits the development to **specialized modelling**
- If variables of interest, functional relationships are spread over different models -> linkage of models

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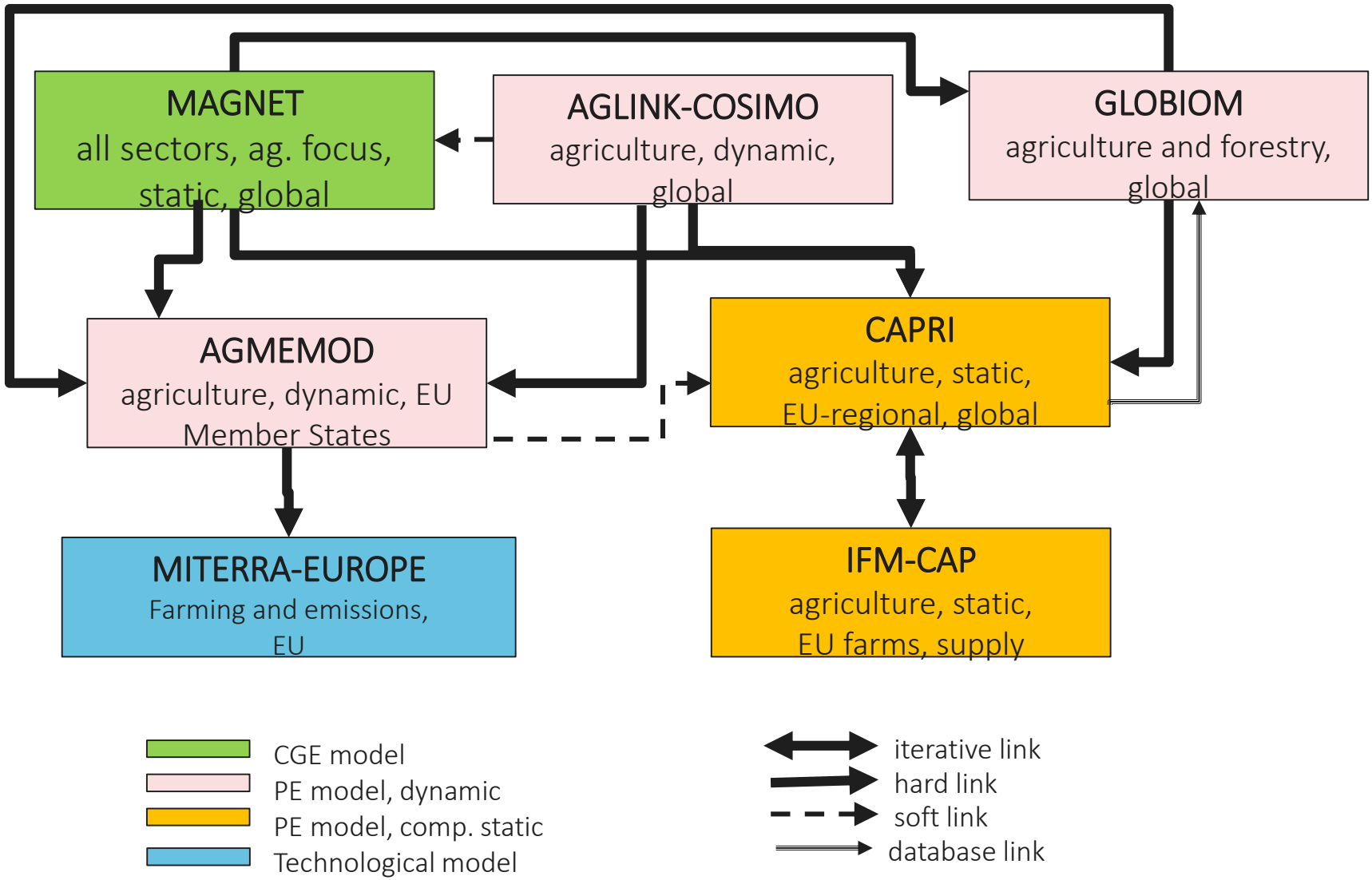
WP 2.2 methods for modelling linkage

- Model chains **without calibration** of the interlinked models (soft linkage)
- Models with **one-way calibration** ("semi" hard linkage)
  - One model is calibrated to results generated by another model
  - bottom-up: behavioural function of the market models is calibrated to economically estimated micro-models (MAGNET-CAPRI)
  - top-down approaches: often necessary for linkage and harmonisation of biophysical models with economic models (Leip *et al.*, 2008)
- **Sequential calibration** (hard linkage)
  - Each model uses and produces its own results, there is iterative feedback among the models, e.g. CAPRI market model and the supply part (farm types, Nuts2), GTAP model with the CAPRI model, FARMIS with ESIM

WP 2.2 Linkages (Alexander Gocht) (1)



WP 2.2 Linkages for strengthening

- IFM-CAP – CAPRI -> iteratively calibration
  - **WP3.2, CAP scenario**
- GLOBIOM – CAPRI (land use) -> one way calibration
  - well explored in baselines; on land use
- AGLINK - AGMEMOD – CAPRI -> one way calibration
  - aspects of the baseline, time efficient, Open issue: Strictness of imposing external information
  - **WP3.1, EU baseline**
- AGMEMOD – MITERRA -> one way calibration top down, hard linkage
  - economy / environment interaction, contraints
  - **WP3.2, CAP scenario**

WP 2.2 Linkages for strengthening

- MAGNET – GLOBIOM – CAPRI -> ??
  - water nexus and mitigation, various options conceivable
  - Looping (like AgriCisTrade?) or one way linkage
  - **WP3.3, long-term assessment of climate change goals**
- MAGNET – AGMEMOD ???
  - supply chain issues are probably best addressed **informally**, but how?
  - Bio-economy issues

WP 2.2 Planning

- D2.2: Report on model linkages, with general parts and including assessments on the key specific linkages with bilateral authorship (M27)

- Planning of concept note for model linkages (input for workshop on 01.03.2018?)
  - 0.5-1 page for each linkage?
  - Contributors available in short run?

WP 2.3 Improve models (lead?)

- … in view of gaps and needs of WP3, possibly
  - AGMEMOD: market network (tools for validation), price transmission
  - GLOBIOM – MAGNET: LU, extreme events, SDGs
  - CAPRI: Expanding land use modelling and carbon effects modelling to non-European regions
  - MITERRA: Adjusting to LULUCF accounting rules
  - Modified focus based on WP1?
- Lead for Petra Salamon, given AGMEMOD examples?
- Other volunteers? (could be handled by WP2 lead)
- Main task: Supervising D2.3 = report on model improvements (M16)

WP 2.4 Testing and versioning (Torbjoern Jansson)

- Particular need for CAPRI due to use and development in network across agencies
  - Some infrastructure for testing is embedded in CAPRI GUI
  - Next stable release cycle to begin under SUPREMA
  - Focus topics and supported features to be decided
    - But only after completion of current release cycle
    - Release cycle involves:
      - Selection of trial version – testing – improving or reporting – maintenance release – minor improvements
- D2.4 also with documentation of solutions in other systems

WP3 Testing the SUPREMA model family

Jesus BARREIRO-HURLE

JRC-D4 Economics of Agriculture

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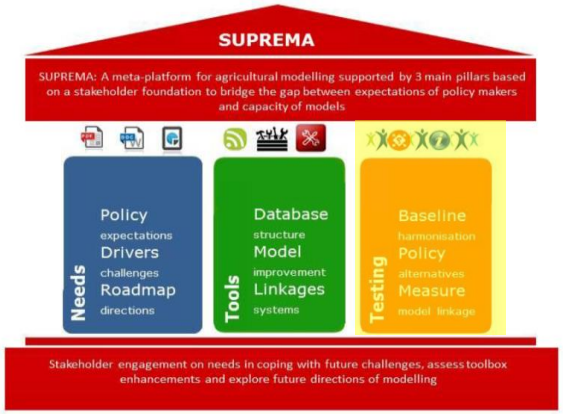
Overall approach for WP3



OBJECTIVES

- Explore future directions applying scenarios in a coordinated fashion
- Improve understanding at different scales
- Showcase potential and limitations with respect to needs

Expected impacts

Activities in SUPREMA	Task	Expected impact		
Work Package	Task	Improved capacity of models	Strengthening of research modelling community	Exploration of future directions for modelling
WP3: Testing the SUPREMA model family	3.1 – Baseline			
	3.2 – Agricultural policy			
	3.3 – Climate policy			

Milestones and Deliverables for WP3

Dec 2018 (M12)	▪ Data to be used in the baseline ▪ Narrative for Policy Scenario ▪ Narrative for Climate Scenario	Verified by PCT
Dec 2019 (M24)	▪ Draft baseline results ready ▪ Draft scenario results ready ▪ Draft scenario results ready	Verified by PCT
April 2020 (M28)	▪ (3x) Report on baseline construction and divergence analysis	

Common approach to documentation; IT solutions and report structure

Workplan for Baseline comparison (WP 3.1) M3-M12

1. Choose baseline assumptions for external drivers

External drivers – list and current values (All)
X-check and choose common ones (JRC)

Policy baseline –

1. 2014-2020 or some other assumption?
2. Alignment of representation?

Workplan for Baseline comparison (WP 3.1) M3-M12

1. Choose baseline assumptions for external drivers

2. Select parameters for comparison

Areas, production, yields, trade…… (tbc)

Workplan for Baseline comparison (WP 3.1) M3-M12

1. Choose baseline assumptions for external drivers

2. Select parameters for comparison

3. Common reporting and data hosting [JRC Data team]

The DataM renewal

DataM = JRC **Data** portal of agro-economic **M**odelling

- Old project (2011-2016):
  - **Focus**: integration, harmonization and storage of worldwide recognized agro-economic datasets and model results
  - **Tech**: Oracle / PROGNOZ platform
  - **Governance**: full IT outsourcing + JRC small team of business experts

- Version 2017-on:
  - **Focus**: integration, analysis and "active" dissemination of modelling results
  - **Tech**: Oracle / Python / Qlik-Sense
  - **Governance**: JRC small team of IT/data science professionals + business drive from whole JRC department for Economics of Agriculture

The new DataM

- https://datam.jrc.ec.europa.eu
- **Not only visualizations**: interactive dashboards interrelating charts allowing users to self-analyze data
- **Not only a web site**: back-office usage of Qlik-Sense allowing modelers to self - analyze results, and then to discuss them with stakeholders
- **Not only models**: wide use of data-science for data processing, creation of new JRC datasets, problems of network analysis, geospatial data, big data…

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DataM - Outcomes

- Multi-model contents developed in 2017:
  - AgMIP (restyling from DataMweb – 11 models)
  - AgCLIM50: (CAPRI / GLOBIOM / IMAGE / MAgPIE / MAGNET)
  - FOODSECURE: (GLOBIOM / MAGNET)
  - Scenar2030: (CAPRI / IFM-CAP / MAGNET) - no hard integration
- Other achievements: Jobs and turnover in Bioeconomy, Biomass flows, FTA (MAGNET)
- 2018 plan:
  - Coming soon: "DG AGRI-JRC – Production, trade and apparent use" (agricultural balance sheets at EU Member State level)
  - Interactive "country fiches"". Profile of developing countries from agro-economic, nutrition and food security perspectives.
  - Implementation of a system for the data quality check of model outcomes
  - Implementation of a data connector for the direct integration of GAMS and Qlik

Workplan for Baseline comparison (WP 3.1) M3-M12

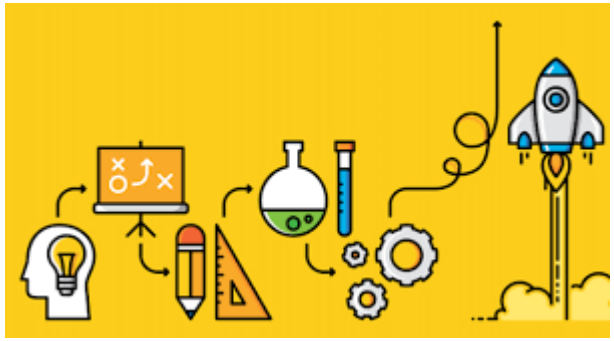
1. Choose baseline assumptions for external drivers

2. Select parameters for comparison

3. Common reporting and data hosting [JRC Data team]

MS8 Baseline construction documentation

Workplan for Baseline comparison (WP 3.1) M3-M12



Who?

What?

By when?

External drivers – list and current values (All)
X-check and choose common ones (JRC)

Variables for comparison
Commodities for comparison

Policy baseline –

1. 2014-2020 or some other assumption?
2. Alignment of representation?

WP3 Testing the SUPREMA model family

Jesus BARREIRO-HURLE

JRC-D4 Economics of Agriculture

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

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WP3, Task 3.2

SUPREMA & CAP Policy scenarios: some first reflections

Roel Jongeneel, Myrna van Leeuwen, Jan Peter Lesschen, Berien Elbersen

23 January, 2018 Wageningen Economic Research

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

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Set-up of this presentation

- Context of the new CAP after 2020: headlines from the Commission's latest communication (November 2017)
- Effort Sharing Regulation after 2020 and implications for climate change policy (recently agreed)
- Scenario building: contrasting lines in addressing same (environmental-climate) policy challenge. Suggestions for two scenario lines:
  - Sustainable intensification & innovation
  - Agro-ecology and extensification
- Which indicators to use?
- Discussion / next steps

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1. Focus & direction of the new CAP after 2020

- All societal objectives count and to be realized simultaneously
- SDGs and COP21: more environmental and climate ambition
- Greater Subsidiarity: Union sets basic policy parameters/targets; MS more responsible on how to achieve these objectives
- MS get greater say in designing compliance and control framework; but accountable for providing credible performance reporting
- MS should establish a CAP strategic plan, covering interventions in P1 and P2, which is subject to EC approval
  - should be simpler than current RDP
  - should focus on objectives and expected results
- New delivery system: more result driven, more subsidiarity (flexibility), reducing EU-related admin burden

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7 Priorities/Themes of new CAP after 2020

1) Better use of research and innovation (link knowhow & growth)
2) Fostering a smart and resilient agriculture
3) Bolstering environmental care and climate action
4) Promoting rural prosperity
5) Attracting new farmers (generational renewal)
6) Addressing consumer concerns about health, nutrition and food waste
7) Global dimension of CAP: trade & migration

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2. Effort Sharing regulation

- Sets out binding annual greenhouse gas emission targets for Member States for the period 2021–2030 (meeting Paris)
- Targets cover sectors of the economy that fall outside the scope of the EU Emissions Trading System (EU ETS), including agriculture
- Sectors of the economy not covered by the EU ETS must reduce emissions by 30% by 2030 compared to 2005
- Aims to ensure fair and cost-effective achievement of targets
- Has a new flexibility to access credits from the land use sector.

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3. Selected key topics/themes *for scenarios*

Innovation

- The new CAP emphasizes the importance of innovations to stimulate sustainable productivity growth
- SMART and resilient agriculture

Climate

- New CAP: climate will be a topic of increasing importance and have expected non-marginal impacts on MSs and agr. sectors
- By the end of 2018 MS have to submit their draft version of their National Energy and Climate Plan (NECP)
- As a result it wil become more clear what mitigation targets MSs will impose on their agricultural sectors

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3. Scenario building

- Suggestion 1: focus on making **CAP more sustainable**
- Suggestion 2: scenarios should be thought-provoking and thus it could be interesting to develop **two contrasting lines**

- Proposal: develop 2 scenario's with input from policymakers and stakeholders:

  Scenario I sustainable intensification and innovation

  Scenario II agro-ecology and extensification

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4a. Scenario I sustainable intensification and innovation

- Follows the innovation and smart agriculture lines as emphasized in the new CAP Communication
- Has an emphasis on technical solutions such as

  Precision agriculture

  Nitrification inhibitors (technique to diminish nitrate emission)

  Other high tech options ...

- Challenges:

  Needs further development: develop set of promising technical innovations

  Translate these into the modelling framework

See also Louise Fresco & Krijn Poppe (2016)

4b. Scenario II Agro-ecology and extensification

- Follows an **agro-ecology approach**, including extensification
- Has an emphasis on **reducing pressure on environment** and closing of nutrient cycles
    - Stimulating organic agriculture
    - Includes small is beautiful side (small farms)
    - Accepts limitations on animal numbers/intensive livestock industry
    - Support for rural & areas with natural handicaps
- Challenges:
    - Needs further development: develop set of promising technical innovations
    - Translate these into the modelling framework

See also Falkenberg (2016) Sustainability now!

5. Which indicators to use?

- Topics/themes
  - Environment
  - Climate
  - Biodiversity
  - Economic
  - Social

Which ones?

.....

.....

- Spatial resolution
  - MS, NUTS x?
  - .....
- Presentation of results ...maps?

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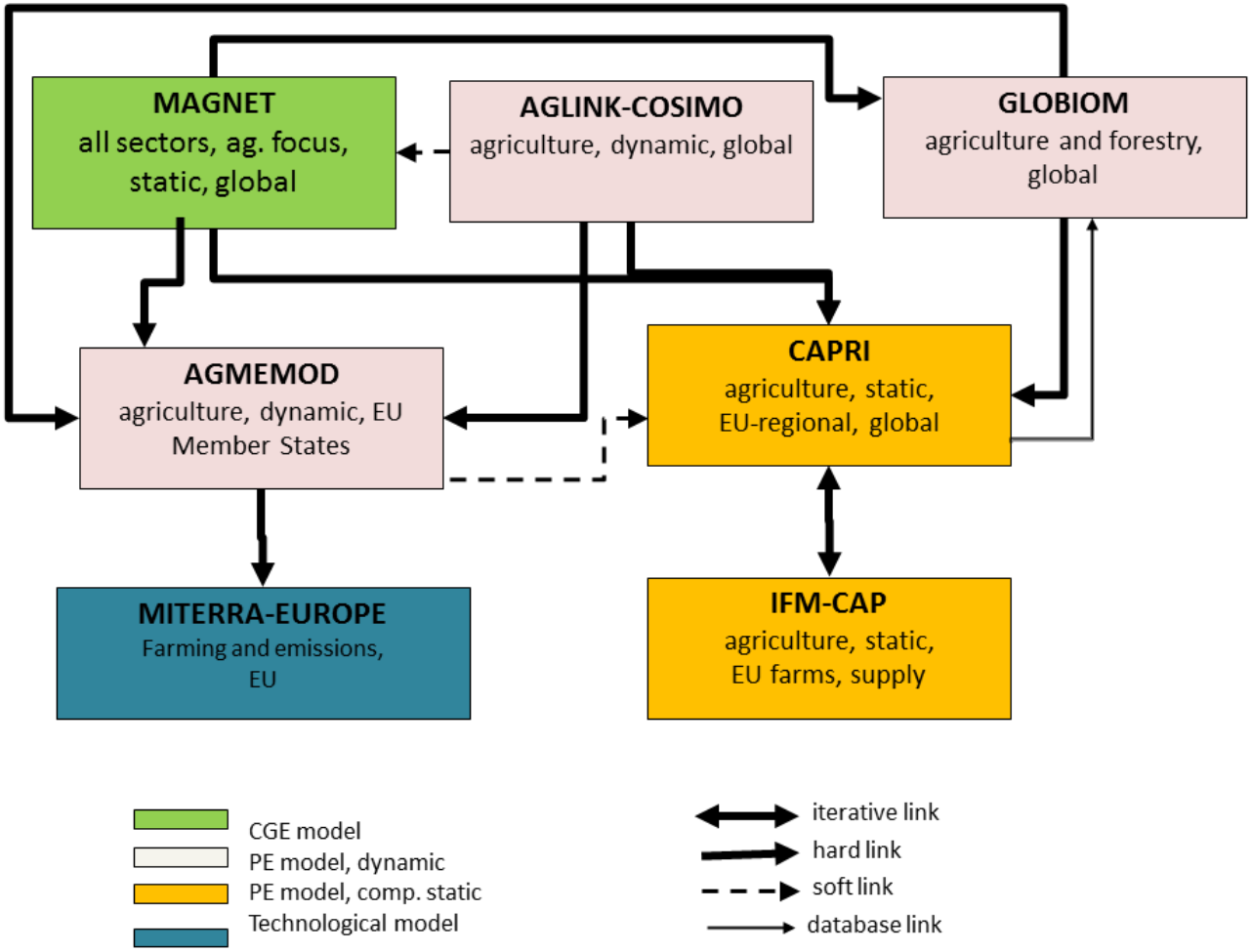
5. Which models to use?



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6. Discussion / Next steps

- Get commitment on ideas about preliminary policy scenario(s) line(s) addressed here
- Scenarios must be linkable to **models** in the SUPREMA platform
- Interaction with a) iMAP group and b) stakeholders in 2nd SUPREMA workshop (M14) on generation and discussion of the policy scenarios
    - story lines and narratives
    - flexibility/diversity for MS options
- Overview on the indicators that need to be followed in the scenario analysis
    - indicators linked to model types (economy, environmental, biodiversity)
    - also linked to what is used in baseline (in order to calculate impacts)

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Thanks

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T3.3 - Long-term assessment of climate change goals

Stefan FRANK, Petr HAVLIK
IIASA

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

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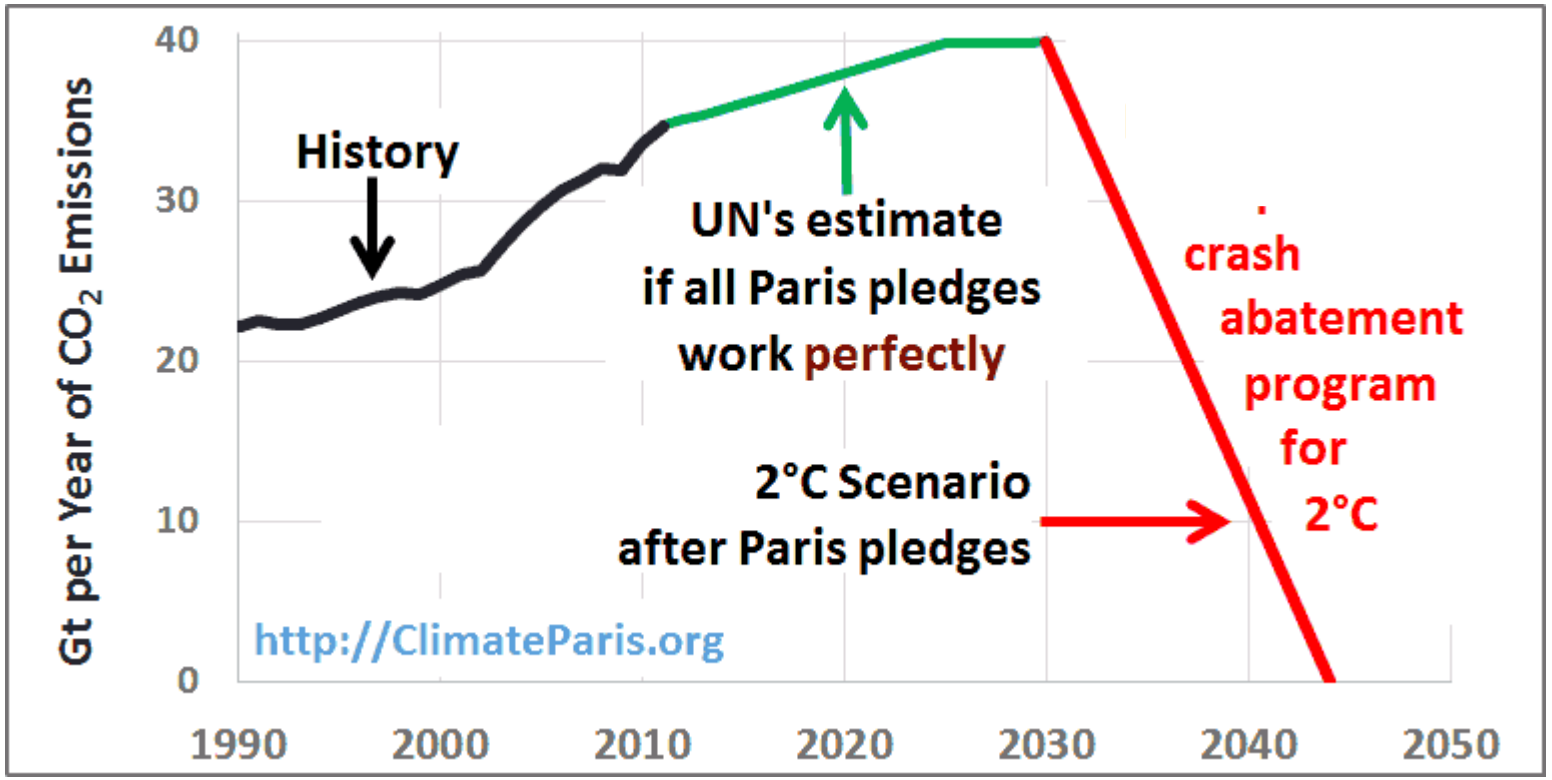
Paris Agreement Mitigation Challenge



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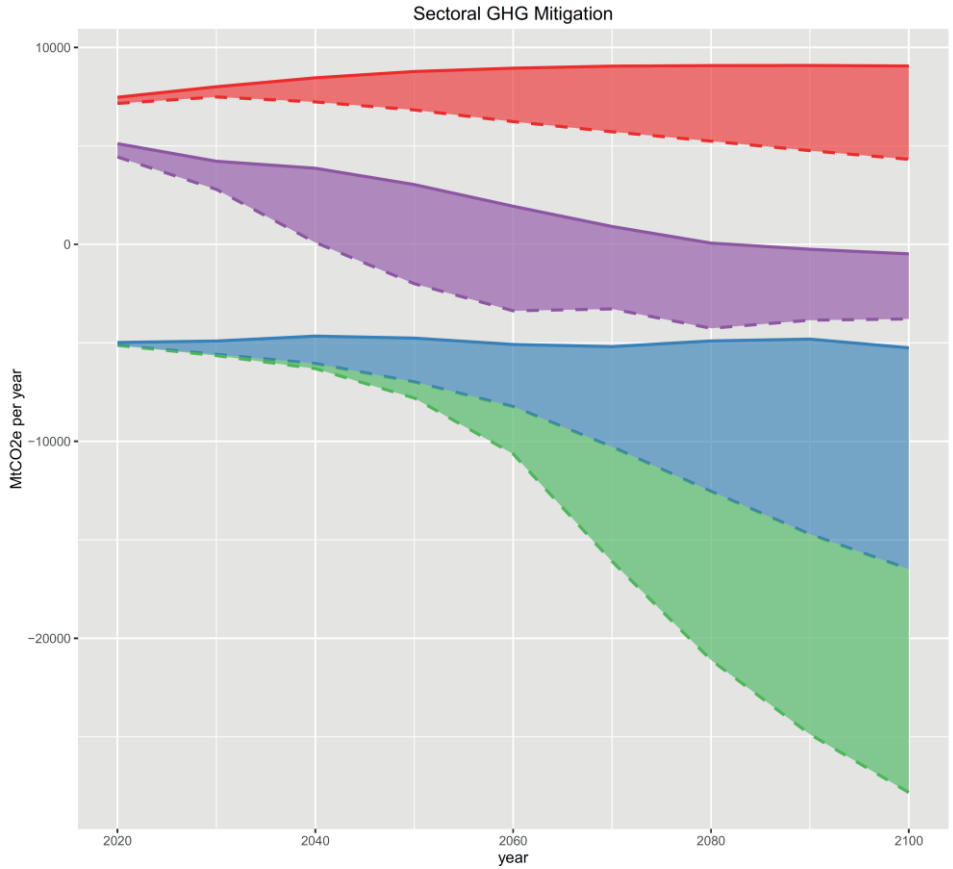
Land use sectors contribution to PA

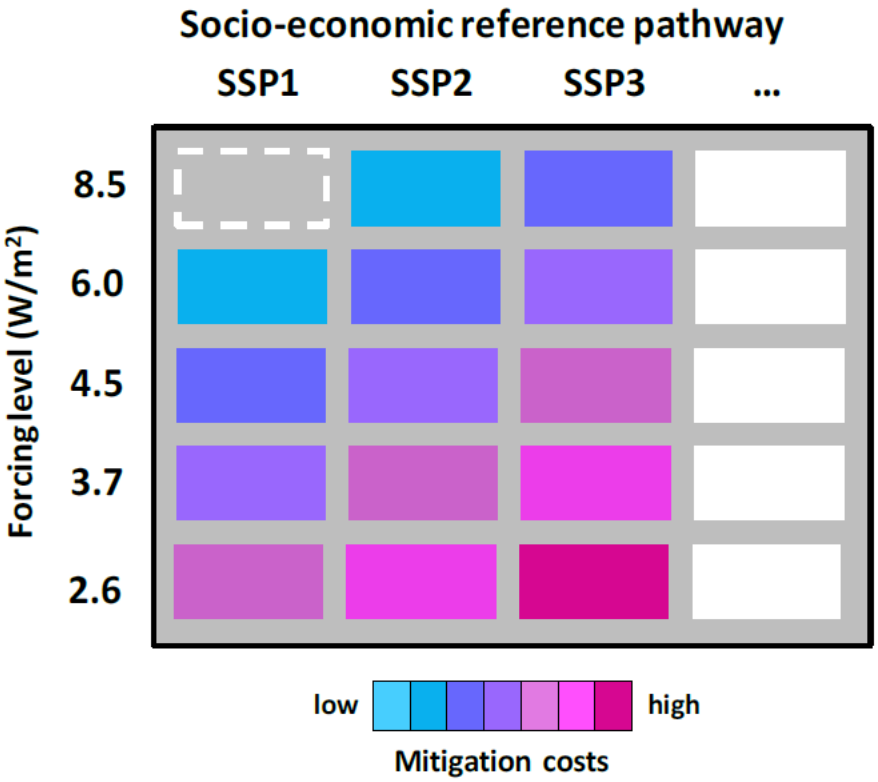


Source: Cantele based on Fricko et al. 2016, GEC

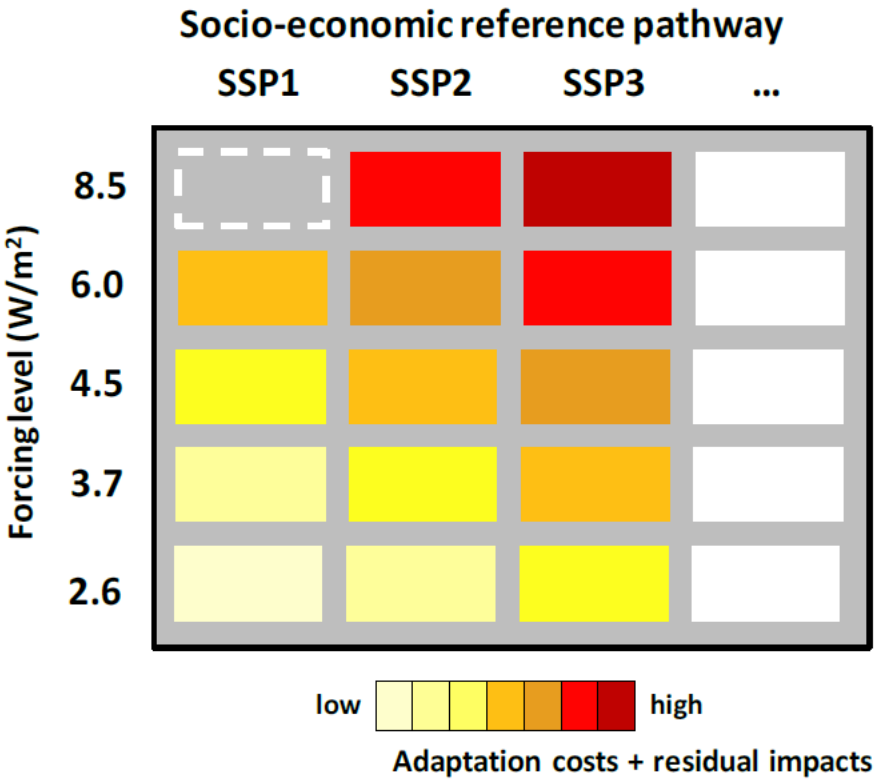
- Land use sectors provide 20 to 30% of total mitigation effort, 50% in 2020
- Agriculture non-CO2 emissions with stable share of 4 to 5%
- Land use decreasing share from 30 to 3%
- Bioenergy and BECCS 7 to 22%

“IPCC” scenarios matrix approach

GHG emissions / Mitigation (IAM)



Climate change / Adaptation (IAV)

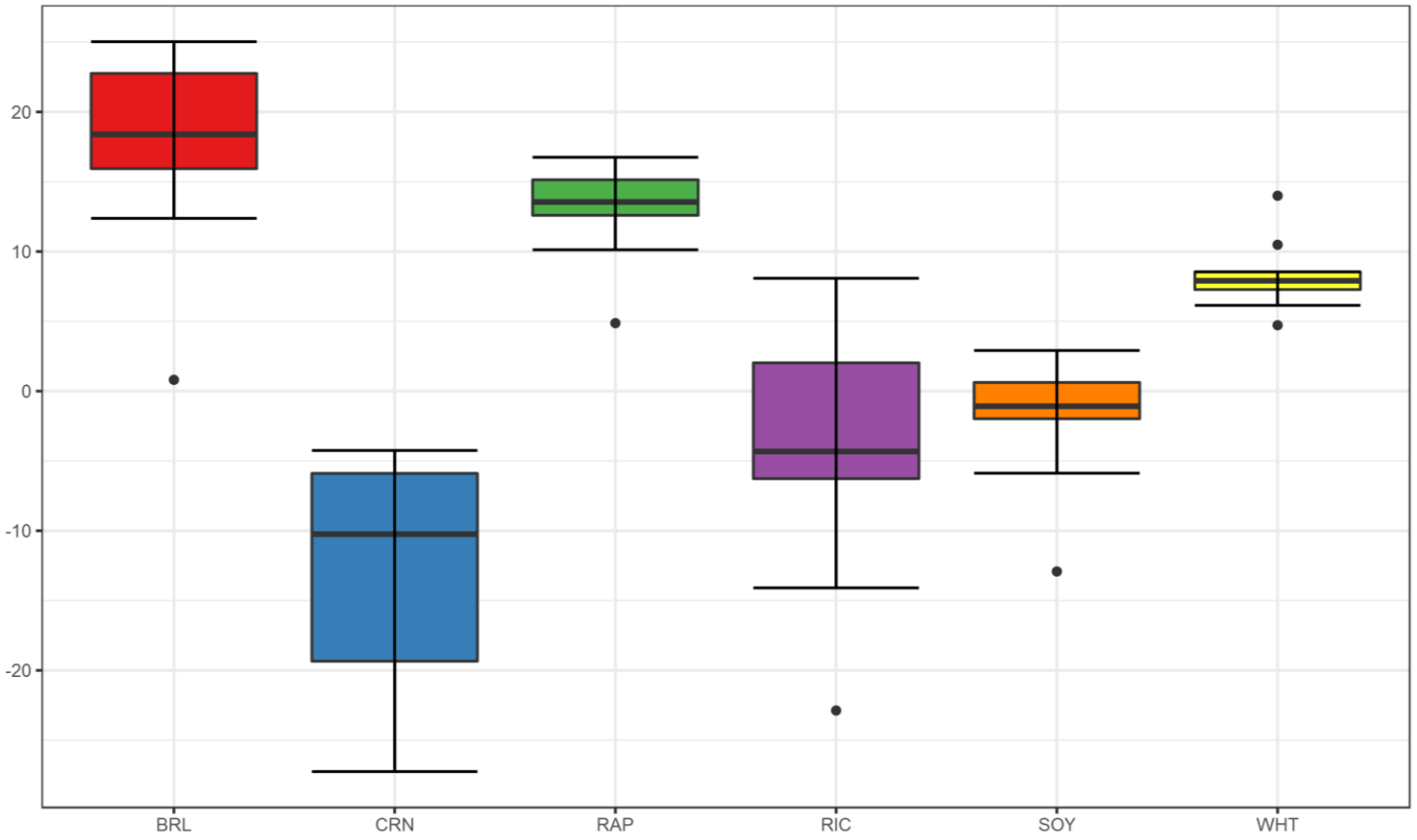


Climate change impacts

- Climate change affects crop yields by gradual change in weather patterns as well as by potential change in frequency and severity of extreme weather events
- For gradual change, climate change impact projections by the crop growth model EPIC from the 1st phase of the ISI-MIP project are used for
  - 4 Representative Concentration Pathways
  - 5 Global Climate Models
  - CO_2 fertilization sensitivity

Climate change impacts: EU

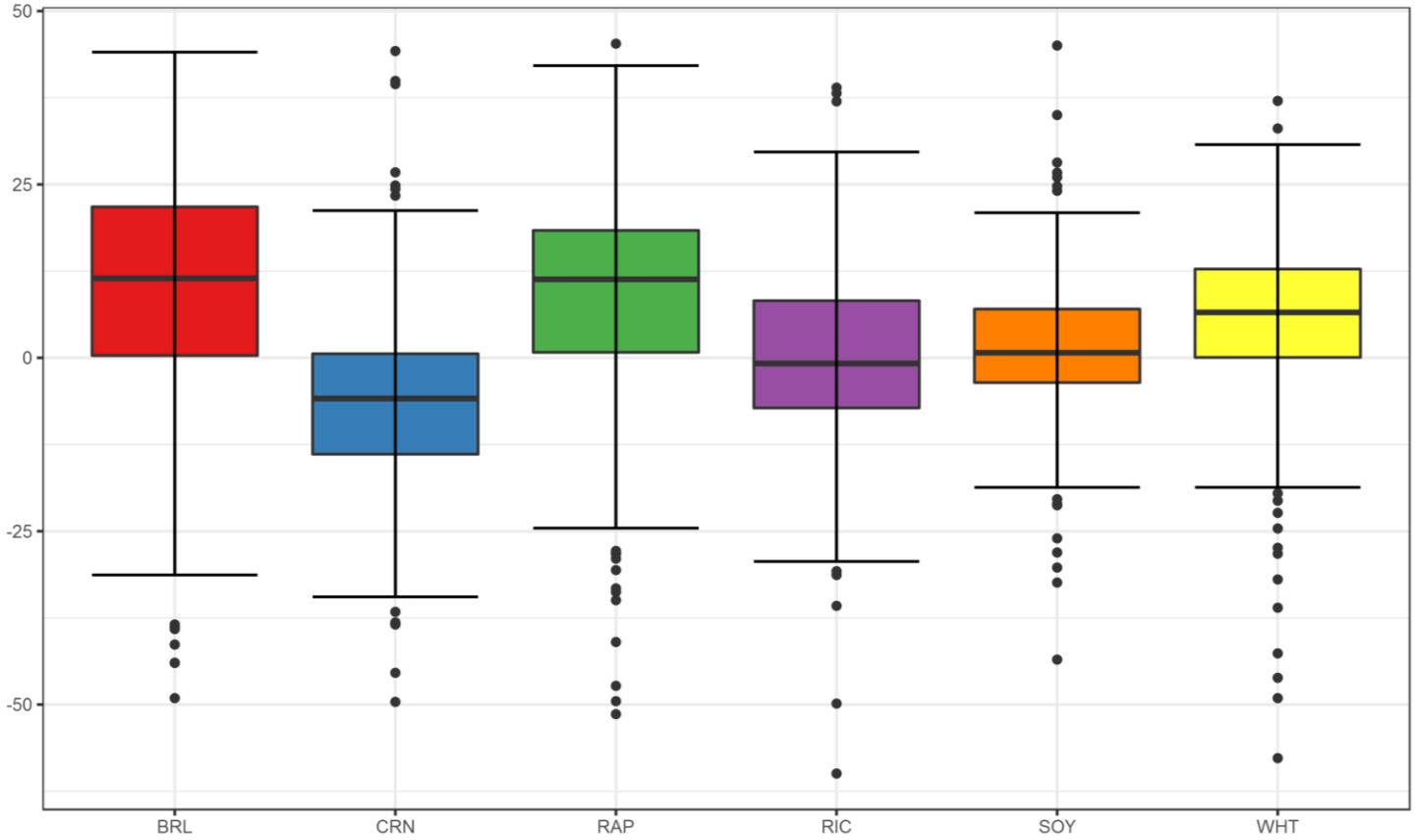
Crop yield change due to climate change in by 2050 [%]



Source: Source: EPIC calculations from ISI-MIP (Leclère et al. 2014)

Climate change impacts: World

Crop yield change due to climate change in by 2050 [%]



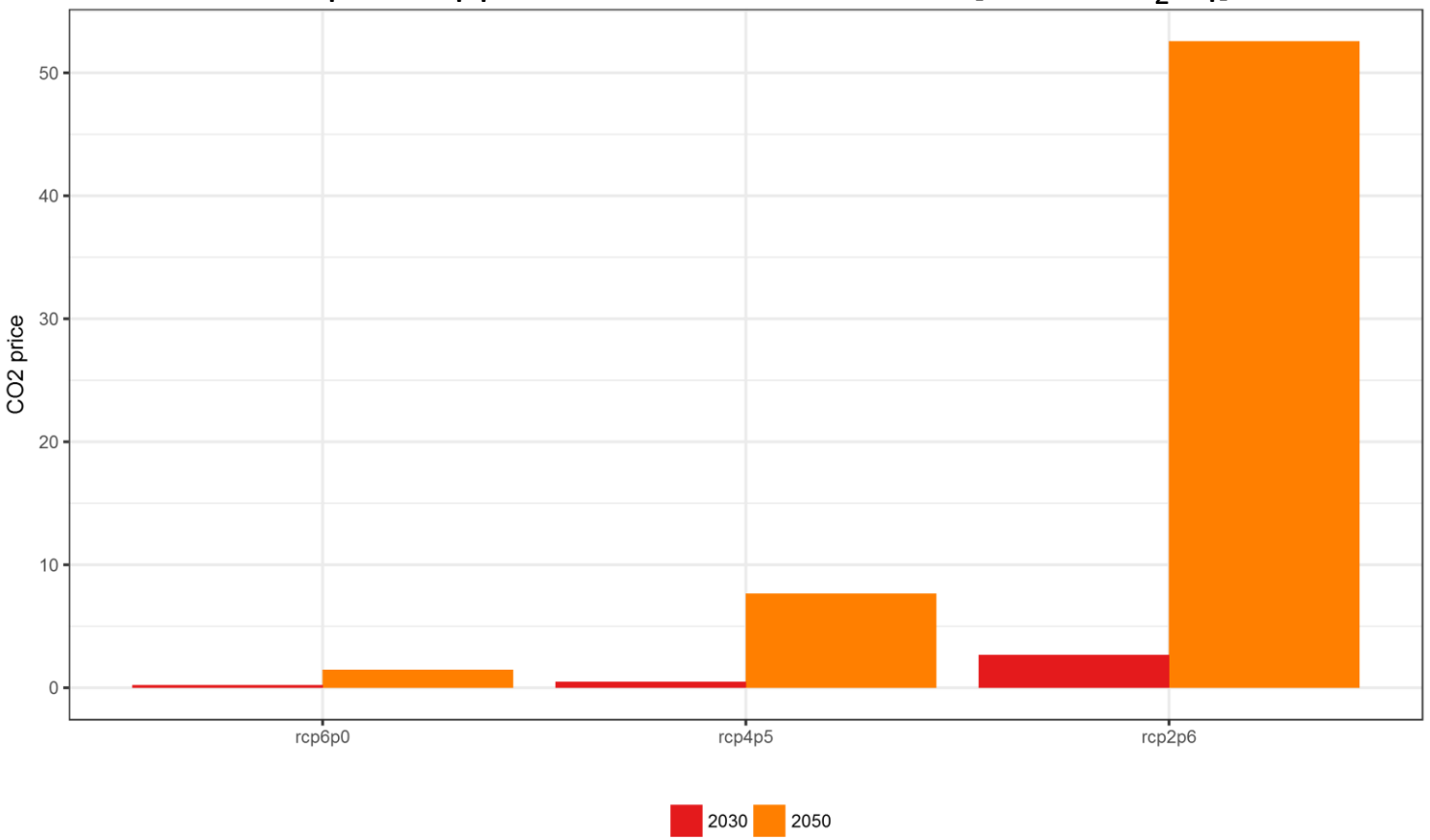
Source: Source: EPIC calculations from ISI-MIP (Leclère et al. 2014)

Climate change mitigation

- Ambitious mitigation pathways largely rely on land sector related mitigation
- The relevant drivers of FNS assessment through the SUSFANS toolbox are carbon price, forest area development, and biomass demand
- Integrated Assessment Model based mitigation pathways corresponding to RCP2p6, RCP4p5, and RCP6p0 under SSP2-SPA2 are used for quantification of the drivers

CC mitigation: Carbon price

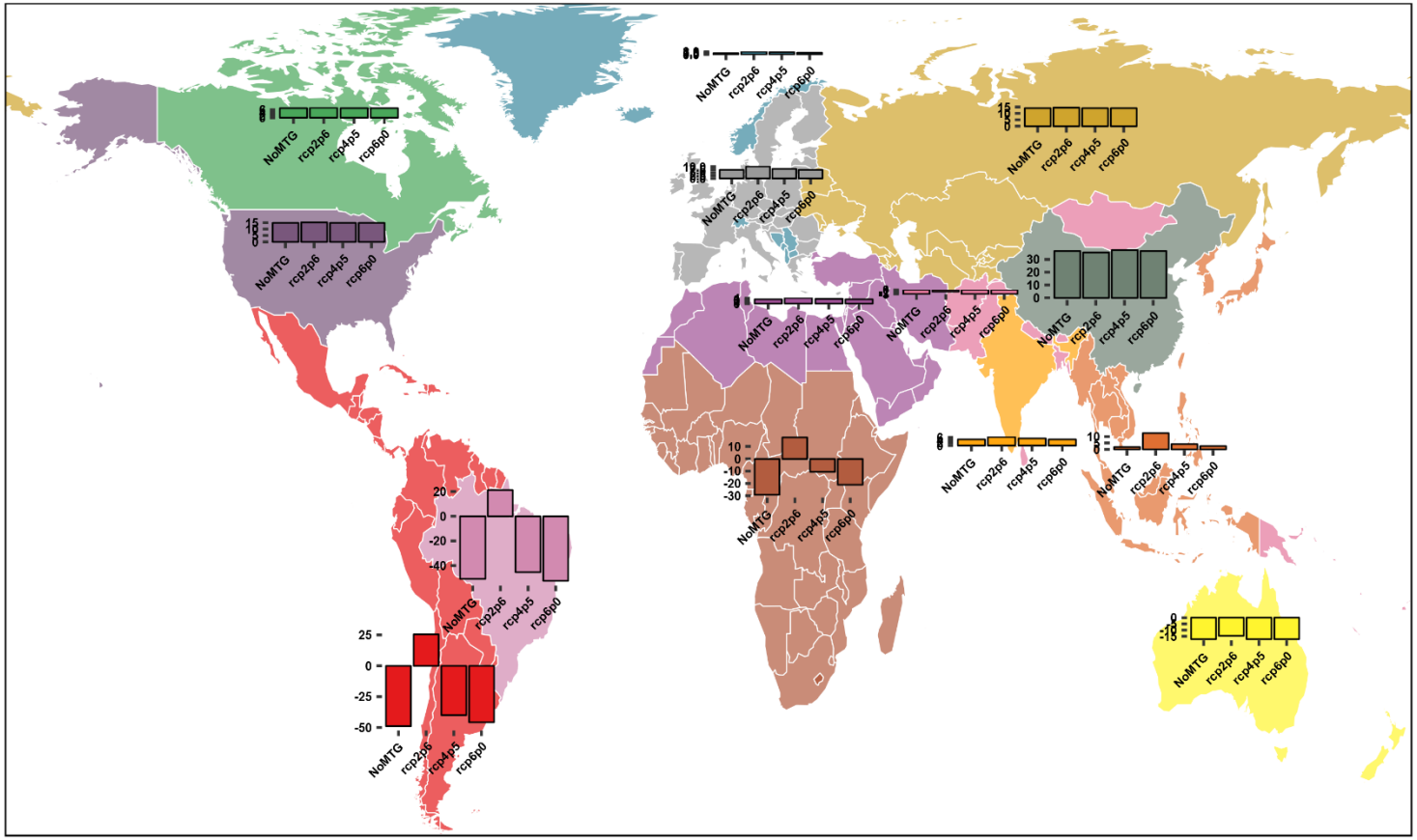
Carbon price applied to the AFOLU sector [USD/tCO_2eq]



Source: MESSAGE-GLOBIOM (Fricko et al. 2017)

CC mitigation: Forests

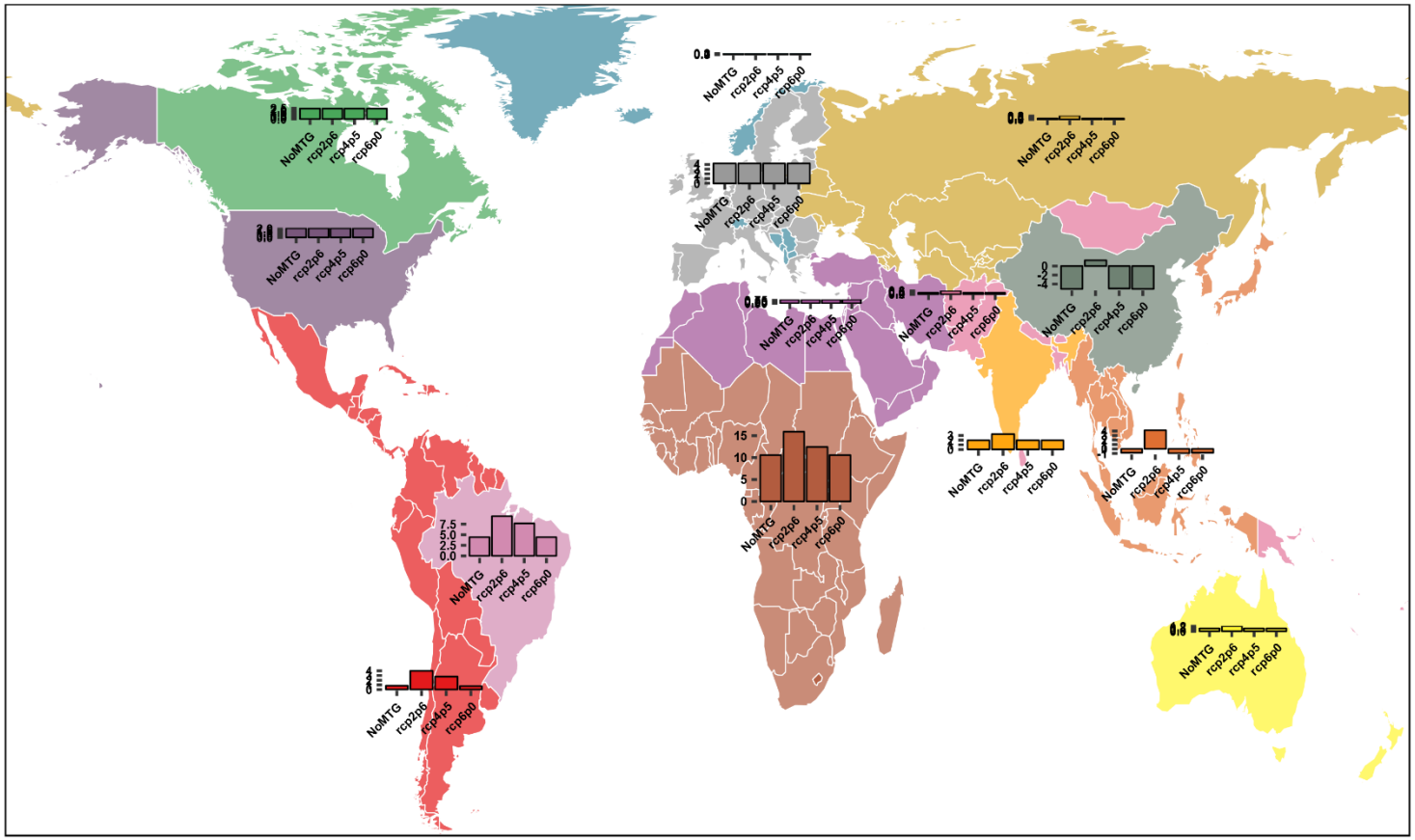
Forest area change in RCP2p6 between 2010 and 2050 [million hectare]



Source: MESSAGE-GLOBIOM (Fricko et al. 2017)

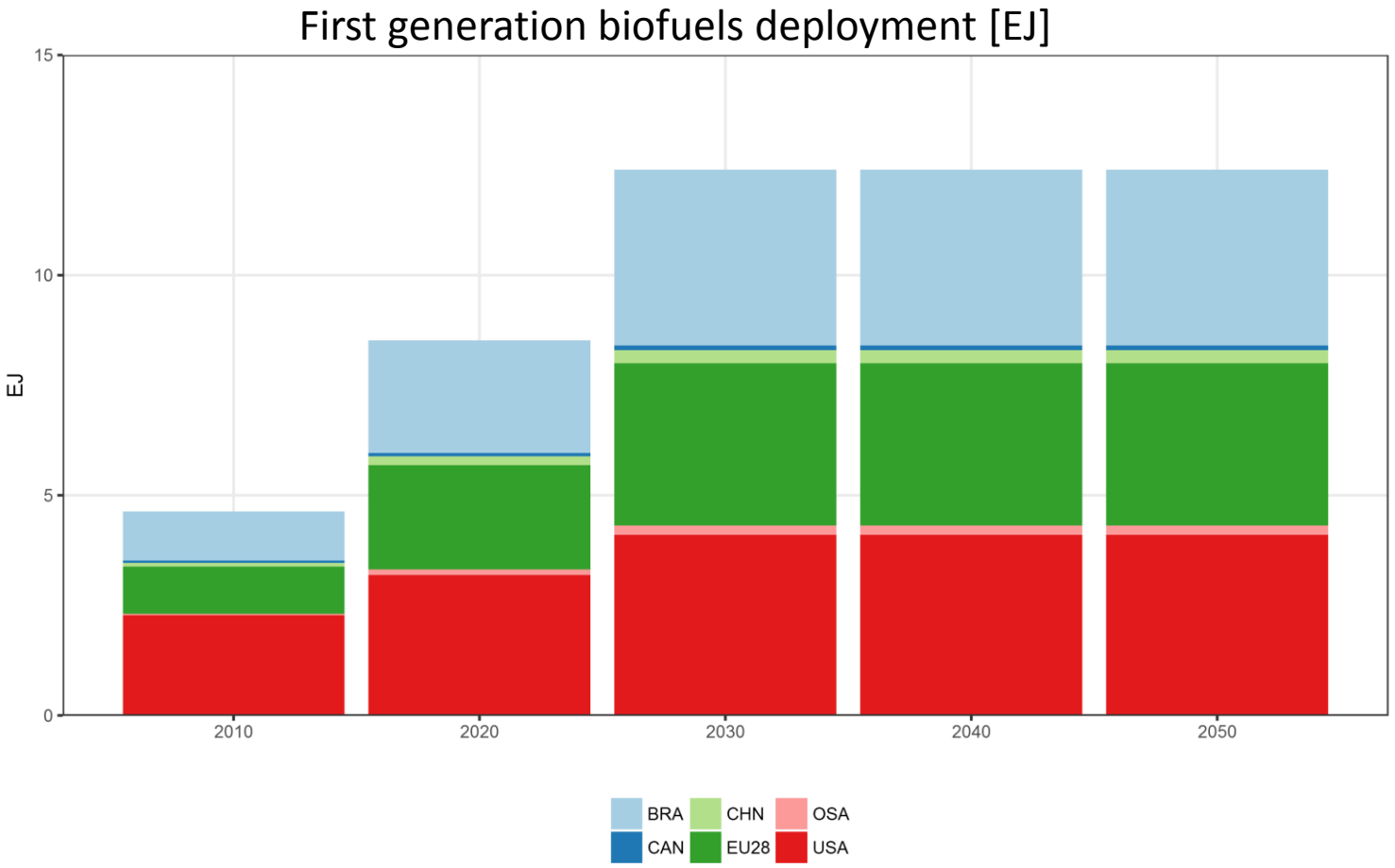
CC mitigation: Bioenergy

Biomass supply for energy production in RCP2p6 by 2050 [EJ]



Source: MESSAGE-GLOBIOM (Fricko et al. 2017)

CC mitigation: 1st Gen Biofuels



Source: AgMIP (Lotze-Campen et al. 2014)

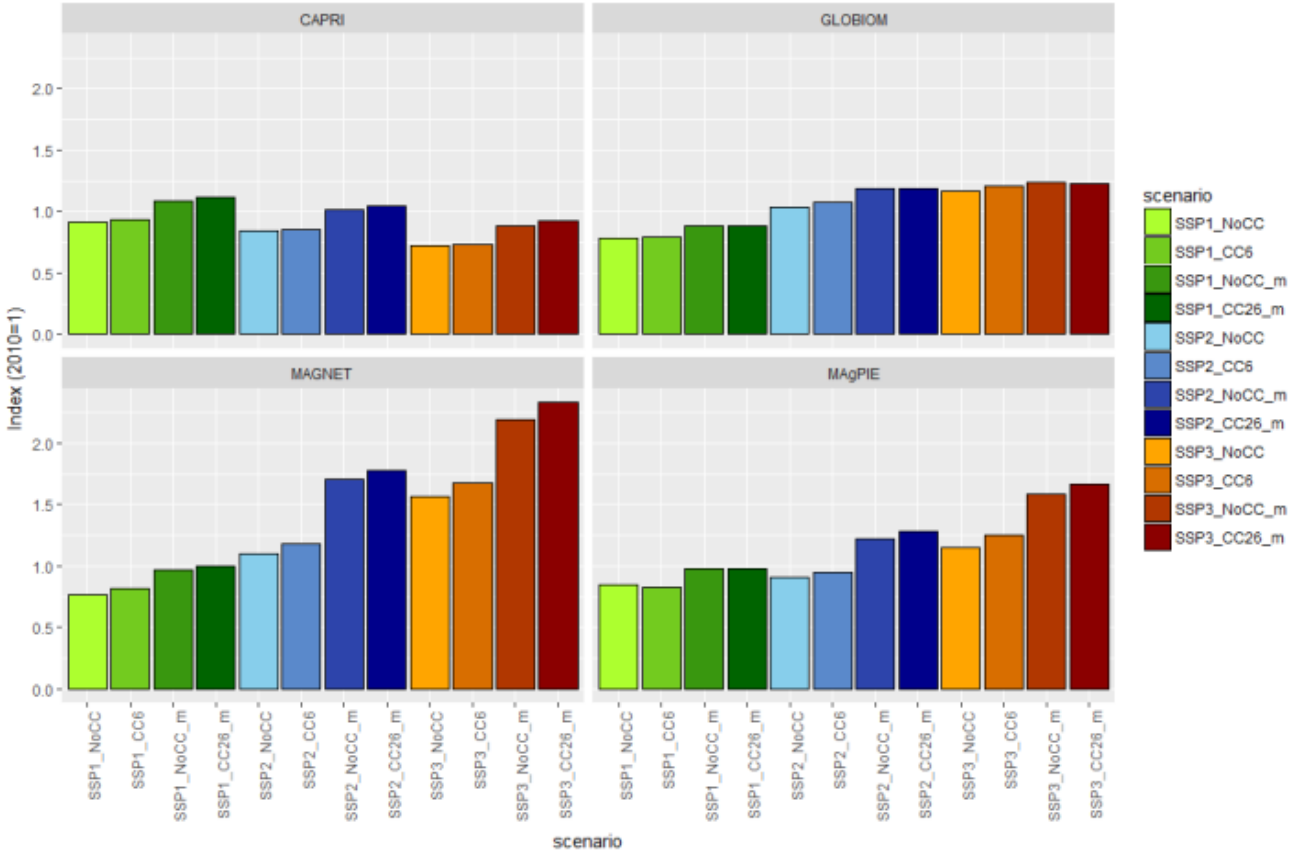
Combining Impacts and Mitigation: AGCLIM50.1

	Climate	Focus	SSP1 'Sustainability'	SSP2 'Middle of the Road'	SSP3 'Fragmentation'
			Adaptation challenge: low	Adaptation challenge: medium	Adaptation challenge: high
A	NoCC	No climate change	SSP1_NoCC	SSP2_NoCC	SSP3_NoCC
B	RCP6.0*	Climate change impacts	SSP1_CC6	SSP2_CC6	SSP3_CC6
C	NoCC	Mitigation measures for 2°C stabilization without residual climate change impacts	SSP1_NoCC_m	SSP2_NoCC_m	SSP3_NoCC_m
D	RCP2.6*	Mitigation measures for 2°C stabilization + residual climate change impacts	SSP1_CC26_m	SSP2_CC26_m	SSP3_CC26_m

Source: van Meijl et al. 2017

Combining Impacts and Mitigation: AGCLIM50.1

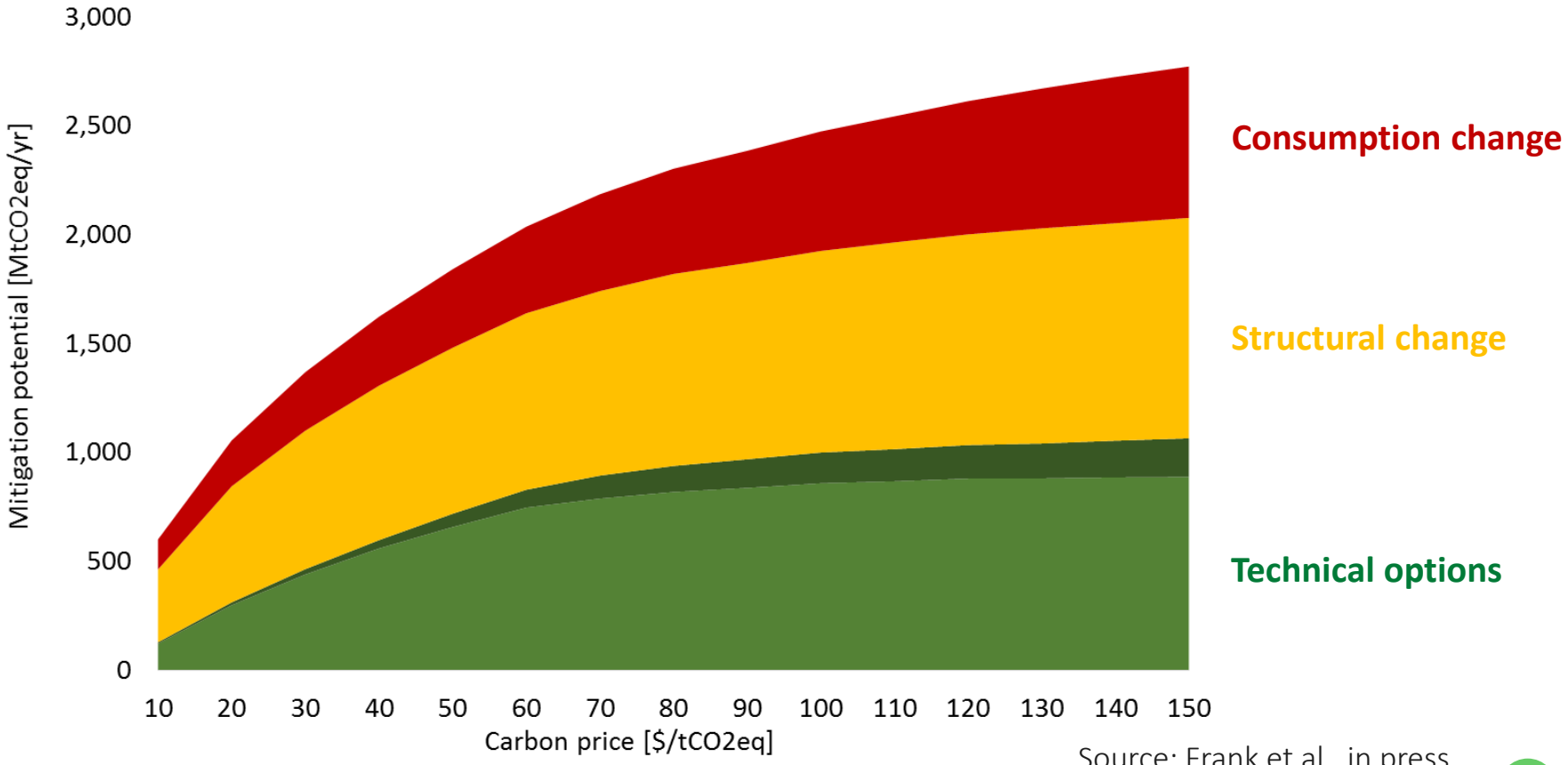
Figure 18. Real producer price of livestock products in 2050



Source: van Meijl et al. 2017

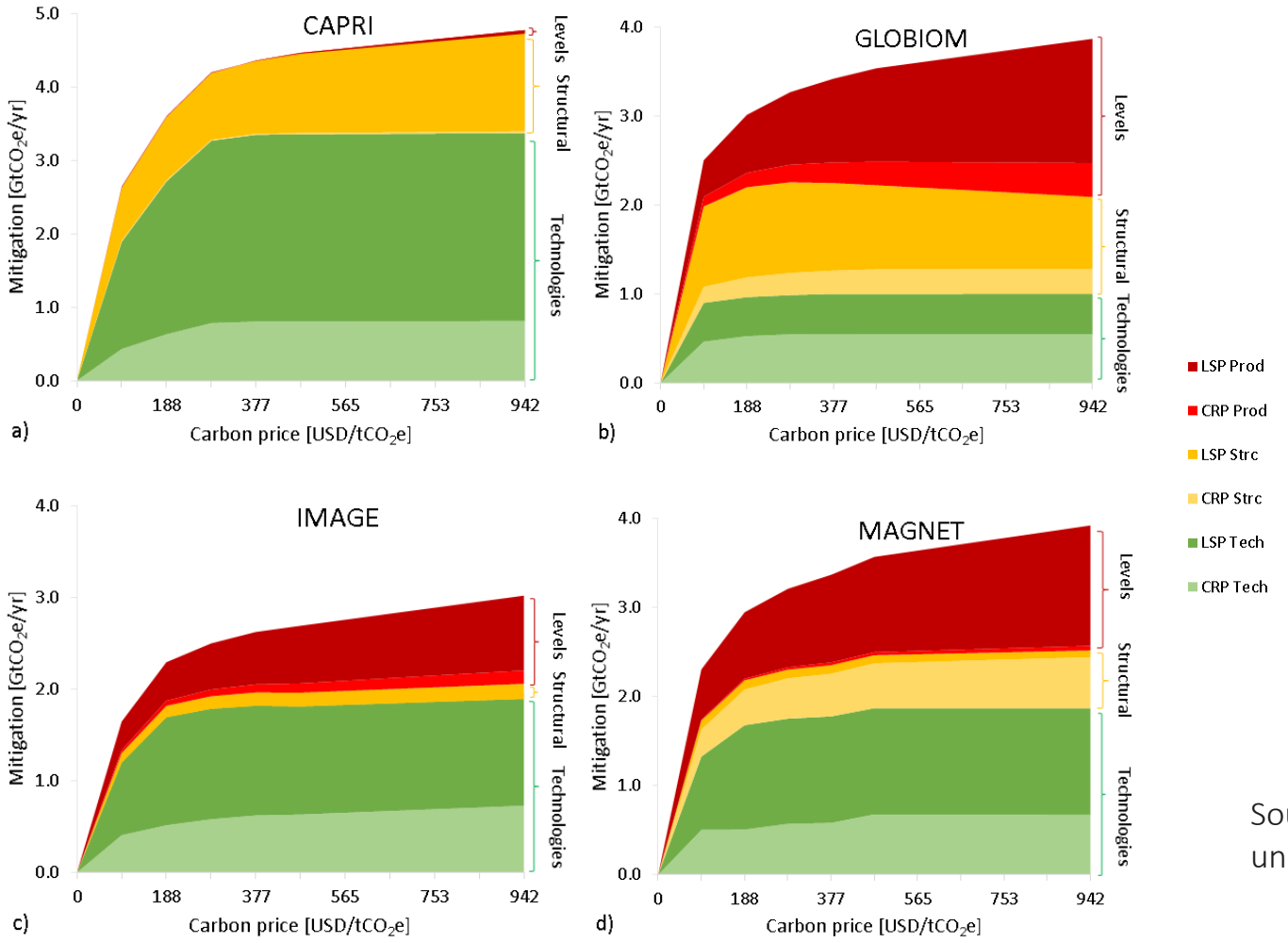
Agriculture emissions mitigation wedges

- Annual non-CO_2 abatement potential by 2050



Source: Frank et al., in press

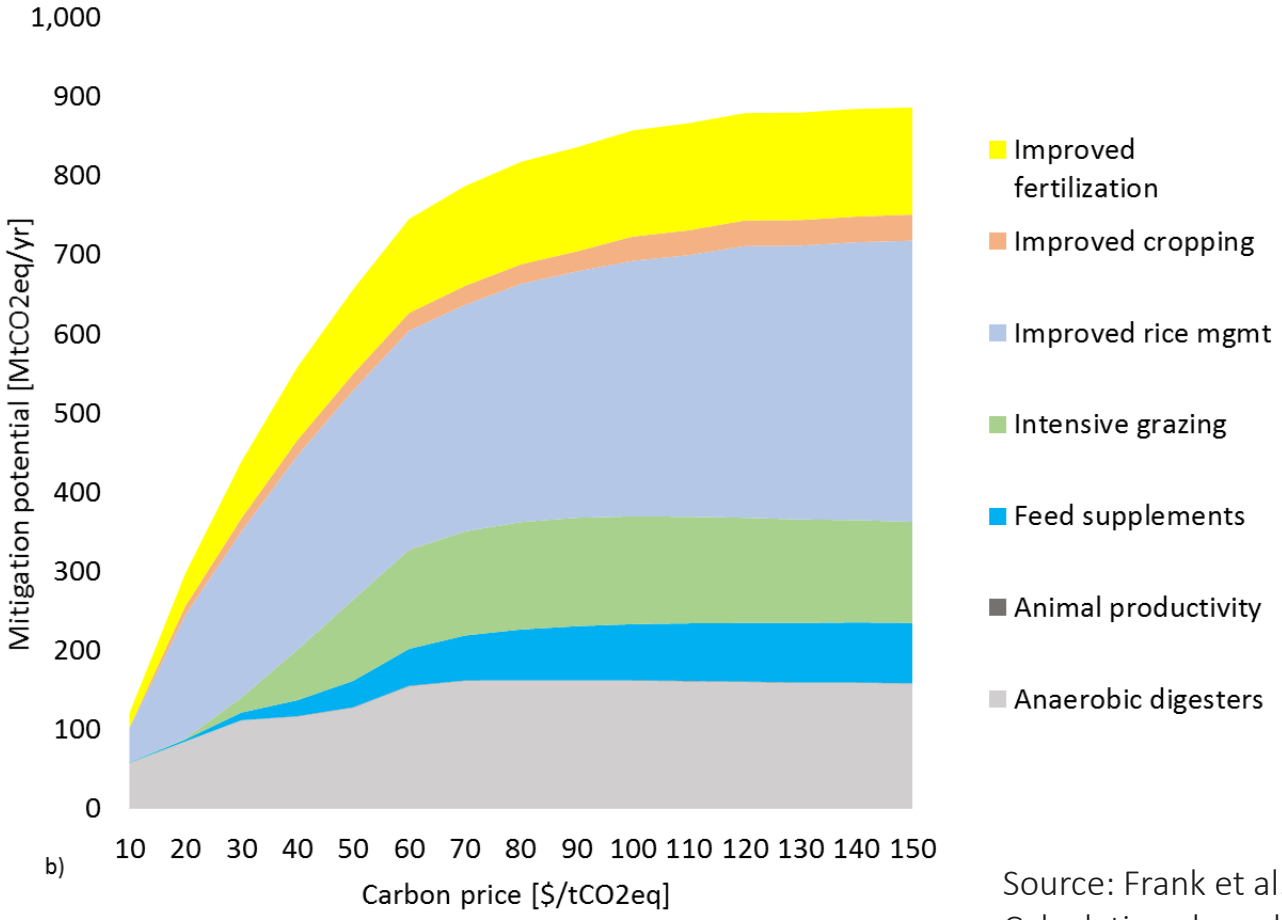
Mitigation wedges across models: AGCLIM50.2



Source: Frank et al., under review

Technical options

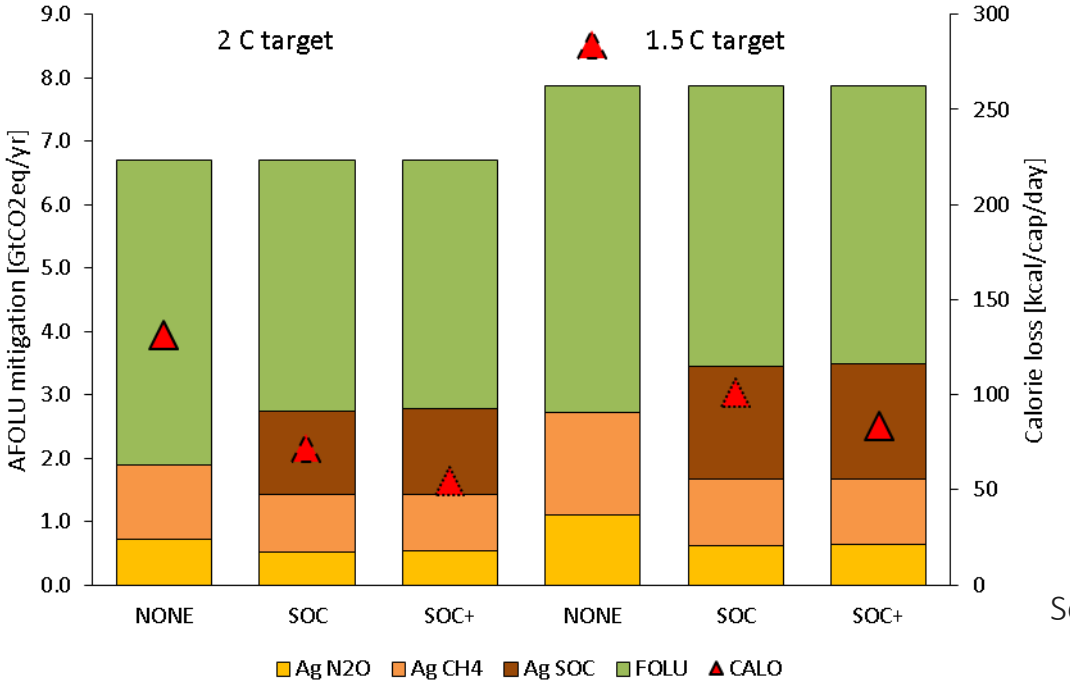
- Global agricultural non-CO2 mitigation potential by 2050



Source: Frank et al., in press
Calculations based on USEPA 2013

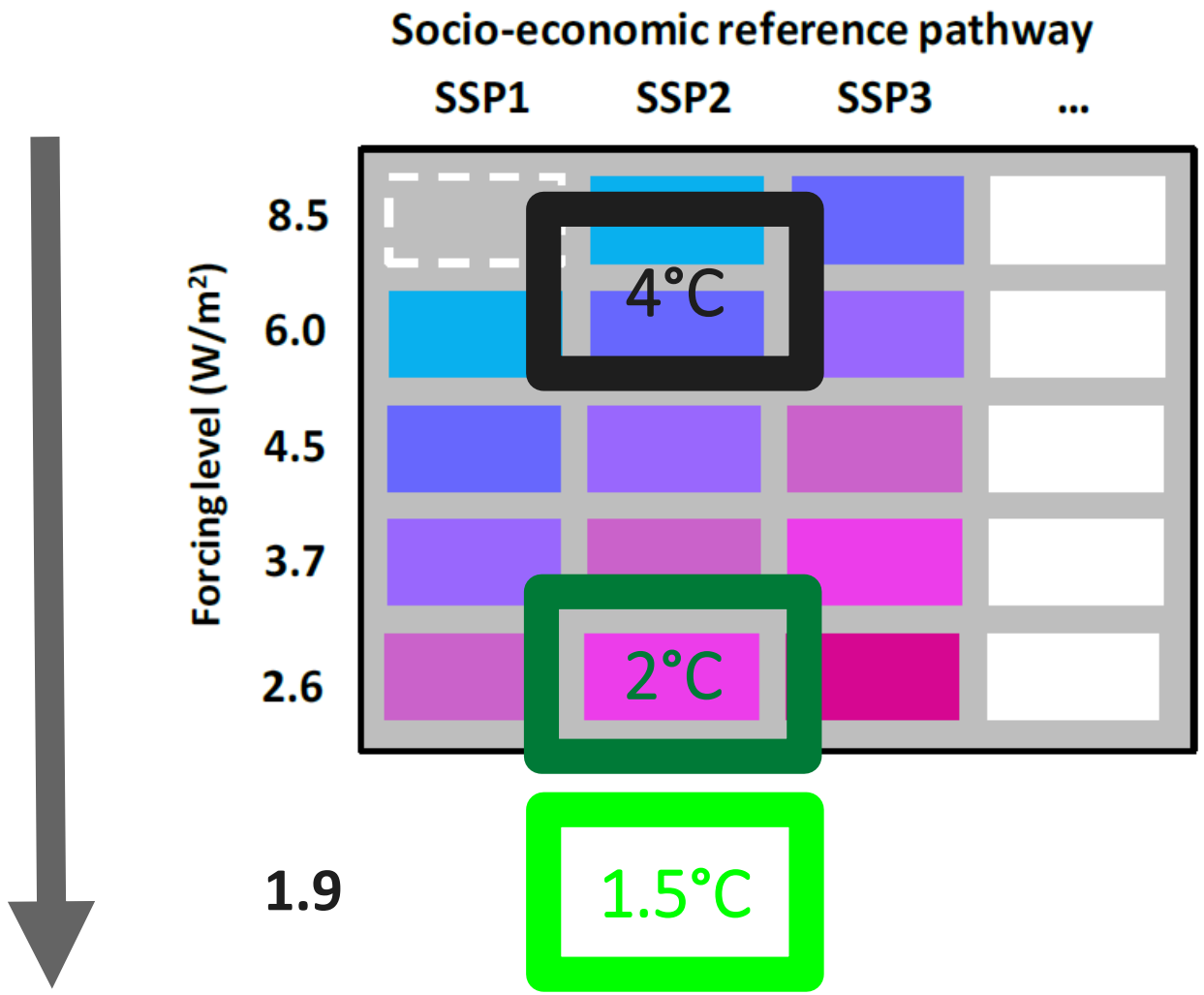
Moderating trade-offs: Remunerating sinks

- Land based mitigation without considering soil organic carbon would lead to a rise in undernourishment of 40 to 170 million people in 2050
- While including the SOC into the mitigation portfolio would limit the additional number of undernourished to to 10 - 40 million people



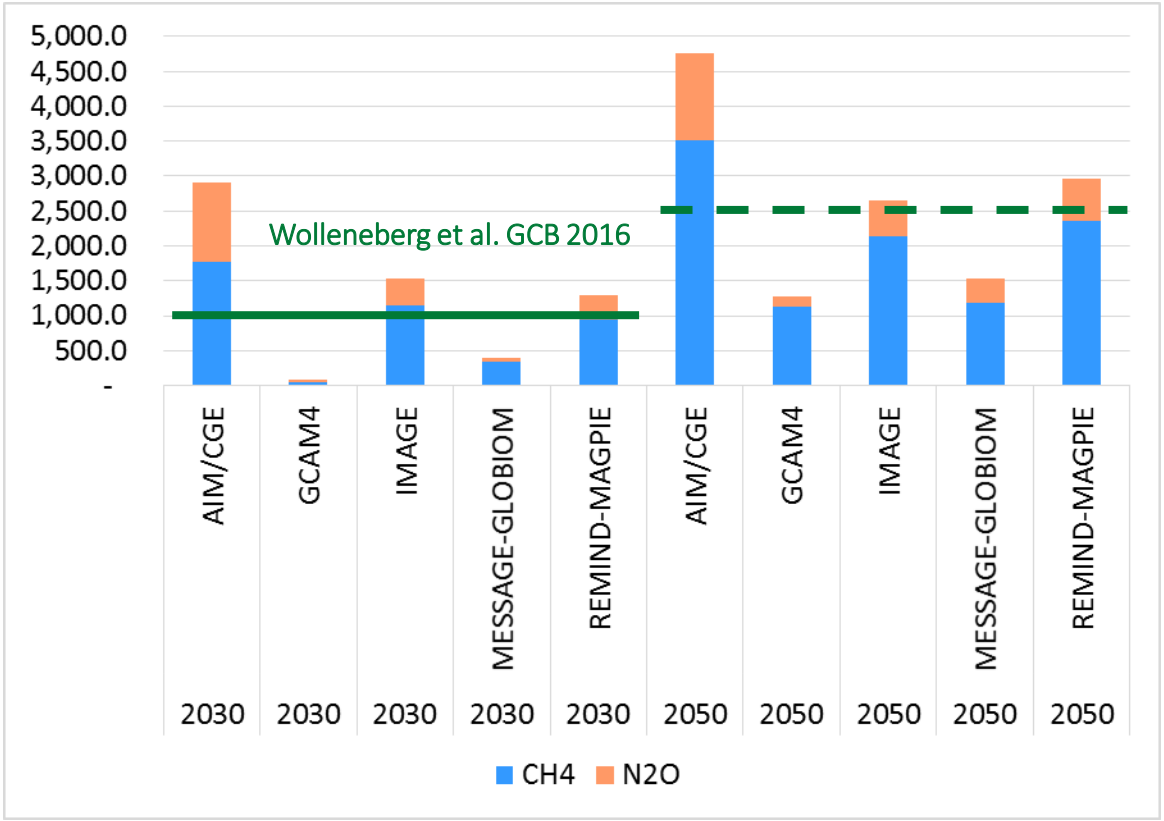
Source: Frank et al. 2017

Paris Agreement: Reconciling Top-Down and Bottom-Up



Top-down cost optimal distribution of efforts (IAMs)

2 degree compatible non-CO2 mitigation target for agriculture

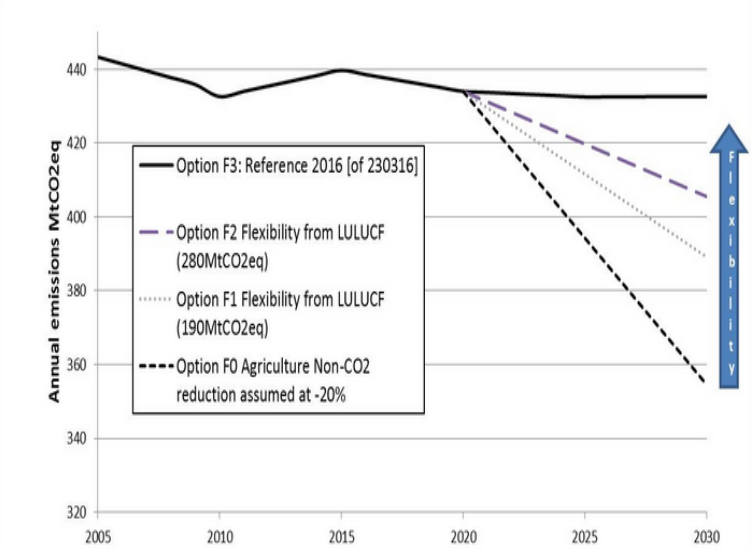


Source:
Popp et al. GEC 2017

EU Climate Policy

- 2020 targets: 20% GHG reduction, bioenergy and energy efficiency

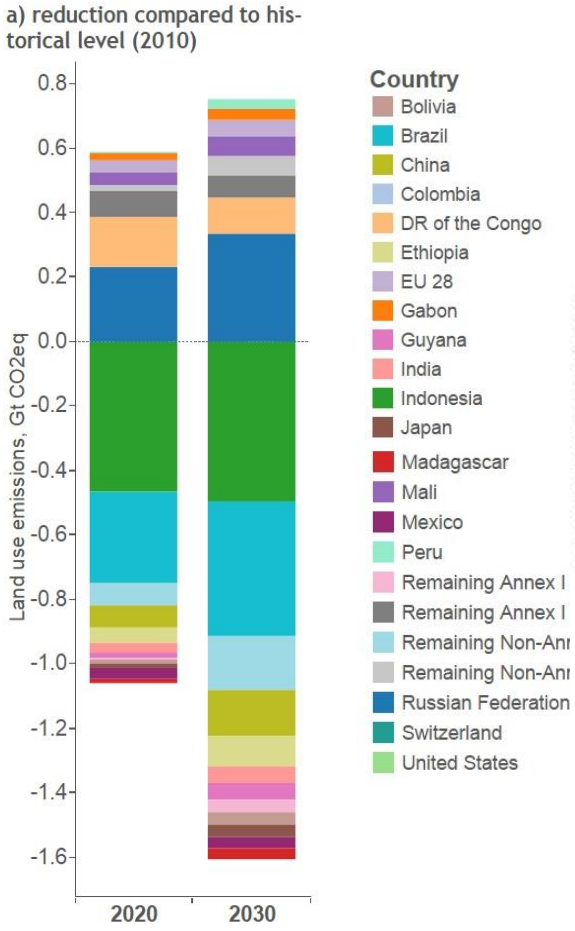
- 2030 targets: 40% GHG reduction
  - -43% ETS: covering power plants and large industrial installations
  - -30% non-ETS covering smaller industries, transport, ag. non-CO_2 …
  - Limited access to LULUCF credits
    No specific target for agriculture yet

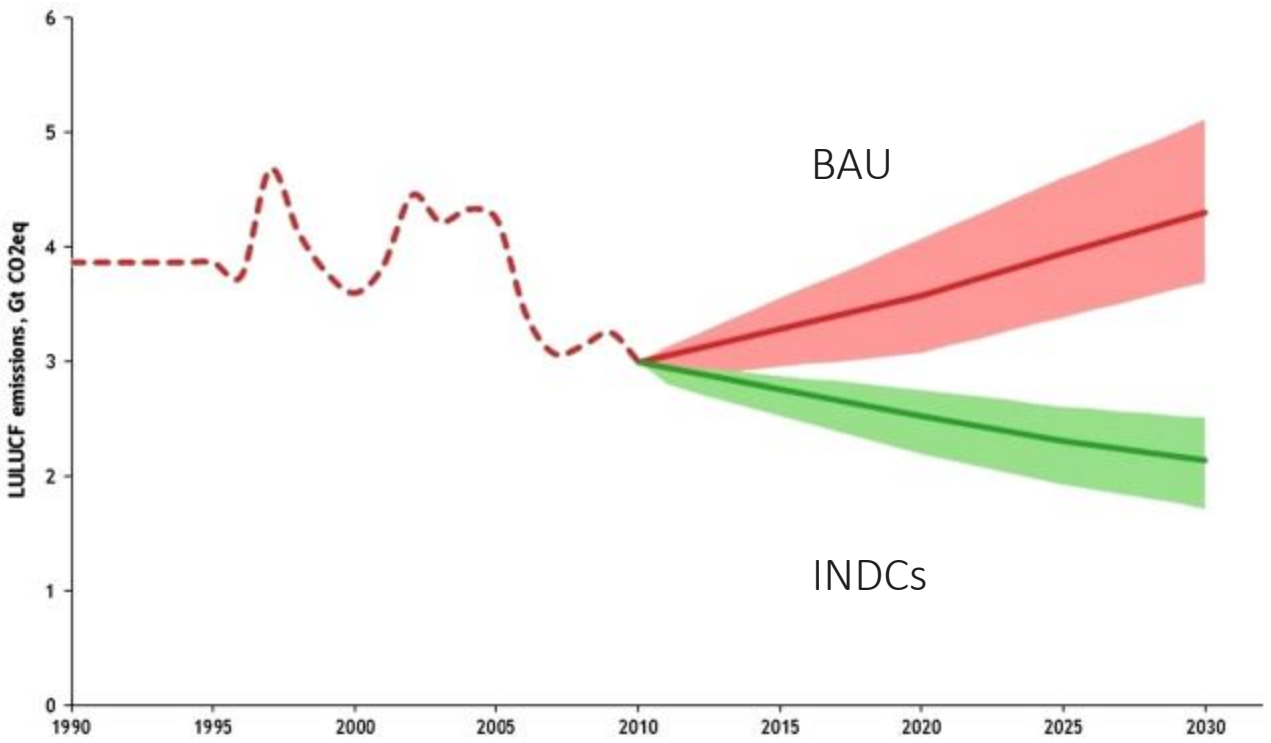


- 2050 roadmap: 80 – 95% GHG reduction
  - Mid-Century Strategy forthcoming

Bottom-Up assessment: INDC LULUCF

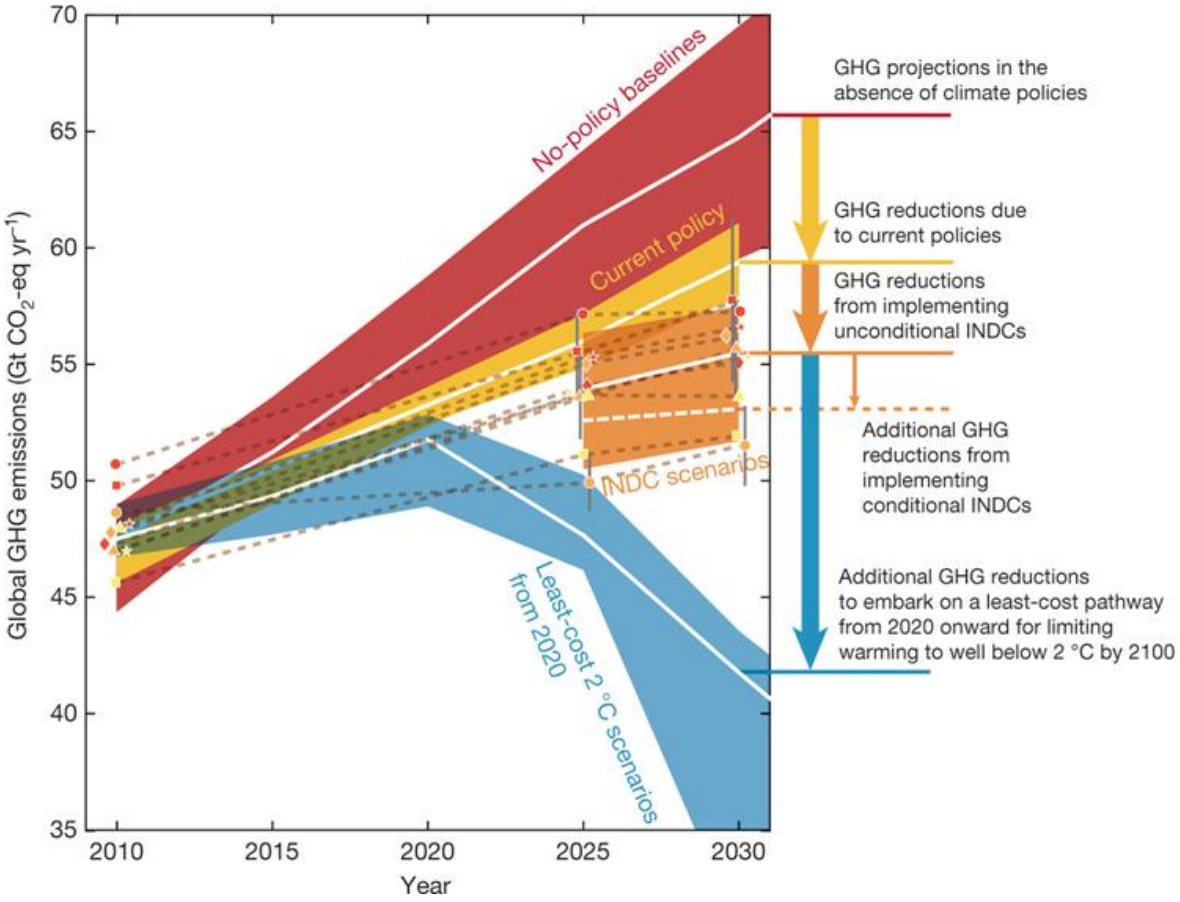
2030 LULUCF emissions reduction NDCs





Source; Forsell et al. 2016

Mismatch between Top-down and Bottom-up



Source: Rogelj et al. 2016

MS9 in M12: Description and assumptions of the scenario under climate change

- MS9 in M12: Description and assumptions of the scenario under climate change
  - Report will provide a narrative for the test scenarios under the climate change impacts and policy to be used in the model runs
- Potential case studies
  - EU AgCLIM50.2 – EU detailed analysis of mitigation potentials (MACCs)
  - Deep dive technical options and their cost and adoption rates
  - Deep dive land use
  - Deep dive soil organic carbon incl. mitigation options
  - Real world policies EU/Global: NDCs and mid-century strategy
  - Climate change impact on mitigation
  - Climate among the other SDGs
  - Energy

MS9 in M12: Description and assumptions of the scenario under climate change

- Additional questions
  - Leading models: GLOBIOM & MAGNET. Which other teams?
  - Which variables to harmonize on (CO2 price, forest area, biomass supply… ?)
  - What time focus – 2030/2050?
  - Which climate change impact scenarios?
  - Reporting: AGCLIM50.2 / SSPs?

Outlook

- **MS15 - Scenario results under climate change and policy (M24)**
  - For each of the models included in the SUPREMA platform the scenario described in MS9 will be run and the results stored in a common reporting format.Leading models: GLOBIOM & MAGNET
- **D3.3 : Divergence analysis of the climate change scenario (M28)**
  - Report comparing results of each of model run under such a climate change scenario, and provide an explanation of why these diverge

WP4 – Project coordination and management

Floor Brouwer

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773499 SUPREMA.

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WP4 has five tasks and all partners to contribute

- Task 4.1 – Contract management (WR)
- Task 4.2 – Coordination (WR)
- Task 4.3 – Setting-up and maintenance of a project website (THUENEN)
- Task 4.4 – Data management (WR)
- Task 4.5 – Future governance structures of the models (SLU)

- All tasks operate M1 – M30, while Task 4.5 will only start in M26

Task 4.1 – Contract management

- Consortium Agreement is signed and this version is distributed on 24 November 2017
- Monitoring project progress
- Financial management and reporting. Letter from the Research Executive Agency regarding pre-financing payment (17.1.2018), which will be transferred without delay
- Prepare and deliver periodic reports. RV1 is tentatively planned for Month 15 (March 2019), with RP1 report due until end of February 2019. RV2 is tentatively planned for Month 33 (September 2020), with RP2 report due until end of August 2020. WP leads to be present, likely one day in Brussels

Eligible costs (Article 6)

- Actually incurred by the beneficiary
- Incurred during the action
- Estimated in the budget set out in Annex 2
- Connected to the action
- Identifiable and verifiable
- In compliance with national laws on taxes, labour and social security
- Reasonable, financially sound

Task 4.1 – Contract management

- Prepare and deliver period reports (progress and financial) and final report to the European Commission/REA
- Continuous reporting through Deliverables and Milestones
- Contact point for relevant Commission/REA Services. Federica Gebbia is the project officer with the Research Executive Agency and she will join the workshop on 1 March.

Task 4.2 – Coordination

- Two meetings of the Executive Board (M2, M24) – partner representatives
- Regular meetings of the Project Coordination Team (PCT)
- WR to organise and report on these meetings

Task 4.3 – Setting-up and maintenance of a project website

- Branded website (www.suprema-project.eu) will be created as a platform for external communication; supporting communication actions targeted on existing platforms
- THUENEN to launch the website

Task 4.4 – Data management

- SUPREMA will participate in the Pilot on Open Research Data in Horizon 2020. Data will be released in open formats like JSON or XML, with proper documentation to support their use in other research.
- After the project completion, and if there is no objection by any of the project partners and use anonymization is preserved, the data may be published in an Open Data portal (for example in http://open-data.europa.eu) for future research.
  - Discuss the data bases that will be part of the Data Management Plan, due for Month 6 (June 2018).

Task 4.5 – Future governance structures of the models

- Lead partner SLU; M26-M30
- The task will review, compare and propose for a better governance structure of models involved in SUPREMA
- Survey existing organizational forms of the modelling groups involved in SUPREMA, and compare with similar organizations, such as GTAP (consortium), Linux (successful open source), and commercial software development. The result is a set of recommendations on how to proceed towards a sustainable business model for models lagging behind in that respect.

Upcoming deliverables and milestones

- D1.1 – The needs – scope to address new challenges in modelling (THUENEN) in Month 5
- D1.2 – Stakeholders workshop ‘Needs’ (THUENEN) in Month 5
- D4.1 – Internal progress report and minutes of the first meeting of EAB and EB (WR) in Month 4
- D4.2 – Project website (THUENEN) in Month 5
- D4.3 – Data Management Plan (WR) in Month 6
- MS1 (Scoping paper) (THUENEN) in Month 4
- MS2 (Stakeholder workshop held) (THUENEN) in Month 4

Process to review and submit deliverables

- Templates for deliverables will be provided shortly; important to have a clear Executive Summary; an introduction section which clearly outlines the purpose and scope of the deliverable, and a conclusions section. Author of deliverable will develop a plan, to be confirmed by the WP lead. Draft of the deliverable is send to the WP lead (also to check against the work plan) and approved.
- Quality check of the deliverable by the PCT (i.e. WP leads)
- Author to send the final version (word and pdf) to WR in time (M4 means submission by April 30 at the latest)

Process to review and submit milestones

- Milestones typically are short reports that are kept internal in the consortium, and verified by the Project Coordination Team. This verification will be completed before the end of the due date.
- Draft reports are confirmed by the WP leads.
- WR will upload a short text in the H2020 portal to justify the process. The project officer may request to receive the internal reports as part of the review process (and share with the external reviewers).