MACSUR - SECOND PHASE REPORT

to be filled in and submitted
by the MACSUR coordinator
to ptj-faccejpi@fz-juelich.de until 31.07.2017

A – General data

Project Title	Modelling European Agriculture with Climate Change for Food Security		
Acronym	FACCE MACSUR 2		
Official Start (dd/mm/yy)	01/06/2015	**Expected End** (dd/mm/yy)	31/05/2017
Signature date of the Consortium Agreement:	12/06/2013		
Total cost of the project (in K€; this is the sum of the individual project costs for each partner)			3262, excl. in-kind staff 5439, incl. in-kind staff
Total spent funding "in cash" (in K€; this is the sum of the in cash funding spent for each partner)			2585
Total "in kind" contribution (in K€; this is the difference between the project costs and the spent funding)			677, excl. in-kind staff 2854, incl. in-kind staff
Total number of Person-Months contributed to MACSUR2			625
Total number of "in kind" Person-Months			299 ≙ c. 2177 k€

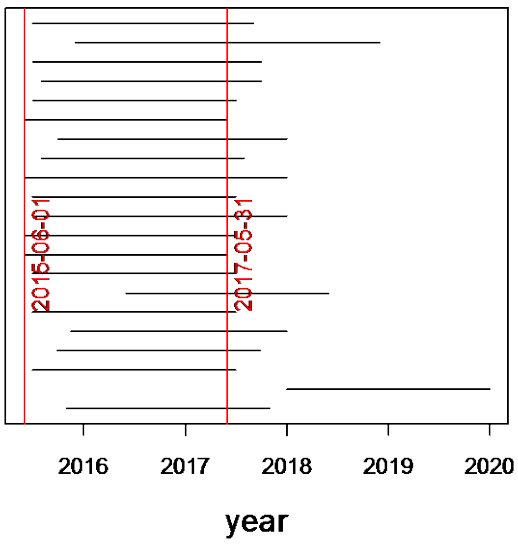


Fig. 1. Distribution of funding periods among partners for their "phase 2" compared to the reporting period. (Based on reports submitted by 30 June 2017)

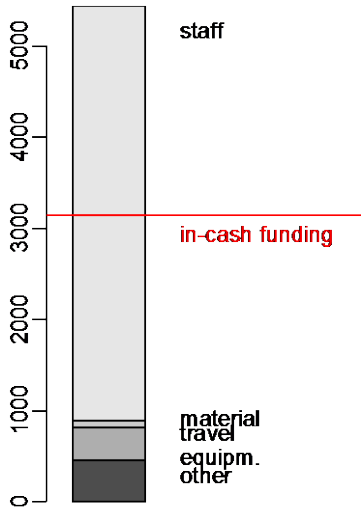


Fig. 2. Allocation of costs (incl. in-kind staff [estimated], kEuro, based on reports submitted by 30 June 2017)

B - Outputs of MACSUR 2nd phase (max. 1 page)

Please provide all lists in Annex

1. Please briefly describe the dissemination activities and how you would judge their effectiveness	
2. Number of articles in peer reviewed international journals and submitted manuscripts acknowledging MACSUR	132 (186 incl. not ack.)
2a) Of which, joint publications	93 (118 incl. not ack.)
3.Number of contributions in books acknowledging MACSUR	4 (12 incl. not ack.)
4.Number of other publications acknowledging MACSUR	6 (11 incl. not ack.)
5.Number of input to policy makers (estimated)	50
6.Number of oral and poster presentations in scientific congresses	219
7.Number of organised major international congresses	3
8.Number of press, radio, TV, and internet appearances	58
9.Number of new external grant and total amount of new external grant money, the application resulting from MACSUR2 activities	8 — >15 M€
10.Number of supervised theses	17
11.Number of joint patents (between partners or resulting from project)	0
12.Number of new collaborations (subset of group or group asking for additional (new) funding)	7
13. Number of scientific acknowledgements (Prizes, honorary doctorates, memberships in scientific academies, major international duties, etc.)	3
14.Data access: number of new datasets or data/model assets generated in MACSUR2 (provide in the annex explanations on the storage: is this centralised or in each group? capture data sharing and evidence for this)	17, including 11 datasets from the CropM European crop rotation study (MACSUR data repository).
15.Number of other activities (please list them by categories in the annex)	2
16. Other dissemination activities?	
Frequent activities on Facebook, Twitter, newsletters to subscribers from policy & stakeholders	
17. To which extend did/will you reach end-users? By what means?	
A great number of MACSUR partners work directly with farm and policy level stakeholders across the nations involved in the knowledge hub. The key impact-related benefit that a knowledge hub can provide (and which is not possible for ordinary research projects made up of smaller groups of researchers) is to increase the capacity, understanding, skills and resources available to partners in their daily interactions with stakeholders. In concrete terms, this includes defining and spreading best practice in research and in stakeholder engagement, creating community wide standards, protocols and resources for use by partners (and researchers beyond the consortium) and enabling researchers to gain a wider world view and perspective of their work in a broader context. All these factors are vital to improving the engagement of research with stakeholders at all levels. The success and innovation demonstrated within projects involving MACSUR partners therefore reflects the impacts of the knowledge hub. In addition, the consortium reached and engaged with end-users directly in numerous	

ways:

1) *Regional case studies* in which modelers and experimental researchers worked hand-in-hand with local farmers, supply chain representatives and policymakers to provide risk assessments on climate change impacts, to explore management options for adaptation, and to build more resilient stakeholder communities through science-practice knowledge sharing. The approaches were developed within MACSUR and were applied in collaboration across disciplines and with multiple stake-holders.
2) Detailed *modelling work at various scales* (soil, crop, field, farm/landscape; animal, herd, farm; farm, sector, region and beyond) delivered insight in (i) the trade-offs that exist between different sources of greenhouse gas emission from agricultural activities, (ii) the reliability of model outcomes through the use of model-ensembles and through various scaling methods, (iii) the biophysical, agronomical and socio-economic and trade implications of agriculture adapting to climate change. Furthermore, attention was given to trade-offs and synergies related to yields of forages or crops, nutritional quality with the use as animal feed, health status and production characteristics of livestock, and water and soil management. Through discussions of extant modelling work and modeling approaches by MACSUR partners, gaps in knowledge and model aspects that require (a more proper) representation have been identified, and have been prioritized for stakeholders. MACSUR partners used their own national networks and contact points with stakeholders, including farmers, agribusiness and policy makers.

18. How many and what type of private partners (SMEs, LCs, others (pls. specify) are involved in your project?

Regional case studies were undertaken in most of the participating countries building further on existing contacts, and this was a major emphasis in this second phase of MACSUR. Individual farmers and farmers' associations were involved in these case-studies, but also local agro-business (including extension), administrative bodies and policy makers. A total of 23 case studies have been conducted in 12 countries, including a wide variety in type of agricultural production and in local production conditions and exposure to climate change, and at least a multiple of 12 agribusinesses, consultant organisations, and other organisations have been involved as stake-holders. Stakeholders have typically been engaged at the case study as well as national level, and they were engaged at the start of every case study initiative. Many relationships between MACSUR partners and these stake-holders pre-existed as a result of previous collaborations and other local or national projects. Within the MACSUR case studies, MACSUR partners were able to build further on their existing relationships and networks, while addressing the specific aims of the MACSUR project.

For further specification and a more detailed description of the type of private partners that were involved, one can turn to the MACSUR web-site for a description. Also the following direct link can be used to obtain further details: http://ojs.macsur.eu/index.php/regional/regional-case-studies.

19. Would you have achieved the same results on impact and networking with a H2020 collaborative project?

Similar results on impact and networking would not have been achieved with a H2020 collaborative project. Our policy brief 'From diversity to strategy' includes a description of what according to our experience are the different roles of traditional collaborative research projects, versus the role of a knowledge hub: http://ojs.macsur.eu/index.php/Reports/article/view/H0.3-D1/267. The knowledge hub provided the work space for networking and synthesis, which is vital for research on complex societal challenges – these aspects of research are often overlooked, side-lined or taken for granted. In fact, these aspects are essential for ensuring that advice to policy reflects an overview of research and is cross-disciplinary, and in this context, it is essential that research teams keep developing skills and tools, based on what they know and what they learn, through an open community of researchers. This is a different structure than collaborative projects in H2020 which are rather based on previous and existing personal relationships. Existing research collaborations can be a highly valuable basis for progress, but may lead to duplication and suboptimal outcomes as well. Many of the outcomes are hard to quantify – when people communicate ideas, cross-pollinate and new interactions arise, but when they come to fruition they might not be easily traced back to network events or exchanges. However, they are essential and steer the direction of how the complex societal challenges are

approached by researchers.

Also financial-wise there is a difference between the MACSUR knowledge hub and a H2020 collaborative project. Networking activities cost money and time – to get people to interact, share ideas, share their work and knowledge, and gain an overview and new knowledge and insights in a knowledge hub does require resources. This includes dedicated, funded staff working full time to govern the network of researchers that are active in the hub, the hub activities and communication, and the hub administration. Many things were achieved in MACSUR, but many more could have been possible if the rate of funding per partner had approached that for a more traditional project. The efforts people put in to activities through 'in-kind' contributions cannot be sustained in the longer term without financial support. Many researchers feel a duty to contribute to communal goods, but at some point a limit to this is reached if they are not financially supported and if they cannot justify to the organisations that employ them for the amount of time spent without financial support.

C – Networking (max. 2 pages)

Please provide relevant lists in Annex

1. How many researchers/ research groups/research organisations of how many different disciplines were involved in your project?	
1a) Number of researchers	325
1b) Number of research groups	at least 71
1c) Research organisations	71
1d) How many and which disciplines (please list):	7
• Crop & temporary grasslands modelling and experimental research • Livestock health and pathogen modelling and experimental research • Farm-scale modelling (biophysical) including emissions models • Grassland modelling (permanent grasslands) and experimental research • Regional socio-economic modelling • International commodity trade modelling • Farm-scale modelling (economic) • Integrated modelling (biophysical crop / regional economic models)	
2.Number of theme or cross-theme meetings (list in annex)	7
3.Number of consortium meetings (whole MACSUR2; list in annex)	2
4.Number of workshops (list in annex)	21 (D2 + D3)

5. Was the coordination across themes sufficient/satisfactory/adequate? Why? What is the potential for improvement?

The double nature of the knowledge hub as a network and research project with distributed and varying funding required a balance in the coordination between bottom-up driven decisions reached by consensus and the top-down directions necessary for, among others, concerted actions and research activities.

The foundations for coordination across themes were laid in MACSUR1 through agreements on similar formats for inventories, model descriptions, common climate and socio-economic scenario assumptions, common simulation protocols and jointly set research priorities. The quality of coordination in phase 2 improved and built on these achievements. In addition, there has been a strong focus on cross-cutting tasks considered as integrated part of the organizational structure of MACSUR2 and on the integrated regional case studies and upscaling of integrated models to European level. The international iCROPM Symposium in Berlin, organised by MACSUR and AgMIP, achieved to bring together the major part of the international crop modellers' community while successfully including scientists from trade and grassland modelling. More responsibility was allocated to task leaders, including those of cross-cutting tasks. On hub level the Project Leadership Team set up in the planning phase of MACSUR2 included one leader of each theme and was supported by a larger Project Steering Committee (monthly meetings) adding additional topical input. This set-up improved the efficiency of coordinating cross-cutting tasks. Notwithstanding these efforts, the effectiveness of coordination was limited by reduced and unequally distributed funds both for coordination at theme level and the realization of cross-cutting tasks. A high share of in kind contributions led to some inflexibility due to obligations to third parties that hindered the full planned exchange of data and results within the network and research efforts focused and streamlined to common MACSUR goals (also see below).

6. Was the integration of work packages sufficient/satisfactory/adequate? Why? What is the potential for improvement?

The setup and organization of work packages varied across the whole hub. The integration of work packages within Themes was adequate overall and the integration of the work of different work packages across Themes improved. However, particularly work across themes was hampered by reduced funds for travelling and exchange, unequal distribution of funds and varying funding period of

individual partners (cp. Figure 1 and Figure 2).

Within all Themes an internal integration was achieved through regular WP leaders meetings, task and WP level workshops and information sharing with partners through extended minutes and the documentation of meetings. Network meetings and workshops were pooled to enable physical exchange while reducing travel costs for attendees. Regular newsletters were produced and shared by CropM, LiveM and TradeM. Several of the steps for improving the integration outlined at the end of phase 1 were realised:

- Inclusion of interlinking tasks (eleven cross cutting tasks) into the project structure with specific outcomes and requiring collaboration between WPs to avoid creation of artificial structural barriers.
- Organisation of events that have reached out beyond the MACSUR network and beyond science (e.g. the iCROPM Symposium; stakeholder meetings in Brussels).
- International livestock modelling conference: Modelling grassland-livestock systems under climate change (hosted by PIK in Potsdam, Germany) (June 2016). Welcomed researchers from across Europe, and from across MACSUR themes and beyond, to present their latest research, network and discuss the future for the research community. Conference papers were presented in a special edition of Advances in Animal Biosciences.
- Workshop 'Assessing climate change adaptation and mitigation options: The regional and policy dimension' (Norway, 9 – 12 October 2016), aimed to advance policy implications of climate change for agriculture and food security. This workshop, organised by TradeM, benefited from the interaction across the three themes as well as the feedback from the European Commission (i.e. DG CLIMA – Unit Land Use and Finance for Innovation; JRC – Institute for Prospective Technical Studies).
- Regularly updated presentations of findings, suitable and relevant for farmers' organisations and ministries, e.g. through the MACSUR policy briefs of the Themes and on hub level

Increasing integration among work packages and tasks has been achieved through both phases of MACSUR and more integrated research has been clearly visible during MACSUR2. This path of integration has been successful and will be further advanced, if a future frame for collaborative activities among MACSUR partners will be granted.

7.Equality of engagement of all research teams involved in the theme	
As in the first phase, the interest to take part and seek ways to contribute to the network among all themes was strong, demonstrated in the high motivation of partners in each theme to continue with joint work. However, the engagement of partners in phase 2 varied more widely than in phase 1 due to larger differences in available financial resources for carrying out research and participating in workshops and conferences in the second phase as compared to phase 1 (travelling and fees).	
8.Number of links to national projects or facilities (list in annex)	0*
9.Number of links created to other EU or international groups (list in annex)	1*[*]
10. Did any partner join at a later stage? Who?	
University of Göttingen	
11. How many new partners were involved in MACSUR2 compared to the first phase? If >0, which ones?	1
University of Göttingen	
12. Did any country join your project that was originally not involved in the call? If yes, which one(s)?	
None formally, collaboration with many countries exists via activities in e.g. AgMIP	
13. Did partners share equipment and/or facilities and if yes, how easy was it to gain access?" (a) easy access, (b) difficult to gain access, pls explain	

[*] Many links exist by simultaneous involvement of researchers in several projects but only one has been established officially by MACSUR

Partners shared equipment in cases of visits at other partners institutions. The “Open Data Journal for Agricultural Research” (http://library.wur.nl/ojs/index.php/odjar/) was built up as a common facility for publishing datasets (including standardised storage and exchange of data) with relevance for modelling related to food security and is easily accessible to all members.

D - Capacity building (max. 1 page)

Please provide relevant lists in Annex

1. Number of trained scientists	410
1a. In the frame of workshops	288*
1b. As PhD students	11
1c. In the frame of mobility actions (exchange of scientists)	111†
2. Number of training workshops (list in annex)	8
3. Number of specialist workshops (list in annex)	13
4. Number of established scientific staff (list in annex)	15
5. Was the collaboration between countries sufficient/satisfactory/adequate?	
Yes, with the restrictions described in C7	
6. Did the project provide opportunities for partners/scientists to become part of the international community of researchers in this field or to further strengthen their own role?	
Yes	
7.Number of research communities in the themes (list in annex)	12

* including multiple participations

† person-weeks

E - Project coordination and management (max. 2 pages)

Please quantify where possible

1.Number of deliverables performed (please provide list with due date and delivery date in annex)	62
2.Number of milestones achieved (please provide list with due date and achievement date in annex)	112
3.Definition of, and agreement on, procedures and annually updated plans of work	
Yes.	
4. How could the administrative burden of theme-leaders and project coordinators be reduced?	

The administrative tasks of the hub coordinator can be split into three overall groups:

- Internal collaboration
  - Organise hub meetings and events
  - Facilitate collaboration, e.g. through cross-cutting activities and announcing funding possibilities
  - Follow up on MACSUR decisions and draft MACSUR documents
  - Maintain and manage membership lists (e-mail lists)
  - Maintain and manage hub calendar
  - Maintain and manage server with all documents
- Dissemination/Global cooperation
  - Maintain and manage website and Facebook and Twitter accounts
  - Issue newsletters
  - Facilitate contributions to other publications (e.g. with EEA)
  - Organise stakeholder events at hub level
  - Represent MACSUR at relevant meetings
  - Liaise with other organisations such as AgMIP and GACSA
- Reporting and controlling
  - Maintain lists of publications and other achievements
  - Maintain lists of milestones and deliverable, and their status
  - Organise writing of annual/mid-term/final reports, collect and check funding reports
  - Interacting with FACCE: forward summaries, reports, ask project leaders for comments, representing MACSUR at meetings
  - Strive for adherence to MACSUR consortium agreement

The theme leaders have had the following overall administrative tasks:

- Coordinating activities within themes (primarily through organising regular meetings among WP leaders)
- Organising theme or topic meetings
- Administering and keeping track of milestones and deliverables.
- Issuing regular newsletters

The administrative tasks of theme leaders have thus been modest and most of the administration has rested with the overall project coordinator. This has been supported through regular (monthly) skype meetings with the project steering committee (PSC) and meetings within the theme leaders in the project leadership team (PLT).

Some of the administrative burden of the hub coordinator and theme leaders could have been reduced, in particular through:

- Support by qualified coordination support staff (would also require funding) to
  - maintain and organise web-based resources
  - organise meetings with stakeholders and internally within MACSUR
- An improved infrastructure for shared document workflow (MACSUR has largely relied on Google

documents)
- Replacing national reporting with the FACCE level reporting (will primarily relieve administration at partner level)
- Better collaboration with FACCE to ensure engagement with European Commission and national.

5. Was there a written research consortium agreement?

Yes: http://macsur.eu/images/download/CA%20with%20Annexes%20FINAL%20small.pdf

6. Which challenges did you face, from an organisational perspective?

The contributions of individual partners are governed both by the overall plans of the MACSUR project documents as well as by the conditions of the national funding organisations. This has given rise to great heterogeneity. Such heterogeneity interferes with effective management, in particular with the short project period of 2 years in MACSUR2. This was further challenged by the many (numerous) new crosscutting activities in MACSUR2.

The main administrative challenges can be summarised in the following points:

- A short (2-year) project period with many new cross-cutting activities that gave very tight timelines for both milestones and deliverables.
- Very heterogeneous administrative setup of partners groups in the various countries, e.g. funding periods and funding conditions.
- The double function of the knowledge hub as a networking and research instrument provides challenges for the legal arrangements for intellectual property in MACSUR. For example, knowledge created by members within MACSUR with „in-kind“ funding from other projects cannot be shared easily with the whole community; confidential or licensed external data obtained by one MACSUR member (or even the hub) cannot be shared with all MACSUR members without additional negotiations with the data owner because the consortium agreement forbids one member to act on behalf of other members due to concerns of the involved institutes about liability of misappropriated intellectual property. MACSUR has therefore largely worked through more informal scientific collaboration among partners within the scope of the MACSUR work programme.
- The double nature of the knowledge hub with decentralised funding requires a difficult balance between bottom-up driven decisions by consensus, imposed by the structure, and top-down directions necessary for quick progress and co-ordinated research activities. This could be partially addressed by putting some money into a central funding pool; decision-making on prioritization of hub activities would also be made easier if there were more clearly expressed expectations of knowledge hub output by the GB. Clear focus and adequate funding of hub structures is vital to ensuring and facilitating effective inter-disciplinary collaboration, which often requires neutral brokers to help frame and arbitrate the nature and rules of co-working.
- Unexpected /unplanned (and therefore non-funded) trips for presentations to FACCE GB and SAB and StAB.
- Existing national funding rules not adapted to support conditions/requirements of a "knowledge hub".

7. Which areas were improved in MACSUR2, from an organisational perspective?

- Cross-cutting activities that brought together participants across themes allowed for some problem-focussed work. However, cross disciplinary work was much harder to align with the funded work of partners beyond the knowledge hub (which mostly involves within-discipline project work), so that it was harder to get ‘in-kind’ buy in for these activities. The lesson – more novel, cross-disciplinary work that the knowledge hub instrument is best placed to deliver, requires more support, both organisational and financially. Networks without that support tend to deliver more within already connected disciplines, where collaborative work is easier to link to externally funded priorities
- A hub-run meeting in Braunschweig in 2015 successfully provided the space for a large number of task level workshops, reducing the administrative burden on theme level coordinators and minimising costs for attendees. This also allowed improved communication and understanding of activities across tasks and themes
- Coordinators at hub and theme level had learned from MACSUR1, enabling them to produce a proposal better tailored to a more concrete understanding of the knowledge hub principle, and

it's potential. This included using surveys and consultations with partners to design activities that could be delivered in the frame of their wider activities, availability, resources and interest. This was particularly important in the LiveM theme, which represents several disciplines under one umbrella, requiring more effort to conceptualise and realise collaborative actions. The time and resources to undertake this type of planning is key to success in this type of project

8. In which areas and by what means could FACCE JPI assist MACSUR3 in its progress?

1) Providing a small bridging fund to:
    - enable pre-planning of new activities (this is vital to a coherent, innovative progression of the knowledge hub (see 7) above)
    - maintain the basis of the network which has been so time (and resource) consuming to create, keeping communication between partners and coordinators to inform the vision and direction of a MACSUR3 proposal, and to enable some of the benefits of communication across disciplines and nations to continue to be realized
2) Highlighting at a high level the importance of knowledge hubs and networks for building capacity and facilitating better outcomes and impact at research project level, through multiple channels (for example: international and inter-disciplinary spread of best practice in science and in stakeholder engagement; wider and more diverse collaborative networks; a better overview of strategic concerns; integrated tools and shared resources that can be flexibly applied at project level). Including the need for these to be supported with adequate and long term funding.

F - Impact and added value of MACSUR2

Please quantify where possible

1. Achievements

1a) Provide a short overview of the main deliverables and milestones that were achieved (max. 2 pp. or bulleted list of achievements (a complete list can be provided in Annex) under each of the main expectations of the Knowledge Hub, namely:

- perform excellent joint research in the particular field to respond to questions in the Strategic Research Agenda;
- increase and facilitate transnational cooperation and coordination between excellent researchers and research organisations, building a progressive and long-lasting network;
- to provide the opportunity to develop research capacity in the particular field, to join learning/training activities (e.g. mobility) and to share infrastructures. These should include fostering interaction and synergy between European modellers in the areas of crops, livestock and trade (max. 2 pp. or bulleted list of milestones)

In order to overcome the rigorous thematic orientation during the first phase of MACSUR with three groups organized according to academic fields, a new structure was developed for MACSUR2. In cross cutting activities topics were identified that required the interaction and collaboration of researchers from a range of different scientific disciplines. During the second phase of MACSUR new groups of researchers came on board. This made it possible to extend the number of regional case studies. In some larger countries like Italy, Poland und UK more than one group were working on different regions. An overview was presented at the workshop for policymakers in Brussels in May 2016.

Deliverables and milestones

1. Excellent joint research in the particular field to respond to questions in the Strategic Research Agenda:
   - Researchers from University of Leeds, Aberystwyth University and Scotland's Rural College have developed a novel method for a spatially explicit estimation of heat stress-related impact of climate change on the milk production of dairy cows in the United Kingdom.
   - Researchers from University of Leeds, Centre for Agricultural Research of the Hungarian Academy of Sciences, International Center for Tropical Agriculture (Colombia) and Ludwig-Maximilians-Universität München (Germany) have developed a novel method to estimating the land use changes for maize and soybean production by 2100 on a global scale.
2. Increase and facilitate transnational cooperation and coordination between excellent researchers and research organisations, building a progressive and long-lasting network:
   - Collaboration with agricultural, meteorological agencies and Escuela Politécnica Nacional from Ecuador to develop a research line on agricultural impacts and adaptation to climate change, with focus on water resources
   - Adaptation in Austrian cattle and milk production (ADAPT-CATMILK). Austrian Climate Research Programme research grant. Partners: WIFO, BOKU, University Cranfield, Thünen Institute
   - Coordination of Spanish participation in the Joint Programming Initiative "Agriculture, Food Security and Climate Change (FACCE-JPI)". Phase 1 http://www.chil.org/profile/spanish.macsur/main.
   - Technical efficiency and challenges of the agricultural sector in Austria and New Zealand. Research proposal submitted to the Austrian Chamber of Agriculture.
   - Coordination of a joint proposal in the Joint Programming Initiative "Agriculture, Food Security and Climate Change (FACCE-JPI)". Phase 2 http://www.chil.org/profile/spanish.macsur/main (Partners participating: MTT Agrifood Finland, University of Bonn, INRA France, Polytechnical University of Madrid)
   - Submission of two research projects with partners involved in MACSUR and private partners to

the call FACCE/ERANET+ Climate Smart Agriculture

- JPI FACCE - SURPLUS. Coordination of a joint application “Towards sustainably intensified and resilient production systems in European Agriculture. Prospects for integrating dairy and bioenergy production systems (DAIRYENERGY)”, submitted 04.03.2015. MACSUR partners from Norway, Belgium, Italy.
- "H2020 Call: H2020-SFS-2016-2017; (Sustainable Food Security – Resilient and resource-efficient value chains) Topic: SFS-02-2016. Stage II. DIVERSify: Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability"
- Links created to other EU groups: with the collaboration started with Edwin Haas (Germany) and Stefan Olin (Sweden). There is an Australian link created with Matthew Harrison. In Europe there is also an active contact in Germany (for the Monica model) and in Poland (for Stics).

3. Develop research capacity in the particular field, to join learning/training activities (e.g. mobility) and to share infrastructures.
   - Over the reporting period nearly 40 visiting scientists were hosted in MACSUR labs for joint research/ learning/training activities. In total, 31 PhD theses were awarded over the reporting period.
   - AgMIP, Memorandum of Understanding signed 2014-02-19
   - Global Research Alliance's Animal Health and Greenhouse Gas Emissions Intensity Network and MACSUR's Task on Animal Health and Greenhouse Gas Emissions organising a joint workshop for MACSUR 2
   - H2020 SFS42-2016. PEANUTSSA Stage-1-proposal submitted February 2016. MACSUR partners Thünen Institute, ILVO, SRUC, James Hutton Institute and non-MACSUR members.
   - FACCE ERAGAS 'CEDERS' (2017-2020)

1b) Which of the achievements would not have been possible without MACSUR2

The above achievements would not have been possible without MACSUR2 as the expertise required for resolving the underlying problems was collected by using the Knowledge Hub, which made it possible to address the right expert with the right problem. This is particularly evident in the collaborations underpinning regional case studies and cross-cutting activities as listed below;

- A large number of scientific outputs was produced in MACSUR2. Among them are articles in high ranking journals. Without the resources provided through MACSUR2 the work on them would not have been possible or would have been significantly delayed.
- The maintenance and the strengthening of collaborations with partners from AgMIP has been a major achievement of MACSUR2. One of the tangible results of the related networking activities is a model intercomparison project (the models CAPRI, MagPIE and Magnet are from MACSUR partners) that was carried out during the last months. The work on publications is ongoing and the results are likely to shape a wider discussion on agriculture and food security in the coming year.
- In order to respond to the challenges of complex questions the organisation of MACSUR2 was set up in another way compared to the previous phase. The more intensive multi-disciplinary work in cross-cutting themes would not have been possible without MACSUR2.
- New groups of researchers became aware of MACSUR during the first phase and joined the network in the second phase. The number of regional case studies could therefore increase.

1c) Which new datasets or data/model assets were generated in MACSUR, and what was their impact on the advancement of the research area of climate modeling? Max. 2 pp.

A number of new datasets and/or data/model assets were generated in MACSUR. Examples are as follows:

- Using an 11-member climate projection ensemble (UKCP09-SCP), as well as an ensemble of 18 milk loss estimation methods, temporal changes in milk production of dairy cows in the United Kingdom were estimated for the 21st century in a spatially-explicit way at a 25 km resolution. By combining the results with economic assumptions, the financial aspect of heat stress related milk losses was estimated and projected for each of the NUTS-1 regions of the UK.

- Coupling land use (Monfreda et al. 2008) and baseline and future land suitability data (Zabel et al. 2014) with future diet (Tilman and Clark 2014) and GHG emission (Smith et al. 2008) scenarios the future of global maize and soybean production areas have been projected at a spatial resolution of 30 arc seconds. Major changes in policy, agricultural practice and diet imply that major shifts will occur in the area used for maize and soya production. Plant physiologists have been challenged to be more active in contributing to enhance the capacity of crop models simulating the 1) grain quality aspects, 2) accurate vegetation-related to CO2 fluxes, 3) canopy temperature and evapotranspiration, 4) effects of high ozone concentrations, 5) acclimation to elevated CO2.
- Basic coherent socio-economic data: CAPRI results data set for the analysis of the baseline scenarios with other models within TradeM
- Basic coherent climate data: Local-scale CMIP5-based climate scenarios for MACSUR2 generated with the LARS-WG weather generator for 5 GCMs: EC-EARTH, GFDL-CM3, HadGEM2-ES, MIROC5, and MPI-ESM-MR;
- 2 RCPs: RCP4.5 and RCP8.5; 4 periods: baseline (1980-2010), near-term (2021-2040), mid-term (2041-2060) and long-term (2081-2100); 15 European sites
- Coherent multivariable 6-year field trial data set for agro-ecosystem model verification and validation from Müncheberg experimental station
- BELAIR data set (http://belair.vgt.vito.be/) for calibration of models and remote sensing routines
- Data set generated for model evaluation of N2O emissions from soils cropped with maize

1d) Provide evidence (by publications, output, achievements,…) of how the existence of MACSUR has added value to the latest updates on climate and agricultural modeling, model development (max. 2 pp.).

Sixteen national and international workshops/conferences were organized by MACSUR over the reporting period. Over 100 publications have appeared during the reporting period, and others as below are in the pipeline:

- Nándor Fodor, Andrew Challinor, Ioannis Droutsas, Julian Ramirez-Villegas, Florian Zabel, Ann-Kristin Koehler, Christine H. Foyer (2017) Integrating plant science and crop modelling: Assessment of the impact of climate change on soybean and maize production. Plant and Cell Physiology (submitted, minor revision has been suggested after the first round)
- Nándor Fodor, Andreas Foskolos, Cairistiona F. E. Topp, Jon M. Moorby, László Pásztor, Christine H. Foyer (2017) Spatially explicit estimation of heat stress-related impact of climate change on the milk production of dairy cows in the United Kingdom. Environmental Research Letters (submitted.

Interactions with media, policymakers and other stakeholders have taken place over the reporting period. These include:

- Nutrient cycles accounting and impact assessment technical advisory group under the FAO-Livestock Environmental Assessment and Performance (LEAP) Partnership
- Meeting with national stakeholders in Norway. Presentation of the Norwegian case study. Gardermoen 8 June 2016.
- Regional Pilot Case Study Mostviertel – AT. Discussion of case study results with advisors and farmers, Amstetten, Lower Austria

2.Scientific and/or technological excellence

2a) Provide up to five examples of scientific excellence reached in the second phase (only) for each theme (CropM, LiveM and TradeM).

CropM

Crop modelling for integrated assessment of climate change risk to food production. Ewert, F., Rötter, R.P., Bindi, M., Webber, H., Trnka, M., Kersebaum, K.C., Olesen, J.E., van Ittersum, M.K., Janssen, S., Rivington, M., Semenov, M., Wallach, D., Porter, J.R., Stewart, D., Verhagen, J., Gaiser, T., Palosuo, T., Tao, F., Nendel, K., Roggero, P.P., Bartosova, L. & Asseng, S. (2015). Environmental Modelling and Software 72, 287-305. The paper provides an overview of the present state of crop

modelling to assess climate change risks to food production and to which extent crop models comply with IAM demands. The paper identified current crop model limitations and proposes ways to overcome these.

Multi-model un-certainty analysis in predicting grain N for crop rotations in Europe. Yin, X., Kersebaum, K.C., Kollas, C., Baby, S., Beaudoin, N., Manevski, K., Palosuo, T., Nendel, C., Wu, L., Hoffmann, M., Hoffmann, H., Sharif, B., Armas-Herrera, C.M., Bin-di, M., Charfeddine, M., Conradt, T., Contantin, J., Ewert, F., Gaiser, T., de Cortazar-Atauri, I.G., Giglio, L., Hlavinka, P., Launay, M., Louarn, F., Manderscheid, R., Mary, B., Mirschel, W., Moriondo, M., Öztürk, I., Pacholski, A., Ripoche-Wachtrl, D., Rötter, R.P., Ruget, F., Trnka, M., Ventrella, D., Weigel, H.-J., Olesen, J.E. (2017). European Journal of Agronomy 84, 152-164. *This study analyses the performance of crop models and model ensembles for simulating grain nitrogen in typical European crop rotations. This is not only important for crop yield and quality, but also for environmental impacts. The study demonstrates need to improve crop nitrogen modelling for several commonly used models.*

Designing future barley ideotypes using a crop model ensemble. Tao, F., Rötter, R., Palosuo, T., Diaz-Ambrona, C.G.H., Minguez, M.I., Semenov, M.A., Kersebaum, K.C., Nendel, C., Cammarano, D., Hoffmann, H., Ewert, F., Dambreville, A., Martre, P., Rodriguez, L., Ruiz-Ramos, M., Gaiser, T., Höhn, J.G., Salo, T., Ferrise, R., Bindi, M., Schulmann, A.H. (2017) *European Journal of Agronomy 82, 144-162. This study presents a new approach to designing new crop ideotypes using a model ensemble approach. It demonstrates that different traits will be required in different parts of Europe.*

Adaptation response surfaces for managing wheat under perturbed climate and CO2 in a Mediterranean environment. Ruiz-Ramos, M., Ferrise, R., Rodriguez, A., Lorite, I.J., Bindi, M., Carter, T.R., Fronzek, S., Palosuo, T., Pirttioja, N., Baranowski, P., Buis, S., Cammarano, D., Chen, Y., Dumont, B., Ewert, F., Gaiser, T., Hlavinka, P., Hoffmann, H., Höhn, J.G., Jurecka, F., Kersebaum, K.C., Krzyszxzak, J., Lana, M., Mechiche.Alami, A., Minet, J., Montesino, M., Nendel, C., Porter, J.R., Ruget, F., Semenov, M.A., Steinmetz, Z., Stratonovitch, P., Supit, I., Tao, F., Trnka, M., de Wit, A., Rötter, R. (2017). Agricultural Systems (in press). *This study presents the new technique of Adaptation Response Surfaces as a useful tool for supporting planning of field level adaptation under conditions of high uncertainty.*

More frequent droughts will threaten food security due to less stable wheat production. Trnka, M., Feng, S., Semenov, M.A., Olesen, J.E., Kersebaum, K.C., Rötter, R.P., Semerádová. D., Klem, K., Huang, W., Hlavinka, P., Balek, J. (submitted). Nature Climate Change. *This study applies a simple model for assessing drought across larger spatial scales and shows that this drought index for the wheat growing area closely related to global grain prices. It also projects a large increase in drought under climate change.*

LiveM

Modeling European ruminant production systems : Facing the challenges of climate change. Kipling, Richard P. ; Bannink, André ; Bellocchi, Gianni ; Dalgaard, Tommy ; Fox, Naomi J. ; Hutchings, Nicholas J. ; Kjeldsen, Chris ; Lacetera, Nicola ; Sinabell, Franz ; Topp, Cairistiona F.E. ; Oijen, Marcel van; Virkajärvi, Perttu ; Scollan, Nigel D. (2016) *Agricultural Systems 147: 24 - 37. It is important to continue to develop more realistic representations of processes in regional and global models, using the understanding gained from finer-scale modeling. Enabling modeling to meet the demands of policymakers and other stakeholders under climate change will require collaboration within adequately-resourced, long-term inter-disciplinary research networks.*

Challenges and priorities for modelling livestock health and pathogens in the context of climate change. Özkan, Şeyda ; Vitali, Andrea ; Lacetera, Nicola ; Amon, Barbara ; Bannink, André ; Bartley, Dave J. ; Blanco-penedo, Isabel ; Haas, Yvette De; Dufrasne, Isabelle ; Elliott, John ; Eory, Vera ; Fox, Naomi J. ; Garnsworthy, Phil C. ; Gengler, Nicolas ; Hammami, Hedi ; Kyriazakis, Ilias ; Leclère, David ; Lessire, Françoise ; Macleod, Michael ; Robinson, Timothy P. ; Ruete, Alejandro ; Sandars, Daniel L. ; Shrestha, Shailesh ; Stott, Alistair W. ; Twardy, Stanislaw ; Vanrobays, Marie-Laure ; Ahmadi, Bouda

Vosough ; Weindl, Isabelle ; Wheelhouse, Nick ; Williams, Adrian G. ; Williams, Hefin W. ; Wilson, Anthony J. ; Østergaard, Søren ; Kipling, Richard P. (2016) *Environmental Research 151 . - p. 130 - 144. The need for more comprehensive validation of empirical relationships, for harmonising terminology and measurements, and for building capacity for under-researched nations, systems and health problems indicated the importance of joined up approaches across nations. The challenges and priorities identified can help focus the development of modelling capacity and future research structures in this vital field.*

Key challenges and priorities for modelling European grasslands under climate change
Kipling, Richard P. ; Virkajärvi, Perttu ; Breitsameter, Laura ; Curnel, Yannick ; Swaef, Tom De; Gustavsson, Anne Maj ; Hennart, Sylvain ; Höglind, Mats ; Järvenranta, Kirsi ; Minet, Julien ; Nendel, Claas ; Persson, Tomas ; Picon-Cochard, Catherine ; Rolinski, Susanne ; Sandars, Daniel L. ; Scollan, Nigel D. ; Sebek, Leon ; Seddaiu, Giovanna ; Topp, Cairistiona F.E. ; Twardy, Stanislaw ; Middelkoop, Jantine Van; Wu, Lianhai ; Bellocchi, Gianni (2016) *Science of the Total Environment 566-567 . - p. 851 - 864. Challenges were in four categories relating to: 1) the direct and indirect effects of climate change on the sward 2) climate change effects on grassland systems outputs 3) mediation of climate change impacts by site, system and management and 4) cross-cutting methodological issues. While research priorities differed between challenges, an underlying theme was the need for accessible, shared inventories of models, approaches and data, as a resource for stakeholders and to stimulate new research.*

Evaluating a European knowledge hub on climate change in agriculture: Are we building a better connected community? Saetnan ER, Kipling RP (2016) Scientometrics 109:1057-1074 doi:10.1007/s11192-016-2064-5. *Tackling complex challenges such as climate change will require research structures that can effectively support and utilise the diversity of talents beyond the already well-connected core of scientists at major research institutes. But network research shows that this core, well-connected group are vital brokers in achieving wider integration.*

Multi-model simulation of soil temperature, soil water content and biomass in Euro-Mediterranean grasslands: Uncertainties and ensemble performance. Sándor R et al. (2017) Eur J Agron 88:22-40 doi:http://dx.doi.org/10.1016/j.eja.2016.06.006. *This study presents results from a major grassland model intercomparison exercise, and highlights the main challenges faced in the implementation of a multi-model ensemble prediction system in grasslands.*

TradeM

A coherent list of adaptation measures on farms in different regions across Europe based on regional case studies.

Better insights in long run uncertainty triggered by climate change and how to deal with it in the context of quantitative modeling in economics.

A better understanding of the role changing consumer preferences play in long term projections about the demand of different varieties of food and the related supply of agricultural commodities.

Participation of TradeM partners in the international economic modeling intercomparison effort together with AgMIP.

Advances in the formulation of consistent story lines for long term scenarios on agriculture and climate change that will be used for in depth analysis in a range of regional case studies across Europe.

2b) Provide three examples of innovative outputs from each theme delivered during the second phase, which have had an impact on a non-scientific audience.

Recognising that in the real world, complex problems need cross-disciplinary solutions, MACSUR2 was organised so that scientific advances and capacity building within themes was brought together in

integrated, cross-theme work in real world case studies. Through these studies, MACSUR2 had its most important impacts beyond the scientific community. Therefore, the examples below cannot be easily allocated by theme, rather they involved problem-orientated activities which drew on each theme as required. The MACSUR Community has organised 16 training workshops over the reporting period.

Olesen, J.E., Niemeyer, S., Roggero, P.P., Lehtonen, H., Schönhart, M. & Kipling, R. (2017). Agriculture. In: Climate change, impacts and vulnerability in Europe 2016. An indicator-based report. EEA Report No. 1/2017. European Environmental Agency, Copenhagen, Denmark, p. 223-243. This contribution to the EEA indicator report draws greatly on MACSUR output, and demonstrates to the wider non-scientific audience the large impacts that climate change is having and will have on European agriculture.

CropM

The modelling of crop yield effects shows both positive and negative aspects, depending on location and type of crops. This diversity in results has even gained interest in the USA, where one of the leading scientists in MACSUR (prof. Jørgen E. Olesen) was cited in Washington by the House Science Committee (http://thehill.com/policy/energy-environment/343485-gop-science-chairman-extolls-often-ignored-climate-change-benefits).

There has been a considerable growing interest by plant breeders in how climate change is affecting crops and crop varieties. CropM researchers are in contact with breeding companies on these issues (also in ongoing research projects as offspring from MACSUR). There is a call for better targeting breeding to the changing climatic conditions. Several research results in CropM are targeting this from various perspectives, e.g.

- Studying from an empirical perspectives how current crop varieties respond to climatic variation. This has been done for both cereals and rapeseed, and results are currently being published.
- Using crop modelling to identify crop characteristics better suited to changed climatic conditions (e.g. using the concept of ideotypes). Several papers have been published on this for cereals in Europe.

TradeM

- Presentations made at policy maker workshops in Brussels, among them a showcase of regional case studies presented by H. Lehtonen.
- Training course for integrated modeling for master and PhD students in the field of agriculture and climate change: most of the participants will not work in science but in the agri-food sector in various professions or in administration;
- A presentation in a stakeholder interaction workshop in Tampere, Finland."Maatilan talous ja ilmastoviisaat ratkaisut – löytyykö keinoja parantaa tilan taloudellista tulosta?" (Farm economy and climate smart solutions - means to improve economic result of a farm?).
- Discussion of case study results with advisors and farmers in the "Regional Pilot Case Study Mostviertel " in Amstetten, Lower Austria.
- Various contributions (articles, interviews) in popular media like newspapers, TV or radio-news broadcasts and professional farmer journals. Among them a report on changing frequencies of catastrophic weather events in the Austrian TV news (ZIB 2) featuring H. Lotze-Campen (on Jun 22, 2017).

2c) With regard to international competitiveness:
(i) to what extent is MACSUR2 leveraging European competitiveness in the field of MACSUR2 of international relevance

(ii) which are the other major networks/projects in the same discipline as MACSUR?

(iii) how did the work and the achieved results of MACSUR differ from those reached by other networks or groups?

(iv) how did MACSUR interact with or influence those groups and learn from them?

Evidence of MACSUR2 leveraging European competitiveness in the field of MACSUR2 of international relevance is provided by the number of European grants that have been awarded. In particular, the present success of placing agriculture with climate change among 24 competing topics in the call for EU FET competition for flagships provides evidence of the international competitiveness of MACSUR2.

AgMIP is the other major network that exists in the same discipline as MACSUR. MACSUR has developed strong links with the AgMIP community.

Our integrated work had a number of important impacts for a non-scientific audience. MACSUR has achieved a "culture change", within the community, driving research initiatives forward through shared endeavor and a common vision. This has been particularly successful in the regional case studies, which have achieved results beyond the scope of other networks and groups.

MACSUR is an open community that interacts with other networks and communities on a daily basis, The presence of MACSUR exerts a strong influence within the global climate change modelling community.

3. Capacity Development

3a) Provide up to 5 examples of how scientists in participating countries, which have a relatively poor track record in modelling, have benefited from being members of MACSUR.

Methods and experiences from the international collaboration within MACSUR provided the basis for a successful research proposal in Hungary exploring the possible impacts of climate change using an integrated modelling framework developed by multidisciplinary research group. The research is supported by the European Regional Development Fund as well as the Hungarian Government (4.1 million Euro).

MACSUR noticed that countries who were initially very keen on improving their capacity in modelling (e.g. Romania, Poland and Israel), withdrew their funding in phase 2.

Several activities in CropM have included a range on research groups in Europe, including groups having previous low scientific track records. This included the following activities:

- Comparison of performance of crop models and use of ensembles of models in a range of contexts, including responses to variation in temperature and precipitation and effects of spatial and temporal scales.
- Analyses of responses of observed crop yield to variation in temperature and precipitation.
- Identification of current adaptation to climate change in crop production at national scale.

These activities involved researchers from a wide range of European universities and research institutions participating in MACSUR CropM. Some of the groups, which have benefited from this in terms of publication rates include:

- Flemish Institute for Technological Research, Belgium
- Agrometeorological Department, Meteorological and Hydrological Service, Croatia
- National Institute of Meteorology and Hydrology, Bulgarian Academy of Sciences, Bulgaria
- National Agriculture & Food Centre, Soil Science & Conservation Research Institute, Slovakia
- Eurac Research, located in Bolzano, Italy

3b) Provide a summary of how up to 5 University courses have benefitted from the knowledge generated within MACSUR (include a clear link with one of the 3 themes).

The following PhD course (10 ECTS) was organized within CropM, drawing on results from MACSUR (this course will be repeated at Aarhus University every second year): Modelling Climate Effects on crops and cropping systems (PhD course; Denmark)

The following MSc course (10 ECTS) is part of the educational programme on Agroenvironmental Management at Aarhus University, Denmark. This course has benefited from both CropM and LiveM in terms of new teaching material: Carbon cycling and climate change.

The following MSc course (5 ECTS) is part of the educational programme in Beijing (China) as part of a joint Sino-Danish educational programme on Water and Environment. The course has benefited from results from CropM giving relevant teaching materials for both Europe and China: Global Change.

CropM has delivered new teaching material for the online the 15 ECTS MSc online course Climate Change Impacts, Adaptation and Mitigation (CCIAM) offered by the University of Copenhagen in collaboration with Oxford University, University of Essex, Australian National University and the Danish Meteorological Institute.

TradeM supported Integrated land use modelling N° 731401, course for Master and PhD Programme at Universität für Bodenkultur in Vienna (Austria) given by Prof. E. Schmid, M. Schönhart and H. Mitter.

Entwicklungsphasen und Entscheidungsprozesse der Gemeinsamen Agrarpolitik N° 731385 (Decision Making the Common Agricultural Policy); course for Master Programme at Universität für Bodenkultur in Vienna (Austria) given by Prof. E. Erjavec and PD F. Sinabell (TradeM).

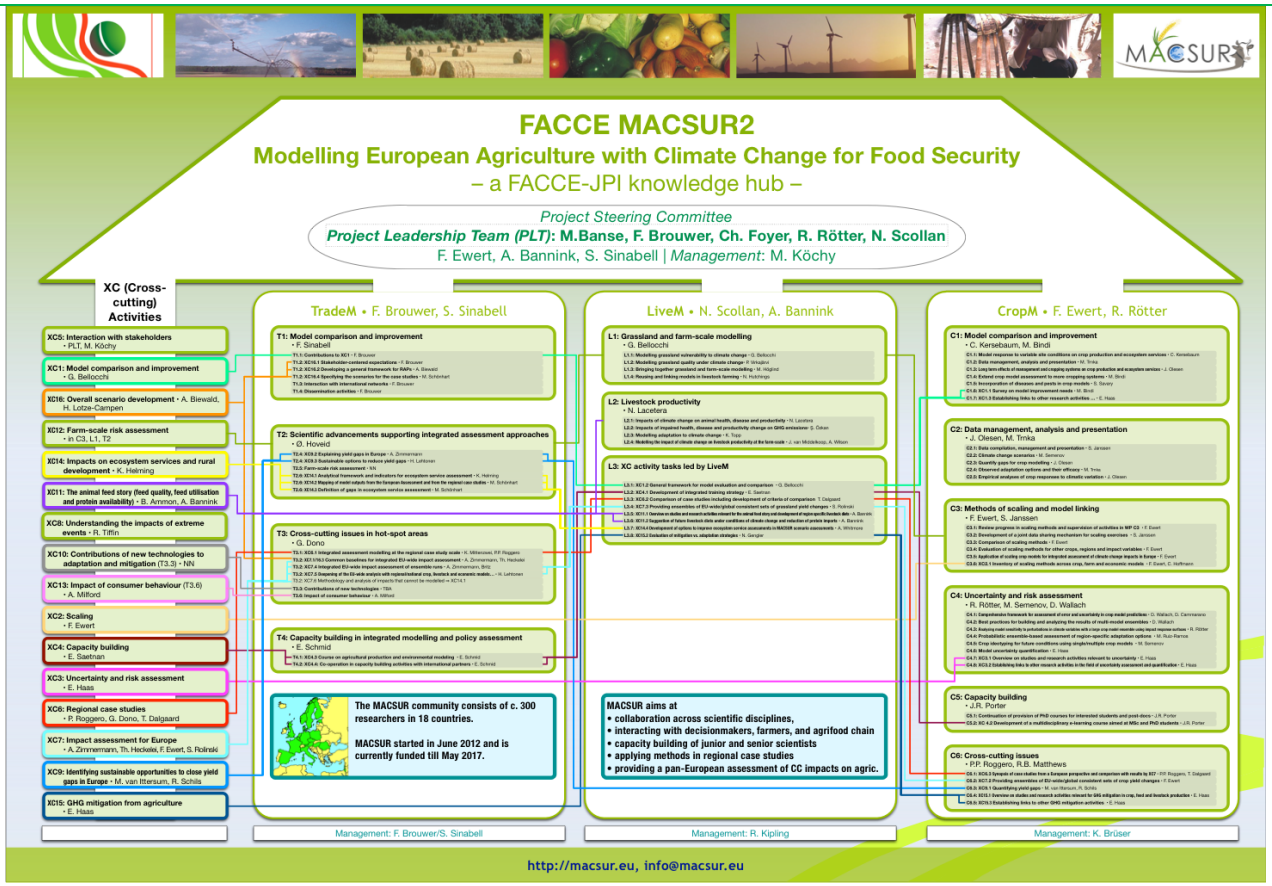
Applied mathematical programming in natural resource management N° 731351, course for Master and PhD Programme at Universität für Bodenkultur in Vienna (Austria) given by Prof. E. Schmid (TradeM).

4. Quality and efficiency of implementation and management

4a) Provide a synoptic description – including a schematic diagram or organigram – of the governance and management structure of MACSUR at the level of the programme and for each theme. Max. 1.5 pp.

An overview of the governance and management structure of MACSUR at the level of the programme and for each theme is provided in Figure F4.1. This structure was chosen when MACSUR2 was launched in order to address some of the shortcomings of the previous phase.

Figure F4.1: Synoptic organigram of FACCE MACSUR2 including theme specific structure



The organisation and governance structure of MACSUR2 was motivated to reach the following objectives:

1. To maintain effective ways of organisation and management that were developed in the previous phase of MACSUR.
2. To break down borders between different disciplines to allow for an integrated work process across different branches of science in Cross Cutting Activities.

In order to achieve objective 1) the three pillar structure "LiveM", "CropM", and "TradeM" was continued. Each partner had the opportunity to self-select to contribute to one of the themes. Theme specific communication channels like newsletters, regular workshops and meetings were established in order to guarantee that partners had access to necessary information.

During the first phase of FACCE MACSUR it became evident that the structure of the project needed to become more malleable. One important reason for more flexibility was that not all partners who wished to contribute to the achievements of MACSUR had sufficient resources. In order to integrate efforts into projects and activities supported by other sources the thematic scope needed to be expanded. Another reason was that many of the researchers were interested in topics that could not be easily attributed to one theme. Therefore in order to achieve objective 2 the previous top-down hierarchy was abandoned and substituted by a matrix structure (see Figure F4.1) The actual work was carried out mainly in the context of cross cutting activities. Each of these efforts had a leadership structure of its own. By organizing regular scientific events forums of scientific exchange were established.

The more complex structure of governance was reflected in a new approach of organizing the leadership. The project steering committee had nine members including scientists from all disciplines and the project management. Organizing meetings for such a large number of people turned out the be cumbersome. Therefore a smaller layer of executive leadership was established: the Project Leadership Team which had only four members who could organize meetings more frequently. The members of this team shared the responsibility for the overall management equally among them. This choice was made in order to make the strong signal that all the scientific disciplines represented in the project steering committee are equally important and contributing in an equal manner to the scientific goals of the MACSUR.

4b) List the three main processes introduced by the management to enhance the sharing of data and models and how this was implemented in each theme.

FACCE MACSUR is a knowledge hub and not an institution with an indefinite time horizon. Therefore it cannot provide the infrastructure that is necessary to collect, develop, maintain and store large data sets and models. The home organisations of the researchers involved in MACSUR and specialized organisations have the necessary infrastructure for maintaining data warehouses and model platforms. The development of data sets and making them accessible is therefore a responsibility of the researchers who made a commitment to provide this service. Due to the matrix structure of the project where cross cutting activities cannot be isolated for a particular theme, there were no theme specific approaches.

The activities of FACCE MACSUR and its three themes were therefore to:

a) Provision of information about data sets: This was done by organizing meetings and workshops where final data sets were presented and where it was possible to discuss about preliminary versions and to develop protocols. Newsletters were another mean to provide information. And finally, scientific publications referring to the data sets are the standard way to promote the use of scientific outputs. Important information channels are the newsletters and mailing lists which were used extensively during the project period. The website including the reporting tools are concrete means to enhance the sharing of information on data and models.
b) Establishment and maintenance of networks: MACSUR promoted the establishment of the Open Data Journal for Agricultural Research (http://library.wur.nl/ojs/index.php/odjar/). This journal was already used to make data sets which were developed by MACSUR partners available for the scientific community.
c) Development of work plans: Cross cutting activities were the main element in MACSUR2 to work on protocols and to develop data sets. Depending on the specific topic and the structure of the involved teams different routes were taken to come to their ends. In many cases the development was carried out in close collaboration with parallel international efforts like AgMIP.

4c) Provide five examples (identifying the relevant theme) where data and/or models were (internally and externally) shared.

1. TradeM: CAPRI data set for the analysis of the baseline scenarios within TradeM. This data set is based on model output of CAPRI (a partial equilibrium economic model). The results are available at the website of MACSUR. A second data set that is under preparation by the time this report is written, will be submitted for publication to the Open Data Journal for Agricultural Research. This data set is currently maintained by F. Sinabell.
2. CropM: Semenov provided a Local-scale CMIP5-based climate scenarios for MACSUR2 generated with the LARS-WG weather generator for 5 GCMs: EC-EARTH, GFDL-CM3, HadGEM2-ES, MIROC5, and MPI-ESM-MR; 2 RCPs: RCP4.5 and RCP8.5; 4 periods: baseline (1980-2010), near-term (2021-2040), mid-term (2041-2060) and long-term (2081-2100); 15 European sites. This data set is maintained by K. Brüser. Access is provided via cloud storage.
3. CropM: Coherent multivariable 6-year field trial data set for agro-ecosystem model verification and validation from Müncheberg experimental station. This data set was published in the open data research portal: Mirschel, Wilfried; Wenkel, Karl Otto; Wegehenkel, Martin; Kersebaum, Kurt Christian; Schindler, Uwe(2010): Comprehensive multivariable field data set for agro-ecosystem modelling from Muencheberg Experimental Stations in 1992 - 1998 ,Leibniz-Zentrum für Agrarlandschaftsforschung(ZALF e.V.).[doi: 10.4228/ZALF.1992.167]
4. CropM and LiveM: BELAIR data set (http://belair.vgt.vito.be/): It provides access to Belgian test sites, for which targeted EO data and other measurement results are collected, on behalf of the Belgian and international research communities, and which may be used as calibration and validation sites for new EO missions, data and products. Further information can be provided by Y. Cumel.
5. CropM: N2O Emission data set: This data set is generated for model evaluation of N2O emissions from soils cropped with maize. Access and further information can be provided by P.P. Roggero.
6. TradeM: Partners of TradeM were involved in the second round of the global economic model inter-comparison effort. Results of these multi-model analyses were recently published at the website of JRC (https://datam.jrc.ec.europa.eu; look for "AgCLIM50").
7. LiveM: Grassland models and data are shared and results are published in papers: Multi-

model simulation of soil temperature, soil water content and biomass in Euro-Mediterranean grasslands: Uncertainties and ensemble performance. Sándor R et al. (2017) Eur J Agron 88:22-40; and: C and N models intercomparison – benchmark and ensemble model estimates for grassland production. Sándor, R et al.; J. Advances in Animal Biosciences, 7: 245–247. 2016. Further information can be provided by G. Bellocchi.

4d) Which challenges were faced from an organisational perspective and how were they resolved? How do you foresee improving the response to these challenges in a possible MACSUR 3. (Max. 1.5 pp. of text).

Scientific challenges of interdisciplinary research

The partners in MACSUR are from many different disciplines and have heterogeneous scientific backgrounds. Each discipline has its own traditions and approaches. This becomes evident when certain ways to work are assumed to be the same for all team members but eventually it turns out that this is not the case. Different approaches in modelling are a good example to clarify this point: in crop sciences the same models are frequently used by many research teams. Those models are calibrated to certain locations and they are designed to be used by different research teams. In economics the situation is different. Most models are specific to a certain region or country and most frequently are developed only by one team. Only in the case of models that deal with continental or global issues there are models that are generic in a way that more than one research teams are working with them (e.g. CAPRI, GTAP). LiveM models are very heterogeneous and in many cases include economic elements by design. Researchers who work on linking models from different disciplines therefore have to overcome several challenges and the most important one is to define standardized interfaces that make it possible to link various models together. Such efforts were made and results from global economic models are now using input data sets that were generated by crop models.

There were two main ways to resolve the challenges of interdisciplinary work: The organisation of the main work in cross-cutting activities. Small groups of researchers worked on very concrete topics that usually combined approaches from more than one discipline. The second approach was to organize scientific events for an interdisciplinary audience. Not only the MACSUR scientific conference was organized in such a manner. CropM events were open for side workshops where researchers from TradeM or LiveM could meet while simultaneously contribute to sessions that had a crop production focus.

Scientific challenges of applied climate change research

The thematic focus of MACSUR is agriculture and climate change. The mission of most researchers involved is to contribute to a better understanding of the vulnerability of agricultural producers and the identification of successful strategies to adapt to new situations. However, there is a considerable time gap between situations in 2050 or 2100 which are two frequently used points in time for projections about climate conditions in the future and 2017. The main beneficiaries of the work done in MACSUR are farmers. However, even those who plant trees have investment cycles that are not longer than 20 years. Typical crop farmers have planning horizons of two to five years. It is therefore important to have in mind that research results obtained in MACSUR are probably not immediately helpful for the farming community. Eventually the target group are farmers but results of MACSUR are more relevant for plant breeders who have to consider conditions a decade ahead when they design new varieties or for agricultural policy makers who have to identify research priorities and make decisions of infrastructure like irrigation projects.

In MACSUR these challenges were addressed by identifying the different groups of potential beneficiaries of MACSUR research results and to develop specific products for them. Policy makers, farmer representatives and management of certain industries have longer time horizons and other informational needs than farmers or the general public. The communication strategy of MACSUR was designed to make results tangible for different groups.

Knowledge transfer and dissemination challenges

In many research projects the team working on a given topic is well defined from the beginning to the end of the duration. New members are frequently not welcome because new comers may benefit from results without having contributed. In MACSUR the situation was very different. All events where announced in public and speakers were invited based on the quality of their

contributions. Such an approach is maximizing the transfer of knowledge and prevents closed circles of insiders that fend off others. The organisation of summer schools and courses in the context of MACSUR were additional means to stimulate the dissemination of knowledge, skills and expertise.

MACSUR governance challenges

During the first phase of MACSUR the organisation of the management was top-down like in a typical research project. By the end of the MACSUR1 it became evident that a new organisational structure will be necessary in order to maintain and further stimulate a vibrant network of researchers. The matrix structure as shown in Figure F4.1 was chosen as an appropriate way to strengthen the active involvement of many more researchers. The project steering committee was well aware of potential draw backs of such a structure: potentially blurred responsibilities, potential disruptions of information flows, potential loss of overview. In order to prevent such downsides two managerial elements were adapted: The Project Steering Committee was split in two tiers. A Project Leadership Team was established in which each member had the same capacity and authority. Instead of one person shouldering the responsibility of project leadership, duties were allocated to a team. External relations were represented by a primus inter pares project leader. The second modification concerned reporting. Partners and team members were given the tools to report about their activities in an efficient manner. A problem with self-reporting is of course that completeness cannot be guaranteed, in particular if team members leave the project before the end.

Challenges to respond to resource constraints

Only a few of the partners and members of MACSUR are fully funded by earmarked grants. Many of the participants of meetings and workshops get travel expenses refunded and many other needed to tap other sources to finance their activities in MACSUR. The project steering committee was well aware of this situation, in particular because some of the members were in a resource constrained situation by themselves. All partners of MACSUR are working either at universities or at research institutes. Therefore striving for scientific excellence within MACSUR was identified to be a necessary condition to attract resources that were not provided by earmarked funds. Among the ways to achieve this was the establishment of platforms to publish preliminary results or presentations reporting about ongoing research and the organisation of poster sessions (many of these outputs are published at www.macsur.eu). Significant contributions of the Research Fund of Norway and resources provided by institutions like the Thünen Institut, ZALF and the Universities of Sassari and Florence made it possible to overcome resource constraints. However, we experienced that a lack of funds may imply that established contacts dry up and that important nodes in a network may vanish (e.g. the loss of partners in Israel during the second phase of MACSUR).

How do you foresee improving the response

The governance structure of a potential third phase of MACSUR is not yet decided. It will certainly be adequate to cope with the scientific challenges and the resources available. A main lesson learned during the first and second phase of MACSUR is that reporting about activities and achievements is important. Researchers usually are satisfied when their findings are published and the achievements can be reported in a CV. The scope of aims of MACSUR is much wider: Interaction with various stakeholders and intangible and hard to measure impacts on the scientific community and the wider public are explicit objectives. In order to measure such impacts, it will be necessary to develop an adequate metrics and to establish a capacity to make them measurable and to train participants of MACSUR to be able to report them.

4e) Provide evidence – by at least two examples each – for the following: (i) quality of the hub as a whole; (ii) complementarity and balance among themes and subthemes; (iii) means for networking; (iv) cooperation with international initiatives

Examples for the *quality of the hub* as a whole:

- Most important and relatively good to measure is the scientific output MACSUR. The number of publications and their quality can be checked by anyone and the impact of the publications on science will become visible during the next few years. Capacity building and training programmes for young scientists are important elements of the scientific output.

- An indicator for the quality of the hub as a whole is the wide interest among partners to move on in a similar structure and with a similar scientific focus. The science conference in Berlin was an opportunity to reflect about achievements and failures. The final session was used to report about discussions that were organized for each theme and for cross-cutting activities. Each of the groups concluded that the benefits of a multidisciplinary approach as provided by MACSUR outweighs the hassles by far.

Examples for the *complementarity and balance among themes and subthemes*

- Most researchers who are part of MACSUR are application oriented, highly specialised in certain disciplines or techniques but are nevertheless open for new ideas and challenging views. Research on topics like changing consumer preferences and new societal movements like vegetarian lifestyles has been an element of MACSUR and contributed to a balanced view on potential societal pathways in the coming decades.
- The themes CropM, LiveM and TradeM are not substitutes for each other, they are complements because each of these themes is strong rooted in specialised scientific disciplines. Many of the researchers working in these fields share a basic understanding about rigorous evidence based science and a pragmatic way to attain solutions that can be deployed in practice. The specific culture experienced in MACSUR is that interdisciplinary research can be fruitful if experts in their fields work on improving their methods and being open for collaboration with researchers from other scientific fields and by using well defined interfaces which allow interaction of quantitative models.

Examples for the means for *networking*

- Scientific conferences and workshops where scientists, stakeholders and people interested in certain topics meet face to face are the most effective mean of networking. The personal interaction is the best way to transfer knowledge, insights, and ideas and to stimulate discussions in order to develop new approaches and projects. Two scientific congresses and a large number of workshops were organized within MACSUR and therefore contributed to establishing, maintaining and strengthening of networks.
- The MACSUR webpage (www.macsur.eu) is an important element of the networking activities of MACSUR. Because it is available all time and because it is updated at a regular basis it is the hub of information where partners of MACSUR and others interested in MACSUR activities get timely information on all aspect of MACUSR. An important element of the website is the section on outputs. It has 13 sub-sections and provides access to all tangible outputs of MACUSR which serves the needs of any target audience.

Examples for the cooperation with *international initiatives:*

- The AgMIP consortium is striving to achieve similar goals as MACSUR, however with another geographical focus. Many partners of MACSUR are actively involved even in leading roles in AgMIP and thus contributing to both. A memorandum of understanding was agreed upon between AgMIP and MACSUR. Because AgMIP is the only international initiative having a similar scope and objective as MACSUR there are no further cooperations possible.
- A group of MACSUR scientists is responsible for providing consensus from the peer-reviewed literature on the impacts of 1.5 ºC global warming on natural and human systems for the IPCC process of assessing literature on the implications of emission pathways. The contact person is M. Bindi.

5. Potential impact on the advancement of the research area in MACSUR

5a) Provide evidence for the strategic approach of the second phase for the Knowledge Hub and for each theme in comparison to the first phase, in particular on the impact of MACSUR on planning and setting priorities for national programmes (2 pp.)

The first phase of MACSUR was characterized by the following major efforts:

- the establishment of a network of scientists in Europe and Israel with an interest in climate change, agriculture and modelling;
- giving a thematic structure for various groups that knew already each other into three thematic blocks (LiveM, TradeM and CropM);
- to integrate institutions and researchers with expertise in the relevant fields which or who were

not yet well connected to the scientific community in Europe;
- to establish contacts to important groups of stakeholders;
- to develop modes of effective interaction and management in order to organize a coherent work programme;

Already at the beginning of phase 1 it turned out that the groups of researchers organized in the three themes were not homogeneous. Many members in CropM knew each other already very well and had experience on working together on tasks of modelling in the context of climate change. Researchers in LiveM were in many cases working for the first time in a large network with similar interest. Considerable time and resources were spent in order to build a common ground of understanding and time was necessary for many partners to identify the common goals and to align individual workplans to them. Many partners in TradeM knew from each other from different projects but compared to CropM it was harder to identify the issues and topics with the largest overlap of interests and competences.

During the work in the first phase many researchers observed that the split in three themes created boundaries that prevented effective collaboration on cross-disciplinary research questions. It became evident that the challenges in science moved from working on small and well defined topics in a given discipline to more comprehensive questions that needed new ways of interaction between disciplines. In order to make the work more relevant for national funding organisations the idea of coherent regional case studies was developed. Because exposure to climate change is location specific and capacities to adjust are not equal across different geographic regions adequate adaptation responses need to be fine-tuned to local conditions. The same is true in the case of mitigation, but most of the work dealt with adaptation.
In order to respond to these needs a new governance structure was established in the second phase of MACSUR and the largest work load was allocated to projects on cross cutting activities.
Work in these groups was conducted with great energy but sometimes new and unexpected challenges needed to be tackled. One among them is that the terminology is very specific to the different disciplines. The term "risk" has a different meaning for an economist and a crop scientist. In many economic models risk is usually not accounted for because models become very complicated whereas accounting for production variations is a standard feature in crop models. Another example of diverging approaches and different mindsets is that some researchers assume that a growing world population will require a growing proportional amount of different sources of food in the future whereas analysts of consumer behaviour see ways and means to influence consumer preferences and thus affect demand. If this happens, it is likely to have substantial impact on the viability and profitability of different production systems in agriculture. Presentations made during the final science conference of MACSUR II showed the accomplishments in the various in the different fields of research but also made evident that some of the original goals are not yet reached in a satisfactory way. One example are the regional case studies. In order to make them comparable across the whole continent it is necessary to identify a coherent set of scenarios. This is a daunting task because very specific assumptions were made about future policy frameworks. Events like the vote on Brexit in the UK and the loss of an important net contributor to the EU budget change the situation fundamentally. The reason is that agricultural subsidies are equivalent to 60% and more of agricultural incomes in many regions in Europe and that the availability of future funds is questionable. The availability of public funds in financing adaptation and mitigation in the primary sector is therefore an open question.

External events like the Paris accord or Brexit or the availability of better and more detailed projections of future climate situations and the availability of better models are among the reasons to develop a set of new scientific challenges and research questions. Mitigation and how it may interact with adaptation is an important topic for future research. To develop a better understanding about technological progress will be essential in order to make prudent choices in the future is another one. Quantitative results based on improved integrated models that account for all aspects of sustainability and future needs of food security will be necessary to address such issues adequately.

5b) How did MACSUR provide answers to the Strategic Research Agenda of FACCE-JPI and to Europe's capability in each thematic area? Max. 2 pp. or a bulleted list of answers.
List the five principal measures for dissemination and/or exploitation of the results and the management of intellectual property

MACSUR was designed to directly refer to the Strategic Research Agenda of FACCE-JPI. The work carried out in MACSUR2 mainly took place in cross-cutting activities. The topics and the content of the

work of these activities are directly contributing the interdisciplinary Core Research Themes:

Sustainable food security under climate change:
- identifying sustainable opportunities to reduce yield gaps in Europe
- Impact of consumer behaviour

Environmentally sustainable intensification of agricultural systems:
- Contributions of new technologies to adaptation and mitigation

Developing synergies and reducing trade-offs between food supply, biodiversity and ecosystem services:
- Impacts on ecosystem services and rural development:
- Regional case studies:

Adaptation to climate change:
- Feeding livestock: forage production, feed quality, efficiency of feed resource use and animal protein production
- Farm-scale risk assessment
- Variability and extreme climatic events
- Uncertainty and risk assessment

Mitigation of climate change:
- Impact Assessment for Europe
- GHG mitigation from agriculture

In an effort to "improving the alignment of national and European research" and " Increasing high quality transnational research activities within food security, agriculture and climate change" the following cross-cutting activities were carried out:
- Model comparison & improvement
- Capacity building
- Overall scenario development

In order to "improving the societal impact on the challenge of food security, agriculture and climate change" a special task was part of the work programme:
- Interaction with stakeholders

The principal measures for dissemination and/or exploitation of the results in MACSUR2 were:
- publication of scientific papers in journals with high scientific impact
- publication of research findings for farmers and other stakeholders in the agri-business, and policy briefs
- scientific congresses and workshops
- workshops with policy makers
- MACSUR website and data repositories

The management of intellectual property was not an issue for MACSUR. Research was funded by national and international organisations which have their own proprietary arrangements of intellectual property management.

5c) How is the long-term data storing and accessibility guaranteed? Max. 1 pp. of text.

During the second phase of MACSUR two approaches emerged that are likely to guarantee that long-term data storage and accessibility:
- the publication of data sets in journals similar to the "Open Data Journal for Agricultural Research" and
- the publication of data sets in repositories of institutions with a reputation of providing access to data and information of long periods like the European Commission or research institutes funded by national governments (e.g. INRA, NIBIO, Thünen Institut).

Building on the expertise so far it is very likely that in a potential third phase of MACSUR a data

management strategy will be made explicit. Until now research groups decided upon their own discretion to find an arrangement of data exchange. Most frequently cloud services (e.g. owncloud or ftp-servers) have been used in the past to store and distribute data sets.
The two approaches outlined above have several advantages over the traditional way of data set provision:

- data sets are indexed in search engines and they are likely to be used more frequently;
- an external review process is part of the quality assurance system in the case that data sets are published by journals
- the likelihood that data sets are made available even after the end of a project period is much higher

However, there are downsides that have to be considered: Journal publications may take long time between the first submission and the publication. Another aspect is that even well-established institutions may undergo restructuring processes and the closure of departments hosting data may happen unexpectedly.
To guarantee the long term availability of data sets or models is therefore a challenge that needs to be addresses in future in a rigorous way. This issue is becoming more important as more scientific outputs are massive data instead of journal papers.

5d) To what extent is MACSUR leveraging European (and international) competitiveness in the field of the Knowledge Hub? Max. 1 pp.

FACCE JPI is a joint programming initiative on agriculture, food security and climate change. It addresses three important societal challenges by funding applied research in a joint programme. In order to identify the extent in which MACSUR is leveraging European and international competitiveness it is necessary to evaluate its effects.
Competitiveness of agriculture and the food industry is most frequently measured by tracking changes of total factor productivity or changes in value added over long periods. The effects of public interventions like subsidies or levies on inputs or outputs are directly measurable in many cases such as an investment support granted in the programme of rural development. However even in such cases it is not always possible to identify causal effects on competitiveness because of several of reasons: a) the effects on value added my arise only with a certain delay of time and farms loose competitiveness in the short run because resources are allocated for making an investment viable; b) the objective of an investment is not always focussed on "value added" in the narrow term but on aspects like animal welfare or agri-environmental improvements; frequently it is even the case that public interventions are lowering the competitiveness of a sector like in the case of support granted for mountain farms - the agricultural sector of a country will be less competitive compared to a situation without farms that not viable without public support. Therefore, even in situations where a direct relationship exists between a public intervention and the competitiveness of firms operating in the market unambiguous findings may be hard to find.

Considering such arguments, it is likely not possible to measure or quantify the impact of MACSUR on the competitiveness of European agriculture and beyond because there are no direct channels of causal effects that can be identified empirically in an unambiguous manner. But evidence from literature suggests that public research on agriculture is paying off extremely well. The (private) internal rates of return of public research on agriculture ranges between 21% and 57% (Table 7.5 in OECD, 2016) which is extremely high compared to other sectors. Many aspects that were analysed in MACSUR are addressing a wider notion of competitiveness because topics included sustainability and consumer aspects like healthy diets and ecosystem services. It is probably not feasible to measure the impact of MACSUR on these aspects even if we allow for certain time lags. A more operational approach is therefore to measure if the scientific output of MACSUR meets the standards of good research in agriculture. If this is the case we may conclude that its contribution for society is likely to be at least in the same range as conventional research in agriculture.

Source: OECD, 2016, Food and Agricultural Reviews Innovation, Agricultural Productivity and Sustainability in the United States. OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264264120-en

6. Contribution to the FACCE JPI mission

6a) International competitiveness: how did MACSUR raise the profile of Europe's research? Provide at least three concrete examples. Max. 2 pp. or a bulleted list of synoptic answers.

International recognition of MACSUR can probably only be judged if compared to similar initiatives in a global context. Up to now the only network with a similar scope of research topics and number of countries involved is AgMIP (see www.agmip.org). MACSUR is recognized as the European hub of knowledge creation in the field of agricultural modelling in the context of climate change. The focus on multi-disciplinary approaches, quantitative modelling and applied research is important to separate it from initiatives that concentrate on advances in primary research and projects that apply qualitative methods. The following list contains three examples of significant scientific outputs that can be used to assess the contribution that MACSUR has made so far:

- A reflection paper dealt with the challenges of climate change on European ruminant production systems is a good example (Kipling, et al., 2016, doi.org/10.1016/j.agsy.2016.05.007). This paper a) provides an overview of how ruminant systems modelling supports the efforts of stakeholders and policymakers to predict, mitigate and adapt to climate change and b) provides ideas for enhancing modelling to fulfil this role. Many grassland models can predict plant growth, yield and GHG emissions from mono-specific swards, but modelling multi-species swards, grassland quality and the impact of management changes requires further development. Current livestock models provide a good basis for predicting animal production; linking these with models of animal health and disease is a priority. Farm-scale modelling provides tools for policymakers to predict the emissions of GHG and other pollutants from livestock farms, and to support the management decisions of farmers from environmental and economic standpoints. Other models focus on how policy and associated management changes affect a range of economic and environmental variables at regional, national and European scales. Models at larger scales generally utilise more empirical approaches than those applied at animal, field and farm-scales and include assumptions which may not be valid under climate change conditions. It is therefore important to continue to develop more realistic representations of processes in regional and global models, using the understanding gained from finer-scale modelling. An iterative process of model development, in which lessons learnt from mechanistic models are applied to develop 'smart' empirical modelling, may overcome the trade-off between complexity and usability. The paper can be downloaded from http://www.sciencedirect.com/science/ article/pii/ S0308521X16301287
- Another publication that reflects very well the European dimension of MACSUR and the benefits of multi-disciplinary approaches is the paper on Climate change impacts on crop yields, land use and environment in response to crop sowing dates and thermal time requirements (Zimmermann et al., 2017, DOI: 10.1016/j.agsy.2017.07.007). Many impact studies assume that crop management remains unchanged in future scenarios, while farmers may adapt their sowing dates and cultivar thermal time requirements to minimize yield losses or realize yield gains. The main objective of this study was to investigate the sensitivity of climate change impacts on European crop yields, land use, production and environmental variables to adaptations in crops sowing dates and varieties' thermal time requirements. A crop, economic and environmental model were coupled in an integrated assessment modelling approach for six important crops, for 27 countries of the European Union (EU27) to assess results of three SRES climate change scenarios to 2050. Crop yields under climate change were simulated considering three different management cases; (i) no change in crop management from baseline conditions (NoAd), (ii) adaptation of sowing date and thermal time requirements to give highest yields to 2050 (Opt) and (iii) a more conservative adaptation of sowing date and thermal time requirements (Act). Averaged across EU27, relative changes in water-limited crop yields due to climate change and increased CO2 varied between −6 and +21% considering NoAd management, whereas impacts with Opt management varied between +12 and +53%, and those under Act management between −2 and +27%. However, relative yield increases under climate change increased to +17 and +51% when technology progress was also considered.
- A third publication which shows the benefits of interaction across disciplines is the report on "Challenges of Global Agriculture in a Climate Change Context by 2050 (AgCLIM50)". This report presents a global integrated assessment of the range of potential economic impacts of climate change and stringent mitigation measures in the agricultural sector. The analysis

employs five global multi-region multi-commodity models and covers selected combinations of socioeconomic storylines and climate signals by mid-century. Model inputs are harmonised by using the same projections for population and GDP growth, as well as relative biophysical crop yield changes due to climate change. Model results can differ depending on model characteristics and the specific quantitative implementations of the socioeconomic storylines (more information see https://ec.europa.eu/jrc/ en/publication/eur-scientific-and-technical-research-reports/challenges-global-agriculture-climate-change-context-2050-agclim50).
Among the authors of this report are partners who actively contributed to MACSUR in TradeM. The results in this study which are from the partial equilibrium agricultural sector model CAPRI are based on a large number of model results developed by the team from the University of Bonn contributing in CropM.

6b) How did MACSUR generate project outcomes that contribute to the FACCE vision: "An integrated European Research Area addressing the challenges of Agriculture, Food Security and Climate Change to achieve sustainable growth in agricultural production to meet increasing world food demand and contributing to sustainable economic growth and a European bio-based economy while maintaining and restoring ecosystem services under current and future climate change" and to solving problems relevant to tackling the societal challenge of FACCE-JPI? Max. 2 pp. of text.

The ways how MACSUR generated outcomes that contribute to the FACCE vision were the following:

- setting up of a coherent organisational structure that aligns individual but possible incoherent research interests of individual researchers towards a common goal that is consistent with the FACCE strategic objectives;
- by implementing a governance structure that is both goal oriented and flexible in order to allow an efficient implementation of a matrix structure that attains both: a consistent orientation towards three scientific disciplines (livestock sciences, crop sciences and economics) and the orientation towards cross cutting questions that emerge disciplinary boundaries;
- by empowering a large group of researchers with a variety of scientific background to conduct research on ambitious but well defined topics in interdisciplinary teams whose members are from countries across Europe;
- by setting up a system of information channels that make use of the whole range of modern communication facilities available (e.g. website, skype-conferences, e-mail, news-letters, phone calls, webinars, video broadcasts of workshop over the internet) complemented by traditional ways to communicate like personal interaction in face to face meetings, lectures and seminars;
- the organisation of the work in a coherent set of activities, structured in work packages and tasks with clear responsibilities and defined outcomes;
- by engaging in collaborative efforts to establish data sets, to improve existing models, to apply them on new data sets / or for new scenarios, to discuss the results and to publish the results in scientific documents and manuscripts;
- by organizing scientific events that were open to the whole scientific community where researchers reported about research results, discussed them and inspired the audience for new approaches, concepts and research questions;
- by communicating findings and open questions to stakeholders in various formats (workshops, policy briefs, professional journal articles);
- by interacting with farmers and the general public in order to identify aspects that have priority outside scientific circles and in order to adjust communication strategies to better disseminate results to groups that may directly benefit from findings obtained in MACSUR;
- by engaging in capacity building events and organizing courses for students with an interest in integrated quantitative modelling in agriculture, food security and sustainability;
- in order to make MACSUR visible in the international research community the project was presented at various occasions in order to attract additional partners and to make more people aware of the activities of MACSUR and the goals of FACCE-JPI
- considerable efforts were made by individual partners to use the benefits of networking in MACSUR to develop interesting research proposals to tap additional sources in order to leverage the support made available via FACCE JPI

6c) To what extent is MACSUR2 influencing FACCE-JPI and the update of FACCE Strategic Research Agenda (SRA)? What is the contribution to the FACCE SRA Core Theme 1?

The results have been presented to FACCE-JPI in several forms of relevance for the updating for the

FACCE SRA:

- At meetings of the FACCE Stakeholder Advisory Board and the Governing Board
- Through newsletters and policy briefs
- Through participation of FACCE GB, StAB and SAB members in MACSUR conferences and meetings, including the final conference, where there was active discussions on these issues.

MACSUR2 has exerted a strong influence on FACCE-JPI and its research agenda. For example, MACSUR representatives participated in the FACCE-JPI pilot valorisation workshop on climate impact on agriculture and food security that was held on the 22nd March 2017 in Brussels. This workshop started a process of dialogue between researchers, policy makers and end users, concerning major policies and significant contributions that could be made in the areas of climate issues related to agriculture and food security and the follow-up of COP. MACSUR2 was identified as one the two ongoing activities with a strong focus on climate aspects related to the agricultural and food sector (which is a central concern of FACCE-JPI) that will provide the required climate and potential “products” of projects that can address these issues.

MACSUR contributed to the updated version of the FACCE-JPI research agenda in various ways:

- by inviting governing board and secretariat members to scientific events of MACSUR (notably the science conferences);
- by personal interaction with members of the board, of stakeholders, the advisory board and the secretariat at workshops
- by updating members of the board, the secretariat and stakeholders about activities (e.g. news-letters, policy briefs, progress reports)

To measure the full extent how MACSUR influenced FACCE-JPI would require to conduct personal interviews of board members, secretariat and stakeholders. Such efforts were not made because the revised edition of the FACCE JPI Strategic Research Agenda makes a direct reference to MACSUR throughout the document. Some of the quotations are listed here:

- "MACSUR is an important example of an innovative means of aligning national research around the theme of modelling climate change impact on European agriculture" (page 7);
- " One example is the pilot action, the Knowledge Hub called MACSUR" (page 14);
- "Overall, MACSUR as an entity uses several ways to inform policy about scientific results and research needs" (page 15)
- MACSUR "... has been greatly successful in fostering transnational cooperation, collaboration and communication between the research communities in thematic clusters" (page 24)

6d) To what extent is MACSUR2 influencing planning and setting priorities for national programmes? What were the main overlaps and gaps identified between research groups/countries during the MACSUR2 preparation and implementation? Please describe the progress towards alignment of research in the field of MACSUR2 among the countries involved as well as the potential for further alignment, if any.

The extent to which MACSUR2 influenced the planning and setting of priorities for national programmes is not yet known by the time of writing this report. One reason is that in many cases partners of MACSUR have to report about achievements and failures to their national funding organizations in parallel and the evaluations usually take some months to be completed. In order to answer this question a survey was conducted in July 2017. In this survey leaders of cross cutting activities and themes were asked about their knowledge how MACSUR influenced or shaped national programmes. The results in a nut-shell are:

- The influence of MACSUR was not only exerted vis a vis funding organisations but also shaped strategies for future research also at institutions like universities or research institutes.
- In larger countries, main achievements of MACSUR are seen in promoting a coherent planning and setting of priorities of various funding organisations like research councils.
- In small countries, a main advantage of MACSUR compared to other approaches is to allow the few institutions that work on related topics to benefit from economies of scale of a large

network of scientists working on the same topics.

- In all countries contributing to MACSUR representatives of funding organizations see as important unique "selling propositions" three elements that act together: institutions with diverse organizational structures (government funded agricultural research institutes and university departments) with researchers from different disciplines get additional and complementary resources to improve models in an international setting.
- On the one hand, some representatives of funding organisations are reluctant to a third phase of MACSUR because many of the goals clearly have been achieved and a vibrant scientific network has been created. On the other hand, the Paris accord from 2016 opened the eyes about the urgency of mitigation efforts in particular in agriculture. Such a shift in priorities may call for new instruments and approaches. But given the existing and well working organizational structure of MACSUR it may be advisable to move on and avoid wasted time and resources involved in setting up a new working management structure in another organizational context.

In Denmark there has not been any specific research programme on climate change related aspects within agriculture. This is considered an aspect of the general research portfolio, and a research area highly relevant for joint European research. The issues of climate change and food security is part of the recently published national research agenda, Forsk2025. Aarhus University has decided to form an interdisciplinary research center on Climate Change, where also the aspects of climate change and food security plays a prominent role. Part of the reasoning behind this center stems from the experiences from the participation in MACSUR. There is thus a large commitment within the research center to engage in cross-national research activities in the area.

7. Institutional and external commitment

7a) List the names of external funding sources, which were leveraged by the existence of MACSUR, including their name, contributions, and main theme. Max. 2 pp.

CropM

- Pathways linking uncertainties in model projections of climate and its effects (PLUMES) funded by the Academy of Finland, 2014-2018
- Assessing options for the SUSTainable intensification of Agriculture for integrated production of food and non-food (SUSTag) funded by FACCE SURPLUS (in Finland: Finnish Ministry of Agriculture and Forestry), 2016-2018
- Securing yield stability of Brassica crops in changing climate conditions (SYBRACLIM) funded by FACCE, 2014-2017
- Improved estimation and mitigation of nitrous oxide emissions and soil carbon storage from crop residues (ResidueGas) funded by FACCE ERAGAS, 2017-2020
- MODelling vegetation response to EXTREMe Events (MODEXTREME) funded by EU FP7, 2013-2016
- Improvement of water and nutrient retention and use efficiency in arable farming systems from field to catchment scale in Europe and North Africa (WaterFarming) funded by ERANET (WaterWorks2015 co-funded call), 2017-2020.
- Innovative and sustainable intensification of integrated food and non-food systems to develop climate-resilient agro-ecosystems in Europe and beyond (SustainFarm) funded by ERANET (FACCEJPI), 2016-2019.

LiveM:

- The modelling work in Low Emission Animal Feed (2011-2017), which was a Dutch funded project on the mitigation of enteric methane emissions, including experimental work, the modelling of rumen function and control mechanisms of rumen methanogenesis, and the dissemination of results and tools to stake-holders.
- Preparatory phase of ERAGAS-CEDERS which focuses at improving greenhouse gas emission accounting on farms and inventory methodology (and closely connected with this the

current FACCE JPI Global Network project)

TradeM

- New research project "Pathways linking uncertainties in model projections of climate and its effects (PLUMES)" funded by the Academy of Finland, 2014-2018 (EUR 989707); more information: S. Fronzek
- New research project "Metrics, Models and Foresight for European Sustainable Food and Nutrition Security (SUSFANS)" funded by the European Commission, 2015-2019 (EUR 5299993); more information: A. Zimmermann
- Participatory Development of Representative Agricultural Pathways for Austria (RAPs.AT). Austrian Climate Research Programme research grant. Partners: BOKU, WIFO, PIK, OSU (EUR 132028); more information: M. Schönhart
- SFS-49 Call. SUpport for Policy RElevant Modelling of Agriculture (SUPREMA). MACSUR Partners: LEI Wageningen UR (Netherlands), Thünen Institut (Germany), UPM (Spain), IIASA (Austria) (EUR 999823); more information: F. Brouwer.
- Transferencia científico-tecnológica para evaluación del impacto del cambio climático en los sistemas agrarios de Ecuador y los recursos hídricos (EUR 10000); more information: M. Ruiz-Ramos

No explicit reference to themes:

- FACCE SURPLUS project »Assessing options for the SUSTainable intensification of Agriculture for integrated production of food and non-food products at different scales (SUSTAg)«(EUR >860828); more information: M. Köchy
- FACCE EraNet+ ClimateCafe (EUR >388626); more information: M. Köchy
- "H2020 Call: H2020-SFS-2016-2017; (Sustainable Food Security – Resilient and resource-efficient value chains) Topic: SFS-02-2016. Stage II. DIVERSify: Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability" (EUR 4999363); more information: M. Inés Mínguez
- Targets for Sustainable and Resilient Agriculture - FACCE JPI Surplus (EUR 1600000); more information: A. Whitmore
- “NuRa – Grass to Profit“, 2015-2018. Funded by the European Agricultural Fund for Rural Development. Partners: Natural Resources Institute Finland, ProAgria Pohjois-Savo, Savonia University of Applied Sciences (EUR 861216); more information: P. Korhonen

7b) Provide evidence for the links of MACSUR to the stakeholders (including government, industry) with an interest in each of the three themes. Max. 2 pp.

Following the direct link http://ojs.macsur.eu/index.php/regional/regional-case-studies a list can be obtained which specific stakeholders (that were involved with the regional case studies conducted throughout the EU. These stakeholders involve local authorities and various NGO’s, advisory organisations and extension services, farmer’s representatives, decision makers and the agro-food chain industry (animal feed, fertilisers, food sector).
There has been exchange of MACSUR as a knowledge hub and an a range of projects that ran/run in parallel to MACSUR (http://ojs.macsur.eu/index.php/regional/regional-case-studies & http://ojs.macsur.eu/index.php/output/external-resources), each one of them engaging their own set of stakeholders.

- Presentation at meeting of the FACCE Stakeholder Advisory Board; more information: M. Köchy
- Stakeholder Round Table on "General framework for model evaluation and comparison"; more information: Roberto Ferrise
- Meeting with national stakeholders in Norway. Presentation of the Norwegian case study. Gardermoen 8 June 2016; more information: Lillian Øygarden
- Summary outcomes from group discussions from workshop "Pohjois-Savon maatalouden sopeutuminen ilmastonmuutokseen" (Adaptation of North Savo agriculture to climate change), held in Kuopio, Finland. 32 participants; more information: Heikki Lehtonen
- Summary outcomes from group discussions from workshop "Kohti parempia satoja" (Towards improved yields), held in Iisalmi, Finland. 64 participants; more inforamtion: Heikki Lehtonen
- Presentation (20 min.) "Maatilan talous ja ilmastoviisaat ratkaisut – löytyykö keinoja parantaa tilan taloudellista tulosta?" (Farm economy and climate smart solutions - means to improve

economic result of a farm?). A presentation in VILMA workshop in Tampere, Finland; more information: Heikki Lehtonen
- Nutrient cycles accounting and impact assessment technical advisory group under the FAO-Livestock Environmental Assessment and Performance (LEAP) Partnership; more information: Barbara Amon
- Presentation (20 min.) "Nurmet ja ilmastonmuutos – rehuntuotannon ratkaisuja?" (Grasslands and climate change - solutions for forage production). A presentation in VILMA workshop in Joensuu, Finland; more information: P. Korhonen
- Migration als letzter Ausweg? Podienreihe Folgen des Klimawandels, Ev. Kirchentag 2017; more information: G. Götz (for H. Lotze-Campen)
- Sharing of modelling concepts for trade-offs between enteric methane and nitrous oxide emissions with grassland management measures, with Dutch industrial partners, Dairy NL (funding board of dairy farmers) and Cows & Opportunities. This was part of a monitoring project on dairy farms in practice, including the development of an accounting tool of greenhouse gas emissions, and a national inventory methodology.
- LiveM produced the first knowledge hub policy brief, centred on defining the role of this type of initiative and its potential to support the aims of EU policymakers: http://ojs.macsur.eu/index.php/Reports/article/view/H0.3-D1/267
- LiveM contributed to the MACSUR regional case studies, which were the main route via which advances in modelling within the knowledge hub, were applied to integrated research work with stakeholders across Europe. These contributions included (for example) predictions of the impact of heat stress on dairy production in Oristano under climate change scenarios.
- EIP-AGRI Focus Group " Reducing emissions from cattle farming"; more information: Barbara Amon
- Regional Pilot Case Study Mostviertel – AT. Discussion of case study results with advisors and farmers, Amstetten, Lower Austria; more information: Martin Schönhart
- Thorough contacts between LUKE (Finland) to funding ministry (Ministry of Agriculture and Forestry) e.g. via annual seminars
- Seminars arranged in North Savo region (LINKS) attended by several local and national stakeholder groups (e.g. fertilizer and seed companies).
- Close contacts between Aarhus University (Denmark) and the funding ministry (Ministry of Food and Environment) as well as industry and other stakeholders, through regular meetings, and through participation in the Danish climate think tank (CONCITO)
- Presentation at Federal Ministry of Nutrition and Agriculture (BMEL) in Berlin (08.01.2016) on yield gaps, yield stagnation- present knowledge and open questions.
- Invitation for presentation at farmer´s association Spree-Neiße at Turnow, Germany (31.01.2016) on climate change effects on crop production.
- MACSUR stakeholder workshop Brussels (24.5.2016)
- Invitation for a presentation at winter school of farmer´s association Mecklenburg Strelitz at Hohenzieritz/Germany (31.01.201) on crop yield potential and limitations of soil use.
- Stakeholder survey on observed adaptation of crop production amanement (Germany: Agricultural chambers of federal state North Rhine-Westphalia, Lower Saxony, Saxony, Brandenburg) and farmer´s associations.

7c) Make a short list of the ten most relevant new collaborations with institutes or international partners. Max. 1,5 pp.

- H2020 SFS42-2016. PEANUTSSA Stage-1-proposal submitted February 2016. MACSUR partners Thünen Institute, ILVO, SRUC, James Hutton Institute and non-MACSUR members; more information: M. Köchy
- H2020 Water 2b. 'Sustainable Integrated Management FOR the NEXUS of water-land-food-energy-climate for a resource-efficient Europe — SIM4NEXUS', MACSUR Partners: LEI Wageningen UR (Netherlands), PIK (Germany), UPM (Spain); more information: F. Brouwer
- FACCE-JPI ERA-NET SuSan application. Norwegian partner (NMBU) is involved in the consortium (Application submitted March 2016); more information: S. Özkan
- New research project "Pathways linking uncertainties in model projections of climate and its effects (PLUMES)" funded by the Academy of Finland, 2014-2018; more information: S.

Fronzek

- EC COST application (result of the links developed between MACSUR animal health task and Global Research Alliance's Animal Health Network). Norwegian partner (NMBU) is involved in the consortium (Application submitted April 2016) S. Özkan
- New research project "Metrics, Models and Foresight for European Sustainable Food and Nutrition Security (SUSFANS)" funded by the European Commission, 2015-2019; more information: A. Zimmermann
- Participatory Development of Representative Agricultural Pathways for Austria (RAPs.AT). Austrian Climate Research Programme research grant. Partners: BOKU, WIFO, PIK, OSU; more information: M. Schönhart
- FACCE SURPLUS project »Assessing options for the SUSTainable intensification of Agriculture for integrated production of food and non-food products at different scales (SUSTAg)«; more information: M. Köchy
- FACCE EraNet+ ClimateCafe; more information: M. Köchy
- "H2020 Call: H2020-SFS-2016-2017; (Sustainable Food Security – Resilient and resource-efficient value chains) Topic: SFS-02-2016. Stage II. DIVERSify: Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability"; more information: M. Inés Mínguez
- Targets for Sustainable and Resilient Agriculture - FACCE JPI Surplus; more information: A. Whitmore
- “NuRa – Grass to Profit“, 2015-2018. Funded by the European Agricultural Fund for Rural Development. Partners: Natural Resources Institute Finland, ProAgria Pohjois-Savo, Savonia University of Applied Sciences; more information: P. Korhonen
- "Stage 2 proposal on ""Integrated Decision Support for Agriculturel and Forestry in Europe"" for H2020-RUR-2016-2017 "; more information: I. Holman
- Polish national startegic project LCAgri (www.lcagri.iung.pulawy.pl) was created by P125 and P139 for conducting reasarch on climate change risk assesment for agriculture and food security with collaboration of MACSUR partners; more information: J. Kozyra
- New links are available for MACSUR through the newly granted proposal ERAGAS-CEDERS which is focused at improving greenhouse gas emission accounting on farms and inventory methodology. New partners (which were not part of MACSUR) are Ireland (Teagasc), New Zealand (AgResearch), Switzerland (ETH), Spain (Granada), US (UC-Davis & Penn State University), Norway (NIBIO) and the FAO and CIRAD. Moreover, various co-authors from other research groups have participated in peer-reviewed papers produced within MACSUR. Links have been established with the FACCE-JPI Global Network project and the Feed and Nutrition Network and the Manure Management Network under the Global Research Alliance.
- A Young Research Talents proposal “3M-Sheep” was submitted to the Norwegian Research Council, which includes a collaboration between N (NIBIO, NAES (Norwegian Agricultural Extension Services), FKF (Felleskjøpet Forutvikling), NL (Wageningen UR), AUS (Melbourne University), UK (Aberystwyth University), NZ (AgResearch).
- Joint workshops and a position paper published in collaboration with the GRA Animal Health Network

CropM partners have established new or deeper collaborations in several cases, e.g.

- Aarhus University (Denmark): LUKE (Finland), ZALF (Germany), Bonn University (Germany), UniFI (Italy), Mendel University (Czech Republic), INRA (France), NIBIO (Norway).
- Luke (Finland): UPM (Spain), Aarhus University (Denmark), NIBIO (Norway), UniFI (Italy), Bonn University (Germany), Göttingen University (Germany), Potsdam Institute for Climate Impact Research (Germany), ZALF (Germany), Lund University (Sweden), INRA (France)
- Italian MACSUR partners: INRA (France), Penn State University (USA), ZALF (Germany), Aarhus University (Denmark), Queens University (Belfast), University of Reading (UK), WAU (Netherlands), James Hutton Institute (UK), BOKU (Austria), University of Science and Technology (Poland), Luke (Finland), NIBIO (Norway), KIT (Germany), Thunen Institute (Germany)
- ZALF: INRA Toulouse (Serge Savary and Laetitia Willocquet) initiating a new network on crop loss estimation by pest and diseases with new international partners. New Zealand Institute for Plant & Food Research (Edmar Teixeira) on catch crop and rotation modelling USDA-ARS,

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**22**				
Legal name of organisation:	**The University of Leeds**				
Country	United Kingdom				
ZIP code:	L2S 9JF	**Town:**	Leeds		
Street name, number:					
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Christine	Family name:	Foyer	
Function:	Professor		Phone (with int. prefix):	+441133431421	
E-Mail:	c.foyer@leeds.ac.uk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·11·01	Expected End of grant (dd/mm/yy)	2017·10·31		
Granted funding (€):	206'000.00 €	In-cash funding spent (until 31/05/2017):	198'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	56'000.00 €	Travel costs (B):	10'000.00 €		
Material & supply (C):	34'000.00 €	Equipment (D):	- €		
Other costs (E):	98'000.00 €	Total costs (A+B+C+D+E):	198'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Hub Deputy Coordinator				
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:					
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	38				
Person-Months contributed “in-kind”:	38				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**24**				
Legal name of organisation:	**Universidad Politécnica de Madrid**				
Country	Spain				
ZIP code:	28040	**Town:**	Madrid		
Street name, number:	Ramiro Meztu, 7				
Website (optional):	www.upm.es	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Margarita	Family name:	Ruiz Ramos	
Function:	Associate professor and Researcher		Phone (with int. prefix):	+34.91452.4900 (ext. 1683	
E-Mail:			Fax (with int. prefix):	+34.915.449.983	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2018·01·01	Expected End of grant (dd/mm/yy)		2019·12·31	
Granted funding (€):	45'000.00 €	In-cash funding spent (until 31/05/2017):		- €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):		- €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		- €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Universidad Politécnica de Madrid Basque Centre for Climate Change Instituto de Investigación y Formación Agraria y Pesquera Instituto Valenciano de Investigaciones agrarias Spanish National Research Council University of Castilla-La Mancha				
Theme/Hub lead:					
WP lead:					
Task lead:	C4.4				
Task contribution:	C1.5; C2.1; C4.3; C4.4; C4.5; C6.3/XC9.1; C6.4/XC15.1; L1.3; L1.4; L2.3; L3.3/XC6.2; L3.8/XC15.2; T2.4/XC9.2; T3.2/XC7.5				
Number of people involved in MACSUR:	22				
Person-Months spent in MACSUR:	10				
Person-Months contributed “in-kind”:	10				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**25**				
Legal name of organisation:	**Rothamsted Research**				
Country	UK				
ZIP code:	AL52JQ	**Town:**	Harpenden		
Street name, number:	**West Common**				
Website (optional):	www.rothamsted.ac.uk		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Mikhail	Family name:	Semenov	
Function:	Principal Investigator		Phone (with int. prefix):	+441582938395	
E-Mail:	mikhail.semenov@rothamsted.ac.uk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)		2017·06·30	
Granted funding (€):	53'628.00 €	In-cash funding spent (until 31/05/2017):		51'393.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	20'268.00 €	Travel costs (B):		14'484.00 €	
Material & supply (C):	13'683.00 €	Equipment (D):		2'958.00 €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		51'393.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	not applicable				
Theme/Hub lead:					
WP lead:	C2, C4				
Task lead:	C0.1, C0.2, C0.3, C2.2, C4.5, C6.2				
Task contribution:					
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	2.35				
Person-Months contributed “in-kind”:	3				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**36**				
Legal name of organisation:	**Centro de Investigación y Tecnología Agroalimentaria (CITA)**				
Country	Spain				
ZIP code:	50059	**Town:**	Zaragoza		
Street name, number:	**Avenida Montañana, 930**				
Website (optional):	tp://www.cita-aragon.e	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name: George		Family name:	Philippidis	
Function:	Researcher		Phone (with int. prefix):		
E-Mail:	gphilippidis@aragon.es		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	n/a	Expected End of grant (dd/mm/yy) n/a			
Granted funding (€):	9'000.00 €	In-cash funding spent (until 31/05/2017):		9'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):		- €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	9'000.00 €	Total costs (A+B+C+D+E):		9'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	None				
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	L3.8				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	3				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**47**				
Legal name of organisation:	**SRUC**				
Country	UK				
ZIP code:	EH9 3JG	**Town:**	Edinburgh		
Street name, number:	**West Mains Rd**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Kairsty	Family name:	Topp	
Function:		Phone (with int. prefix):	4.41315E+11		
E-Mail:	Kairsty.Topp@sruc.ac.uk	Fax (with int. prefix):			
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)		Expected End of grant (dd/mm/yy)			
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	- €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	- €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	- €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:	L2.3				
Task contribution:	L1.4, L2.2, L2.3				
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	4.6				
Person-Months contributed “in-kind”:	4.6				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**62**				
Legal name of organisation:	**Desertification Research Centre, NRD University of Sassari**				
Country	**Italy**				
ZIP code:	**07100**	**Town:**	**Sassari**		
Street name, number:	**Viale Italia, 39**				
Website (optional):	http://en.uniss.it/nrd		**P.O.Bo (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	**Pier Paolo**	Family name:	**Roggero**	
Function:	**Direttore**		Phone (with int. prefi):	**+393280428058**	
E-Mail:	pproggero@uniss.it		Fa (with int. prefi):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	**2015·11·16**		Epected End of grant (dd/mm/yy)	**2017·12·30**	
Granted funding (€):	**399'031.58 €**		In-cash funding spent (until 31/05/2015):	**227'116.03 €**	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	**186'070.36 €**		Travel costs (B):	**23'697.85 €**	
Material & supply (C):	**136.00 €**		Equipment (D):	**- €**	
Other costs (E):	**47'883.71 €**		Total costs (A+B+C+D+E):	**257'787.92 €**	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	**CREA** (centro di ricerca agricoltura e ambiente) , **DAFNE-UNITUS** (dipartimento di scienze agrarie e forestali) **MEDES** (fondazione per lo sviluppo sostenibile nel Mediterraneo), **DISAA-UNIMI** (Dipartimento di Scienze Agrarie e Ambientali), **Dipartimento di Fisica - UNITO**, **CNR - Istituto di Biometereologia**, **D3A - UNIVPM** (Dipartimento di Scienze Agrarie Alimentalie e Ambientali) e **DIAPAA-UNIFI** (Dipartimento di Scienze delle Produzioni Agroalimentari dell'Ambiente)				
Theme/Hub lead:					
WP lead:	C1, H1 and XC1 (Bindi); C6 and XC6 (Roggero, Dono)				
Task lead:	C1.4 C1.6/XC1.1 C3.5.4 (Bindi) T3.3 (Dono) L2.1 (Lacetera) C6.1/C6.3 (Roggero)				
Task contribution:	C1.1, C1.2, C1.3, C1.4, C1.5, C1.6, C1.7, C2.1, C2.3, C2.4, C2.5, C3.1, C3.3, C3.4, C3.5, C4.1, C4.2, C4.3, C4.4, C4.5, C4.7/XC3.1, C4.8/XC3.2, C5.1, C5.2/XC4.2, C6.1/XC6.3, C6.2/XC7.2, C6.3/XC9.1, C6.4/XC15.1, C6.5/XC15.3, L1.1, L2.1, L2.2, L2.3, L2.4, L3.1/XC1.2, L3.3/XC6.2, L3.6/XC11.2, L3.7/XC14.4, L3.8/XC15.2, T1.2/XC16.4, T1.4, T2.5, T2.6/XC14.1-2-3, T3.1/XC6.1, T3.2/XC7.5, T3.2/XC7.6, T3.3, T4.1/XC4.3,				
Number of people involved in MACSUR:*	**34**				
Person-Months spent in MACSUR:*	174.5				
Person-Months contributed “in-kind”:	34				

*People and person months calculated for the whole project duration (i.e. until 31/12/2017 if not later)

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**65**				
Legal name of organisation:	**Rothamsted Research**				
Country	UK				
ZIP code:	AL5 2JQ	**Town:**	Harpenden		
Street name, number:					
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Andrew	Family name:	whitmore	
Function:	Group Leader		Phone (with int. prefix):		
E-Mail:	andy.whitmore@rothamsted.ac.uk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	65'509.20 €	In-cash funding spent (until 31/05/2017):	45'423.60 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	23'145.60 €	Travel costs (B):	672.00 €		
Material & supply (C):	7'762.80 €	Equipment (D):	- €		
Other costs (E):	13'843.20 €	Total costs (A+B+C+D+E):	45'423.60 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	Katharina Helming				
WP lead:					
Task lead:					
Task contribution:	Modelling Ecosystem Services				
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	2.4				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**71**				
Legal name of organisation:	**University of Copenhagen**				
Country	Denmark				
ZIP code:	2630	**Town:**	Taastrup		
Street name, number:	Højbakkegaard Allé 13				
Website (optional):	Plen.ku.dk		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Birgitte	Family name:	Nielsen	
Function:	Finance administrator		Phone (with int. prefix):	+4535333556	
E-Mail:	bini@plen.ku.dk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2016·06·01	Expected End of grant (dd/mm/yy)		2018·05·31	
Granted funding (€):	200'000.00 €	In-cash funding spent (until 31/05/2017):		17'876.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	98'699.00 €	Travel costs (B):		23'251.00 €	
Material & supply (C):	556.00 €	Equipment (D):		- €	
Other costs (E):	540.00 €	Total costs (A+B+C+D+E):		123'046.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:	C5				
Task lead:	C5.1 and C5.2/X4.2				
Task contribution:	XC3.1, XC15.1, C0.1, C0.2, C0.3, C4.1, C4.2, C4.3, C 4.7/XC3.1 and C6.4/XC15.1				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	12				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**83**				
Legal name of organisation:	**Potsdam Institute for Climate Impact Research**				
Country	Germany				
ZIP code:	14473	**Town:**	Potsdam		
Street name, number:	**Telegrafenberg A 31**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Hardy	Family name:	Seemann	
Function:	Administration		Phone (with int. prefix):		
E-Mail:	hardy.seemann@pik-potsdam.de		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	79'510.00 €	In-cash funding spent (until 31/05/2015):	68'680.93 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	60'991.25 €	Travel costs (B):	1'590.56 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	6'099.12 €	Total costs (A+B+C+D+E):	68'680.93 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	no				
Theme/Hub lead:	no				
WP lead:	no				
Task lead:	TradeM: H1.XC16 Overall scenario development				
Task contribution:	CropM: H1.XC7 Impact assessment for Europe TradeM: H1.XC8 Understanding the Impacts of Extreme Events TradeM: H1.XC16 Overall scenario development LiveM: H1.XC2 Model intercomparison on climate change in relation to livestock and grassland LiveM: H1.XC7 Impact assessment for Europe LiveM: H1.XC11 The animal feed story				
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	10.75				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**92**				
Legal name of organisation:	**Natural Resources Institute Finland (Luke)**				
Country	Finland				
ZIP code:	FI-00790	**Town:**	Helsinki		
Street name, number:	**Latokartanonkaari 9**				
Website (optional):	www.luke.fi		**P.O.Box (optional):**	P.O.Box 2, 00791 Helsinki	
Contact person					
Mr/Ms./Dr.	First name:	Taru	Family name:	Palosuo	
Function:	Principal scientist		Phone (with int. prefix):	358 29 532 6422	
E-Mail:	taru.palosuo@luke.fi		Fax (with int. prefix):	-	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01		Expected End of grant (dd/mm/yy)	2017·05·31	
Granted funding (€):	200'000.00 €		In-cash funding spent (until 31/05/2015):	200'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	340'000.00 €		Travel costs (B):	30'000.00 €	
Material & supply (C):	- €		Equipment (D):	- €	
Other costs (E):	30'000.00 €		Total costs (A+B+C+D+E):	400'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Finnish Environment Institute (SYKE)				
Theme/Hub lead:	CropM co-coordination				
WP lead:	C0 (deputy), C4				
Task lead:	XC9.3, C4.3,				
Task contribution:	H0.1, H0.2, H0.3, XC6.3,XC7.5,XC8,XC9.1, C1.1, C1.3, C1.4, C1.5, C2.1, C2.3, C2.4, C2.5, C3.3, C3.6/XC2.1, C4.1, C4.2, C4.4, C4.5, C4.6, C 4.7/XC3.1, C4.8/XC3.2, C6.1/XC7.2, C6.2/XC7.2, C6.3,XC9.1, L1.1, L1.2, L1.3, L2.3, L2.4, L3.3/XC6.2, L3.6/XC11.2, T1.2/XC16.1, T1.2/XC16.2, T1.2/XC16.4, T2.4/XC9.2, T2.4/XC9.3, 3.2/XC7.5				
Number of people involved in MACSUR:	15				
Person-Months spent in MACSUR:	48				
Person-Months contributed “in-kind”:	25				

a) in-cash funding covering only Luke's share for the funding of the MACSUR project
b) "in-kind" persons months covering estimated PMs from several supporting national projects that directly contributed to MACSUR work

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**100**				
Legal name of organisation:	**UTP University of Science and Technology**				
Country	Poland				
ZIP code:	85-796	**Town:**	Bydgoszcz		
Street name, number:	**Al. Prof. S. Kaliskiego 7**				
Website (optional):	www.utp.edu.pl		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Waldemar	Family name:	Bojar	
Function:	Project Leader		Phone (with int. prefix):	48523408192	
E-Mail:	wald@utp.edu.pl		Fax (with int. prefix):	48523408192	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)		Expected End of grant (dd/mm/yy)			
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	- €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	1'063.85 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	607.42 €	Total costs (A+B+C+D+E):	1'671.27 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	XC 1.3; XC3.2; XC 6.2;T1.3				
Number of people involved in MACSUR:	6				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	4				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**105**				
Legal name of organisation:	**Moredun Research Institute**				
Country	Scotland				
ZIP code:	EH26 0PZ	**Town:**	Penicuik		
Street name, number:	**Bush Loan**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Dave	Family name:	Bartley	
Function:	LiveM participant		Phone (with int. prefix):	+441314455111	
E-Mail:	dave.bartley@moredun.ac.uk		Fax (with int. prefix):	+44 131 4456235	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)	2017·05·31		
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	1'023.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	1'023.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	1'023.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	LiveM 2.3.1; 2.3.2; 2.3.3				
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	1				
Person-Months contributed “in-kind”:	1				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**112**				
Legal name of organisation:	**Johann Heinrich von Thünen-Institut**				
Country	Germany				
ZIP code:	38116	**Town:**	Braunschweig		
Street name, number:	Bundesallee 50				
Website (optional):	http://thuenen.de	**P.O.Box (optional):**			
Contact person					
Dr.	First name:	Martin	Family name:	Banse	
Function:	Head of Institute of Market Analysis		Phone (with int. prefix):	+49 531 596 5301	
E-Mail:	martin.banse@thuenen.de		Fax (with int. prefix):	+49 531 596 5399	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	193'479.00 €	In-cash funding spent (until 31/05/2017):	152'500.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	140'500.00 €	Travel costs (B):	12'000.00 €		
Material & supply (C):	1'500.00 €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	154'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	German Agricultural Research Alliance				
Theme/Hub lead:	Hub, Chair of the Project Steering Committee				
WP lead:					
Task lead:					
Task contribution:					
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	19				
Person-Months contributed “in-kind”:	9				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**117**				
Legal name of organisation:	**University of Aberdeen**				
Country	UK				
ZIP code:	AB24 3FX	**Town:**	Aberdeen		
Street name, number:	**Kings College**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Kerry	Family name:	Duffus	
Function:	Research Administration Manager		Phone (with int. prefix):	00441224272279	
E-Mail:	k.duffus@abdn.ac.uk		Fax (with int. prefix):	N/A	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)		2017·06·30	
Granted funding (€):	66'000.00 €	In-cash funding spent (until 31/05/2017):		52'631.61 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	8'000.00 €	Travel costs (B):		15'846.94 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	28'784.67 €	Total costs (A+B+C+D+E):		52'631.61 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	James Hutton Institute				
Theme/Hub lead:	Cropland Hub				
WP lead:	n/a				
Task lead:	Leading the analysis of the carbon dynamics in the scaling exercise of C3.				
Task contribution:	Provide model simulation results of DailyDayCent; co-authors on 2 papers; co-author on 1 book chapter; oral presentation at a conference				
Number of people involved in MACSUR:	6				
Person-Months spent in MACSUR:	8				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**115**				
Legal name of organisation:	**Rheinische Friedrich-Wilhelms Universität Bonn**				
Country	Germany				
ZIP code:	53115	**Town:**	Bonn		
Street name, number:	**Regina-Pacis Weg 2**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Frank	Family name:	Ewert	
Function:	Professor and Head of Plant Science g	Phone (with int. prefix):	0049 (0)33432 82-200		
E-Mail:	frank.ewert@uni-bonn.de	Fax (with int. prefix):			
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·12·31		
Granted funding (€):	157'952.43 €	In-cash funding spent (until 31/05/2017):	133'987.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	123'370.00 €	Travel costs (B):	10'617.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	133'987.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Representing the Crop Science Group, Institute of Crop Science and Resource Conservation (INRES) and the Institute for Food and Resource Economics (ILR) Univ. Bonn				
Theme/Hub lead:	Member of hub steering committee; Co-Lead of CropM Theme				
WP lead:	C0, C3				
Task lead:	C0.1, C0.2, C0.3, C3.4, C.3.5.1, C3.6/XC2.1; T2.4/XC9.2, T3.2/XC7.1, T3.2/XC7.4				
Task contribution:	C.1.1, C1.3, C.2.1, C.3.1, C3.2,C.4.2, C.4.3, C4.4, C.4.5, C6.2/XC7.2; T1.2/XC16.2				
Number of people involved in MACSUR:	10				
Person-Months spent in MACSUR:	50.5				
Person-Months contributed “in-kind”:	22				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**128**			
Legal name of organisation:	**Norwegian Institute of Bioeconomy research (NIBIO)**			
Country	Norway			
ZIP code:	1430	**Town:**	Aas	
Street name, number:	**Høgskoleveien 7**			
Website (optional):	www.nibio.no	**P.O.Box (optional):**		
Research Activites: mats.hoglind@nibio.no phone:+47 40475391				
Mr/Ms./Dr.	First name:	Lillian	Family name:	Øygarden
Function:	Coordinator of consortium		Phone (with int. prefix):	+4791684113
E-Mail:	lillian.oygarden@nibio.no		Fax (with int. prefix):	
Details on the grant/contract with funding authority				
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)		2017·12·31
Granted funding (€):	824'000.00 €	In-cash funding spent (until 31/05/2017):		693'000.00 €
Budget spent (€, until 31/05/2017)				
Personnel costs (A):	562'000.00 €	Travel costs (B):		30'000.00 €
Material & supply (C):	- €	Equipment (D):		- €
Other costs (E):	101'000.00 €	Total costs (A+B+C+D+E):		693'000.00 €
Role in MACSUR				
Other institutions, including subcontractors represented by this partner	Norwegian University of Life Sciences (NMBU)			
Theme/Hub lead:				
WP lead:	C6			
Task lead:	L2.2, L1.2, XC9 (grassland), T3.1 /XC6.1, T3.6, T2			
Task contribution:	L1.1, L1.4, L1.5, L2.4, L1.3,C1.C1.2, C1.5, XC3, XC6,XC7,XC8, XC9			
Number of people involved in MACSUR:	14			
Person-Months spent in MACSUR:	49			
Person-Months contributed “in-kind”:	18			

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**143**				
Legal name of organisation:	**Cranfield University**				
Country	United Kingdom				
ZIP code:	MK43 0AL	**Town:**	Cranfield, Bedford		
Street name, number:					
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Ian	Family name:	Holman	
Function:	Professor		Phone (with int. prefix):	44-1234-758277	
E-Mail:	i.holman@cranfield.ac.uk		Fax (with int. prefix):	44-1234-752970	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)		2017·09·03	
Granted funding (€):	56'000.00 €	In-cash funding spent (until 31/05/2017):		39'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	15'000.00 €	Travel costs (B):		3'000.00 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	21'000.00 €	Total costs (A+B+C+D+E):		39'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	N/A				
Theme/Hub lead:	N/A				
WP lead:	N/A				
Task lead:	N/A				
Task contribution:	XC1, 2, 6, 7, 16				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	6				
Person-Months contributed “in-kind”:	6				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**154**				
Legal name of organisation:	**The University of Reading**				
Country	United Kingdom				
ZIP code:	RG6 6AR	**Town:**	Reading		
Street name, number:	**Agriculture Building, Earley Gate**				
Website (optional):		**P.O.Box (optional):**	PO Box 237		
Contact person					
Mr/Ms./Dr.	First name:	Richard	Family name:	Tiffin	
Function:		Phone (with int. prefix):	44(0)118 378 8965		
E-Mail:	j.r.tiffin@reading.ac.uk	Fax (with int. prefix):			
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·09·28	Expected End of grant (dd/mm/yy)	2017·09·27		
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	- €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	15'800.00 €	Travel costs (B):	3'200.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	19'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	None				
Theme/Hub lead:					
WP lead:	Richard Tiffin (XC Activity 8 'Understanding the Impacts of Extreme Events')				
Task lead:	XC8: Jacob Bishop				
Task contribution:	Delivery of two workshops: meaningful extreme weather scenarios and an understanding of where modelling is feasible; narrative descriptions of the events and their impacts				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**159**				
Legal name of organisation:	**Forschungszentrum Jülich GmbH**				
Country	Germany				
ZIP code:	52425	**Town:**	Jülich		
Street name, number:	**Leo-Brandt-Strasse**				
Website (optional):	www.fz-juelich.de	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Lutz	Family name:	Weihermüller	
Function:	senior Scientist		Phone (with int. prefix):	02461 618669	
E-Mail:	l.weihermueller@fz-juelich.de		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·08·01	Expected End of grant (dd/mm/yy)	2017·07·31		
Granted funding (€):	29'800.00 €	In-cash funding spent (until 31/05/2017):	29'800.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	27'000.00 €	Travel costs (B):	2'800.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	29'800.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	C3				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	10				
Person-Months contributed “in-kind”:	10				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**163**				
Legal name of organisation:	**Swedish University of Agricultural Sciences**				
Country	Sweden				
ZIP code:	750 07	**Town:**	Uppsala		
Street name, number:	**Lennart Hjelms väg 9**				
Website (optional):	http://www.slu.se/mark	**P.O.Box (optional):**	Box 7014		
Contact person					
Mr/Ms./Dr.	First name:	Elisabet (Lisbet)	Family name:	Lewan	
Function:	Assoc prof/ Partner Coordinator		Phone (with int. prefix):	+4618672629	
E-Mail:	Lisbet.Lewan@slu.se		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·10·01	Expected End of grant (dd/mm/yy)	2017·12·31		
Granted funding (€):	77'500.00 €	In-cash funding spent (until 31/05/2017):	65'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	20'000.00 €	Travel costs (B):	25'000.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	20'000.00 €	Total costs (A+B+C+D+E):	65'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	**Department at Lund University (LU):** *Ben Smith*/Physical Geography and Ecosystem Science**. Departments at Swedish University of Agricultural Sciences (SLU)**: Soil & Environment; Plant Production Ecology; Forest Mycology and Plant Pathology; Division of Plant Pathology/Epidemiology; Agricultural Research for Northern Sweden.				
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	Contributions to C1,C3, C4				
Number of people involved in MACSUR:	9				
Person-Months spent in MACSUR:	28				
Person-Months contributed “in-kind”:	24				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**173**				
Legal name of organisation:	**St. Dienst Landbouwkundig Onderzoek livestock Research**				
Country	The Netherlands				
ZIP code:	6708 WD	**Town:**	Wageningen		
Street name, number:	**De Elst 1**				
Website (optional):	www.wur.nl		**P.O.Box (optional):**	338	
Contact person					
Mr/Ms./Dr.	First name:	A.	Family name:	Bannink	
Function:	Senior Researcher		Phone (with int. prefix):	+31317480681	
E-Mail:	andre.bannink@wur.nl		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)	2017·05·31		
Granted funding (€):	50'000.00 €	In-cash funding spent (until 31/05/2017):	40'371.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	34'929.00 €	Travel costs (B):	3'179.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	2'263.00 €	Total costs (A+B+C+D+E):	40'371.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	LiveM				
WP lead:	XC11.0				
Task lead:	L3.5/XC11.1, L3.6/XC11.2				
Task contribution:	C6.3/XC 9.1, C6.4/XC15.1, C6.5/XC15.3, H0, L1.2, L1.3, L2.1, L2.2, L2.4, L3.8/XC15.2, T2.6/XC14.2				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	5				
Person-Months contributed “in-kind”:	4				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**175**				
Legal name of organisation:	**Institut National de la Recherche Agronomique (INRA)**				
Country	France				
ZIP code:	75007	**Town:**	Paris		
Street name, number:	**147 rue de l'Université**				
Website (optional):	http://www.inra.fr/		**P.O.Box (optional):**		
Contact person					
Dr.	First name:	Thierry	Family name:	CAQUET	
Function:	AAFCC programme director		Phone (with int. prefix):	+00 33 (0)3 83 39 40 00	
E-Mail:	accaf@inra.fr		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)		2017·05·30	
Granted funding (€):	85'000.00 €	In-cash funding spent (until 31/05/2017):		83'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	328'000.00 €	Travel costs (B):		79'500.00 €	
Material & supply (C):	3'000.00 €	Equipment (D):		500.00 €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		411'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	-				
Theme/Hub lead:					
WP lead:	L1, C4				
Task lead:	C1.5, C4.1, C4.2, C6.3, L1.1, L2, T2.4				
Task contribution:	C1.2, C1.3, C1.4, C1.5, C3.3, C3.4, C3.5, C4.3, C4.4, L1.1., L1.2, L1.5, L2.4, L3.1, L3.2, T1, T1.4				
Number of people involved in MACSUR:	34				
Person-Months spent in MACSUR:	72				
Person-Months contributed “in-kind”:	60				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**189**				
Legal name of organisation:	**Aarhus University**				
Country	Denmark				
ZIP code:	8830	**Town:**	Tjele		
Street name, number:	**Blichers Allé 20**				
Website (optional):	www.au.dk		**P.O.Box (optional):**	50	
Contact person					
Mr/Ms./Dr.	First name:	Jørgen E.	Family name:	Olesen	
Function:	Professor		Phone (with int. prefix):	+45 40821659	
E-Mail:	jeo@agro.au.dk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	300'000.00 €	In-cash funding spent (until 31/05/2017):	239'913.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	149'903.00 €	Travel costs (B):	12'942.00 €		
Material & supply (C):	3'761.00 €	Equipment (D):	- €		
Other costs (E): (overhead)	73'307.00 €	Total costs (A+B+C+D+E):	239'913.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	CropM				
WP lead:	C2				
Task lead:	XC6.2, C1.3, C2.3, C2.5, L3,3				
Task contribution:	1, XC15.2, XC16.2, C0.1, C0.2, C0.3, C1.1, C1.2, C2.1, C2.3, C2.4, C4.1, C4.2,				
Number of people involved in MACSUR:	12				
Person-Months spent in MACSUR:	15.78				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**22**				
Legal name of organisation:	**The University of Leeds**				
Country	United Kingdom				
ZIP code:	L2S 9JF	**Town:**	Leeds		
Street name, number:					
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Christine	Family name:	Foyer	
Function:	Professor		Phone (with int. prefix):	+441133431421	
E-Mail:	c.foyer@leeds.ac.uk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·11·01	Expected End of grant (dd/mm/yy)	2017·10·31		
Granted funding (€):	206'000.00 €	In-cash funding spent (until 31/05/2017):	198'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	56'000.00 €	Travel costs (B):	10'000.00 €		
Material & supply (C):	34'000.00 €	Equipment (D):	- €		
Other costs (E):	98'000.00 €	Total costs (A+B+C+D+E):	198'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Hub Deputy Coordinator				
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:					
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	38				
Person-Months contributed “in-kind”:	38				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**24**				
Legal name of organisation:	**Universidad Politécnica de Madrid**				
Country	Spain				
ZIP code:	28040	**Town:**	Madrid		
Street name, number:	Ramiro Meztu, 7				
Website (optional):	www.upm.es	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Margarita	Family name:	Ruiz Ramos	
Function:	Associate professor and Researcher		Phone (with int. prefix):	+34.91452.4900 (ext. 1683	
E-Mail:			Fax (with int. prefix):	+34.915.449.983	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2018·01·01	Expected End of grant (dd/mm/yy)		2019·12·31	
Granted funding (€):	45'000.00 €	In-cash funding spent (until 31/05/2017):		- €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):		- €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		- €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Universidad Politécnica de Madrid Basque Centre for Climate Change Instituto de Investigación y Formación Agraria y Pesquera Instituto Valenciano de Investigaciones agrarias Spanish National Research Council University of Castilla-La Mancha				
Theme/Hub lead:					
WP lead:					
Task lead:	C4.4				
Task contribution:	C1.5; C2.1; C4.3; C4.4; C4.5; C6.3/XC9.1; C6.4/XC15.1; L1.3; L1.4; L2.3; L3.3/XC6.2; L3.8/XC15.2; T2.4/XC9.2; T3.2/XC7.5				
Number of people involved in MACSUR:	22				
Person-Months spent in MACSUR:	10				
Person-Months contributed “in-kind”:	10				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**25**				
Legal name of organisation:	**Rothamsted Research**				
Country	UK				
ZIP code:	AL52JQ	**Town:**	Harpenden		
Street name, number:	**West Common**				
Website (optional):	www.rothamsted.ac.uk		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Mikhail	Family name:	Semenov	
Function:	Principal Investigator		Phone (with int. prefix):	+441582938395	
E-Mail:	mikhail.semenov@rothamsted.ac.uk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)		2017·06·30	
Granted funding (€):	53'628.00 €	In-cash funding spent (until 31/05/2017):		51'393.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	20'268.00 €	Travel costs (B):		14'484.00 €	
Material & supply (C):	13'683.00 €	Equipment (D):		2'958.00 €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		51'393.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	not applicable				
Theme/Hub lead:					
WP lead:	C2, C4				
Task lead:	C0.1, C0.2, C0.3, C2.2, C4.5, C6.2				
Task contribution:					
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	2.35				
Person-Months contributed “in-kind”:	3				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**36**				
Legal name of organisation:	**Centro de Investigación y Tecnología Agroalimentaria (CITA)**				
Country	Spain				
ZIP code:	50059	**Town:**	Zaragoza		
Street name, number:	**Avenida Montañana, 930**				
Website (optional):	tp://www.cita-aragon.e	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name: George		Family name:	Philippidis	
Function:	Researcher		Phone (with int. prefix):		
E-Mail:	gphilippidis@aragon.es		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	n/a	Expected End of grant (dd/mm/yy) n/a			
Granted funding (€):	9'000.00 €	In-cash funding spent (until 31/05/2017):		9'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):		- €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	9'000.00 €	Total costs (A+B+C+D+E):		9'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	None				
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	L3.8				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	3				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**47**				
Legal name of organisation:	**SRUC**				
Country	UK				
ZIP code:	EH9 3JG	**Town:**	Edinburgh		
Street name, number:	**West Mains Rd**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Kairsty	Family name:	Topp	
Function:		Phone (with int. prefix):	4.41315E+11		
E-Mail:	Kairsty.Topp@sruc.ac.uk	Fax (with int. prefix):			
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)		Expected End of grant (dd/mm/yy)			
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	- €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	- €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	- €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:	L2.3				
Task contribution:	L1.4, L2.2, L2.3				
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	4.6				
Person-Months contributed “in-kind”:	4.6				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**62**				
Legal name of organisation:	**Desertification Research Centre, NRD University of Sassari**				
Country	**Italy**				
ZIP code:	**07100**	**Town:**	**Sassari**		
Street name, number:	**Viale Italia, 39**				
Website (optional):	http://en.uniss.it/nrd		**P.O.Bo (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	**Pier Paolo**	Family name:	**Roggero**	
Function:	**Direttore**		Phone (with int. prefi):	**+393280428058**	
E-Mail:	pproggero@uniss.it		Fa (with int. prefi):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	**2015·11·16**		Epected End of grant (dd/mm/yy)	**2017·12·30**	
Granted funding (€):	**399'031.58 €**		In-cash funding spent (until 31/05/2015):	**227'116.03 €**	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	**186'070.36 €**		Travel costs (B):	**23'697.85 €**	
Material & supply (C):	**136.00 €**		Equipment (D):	**- €**	
Other costs (E):	**47'883.71 €**		Total costs (A+B+C+D+E):	**257'787.92 €**	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	**CREA** (centro di ricerca agricoltura e ambiente) , **DAFNE-UNITUS** (dipartimento di scienze agrarie e forestali) **MEDES** (fondazione per lo sviluppo sostenibile nel Mediterraneo), **DISAA-UNIMI** (Dipartimento di Scienze Agrarie e Ambientali), **Dipartimento di Fisica - UNITO**, **CNR - Istituto di Biometereologia**, **D3A - UNIVPM** (Dipartimento di Scienze Agrarie Alimentalie e Ambientali) e **DIAPAA-UNIFI** (Dipartimento di Scienze delle Produzioni Agroalimentari dell'Ambiente)				
Theme/Hub lead:					
WP lead:	C1, H1 and XC1 (Bindi); C6 and XC6 (Roggero, Dono)				
Task lead:	C1.4 C1.6/XC1.1 C3.5.4 (Bindi) T3.3 (Dono) L2.1 (Lacetera) C6.1/C6.3 (Roggero)				
Task contribution:	C1.1, C1.2, C1.3, C1.4, C1.5, C1.6, C1.7, C2.1, C2.3, C2.4, C2.5, C3.1, C3.3, C3.4, C3.5, C4.1, C4.2, C4.3, C4.4, C4.5, C4.7/XC3.1, C4.8/XC3.2, C5.1, C5.2/XC4.2, C6.1/XC6.3, C6.2/XC7.2, C6.3/XC9.1, C6.4/XC15.1, C6.5/XC15.3, L1.1, L2.1, L2.2, L2.3, L2.4, L3.1/XC1.2, L3.3/XC6.2, L3.6/XC11.2, L3.7/XC14.4, L3.8/XC15.2, T1.2/XC16.4, T1.4, T2.5, T2.6/XC14.1-2-3, T3.1/XC6.1, T3.2/XC7.5, T3.2/XC7.6, T3.3, T4.1/XC4.3,				
Number of people involved in MACSUR:*	**34**				
Person-Months spent in MACSUR:*	174.5				
Person-Months contributed “in-kind”:	34				

*People and person months calculated for the whole project duration (i.e. until 31/12/2017 if not later)

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**65**				
Legal name of organisation:	**Rothamsted Research**				
Country	UK				
ZIP code:	AL5 2JQ	**Town:**	Harpenden		
Street name, number:					
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Andrew	Family name:	whitmore	
Function:	Group Leader		Phone (with int. prefix):		
E-Mail:	andy.whitmore@rothamsted.ac.uk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	65'509.20 €	In-cash funding spent (until 31/05/2017):	45'423.60 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	23'145.60 €	Travel costs (B):	672.00 €		
Material & supply (C):	7'762.80 €	Equipment (D):	- €		
Other costs (E):	13'843.20 €	Total costs (A+B+C+D+E):	45'423.60 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	Katharina Helming				
WP lead:					
Task lead:					
Task contribution:	Modelling Ecosystem Services				
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	2.4				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**71**				
Legal name of organisation:	**University of Copenhagen**				
Country	Denmark				
ZIP code:	2630	**Town:**	Taastrup		
Street name, number:	Højbakkegaard Allé 13				
Website (optional):	Plen.ku.dk		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Birgitte	Family name:	Nielsen	
Function:	Finance administrator		Phone (with int. prefix):	+4535333556	
E-Mail:	bini@plen.ku.dk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2016·06·01	Expected End of grant (dd/mm/yy)		2018·05·31	
Granted funding (€):	200'000.00 €	In-cash funding spent (until 31/05/2017):		17'876.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	98'699.00 €	Travel costs (B):		23'251.00 €	
Material & supply (C):	556.00 €	Equipment (D):		- €	
Other costs (E):	540.00 €	Total costs (A+B+C+D+E):		123'046.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:	C5				
Task lead:	C5.1 and C5.2/X4.2				
Task contribution:	XC3.1, XC15.1, C0.1, C0.2, C0.3, C4.1, C4.2, C4.3, C 4.7/XC3.1 and C6.4/XC15.1				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	12				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**83**				
Legal name of organisation:	**Potsdam Institute for Climate Impact Research**				
Country	Germany				
ZIP code:	14473	**Town:**	Potsdam		
Street name, number:	**Telegrafenberg A 31**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Hardy	Family name:	Seemann	
Function:	Administration		Phone (with int. prefix):		
E-Mail:	hardy.seemann@pik-potsdam.de		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	79'510.00 €	In-cash funding spent (until 31/05/2015):	68'680.93 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	60'991.25 €	Travel costs (B):	1'590.56 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	6'099.12 €	Total costs (A+B+C+D+E):	68'680.93 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	no				
Theme/Hub lead:	no				
WP lead:	no				
Task lead:	TradeM: H1.XC16 Overall scenario development				
Task contribution:	CropM: H1.XC7 Impact assessment for Europe TradeM: H1.XC8 Understanding the Impacts of Extreme Events TradeM: H1.XC16 Overall scenario development LiveM: H1.XC2 Model intercomparison on climate change in relation to livestock and grassland LiveM: H1.XC7 Impact assessment for Europe LiveM: H1.XC11 The animal feed story				
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	10.75				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**92**				
Legal name of organisation:	**Natural Resources Institute Finland (Luke)**				
Country	Finland				
ZIP code:	FI-00790	**Town:**	Helsinki		
Street name, number:	**Latokartanonkaari 9**				
Website (optional):	www.luke.fi		**P.O.Box (optional):**	P.O.Box 2, 00791 Helsinki	
Contact person					
Mr/Ms./Dr.	First name:	Taru	Family name:	Palosuo	
Function:	Principal scientist		Phone (with int. prefix):	358 29 532 6422	
E-Mail:	taru.palosuo@luke.fi		Fax (with int. prefix):	-	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01		Expected End of grant (dd/mm/yy)	2017·05·31	
Granted funding (€):	200'000.00 €		In-cash funding spent (until 31/05/2015):	200'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	340'000.00 €		Travel costs (B):	30'000.00 €	
Material & supply (C):	- €		Equipment (D):	- €	
Other costs (E):	30'000.00 €		Total costs (A+B+C+D+E):	400'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Finnish Environment Institute (SYKE)				
Theme/Hub lead:	CropM co-coordination				
WP lead:	C0 (deputy), C4				
Task lead:	XC9.3, C4.3,				
Task contribution:	H0.1, H0.2, H0.3, XC6.3,XC7.5,XC8,XC9.1, C1.1, C1.3, C1.4, C1.5, C2.1, C2.3, C2.4, C2.5, C3.3, C3.6/XC2.1, C4.1, C4.2, C4.4, C4.5, C4.6, C 4.7/XC3.1, C4.8/XC3.2, C6.1/XC7.2, C6.2/XC7.2, C6.3,XC9.1, L1.1, L1.2, L1.3, L2.3, L2.4, L3.3/XC6.2, L3.6/XC11.2, T1.2/XC16.1, T1.2/XC16.2, T1.2/XC16.4, T2.4/XC9.2, T2.4/XC9.3, 3.2/XC7.5				
Number of people involved in MACSUR:	15				
Person-Months spent in MACSUR:	48				
Person-Months contributed “in-kind”:	25				

a) in-cash funding covering only Luke's share for the funding of the MACSUR project
b) "in-kind" persons months covering estimated PMs from several supporting national projects that directly contributed to MACSUR work

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**100**				
Legal name of organisation:	**UTP University of Science and Technology**				
Country	Poland				
ZIP code:	85-796	**Town:**	Bydgoszcz		
Street name, number:	**Al. Prof. S. Kaliskiego 7**				
Website (optional):	www.utp.edu.pl		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Waldemar	Family name:	Bojar	
Function:	Project Leader		Phone (with int. prefix):	48523408192	
E-Mail:	wald@utp.edu.pl		Fax (with int. prefix):	48523408192	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)		Expected End of grant (dd/mm/yy)			
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	- €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	1'063.85 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	607.42 €	Total costs (A+B+C+D+E):	1'671.27 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	XC 1.3; XC3.2; XC 6.2;T1.3				
Number of people involved in MACSUR:	6				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	4				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**105**				
Legal name of organisation:	**Moredun Research Institute**				
Country	Scotland				
ZIP code:	EH26 0PZ	**Town:**	Penicuik		
Street name, number:	**Bush Loan**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Dave	Family name:	Bartley	
Function:	LiveM participant		Phone (with int. prefix):	+441314455111	
E-Mail:	dave.bartley@moredun.ac.uk		Fax (with int. prefix):	+44 131 4456235	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)	2017·05·31		
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	1'023.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	1'023.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	1'023.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	LiveM 2.3.1; 2.3.2; 2.3.3				
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	1				
Person-Months contributed “in-kind”:	1				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**112**				
Legal name of organisation:	**Johann Heinrich von Thünen-Institut**				
Country	Germany				
ZIP code:	38116	**Town:**	Braunschweig		
Street name, number:	Bundesallee 50				
Website (optional):	http://thuenen.de	**P.O.Box (optional):**			
Contact person					
Dr.	First name:	Martin	Family name:	Banse	
Function:	Head of Institute of Market Analysis		Phone (with int. prefix):	+49 531 596 5301	
E-Mail:	martin.banse@thuenen.de		Fax (with int. prefix):	+49 531 596 5399	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	193'479.00 €	In-cash funding spent (until 31/05/2017):	152'500.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	140'500.00 €	Travel costs (B):	12'000.00 €		
Material & supply (C):	1'500.00 €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	154'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	German Agricultural Research Alliance				
Theme/Hub lead:	Hub, Chair of the Project Steering Committee				
WP lead:					
Task lead:					
Task contribution:					
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	19				
Person-Months contributed “in-kind”:	9				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**117**				
Legal name of organisation:	**University of Aberdeen**				
Country	UK				
ZIP code:	AB24 3FX	**Town:**	Aberdeen		
Street name, number:	**Kings College**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Kerry	Family name:	Duffus	
Function:	Research Administration Manager		Phone (with int. prefix):	00441224272279	
E-Mail:	k.duffus@abdn.ac.uk		Fax (with int. prefix):	N/A	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)		2017·06·30	
Granted funding (€):	66'000.00 €	In-cash funding spent (until 31/05/2017):		52'631.61 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	8'000.00 €	Travel costs (B):		15'846.94 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	28'784.67 €	Total costs (A+B+C+D+E):		52'631.61 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	James Hutton Institute				
Theme/Hub lead:	Cropland Hub				
WP lead:	n/a				
Task lead:	Leading the analysis of the carbon dynamics in the scaling exercise of C3.				
Task contribution:	Provide model simulation results of DailyDayCent; co-authors on 2 papers; co-author on 1 book chapter; oral presentation at a conference				
Number of people involved in MACSUR:	6				
Person-Months spent in MACSUR:	8				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**115**				
Legal name of organisation:	**Rheinische Friedrich-Wilhelms Universität Bonn**				
Country	Germany				
ZIP code:	53115	**Town:**	Bonn		
Street name, number:	**Regina-Pacis Weg 2**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Frank	Family name:	Ewert	
Function:	Professor and Head of Plant Science g	Phone (with int. prefix):	0049 (0)33432 82-200		
E-Mail:	frank.ewert@uni-bonn.de	Fax (with int. prefix):			
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·12·31		
Granted funding (€):	157'952.43 €	In-cash funding spent (until 31/05/2017):	133'987.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	123'370.00 €	Travel costs (B):	10'617.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	133'987.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	Representing the Crop Science Group, Institute of Crop Science and Resource Conservation (INRES) and the Institute for Food and Resource Economics (ILR) Univ. Bonn				
Theme/Hub lead:	Member of hub steering committee; Co-Lead of CropM Theme				
WP lead:	C0, C3				
Task lead:	C0.1, C0.2, C0.3, C3.4, C.3.5.1, C3.6/XC2.1; T2.4/XC9.2, T3.2/XC7.1, T3.2/XC7.4				
Task contribution:	C.1.1, C1.3, C.2.1, C.3.1, C3.2,C.4.2, C.4.3, C4.4, C.4.5, C6.2/XC7.2; T1.2/XC16.2				
Number of people involved in MACSUR:	10				
Person-Months spent in MACSUR:	50.5				
Person-Months contributed “in-kind”:	22				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**128**			
Legal name of organisation:	**Norwegian Institute of Bioeconomy research (NIBIO)**			
Country	Norway			
ZIP code:	1430	**Town:**	Aas	
Street name, number:	**Høgskoleveien 7**			
Website (optional):	www.nibio.no	**P.O.Box (optional):**		
Research Activites: mats.hoglind@nibio.no phone:+47 40475391				
Mr/Ms./Dr.	First name:	Lillian	Family name:	Øygarden
Function:	Coordinator of consortium		Phone (with int. prefix):	+4791684113
E-Mail:	lillian.oygarden@nibio.no		Fax (with int. prefix):	
Details on the grant/contract with funding authority				
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)		2017·12·31
Granted funding (€):	824'000.00 €	In-cash funding spent (until 31/05/2017):		693'000.00 €
Budget spent (€, until 31/05/2017)				
Personnel costs (A):	562'000.00 €	Travel costs (B):		30'000.00 €
Material & supply (C):	- €	Equipment (D):		- €
Other costs (E):	101'000.00 €	Total costs (A+B+C+D+E):		693'000.00 €
Role in MACSUR				
Other institutions, including subcontractors represented by this partner	Norwegian University of Life Sciences (NMBU)			
Theme/Hub lead:				
WP lead:	C6			
Task lead:	L2.2, L1.2, XC9 (grassland), T3.1 /XC6.1, T3.6, T2			
Task contribution:	L1.1, L1.4, L1.5, L2.4, L1.3,C1.C1.2, C1.5, XC3, XC6,XC7,XC8, XC9			
Number of people involved in MACSUR:	14			
Person-Months spent in MACSUR:	49			
Person-Months contributed “in-kind”:	18			

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**143**				
Legal name of organisation:	**Cranfield University**				
Country	United Kingdom				
ZIP code:	MK43 0AL	**Town:**	Cranfield, Bedford		
Street name, number:					
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Ian	Family name:	Holman	
Function:	Professor		Phone (with int. prefix):	44-1234-758277	
E-Mail:	i.holman@cranfield.ac.uk		Fax (with int. prefix):	44-1234-752970	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)		2017·09·03	
Granted funding (€):	56'000.00 €	In-cash funding spent (until 31/05/2017):		39'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	15'000.00 €	Travel costs (B):		3'000.00 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	21'000.00 €	Total costs (A+B+C+D+E):		39'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	N/A				
Theme/Hub lead:	N/A				
WP lead:	N/A				
Task lead:	N/A				
Task contribution:	XC1, 2, 6, 7, 16				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	6				
Person-Months contributed “in-kind”:	6				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**154**				
Legal name of organisation:	**The University of Reading**				
Country	United Kingdom				
ZIP code:	RG6 6AR	**Town:**	Reading		
Street name, number:	**Agriculture Building, Earley Gate**				
Website (optional):		**P.O.Box (optional):**	PO Box 237		
Contact person					
Mr/Ms./Dr.	First name:	Richard	Family name:	Tiffin	
Function:		Phone (with int. prefix):	44(0)118 378 8965		
E-Mail:	j.r.tiffin@reading.ac.uk	Fax (with int. prefix):			
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·09·28	Expected End of grant (dd/mm/yy)	2017·09·27		
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	- €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	15'800.00 €	Travel costs (B):	3'200.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	19'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	None				
Theme/Hub lead:					
WP lead:	Richard Tiffin (XC Activity 8 'Understanding the Impacts of Extreme Events')				
Task lead:	XC8: Jacob Bishop				
Task contribution:	Delivery of two workshops: meaningful extreme weather scenarios and an understanding of where modelling is feasible; narrative descriptions of the events and their impacts				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**159**				
Legal name of organisation:	**Forschungszentrum Jülich GmbH**				
Country	Germany				
ZIP code:	52425	**Town:**	Jülich		
Street name, number:	**Leo-Brandt-Strasse**				
Website (optional):	www.fz-juelich.de	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Lutz	Family name:	Weihermüller	
Function:	senior Scientist		Phone (with int. prefix):	02461 618669	
E-Mail:	l.weihermueller@fz-juelich.de		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·08·01	Expected End of grant (dd/mm/yy)	2017·07·31		
Granted funding (€):	29'800.00 €	In-cash funding spent (until 31/05/2017):	29'800.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	27'000.00 €	Travel costs (B):	2'800.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	29'800.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	C3				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	10				
Person-Months contributed “in-kind”:	10				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**163**				
Legal name of organisation:	**Swedish University of Agricultural Sciences**				
Country	Sweden				
ZIP code:	750 07	**Town:**	Uppsala		
Street name, number:	**Lennart Hjelms väg 9**				
Website (optional):	http://www.slu.se/mark	**P.O.Box (optional):**	Box 7014		
Contact person					
Mr/Ms./Dr.	First name:	Elisabet (Lisbet)	Family name:	Lewan	
Function:	Assoc prof/ Partner Coordinator		Phone (with int. prefix):	+4618672629	
E-Mail:	Lisbet.Lewan@slu.se		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·10·01	Expected End of grant (dd/mm/yy)	2017·12·31		
Granted funding (€):	77'500.00 €	In-cash funding spent (until 31/05/2017):	65'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	20'000.00 €	Travel costs (B):	25'000.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	20'000.00 €	Total costs (A+B+C+D+E):	65'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	**Department at Lund University (LU):** *Ben Smith*/Physical Geography and Ecosystem Science**. Departments at Swedish University of Agricultural Sciences (SLU)**: Soil & Environment; Plant Production Ecology; Forest Mycology and Plant Pathology; Division of Plant Pathology/Epidemiology; Agricultural Research for Northern Sweden.				
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	Contributions to C1,C3, C4				
Number of people involved in MACSUR:	9				
Person-Months spent in MACSUR:	28				
Person-Months contributed “in-kind”:	24				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**173**				
Legal name of organisation:	**St. Dienst Landbouwkundig Onderzoek livestock Research**				
Country	The Netherlands				
ZIP code:	6708 WD	**Town:**	Wageningen		
Street name, number:	**De Elst 1**				
Website (optional):	www.wur.nl		**P.O.Box (optional):**	338	
Contact person					
Mr/Ms./Dr.	First name:	A.	Family name:	Bannink	
Function:	Senior Researcher		Phone (with int. prefix):	+31317480681	
E-Mail:	andre.bannink@wur.nl		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)	2017·05·31		
Granted funding (€):	50'000.00 €	In-cash funding spent (until 31/05/2017):	40'371.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	34'929.00 €	Travel costs (B):	3'179.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	2'263.00 €	Total costs (A+B+C+D+E):	40'371.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	LiveM				
WP lead:	XC11.0				
Task lead:	L3.5/XC11.1, L3.6/XC11.2				
Task contribution:	C6.3/XC 9.1, C6.4/XC15.1, C6.5/XC15.3, H0, L1.2, L1.3, L2.1, L2.2, L2.4, L3.8/XC15.2, T2.6/XC14.2				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	5				
Person-Months contributed “in-kind”:	4				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**175**				
Legal name of organisation:	**Institut National de la Recherche Agronomique (INRA)**				
Country	France				
ZIP code:	75007	**Town:**	Paris		
Street name, number:	**147 rue de l'Université**				
Website (optional):	http://www.inra.fr/		**P.O.Box (optional):**		
Contact person					
Dr.	First name:	Thierry	Family name:	CAQUET	
Function:	AAFCC programme director		Phone (with int. prefix):	+00 33 (0)3 83 39 40 00	
E-Mail:	accaf@inra.fr		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·06·01	Expected End of grant (dd/mm/yy)		2017·05·30	
Granted funding (€):	85'000.00 €	In-cash funding spent (until 31/05/2017):		83'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	328'000.00 €	Travel costs (B):		79'500.00 €	
Material & supply (C):	3'000.00 €	Equipment (D):		500.00 €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		411'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	-				
Theme/Hub lead:					
WP lead:	L1, C4				
Task lead:	C1.5, C4.1, C4.2, C6.3, L1.1, L2, T2.4				
Task contribution:	C1.2, C1.3, C1.4, C1.5, C3.3, C3.4, C3.5, C4.3, C4.4, L1.1., L1.2, L1.5, L2.4, L3.1, L3.2, T1, T1.4				
Number of people involved in MACSUR:	34				
Person-Months spent in MACSUR:	72				
Person-Months contributed “in-kind”:	60				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**189**				
Legal name of organisation:	**Aarhus University**				
Country	Denmark				
ZIP code:	8830	**Town:**	Tjele		
Street name, number:	**Blichers Allé 20**				
Website (optional):	www.au.dk		**P.O.Box (optional):**	50	
Contact person					
Mr/Ms./Dr.	First name:	Jørgen E.	Family name:	Olesen	
Function:	Professor		Phone (with int. prefix):	+45 40821659	
E-Mail:	jeo@agro.au.dk		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)	2017·06·30		
Granted funding (€):	300'000.00 €	In-cash funding spent (until 31/05/2017):	239'913.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	149'903.00 €	Travel costs (B):	12'942.00 €		
Material & supply (C):	3'761.00 €	Equipment (D):	- €		
Other costs (E): (overhead)	73'307.00 €	Total costs (A+B+C+D+E):	239'913.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	CropM				
WP lead:	C2				
Task lead:	XC6.2, C1.3, C2.3, C2.5, L3,3				
Task contribution:	1, XC15.2, XC16.2, C0.1, C0.2, C0.3, C1.1, C1.2, C2.1, C2.3, C2.4, C4.1, C4.2,				
Number of people involved in MACSUR:	12				
Person-Months spent in MACSUR:	15.78				
Person-Months contributed “in-kind”:	0				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**192**				
Legal name of organisation:	**Wageningen Research (Wageningen Economic Research)**				
Country	the Netherlands				
ZIP code:	2585DB	**Town:**	The Hague		
Street name, number:	**Alexanderveld 5**				
Website (optional):	e-Services/Research-Ins		**P.O.Box (optional):**	29703	
Contact person					
Dr.	First name:	Floor	Family name:	Brouwer	
Function:	Researcher		Phone (with int. prefix):	31703358127	
E-Mail:	floor.brouwer@wur.nl		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)			Expected End of grant (dd/mm/yy)		
Granted funding (€):	- €		In-cash funding spent (until 31/05/2015):	- €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	45'000.00 €		Travel costs (B):	15'000.00 €	
Material & supply (C):	- €		Equipment (D):	- €	
Other costs (E):	- €		Total costs (A+B+C+D+E):	60'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	TradeM				
WP lead:	T0 (Coordination)				
Task lead:	T0.1 (Implementation and facilitation), T0.2 (Administrative tasks and reports), T1.2/XC16.1 (Stakholder-centred expectations)				
Task contribution:					
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**202**				
Legal name of organisation:	**Estonian University of Life Sciences**				
Country	Estonia				
ZIP code:	51014	**Town:**	Tartu		
Street name, number:	**Kreutzwaldi 5**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Evelin	Family name:	Loit	
Function:	senior researcher		Phone (with int. prefix):	37'259'125'549	
E-Mail:	evelin.loit@emu.ee		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)			
Granted funding (€):	60'000.00 €	In-cash funding spent (until 31/05/2017):	60'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	37'632.00 €	Travel costs (B):	5'500.00 €		
Material & supply (C):	4'372.00 €	Equipment (D):	- €		
Other costs (E):	1'996.00 €	Total costs (A+B+C+D+E):	49'500.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:					
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	18				
Person-Months contributed “in-kind”:	10				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**208**				
Legal name of organisation:	**University of Natural Resources and Life Sciences**				
Country	Austria				
ZIP code:	1180	**Town:**	Vienna		
Street name, number:	**Gregor-Mendel-Straße 33**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Erwin	Family name:	Schmid	
Function:	Head of Department		Phone (with int. prefix):	+4314765473120	
E-Mail:	erwin.schmid@boku.ac.at		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·08·03	Expected End of grant (dd/mm/yy)		2017·09·30	
Granted funding (€):	60'520.00 €	In-cash funding spent (until 31/05/2017):		58'550.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	39'100.00 €	Travel costs (B):		18'600.00 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	850.00 €	Total costs (A+B+C+D+E):		58'550.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:	XC4.3, XC4.4, XC14.2,				
Task contribution:	, C1.2, C1.3, C2.1, XC4.2, XC6.2, XC6.3, XC14.1, XC14.3, XC15.1, XC15.2, XC				
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	15				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**209**				
Legal name of organisation:	**Österreichishces Insitut für Wirtschaftsforschung**				
Country	Austria				
ZIP code:	1030	**Town:**	Vienna		
Street name, number:	**Arsenal Objekt 20**				
Website (optional):	www.wifo.ac.at		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Franz	Family name:	Sinabell	
Function:	Senior Researcher		Phone (with int. prefix):	0043-1-7982601-481	
E-Mail:	franz.sinabell@wifo.ac.at		Fax (with int. prefix):	00431798 93 86	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01		Expected End of grant (dd/mm/yy)	2017·09·30	
Granted funding (€):	52'480.00 €		In-cash funding spent (until 31/05/2017):	52'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	37'000.00 €		Travel costs (B):	15'000.00 €	
Material & supply (C):	- €		Equipment (D):	- €	
Other costs (E):	- €		Total costs (A+B+C+D+E):	52'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	IIASA - International Institute of Advanced System Analysis				
Theme/Hub lead:	Deputy Theme Lead TradeM				
WP lead:	T1				
Task lead:					
Task contribution:	T0, T1, T2, T4				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**253**				
Legal name of organisation:	**MTA Centre for Ecological Research**				
Country	Hungary				
ZIP code:	8237	**Town:**	Tihany		
Street name, number:	**Klebelsberg Kuno u. 3.**				
Website (optional):	ttp://okologia.mta.hu/e	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Eszter	Family name:	Lellei-Kovács	
Function:	research fellow		Phone (with int. prefix):	+36 28 360122/151	
E-Mail:	lellei-kovacs.eszter@okologia.mta.h		Fax (with int. prefix):	+36 28 360110	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·12·01	Expected End of grant (dd/mm/yy)		2018·11·30	
Granted funding (€):	1'500.00 €	In-cash funding spent (until 31/05/2017):		1'500.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	1'000.00 €	Travel costs (B):		500.00 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		1'500.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	L2.4				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	1				
Person-Months contributed “in-kind”:	1				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**254**				
Legal name of organisation:	**EURAC Research - Institute for Regional Development**				
Country	ITALY				
ZIP code:	I-39100	**Town:**	Bolzano/Bozen		
Street name, number:	**Viale Druso 1**				
Website (optional):	www.eurac.edu		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Christian	Family name:	HOFFMANN	
Function:	Senior Researcher		Phone (with int. prefix):	+39 0471 055328	
E-Mail:	christian.hoffmann@eurac.edu		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	---		Expected End of grant (dd/mm/yy)	---	
Granted funding (€):	0.00		In-cash funding spent (until 31/05/2015):	0.00	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	5'520.00 €		Travel costs (B):	1'270.00 €	
Material & supply (C):	- €		Equipment (D):	- €	
Other costs (E):	- €		Total costs (A+B+C+D+E):	6'790.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	As an associated partner in MACSUR, we contributed with pilot region experiences from South Tyrol to the ideas and requested tasks for cross-cutting activities in MACSUR. With great interest we followed the initiatives of Trade-M, Life-M or Crop-M in MACSUR 2 and tried to participate (when feasible) in certain meetings of MACSUR - like at the MACSUR XC workshop in Oslo on October 13th .				
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	1				
Person-Months contributed “in-kind”:	1				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**256**				
Legal name of organisation:	**Georg-August-Universität Göttingen**				
Country	Germany				
ZIP code:	37077	**Town:**	Göttingen		
Street name, number:	**Grisebachstraße 6**				
Website (optional):	.uni-goettingen.de/en/		**P.O.Box (optional):**		
Contact person					
Dr.	First name:	Reimund	Family name:	Rötter	
Function:	Professor and Division Head		Phone (with int. prefix):	0049 551 39 33 751	
E-Mail:	rroette@uni-goettingen.de		Fax (with int. prefix):	0049 551 39 33759	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)		Expected End of grant (dd/mm/yy)			
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	5'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	- €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	- €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	RP Rötter has been involved from teh development of original MACSUR proposal in 2011 till present (yet, till 2015 heCwas working at LUKE/Finland and received MACSUR funding through Finnish Minstry of Agriculture; since 2016 he has continued tasks (unfunded) from new employer (University of Göttingen, Germany)				
Theme/Hub lead:	Hub lead (till June 2016), CropM lead (till October 2016)				
WP lead:	WP 4 lead (since inception of the project)				
Task lead:	WP4.3 and 4.4				
Task contribution:	P1.1, 1.2, 1.4, WP2.2, 2.3, WP3.2, WP 4.1, 4.2, 4.3. 4.4, 4.5 and to TradeM (Reg				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	4				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**192**				
Legal name of organisation:	**Wageningen Research (Wageningen Economic Research)**				
Country	the Netherlands				
ZIP code:	2585DB	**Town:**	The Hague		
Street name, number:	**Alexanderveld 5**				
Website (optional):	e-Services/Research-Ins		**P.O.Box (optional):**	29703	
Contact person					
Dr.	First name:	Floor	Family name:	Brouwer	
Function:	Researcher		Phone (with int. prefix):	+31-703358127	
E-Mail:	floor.brouwer@wur.nl		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)		Expected End of grant (dd/mm/yy)			
Granted funding (€):	60'000.00 €	In-cash funding spent (until 31/05/2015):	60'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	45'000.00 €	Travel costs (B):	15'000.00 €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	60'000.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:	TradeM				
WP lead:	T0 (Coordination)				
Task lead:	T0.1 (Implementation and facilitation), T0.2 (Administrative tasks and reports), T1.2/XC16.1 (Stakholder-centred expectations)				
Task contribution:					
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**202**				
Legal name of organisation:	**Estonian University of Life Sciences**				
Country	Estonia				
ZIP code:	51014	**Town:**	Tartu		
Street name, number:	**Kreutzwaldi 5**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Evelin	Family name:	Loit	
Function:	senior researcher		Phone (with int. prefix):	37'259'125'549	
E-Mail:	evelin.loit@emu.ee		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01	Expected End of grant (dd/mm/yy)			
Granted funding (€):	60'000.00 €	In-cash funding spent (until 31/05/2017):	60'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	37'632.00 €	Travel costs (B):	5'500.00 €		
Material & supply (C):	4'372.00 €	Equipment (D):	- €		
Other costs (E):	1'996.00 €	Total costs (A+B+C+D+E):	49'500.00 €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:					
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	18				
Person-Months contributed “in-kind”:	10				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**208**				
Legal name of organisation:	**University of Natural Resources and Life Sciences**				
Country	Austria				
ZIP code:	1180	**Town:**	Vienna		
Street name, number:	**Gregor-Mendel-Straße 33**				
Website (optional):		**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Erwin	Family name:	Schmid	
Function:	Head of Department		Phone (with int. prefix):	+4314765473120	
E-Mail:	erwin.schmid@boku.ac.at		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·08·03	Expected End of grant (dd/mm/yy)		2017·09·30	
Granted funding (€):	60'520.00 €	In-cash funding spent (until 31/05/2017):		58'550.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	39'100.00 €	Travel costs (B):		18'600.00 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	850.00 €	Total costs (A+B+C+D+E):		58'550.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:	XC4.3, XC4.4, XC14.2,				
Task contribution:	, C1.2, C1.3, C2.1, XC4.2, XC6.2, XC6.3, XC14.1, XC14.3, XC15.1, XC15.2, XC				
Number of people involved in MACSUR:	5				
Person-Months spent in MACSUR:	15				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**209**				
Legal name of organisation:	**Österreichishces Insitut für Wirtschaftsforschung**				
Country	Austria				
ZIP code:	1030	**Town:**	Vienna		
Street name, number:	**Arsenal Objekt 20**				
Website (optional):	www.wifo.ac.at		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Franz	Family name:	Sinabell	
Function:	Senior Researcher		Phone (with int. prefix):	0043-1-7982601-481	
E-Mail:	franz.sinabell@wifo.ac.at		Fax (with int. prefix):	00431798 93 86	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·07·01		Expected End of grant (dd/mm/yy)	2017·09·30	
Granted funding (€):	52'480.00 €		In-cash funding spent (until 31/05/2017):	52'000.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	37'000.00 €		Travel costs (B):	15'000.00 €	
Material & supply (C):	- €		Equipment (D):	- €	
Other costs (E):	- €		Total costs (A+B+C+D+E):	52'000.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	IIASA - International Institute of Advanced System Analysis				
Theme/Hub lead:	Deputy Theme Lead TradeM				
WP lead:	T1				
Task lead:					
Task contribution:	T0, T1, T2, T4				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	2				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**253**				
Legal name of organisation:	**MTA Centre for Ecological Research**				
Country	Hungary				
ZIP code:	8237	**Town:**	Tihany		
Street name, number:	**Klebelsberg Kuno u. 3.**				
Website (optional):	ttp://okologia.mta.hu/e	**P.O.Box (optional):**			
Contact person					
Mr/Ms./Dr.	First name:	Eszter	Family name:	Lellei-Kovács	
Function:	research fellow		Phone (with int. prefix):	+36 28 360122/151	
E-Mail:	lellei-kovacs.eszter@okologia.mta.h		Fax (with int. prefix):	+36 28 360110	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	2015·12·01	Expected End of grant (dd/mm/yy)		2018·11·30	
Granted funding (€):	1'500.00 €	In-cash funding spent (until 31/05/2017):		1'500.00 €	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	1'000.00 €	Travel costs (B):		500.00 €	
Material & supply (C):	- €	Equipment (D):		- €	
Other costs (E):	- €	Total costs (A+B+C+D+E):		1'500.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	L2.4				
Number of people involved in MACSUR:	3				
Person-Months spent in MACSUR:	1				
Person-Months contributed “in-kind”:	1				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**254**				
Legal name of organisation:	**EURAC Research - Institute for Regional Development**				
Country	ITALY				
ZIP code:	I-39100	**Town:**	Bolzano/Bozen		
Street name, number:	**Viale Druso 1**				
Website (optional):	www.eurac.edu		**P.O.Box (optional):**		
Contact person					
Mr/Ms./Dr.	First name:	Christian	Family name:	HOFFMANN	
Function:	Senior Researcher		Phone (with int. prefix):	+39 0471 055328	
E-Mail:	christian.hoffmann@eurac.edu		Fax (with int. prefix):		
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)	---		Expected End of grant (dd/mm/yy)	---	
Granted funding (€):	0.00		In-cash funding spent (until 31/05/2015):	0.00	
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	5'520.00 €		Travel costs (B):	1'270.00 €	
Material & supply (C):	- €		Equipment (D):	- €	
Other costs (E):	- €		Total costs (A+B+C+D+E):	6'790.00 €	
Role in MACSUR					
Other institutions, including subcontractors represented by this partner					
Theme/Hub lead:					
WP lead:					
Task lead:					
Task contribution:	As an associated partner in MACSUR, we contributed with pilot region experiences from South Tyrol to the ideas and requested tasks for cross-cutting activities in MACSUR. With great interest we followed the initiatives of Trade-M, Life-M or Crop-M in MACSUR 2 and tried to participate (when feasible) in certain meetings of MACSUR - like at the MACSUR XC workshop in Oslo on October 13th .				
Number of people involved in MACSUR:	1				
Person-Months spent in MACSUR:	1				
Person-Months contributed “in-kind”:	1				

G - Partner data

(to be filled in by each partner and compiled by the coordinator;
*one table, **one page** per partner)*

Partner n°	**256**				
Legal name of organisation:	**Georg-August-Universität Göttingen**				
Country	Germany				
ZIP code:	37077	**Town:**	Göttingen		
Street name, number:	**Grisebachstraße 6**				
Website (optional):	.uni-goettingen.de/en/		**P.O.Box (optional):**		
Contact person					
Dr.	First name:	Reimund	Family name:	Rötter	
Function:	Professor and Division Head		Phone (with int. prefix):	0049 551 39 33 751	
E-Mail:	rroette@uni-goettingen.de		Fax (with int. prefix):	0049 551 39 33759	
Details on the grant/contract with funding authority					
Start of grant (dd/mm/yy)		Expected End of grant (dd/mm/yy)			
Granted funding (€):	- €	In-cash funding spent (until 31/05/2017):	5'000.00 €		
Budget spent (€, until 31/05/2017)					
Personnel costs (A):	- €	Travel costs (B):	- €		
Material & supply (C):	- €	Equipment (D):	- €		
Other costs (E):	- €	Total costs (A+B+C+D+E):	- €		
Role in MACSUR					
Other institutions, including subcontractors represented by this partner	RP Rötter has been involved from teh development of original MACSUR proposal in 2011 till present (yet, till 2015 heCwas working at LUKE/Finland and received MACSUR funding through Finnish Minstry of Agriculture; since 2016 he has continued tasks (unfunded) from new employer (University of Göttingen, Germany)				
Theme/Hub lead:	Hub lead (till June 2016), CropM lead (till October 2016)				
WP lead:	WP 4 lead (since inception of the project)				
Task lead:	WP4.3 and 4.4				
Task contribution:	P1.1, 1.2, 1.4, WP2.2, 2.3, WP3.2, WP 4.1, 4.2, 4.3. 4.4, 4.5 and to TradeM (Reg				
Number of people involved in MACSUR:	2				
Person-Months spent in MACSUR:	4				
Person-Months contributed “in-kind”:	4				

Annexes to sections B – E

B Outputs of MACSUR

B2. Articles in peer reviewed international journals and submitted manuscripts

* denotes publications identified as "joint publications"

Phase 1

1. **Integrating local knowledge with experimental research: case studies on managing cropping systems in Italy and Australia** (2013) Allan C., Nguyen T.P.L., Seddaiu G., Wilson B. and Roggero P.P. Italian Journal of Agronomy 8: 15. *doi*: 10.4081/ija.2013.e15
2. ***'Fingerprints' of four crop models as affected by soil input data aggregation** (2014) Angulo C., Gaiser T., Rötter R.P., Børgesen C.D., Hlavinka P., Trnka M. *et al*. European Journal of Agronomy 61: 35-48. *doi*: 10.1016/j.eja.2014.07.005
3. **Implication of crop model calibration strategies for assessing regional impacts of climate change in Europe** (2013) Angulo C., Rötter R., Lock R., Enders A., Fronzek S. and Ewert F. Agricultural and Forest Meteorology 170: 32-46. *doi*: 10.1016/j.agrformet.2012.11.017
4. **Characteristic 'fingerprints' of crop model responses to weather input data at different spatial resolutions** (2013) Angulo C., Rötter R., Trnka M., Pirttioja N., Gaiser T., Hlavinka P. *et al*. European Journal of Agronomy 49: 104-114. *doi*: 10.1016/j.eja.2013.04.003
5. ***Rising temperatures reduce global wheat production** (2014) Asseng S., Ewert F., Martre P., Rötter R.P., Lobell D.B., Cammarano D. *et al*. Nature Climate Change 5: 143-147. *doi*: 10.1038/nclimate2470
6. **Uncertainty in simulating wheat yields under climate change** (2013) Asseng S., Ewert F., Rosenzweig C., Jones J.W., Hatfield J.L., Ruane A.C. *et al*. Nature Climate Change 3: 827-832. *doi*: 10.1038/nclimate1916
7. **Replace, reuse, recycle: improving the sustainable use of phosphorus by plants** (2015) Baker A., Ceasar S.A., Palmer A.J., Paterson J.B., Qi W., Muench S.P. *et al*. Journal of Experimental Botany 66: 3523-3540. *doi*: 10.1093/jxb/erv210
8. ***Making a decision-support system for dairy farmers usable throughout Europe: the challenge of feed evaluation** (2015) Baldinger L., Vaillant J., Zollitsch W. and Rinne M. Advances in Animal Biosciences 6: 3-5. *doi*: 10.1017/S2040470014000387
9. ***Pan-European crop modelling with EPIC: Implementation, up-scaling and regional crop yield validation** (2013) Balkovič J., Van Der Velde M., Schmid E., Skalský R., Khabarov N., Obersteiner M. *et al*. Agricultural Systems 120: 61-75. *doi*: 10.1016/j.agsy.2013.05.008
10. ***Hyperspectral and thermal imaging of oilseed rape (Brassica napus) response to fungal species of the genus Alternaria.** (2015) Baranowski P., Jedryczka M., Mazurek W., Babula-Skowronska D., Siedliska A. and Kaczmarek J. PLoS One 10: e0122913. *doi*: 10.1371/journal.pone.0122913
11. ***Multifractal analysis of meteorological time series to assess climate impacts** (2015) Baranowski P., Krzyszczak J., Slawinski C., Hoffmann H., Kozyra J., Nieróbca A. *et al*. Climate Research 65: 39-52. *doi*: 10.3354/cr01321
12. **How do various maize crop models vary in their responses to climate change factors** (2014) Bassu S., Brisson N., Durand J.-L., Boote K., Lizaso J., Jones J.W. *et al*. Global Change Biology 20: 2301-2320. *doi*: 10.1111/gcb.12520
13. ***Deliberative processes for comprehensive evaluation of agroecological models. A review** (2015) Bellocchi G., Rivington M., Matthews K. and Acutis M. Agronomy for Sustainable Development 35: 589-605. *doi*: 10.1007/s13593-014-0271-0
14. **Can farmers' adaptation to climate change be explained by socio-economic household-level variables** (2012) Below T.B., Mutabazi K.D., Kirschke D., Franke C., Sieber S., Siebert R. *et al*. Global Environmental Change 22: 223-235. *doi*:

10.1016/j.gloenvcha.2011.11.012
15. **Toward a more resilient agriculture** (2014) Bennett E., Carpenter S.R., Gordon L.J., Ramankutty N., Balvanera P., Campbell B. *et al*. The Solutions Journal 5: 65-75.
16. **Identity-based estimation of greenhouse gas emissions from crop production: case study from Denmark** (2012) Bennetzen E.H., Smith P., Soussana J.-F. and Porter J.R. European Journal of Agronomy 41: 66-72. *doi*: 10.1016/j.eja.2012.03.010
17. *__The effects of heat stress in Italian Holstein dairy cattle__ (2014) Bernabucci U., Biffani S., Buggiotti L., Vitali A., Lacetera N. and Nardone A. Journal of Dairy Science 97: 471-486. *doi*: 10.3168/jds.2013-6611
18. **Long-term durum wheat monoculture: modelling and future projection** (2012) Bernardoni E., Acutis M. and Ventrella D. Italian Journal of Agronomy 7: 13. *doi*: 10.4081/ija.2012.e13
19. *__Seasonal variations in the composition of Holstein cow's milk and temperature-humidity index relationship.__ (2014) Bertocchi L., Vitali A., Lacetera N., Nardone A., Varisco G. and Bernabucci U. Animal 8: 667-674. *doi*: 10.1017/S1751731114000032
20. **Valuing the impact of trade on local blue water** (2014) Biewald A., Rolinski S., Lotze-Campen H., Schmitz C. and Dietrich J.P. Ecological Economics 101: 43-53. *doi*: 10.1016/j.ecolecon.2014.02.003
21. *__Robust relationship between yields and nitrogen inputs indicates three ways to reduce nitrogen pollution__ (2014) Bodirsky B.L. and Müller C. Environmental Research Letters 9: 111005. *doi*: 10.1088/1748-9326/9/11/111005
22. **Reactive nitrogen requirements to feed the world in 2050 and potential to mitigate nitrogen pollution** (2014) Bodirsky B.L., Popp A., Lotze-Campen H., Dietrich J.P., Rolinski S., Weindl I. *et al*. Nature Communications 5: 3858. *doi*: 10.1038/ncomms4858
23. **Polyphenol oxidase in leaves: is there any significance to the chloroplastic localization** (2015) Boeckx T., Winters A.L., Webb K.J. and Kingston-Smith A.H. Journal of Experimental Botany 66: 3571-3579. *doi*: 10.1093/jxb/erv141
24. *__Impact of extreme climate changes on the forecasted agriculture production__ (2014) Bojar W., Knopik L., Żarski J., Sławiński C., Baranowski P. and Żarski W. Acta Agrophysica 21: 415-431.
25. **Social organization and agricultural strategies to face climate variability: a case study in Guaraciaba, southern Brazil** (2013) Bonatti M., Schlindwein S.L., De Vasconcelos A.C.F., Sieber S., Agostini L.R.D., Lana M.A. *et al*. Sustainable Agriculture Research 2: 118. *doi*: 10.5539/sar.v2n3p118
26. **How cost-effective is a mixed policy targeting the management of three agricultural N-pollutants** (2014) Bourgeois C., Fradj N.B. and Jayet P.-A. Environmental Modelling & Assessment 19: 389-405. *doi*: 10.1007/s10666-014-9401-y
27. **Biotechnology for mechanisms that counteract salt stress in extremophile species: a genome-based view** (2013) Bressan R.A., Park H.C., Orsini F., Oh D.-H., Dassanayake M., Inan G. *et al*. Plant Biotechnology Reports 7: 27-37. *doi*: 10.1007/s11816-012-0249-9
28. *__Plant growth regulators-assisted phytoextraction__ (2014) Bulak P., Walkiewicz A. and Brzezińska M. Biologia Plantarum 58: 1-8. *doi*: 10.1007/s10535-013-0382-5
29. **Local-scale climate scenarios for impact studies and risk assessments: integration of early 21st century ENSEMBLES projections into the ELPIS database** (2013) Calanca P. and Semenov M.A. Theoretical and Applied Climatology 113: 445-455. *doi*: 10.1007/s00704-012-0799-3
30. **Geographical downscaling of outputs provided by an economic farm model calibrated at the regional level** (2012) Cantelaube P. and Jayet P. Land Use Policy 29: 35-44. *doi*: doi:10.1016/j.landusepol.2011.05.002
31. **Broadening the scope for ecoclimatic indicators to assess crop climate suitability according to ecophysiological, technical and quality criteria** (2015) Caubel J., García De Cortázar-Atauri I., Launay M., De Noblet-Ducoudré N., Huard F., Bertuzzi P. *et al*.

Agricultural and Forest Meteorology 207: 94-106. *doi*: 10.1016/j.agrformet.2015.02.005
32. **Use of agro-climate ensembles for quantifying uncertainty and informing adaptation** (2013) Challinor A.J., Smith M.S. and Thornton P. Agricultural and Forest Meteorology 170: 2-7. *doi*: 10.1016/j.agrformet.2012.09.007
33. **Making the most of climate impacts ensembles** (2014) Challinor A., Martre P., Asseng S., Thornton P. and Ewert F. Nature Climate Change 4: 77-80. *doi*: 10.1038/nclimate2117
34. **Can fuzzy cognitive mapping help in agricultural policy design and communication?** (2015) Christen B., Kjeldsen C., Dalgaard T. and Martin-Ortega J. Land Use Policy 45: 64-75. *doi*: 10.1016/j.landusepol.2015.01.001
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4. **Climate change and irrigated farming in the Mediterranean: lower expectation of favorable conditions to profitability rather than harshening of adverse conditions** Dono G., Cortignani R., Giraldo L. and Roggero P.P.
5. **Spatially explicit estimation of heat stress related impact of climate change onthe milk production of dairy cows in the United Kingdom** Fodor N., Foskolos A., Topp C.F.E., Moorby J., Pásztor L. and Foyer C. Environmental Research Letters
6. **Classifying multi-model wheat yield impact response surfaces showing sensitivity to temperature and precipitation change** Fronzek S., Pirttioja N., Carter T.R., Bindi M., Hoffmann H., Palosuo T. *et al*.
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12. **The importance of extensive meadow and pasture kind of land use for the implementation of cross-compliance in mountain areas** Kopacz M. and Twardy S.

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17. **Quantifying data requirements in crop models; applying the learning curve approach to winter wheat phenology models** Montesino-San Martin M., Wallach D., Olesen J.E. and Porter J.R.
18. **Integrating plant science and crop modelling to assess the consequences of future high atmospheric carbon dioxide concentrations for the production of soybean and maize** Fodor N., Challinor A., Droutsas I., Ramirez-Villegas J., Zabel F., Koehler A.-K. *et al.* Plant and Cell Physiology
19. **Interrelationship and optimal choice of indicators to evaluate performance of agrometeorological models** Sanna M., Bellocchi G., Fumagalli M. and Acutis M.
20. **Margin Insurance in Agriculture - a micro simulation approach of wheat and hog production in Austria** Sinabell F., Heinschink K. and Url T. Tagungsband der 57. Jahrestagung der Gesellschaft für Wirtschafts- und Sozialwissenschaften des Landbaues e.V. (GEWISOLA) und 27. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie (ÖGA) "Agrar- und Ernährungswirtschaft zwischen Ressourceneffizienz und gesellschaftlichen Erwartungen"
21. **Landwirtschaft und Klimawandel: Konsequenzen für die österreichische Landwirtschaft auf der Grundlage internationaler Forschungsergebnisse** Sinabell F., Schmid E. and Schönhart M. Ländlicher Raum
22. **Markov chain as model daily precipitation** Żarski J., Knopik L., Kusmierek-Tomaszewska R. and Bojar W.

B3. Contributions in books

Phase 1

1. **Temperature routines in Nwheat** (2013) Asseng S., Royce F. and Cammarano D. *in* Proceedings of the Workshop 'Modeling Wheat Response to High Temperature' CIMMYT, El Batan, Texcoco, Mexico, June 19-21, 2013 (*Ed*s. Alderman P.D., Quilligan E., Asseng S., Ewert F. and Reynolds M.P.), *pp*. 32-39, International Maize and Wheat Improvement Center (CIMMYT), Mexico, D.F. (CropM)
2. **Quantifying Uncertainties in Modeling Crop Water Use under Climate Change** (2013) Cammarano D., Rötter R.P., Asseng S., Ewert F., Rosenzweig C., Jones J.W. *et al. in* Impacts World, International Conference on Climate Change Effects (*Ed*s. *pp*. 206-220, *doi*: 10.2312/pik.2013.001 (CropM)
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26. **Stand und Perspektiven des Sojaanbaues in Serbien (Soy bean production in Serbia – current state and future perspectives)** (2014) Nikolić U., Mitter H., Schmid E. and F. S. *in* Jahrbuch der ÖGA 24, (*Ed*s. *pp*. 49-58, (TradeM)
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30. **Food security and food production systems** (2014) Porter J.R., Xie L., Challinor A.J., Cochrane K., Howden S.M., Iqbal M.M. *et al*. *in* Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel of Climate Change (IPCC) Climate Change 2014: Impacts, Adaptation, and Vulnerability, (*Ed*s. Field C.B., Barros V.R., Dokken D.J., Mach K.J.,

Mastrandrea M.D., Bilir T.E. *et al.*), *pp*. 485-533, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. (CropM)
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37. **The role of permanent grasslands in mountain areas: Study on agri-environmental importance of permanent grasslands - based on research carried out in the upper Dunajec River basin and Grajcarek Stream basin** (2015) Twardy S. and Kopacz M. Falenty-Krakow, (CropM, LiveM)
38. **Sustainable use of mountain lands as a basis of permanent quality maintaining of natural environment** (2014) Twardy S. and Kopacz M. Falenty-Krakow, (CropM)
39. **The essential temperature routines in LPJmL for wheat simulations** (2013) Waha K. and Müller C. *in* Proceedings of the Workshop 'Modeling Wheat Response to High Temperature' CIMMYT, El Batan, Texcoco, Mexico, June 19-21, 2013 (*Ed*s. Alderman P.D., Quilligan E., Asseng S., Ewert F. and Reynolds M.P.), *pp*. 81-84, International Maize and Wheat Improvement Center (CIMMYT), Mexico, D.F. (CropM)
40. **Enhancing climate resilience of cropping systems** (2014) Webber H., Kahiluoto H., Rötter R.P. and Ewert F. *in* Climate Change Impact and Adaptation in Agricultural Systems (*Ed*s. Fuhrer J. and Gregory P.J.), *pp*. 167-185, CAB International, Wallingford. (CropM)

Phase 2

1. **The Role of International Trade under a Changing Climate: Insights from global economic modelling** (2015) Ahammad H., Heyhoe E., Nelson G., Sands R., Fujimori S.,

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2. **Sentinel site data for crop model improvement—definition and characterization** (2016) Boote K.J., Porter C., Jones J.W., Thorburn P.J., Kersebaum K.C., Hoogenboom G. *et al*. *in* Improving Modeling Tools to Assess Climate Change Effects on Crop Response Advances in Agricultural Systems Modeling (7), (*Ed*s. Hatfield J.L. and Fleisher D.), American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Inc., *doi*: 10.2134/advagricsystmodel7.2014.0019 (CropM)
3. *__SC 2.10 Adapting farming systems to climate variability and change in Europe: the MACSUR experience__ (2016) Brouwer F. *in* 4th International Climate Change Adaptation Conference, Rotterdam, the Netherlands, 10–13 May 2016: Adaptation Futures 2016: Practices and Solutions: Meeting Report (*Ed*s. de Pater F. and van Steenis O.), *pp*. 107-108, Rotterdam. (Hub)
4. **Uncertainties in Scaling up Crop Models for Large Area Climate-change Impact Assessments** (2015) Ewert F., van Bussel L.G.J., Zhao G., Hoffmann H., Gaiser T., Specka X. *et al*. *in* Handbook of Climate Change and Agroecosystems: The Agricultural Model Intercomparison and Improvement Project (AgMIP) Integrated Crop and Economic Assessments — Joint Publication with American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America (In 2 Parts) ICP Series on Climate Change Impacts, Adaptation, and Mitigation (3), (*Ed*s. Rosenzweig C. and Hillel D.), *pp*. 261-277, Imperial College Press, London. *doi*: 10.1142/9781783265640_0010 (CropM)
5. **Crop production costs in Austria: Comparison of simulated results and farm observations** (2016) Heinschink K., Lembacher F., Sinabell F. and Trible C. *in* Jahrbuch der ÖGA 26, (*Ed*s. *pp*. 33-34, (TradeM)
6. **Decomposition of variable costs in the Austrian agricultural production** (2015) Heinschink K., Sinabell F. and Tribl C. *in* Jahrbuch der ÖGA 25, (*Ed*s. *pp*. 231-240, (TradeM)
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9. **Impacts of climate and policy change on Austrian protein crop supply balances** (2015) Mitter H., Sinabell F. and Schmid E. *in* Jahrbuch der ÖGA 23, (*Ed*s. *pp*. 131-140, (TradeM)
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B3. Other publications

Phase 1 – Reports

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3. **Short information on progress in MACSUR** (2014) Bojar W. *in* Format UTP 68: 63.
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6. **Integrated land use and regional resource management--a cross-disciplinary dialogue on future perspectives for a sustainable development of regional resources.** (2013) Fürst C., Helming K., Lorz C., Müller F. and Verburg P.H. Journal of Environmental Management 127 Suppl: S1-S5. *doi*: 10.1016/j.jenvman.2012.12.015
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12. **Dynamics of the mountain meadow yielding in period of 25 years after fertilization abandonment** (2013) Smoroń S. *in* Water-Environment-Rural Areas 132: 111-120. ITP Falenty,
13. **The dynamics of the rainfall - runoff relations in the Biała Woda and Czarna Woda streams in the hydrological year 2010** (2012) Twardy S. and Kopacz M. *in* Woda Środowisko Obszary Wiejskie 12(3): 197-210. ITP Falenty,
14. **Agenda for transnational co-operation on energy efficiency in agriculture** (2013) de Visser C., Schoorlemmer H., Gołaszewski J., Olba-Zięty E., Stolarski M., Brodziński Z. *et al*. *in* Project deliverable report 4.5. FP7 EU project: Agriculture & Energy Efficiency AGREE, www.agree.aua.gr. Wageningen UR, Wageningen,

Phase 2 – Reports

1. **The impact of climate change on costs of food and people exposed to hunger at subnational scale** (2015) Biewald A., Lotze-Campen H., Otto I., Brinckmann N., Bodirsky

B., Weindl I. *et al.* *in* PIK Report 128. Potsdam-Institut für Klimafolgenforschung, Potsdam,

2. *__Towards climate resilience in European agriculture – lessons for farming and policy__ (2016) Brouwer F., Sinabell F., Rötter R.P., Dono G., Hoveid Ø., Lehtonen H. *et al.* *in* WIFO-Working Paper. Austrian Institute of Economic Research, Vienna, Austria.
3. *__Elements of an Index-based Margin Insurance. An Application to Wheat Production in Austria__ (2017) Heinschink K., Sinabell F. and Url T. *in* WIFO Working Papers 536.
4. *__Editorial__ (2016) Kipling R.P., Bannink A., Özkan Gülzari Ş. and Van Middelkoop J. Advances in Animal Biosciences 7: 223. *doi*: 10.1017/S2040470016000194
5. __Agriculture in Spain and the climate change issue__ (2016) Mínguez M.I. *in* Watch letter 37. International Center for Advanced Mediterranean Agronomic Studies CIHEAM,
6. *__Mitigation and quantification of greenhouse gas emissions in Mediterranean cropping systems__ (2017) Sanz-Cobena A., Lassaletta L., Gamier J., Smith P., Sanz-Cobena A., Lassaletta L. *et al.* Agriculture, Ecosystems & Environment 238: 1-4. *doi*: 10.1016/j.agee.2016.12.032
7. *__Maisanbau in Österreich. Ökonomische Bedeutung und pflanzenbauliche Herausforderungen__ (2015) Sinabell F., Kappert R., Kaul H.-P., Kratena K. and Sommer M. *in* Studie des Österreichischen Instituts für Wirtschaftsforschung im Auftrag des Ökosozialen Forums. Österreichisches Institut für Wirtschaftsforschung, Austria.
8. *__Austrian Agriculture 2010-2050. Quantitative Effects of Climate Change Mitigation Measures. An analysis of the scenarios WEM, WAM, WAM+ and a sensitivity analysis of scenario WEM__ (2015) Sinabell F., Schönhart M. and Schmid E. *in* Studie des Österreichischen Instituts für Wirtschaftsforschung im Auftrag des Umweltbundesamts. Österreichisches Institut für Wirtschaftsforschung, Vienna, Austria.
9. __Correction: Thermodynamic Driving Force of Hydrogen on Rumen Microbial Metabolism: A Theoretical Investigation.__ (2016) van Lingen H.J., Plugge C.M., Fadel J.G., Kebreab E., Bannink A., Dijkstra J. *in* PLoS One 11(12): e0168052. doi: 10.1371/journal.pone.0168052
10. __Edited plants should not be patented__ (2016) Porter J.R., Durand J.L., Elmayan T. *in* Nature 530: 33. doi: 10.1038/530033b
11. __Food, hunger, health, and climate change__ (2016) Woodward A., Porter J.R. *in* The Lancet 387(10031): 1886-1887. doi: 10.1016/S0140-6736(16)00349-4

B5. Input to policy makers

Phase 1

1. __Participation in Global Forum on Climate Change, Food Security and Trade, FAO, Rome__ (2014) Banse M. 2014-06-03,
2. __Climate-change impacts on farming systems in the next decades: Why worry when you have CAP? A FACCE MACSUR workshop for policymakers — Introduction__ (2015) Banse M. *in* FACCE MACSUR workshop for policymakers. 2016-05-06, Brussels, Belgium.
3. __Three years of collaboration in TradeM – Agricultural markets and prices__ (2015) Brouwer F. and Sinabell F. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
4. __CropM: Understanding and Modelling Impacts of Climate Change on Crop Production__ (2015) Ewert F., Rötter R. and Brüser K. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
5. __Impacts of CAP relative to climate with respect to adaptation__ (2015) Iglesias A. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
6. __Developments and prospects of farm-level modelling for post 2013 CAP impact analysis.__

EU Commission, Brussels. (2012) Jayet P.A. 2012-06-06,

7. **GAP nach 2013 und weitere Analysen der agrarökonomischen Institute des Thünen-Instituts** (2013) Köchy M. 2013-12-09,
8. **Gesellschaftliche und wirtschaftliche Bedingungen für die europäische Landwirtschaft bis 2050** (2013) Köchy M., Lehtonen H., Schönhart M. and Roggero P.P. *in* GAP nach 2013. 2013-12-09 to 2013-12-10, Braunschweig, Germany.
9. **Meeting with German MP Groneberg on the topics of agriculture, climate change and agricultural economy. Berlin, Germany** (2013) Lotze-Campen H. 2013-05-14,
10. **EU-level assessments and scenarios** (2015) Lotze-Campen H. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
11. **Responding to EEA enquiry about contributions to Indicator Report** (2015) Macsur-Hub. 2015-01-28,
12. **Promoting climate mitigation on agricultural and forest land through the CAP** (2015) Van Middelkoop J. *in* Workshop at the European Commission, Brussels. 2015-03-06 to 2015-03-06,
13. **The Global Gridded Crop Model Intercomparison - Approaches, insights and caveats of modeling climate change impacts on agriculture at the global scale** (2013) Müller C. and Elliott J. *in* FAO expert consultation on climate change and trade. 2013-11-05 to 2013-11-06, Rome, Italy.
14. **Meeting with chief economist of the Israeli Ministry of Agriculture Dr. Yael Kahal to define policy scenarios for the project analysis** (2014) Palatnik R.R. 2014-04-09,
15. **Meeting with the chief scientist of the Israeli Ministry of Agriculture Dr. Perel to report on the progress of the project and to check the possibility of Israeli cooperation in Stage II of MACSUR** (2014) Palatnik R.R. 2014-04-24,
16. **ARVALIS is a private, non-profit, and the most important French technical institute in charge of applied research on the major arable crops (cereals, maize, potatoes, forages). The programme of activity is approved by farmers and agricultural organizations, and almost entirely financed by farmers. They serve about 400 agricultural organisations, and receive about 2 million internet visits for advice and consultancy per year in France and French-speaking Africa. Today, on the basis of John R Porter's scientific insights and achievements, ARVALIS provides a farming decision tool portfolio which is used by a great number of farmers: Farmstar®, which is currently the most important service in France in terms of area deployment (around 800,000 ha), Septolis® (dedicated to Septoria control), and Previlis® which is the only decision tool to be able to predict ahead of time all the development stages of cereals. It is also relevant to mention that the best known model recognized by the French scientific community (the STICS model) adopted the modelling algorithms proposed by Porter in 1984.** Porter J.R.
17. **Barilla SpA, the Italian pasta manufacturers, have used AFRCWHEAT as the basis of their system to identify sources of high quality durum wheat about four weeks prior to harvest, thus enabling them to obtain the best quality-to-price ratio. This predictive system, which has more than 90% accuracy, is based on a confidential computer algorithm that Porter wrote for Barilla in the mid-1990s. Barilla thus gains an advantage over their competitors by knowing, a month or so in advance, the quantity and quality of their sources of durum wheat; an indicative estimate is that on their ca. 1.1 Mt annual purchases of durum wheat, this science-based knowledge from models saves them about 15 million USD per year.** Porter J.R.
18. **Oristano, Sardinia, Italy: Winners and losers from climate change in agriculture: a case study in the Mediterranean basin** (2015) Roggero P.-P. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
19. **P62 is interacting with the Italian Ministry of Agricultural Food and Forestry Policies to create the pre-conditions for a MACSUR-Italy follow-up. A high level meeting will be**

held shortly to invite policy makers to recognize the relevance of the knowledge hub in the context of supporting adaptive responses for Italian agriculture. Roggero P.P.

20. **Climate change impacts on crop production and its variability in Europe: an overview.** (2013) Rötter P. and Höhn J. *in* FAO expert consultation on climate change and trade. 2013-11-05 to 2013-11-06, Rome, Italy.
21. **Uncertainties in modelling impacts of climate change and variability on crop production – focus on Europea-led efforts in FACCE MACSUR.** (2013) Rötter R.P. and Al. E. *in* FAO expert consultation on climate change and trade. 2013-11-05 to 2013-11-06, Rome, Italy.
22. **An overview of climate change impacts on crop production and its variability in Europe, related uncertainties and research challenges** (2014) Rötter R.P. and Höhn J. *in* FAO expert consultation on Climate Change and Food Systems: Global implications for food security, water and trade 106-145. 2013-11-05 to 2013-11-06, Rome, Italy.
23. **Workshop at the Spanish Office on Climate Change. Presentation "Agroclima: Escenarios climáticos, impactos, evidencias, vulnerabilidades y sistemas agrarios"** (2014) Ruiz-Ramos M. 2014-01-29,
24. **Perspektiven der österreichischen Landwirtschaft im nächsten Jahrzehnt:** (2014) Schönhart M. *in* Agrarmärkte und Globaler Wandel, NOURIVIT Informationsveranstaltung. 2014·03·13, Unterwaltersdorf, Austria.
25. **Integrated Assessment of Climate Change Mitigation and Adaptation Impacts at Landscape level: Mostviertel, Austria** (2015) Schönhart M., Schauppenlehner T., Kuttner M., Kirchner M. and Schmid E. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
26. **Herausforderungen und Chancen für die österreichische Landwirtschaft in den kommenden Jahrzehnten: Umwelt – Gesellschaft – Märkte** (2014) Schönhart M., Schmid, E. *in* 1. RLG Agrar-Fach-Tag | Schloss Margarethen am Moos. 2014·02·20,
27. **Livestock and feed production, especially dairy and beef** (2015) Scollan N., Bannink A., Kipling R., Saetnan E. and Van Middelkoop J. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
28. **Stakeholder Event: Scaling in global, regional and farm models. Agriculture, food security and climate change: scaling challenges in agricultural models, Vienna** (2014) Sinabell F., Schmid, E., Schönhart, M. 2014-09-24,
29. **Seminar for polish funding agencies regarding the participation of polish teams in MACSUR2** (2014) Slawinski C. 2014-06-24,
30. **MACSUR -Modelling European Agriculture with Climate Change for Food Security.** (2012) Slawinski C., Brzezinska M. and Lipiec J. *in* A seminar on presenting the objectives of FACCE-JPI MACSUR project and discussing the participation of the Institute of Agrophysics PAS in this project (cooperation between partners: 139, 158, 162), Institute of Agrophysics Polish Academy of Sciences. 2012-10-29 to 2012-10-29, Lublin, Poland.
31. **Presentation of MACSUR to policymakers at "Agricultural research and food security – Outlook to Horizon 2020 and beyond Czech contribution to common European effort"** (2014) Trnka M. 2014-06-05,
32. **Regional impacts of climate change, observations and projections. Finnish Pilot study: North Savo region** (2015) Virkajärvi P., Lehtonen H. and Järvenranta K. *in* FACCE MACSUR workshop for policymakers. 2015-05-06, Brussels, Belgium.
33. **ANIHWA Foresight Workshop on Disease Driver Prioritisation** (2014) Wilson A. 2014-04-02 to 2014-04-03,
34. **STAR-IDAZ workshop on Meeting Future Research Needs on Infectious Diseases of Animals and Zoonoses** (2014) Wilson A. 2014-06-17 to 2014-06-20,

Phase 2

1. **TFRN: co-chair "Expert Panel on Mitigation of Agr. Nitrogen"** (2016) Amon B. 2016-05-16,
2. **TFRN: member "Expert Panel on Nitrogen Budgets"** (2016) Amon B. 2016-05-16,
3. **UN/ECE Control of Long Range Transboundary Air Pollution, EMEP Steering Body, Task Force on Emission Inventories and Projections: co-chair "Agriculture and Nature Panel"** (2016) Amon B. 2016-05-16,
4. **Lead author of the European Commission (DG Environment) and UNECE Task Force on Reactive Nitrogen (TFRN) guidance document "Towards joined-up nitrogen guidance for air, water and climate co-benefits** (2016) Amon B. 2016-10-01,
5. **Workshop "Technological GHG emission mitigation options in agriculture", EU JRC-Sevilla** (2015) Bannink A. 2015-04-17,
6. **Working Group Extensive Livestock Production, at RVO, Utrecht. "Reduction of methane (according to the convenant Schoon&Zuinig between the Dutch government and the agricultural sector): results of the Innovation program Low Emission Animal Feed.** (2015) Bannink A. 2015-06-10,
7. **Workshop Climate Change: mitigation technologies in agriculture. EU DG-Agri, Brussel.** (2015) Bannink A. 2015-09-11,
8. **Variation in feed efficiency and methane emission in lactating cows, meeting of the GRA - Feed and Nutrition Network group, Melbourne, Australia.** (2016) Bannink A. 2016-02-18,
9. **F4F-workshop in Wageningen** (2016) Bannink A. 2016-03-02,
10. **MACSUR: Modelling European Agriculture with Climate Change for Food Security. Presentation to FACCE GB** (2016) Banse M. and Olesen J.E. 2016-12-01, Berlin, Germany.
11. **Invited consultation to Water JPI** (2017) Brouwer F. März 17,
12. **Visions for MACSUR Phase 3 (2017-2020)** (2017) Brouwer F. and Banse M. *in* FACCE MACSUR workshop for policymakers. 2017-11-05, Brussels, Belgium.
13. **MACSUR initiatives: Integrated assessments of Europe 20150 and Flagship on Climate change impacts along the agro-food chain** (2016) Brouwer F. and Köchy M. *in* FACCE MACSUR Workshop for policymakers. 2016-05-24, Brussels, Belgium.
14. **Introduction to FACCE MACSUR** (2016) Brouwer F. and Lekaviciute J. *in* FACCE MACSUR Workshop for policymakers. 2016-05-24, Brussels, Belgium.
15. **Improved crop modelling for supporting policy design on climate change impacts, adaptation and mitigation — CropM in MACSUR. FACCE MACSUR Policy Brief 2** (2016) Cropm Macsur *in* FACCE MACSUR Reports 2: H0.3-D2.
16. **IFAD funded project on: Informational Assessment of Agricultural Risk Management Information Systems (ARM-IS). Presentation to National Authorities -Ministries of Agriculture, M. of Health, Meteorogical Offices/Authorities; Statistical Bureaux; regional Centres for Development, etc. of Uganda, Ethiopia, Senegal, Cameroon.** (2016) Garrido A., Mínguez M.I., Hernández C.G., Bardají I. and Tarquis A.M.
17. **Presentation on balance nitrogen management at internal EU Commission workshop on reform of the CAP, Brussels** (2017) Hutchings N. 2017-03-23,
18. **UN/ECE Control of Long Range Transboundary Air Pollution, EMEP Steering Body, Task Force on Emission Inventories and Projections: co-chair "Agriculture and Nature Panel" meeting in Krakow, Poland** (2017) Hutchings N. 2017-05-11 to 2017-05-12,
19. **UN/ECE Control of Long Range Transboundary Air Pollution, EMEP Steering Body, Task Force on Emission Inventories and Projections: participation in Task Force on Reactive Nitrogen meeting with WGSR, at UN Geneva** (2017) Hutchings N. 2017-06-01 to 2017-06-02,
20. **Contributions for adaptation and mitigation by modelling** (2016) Kersebaum K.C. *in* FACCE MACSUR Workshop for policymakers. 2016-05-24, Brussels, Belgium.

21. **Technical report for farm advisors published on the Welsh Government's Farming Connect website, based on recent LiveM position papers and written by the Aberystwyth Knowledge Hub. Title 'A European approach to facing the challenges of climate change in ruminant agriculture** (2016) Kipling R., Aberystwyth University. 2016-08-01,
22. **From diversity to strategy: Livestock research for effective policy in a climate change world. FACCE MACSUR Policy Brief 1** (2016) Kipling R., Scollan N., Bannink A. and Van Middelkoop J. *in* FACCE MACSUR Reports 8: H0.3-D1.
23. **Invited participation in FACCE Cluster 2-Workshop** (2016) Köchy M., Fodor N., Lehtonen H., Ewert F. and J. O. 2016-10-19 to 2016-10-20,
24. **Participation in FACCE Projects Meeting, Brussels** (2017) Köchy M. 2017-03-21,
25. **Participation in FACCE Valorisation Workshop, Brussels** (2017) Köchy M. 2017-03-22,
26. **Participation in "Workshop Klimaanpassung". Input to Ministry of Agriculture of Germany.** (2016) Köchy M. 2016-10-04,
27. **MACSUR seminar for Ministry of Agriculture and Forestry of Finland** (2016) Lehtonen H., Palosuo T., Virkajärvi P. and Korhonen P. 2016-05-09,
28. **How do European policies (CAP, Nitrate Directive, Water Framework, etc.) contribute to climate change mitigation and adaptation in MACSUR case study regions?** (2016) Lehtonen H. *in* FACCE MACSUR Workshop for policymakers. 2016-05-24, Brussels, Belgium.
29. **Panel discussion on "The supply of healthy food for large cities - challenges and Visions"** (2016) Lotze-Campen H. *in* GFFA/Leibniz-Forschungsverbund - panel discussion, Berlin, CityCube. 2016-01-15,
30. **Ernährung der Zukunft – Nachhaltigkeitsaspekte und Herausforderungen** (2016) Lotze-Campen H. *in* pearls Forum Wissenschaft und Gesellschaft. 2016-06-16,
31. **Agriculture please! Warum man die Klimakrise nicht ohne die Landwirtschaft lösen kann** (2016) Lotze-Campen H. 2016-11-09,
32. **How can European technological competitiveness be secured ? EPPA workshop on digital and circular economy in the biosphere sector, Berlin, 4 May 2017** (2017) Lotze-Campen H. 2017-05-04,
33. **Discussions with national FACCE GB members on MACSUR3** (2016) Macsur National Contacts. 2016-11-01,
34. **Submission to EU@EXPO consultation** (2015) Macsur-Hub. 2015-08-31,
35. **Submission to H2020-SC5 consultation** (2016) Macsur-Hub. 2016-04-07,
36. **Submission to EU Flagship consultation** (2016) Macsur-Hub. 2016-04-30,
37. **Submission to GEO consultation** (2016) Macsur-Hub. 2016-04-30,
38. **Experiences of MACSUR with the Knowledge Hub Instrument. Presentation at the kickoff meeting of the FACCE Knowledge Network on Sustainable Intensification** (2016) Macsur-Hub. 2016-06-03,
39. **MACSUR as a case study for ERA-Learn 2020** (2016) Macsur-Hub. 2016-06-07,
40. **Responding to FACCE enquiry (for EU) about research results published in time for IPCC special report.** (2016) Macsur-Hub. 2016-07-21,
41. **Submission to H2020-SC2 consultation** (2016) Macsur-Hub. 2016-08-24,
42. **Responding to FACCE enquiry about experts in the field of phenotyping, genotyping and breeding** (2016) Macsur-Hub. 2016-08-31,
43. **Challenges and research gaps in the area of integrated climate change risk assessment for European agriculture and food security: FACCE MACSUR Policy Brief 3** (2017) Macsur-Hub *in* FACCE MACSUR Reports 10: H0.3-D3. 2017-05-08,
44. **MACSUR case studies across Europe: opportunities and challenges for farming systems** (2017) Roggero P.P. *in* FACCE MACSUR workshop for policymakers. 2017-11-05, Brussels, Belgium.
45. **Respuesta de los cultivos ante la variabilidad y el cambio climáticos (Presentation for AGROSEGURO, a private company for agricultural insurance in Spain)** (2016) Ruiz-

Ramos M., Capa-Morocho M. and Rodríguez Foseca B. März 16,

46. **Lecture on Crop response to climate variability and change within expert course on Agricultural Insurance at the IAMZ, one of the four Mediterranean Agronomic Institutes of the CIHEAM (International Centre for Advanced Mediterranean Agronomic Studies), in Zaragoza, Spain.** (2016) Ruiz-Ramos M. Nov. 2016,
47. **National level case study - AT. Präsentation on "Evidenz veränderter zukünftiger landwirtschaftlicher Risiken durch Klimawandel in der wissenschaftlichen Literatur"** (2016) Schönhart M. *in* AWI-Seminar on "Risiken und Risikomanagement in der Landwirtschaft, Vienna. 2016-12-05,
48. **The mitigation potential in European agriculture** (2016) Scollan N. *in* FACCE MACSUR Workshop for policymakers. 2016-05-24, Brussels, Belgium.
49. **Representative Agricultural Pathways for Europe** (2017) Sinabell F. and Schönhart M. *in* FACCE MACSUR workshop for policymakers. 2017-11-05, Brussels, Belgium.
50. **Bluetongue expert advice and scenario modelling for Defra (UK ministry for farmed animals)** (2016) Wilson A.

B6. Oral and poster presentations in scientific congresses

Phase 1

1. **Briefing on CropM-LiveM model intercomparison protocol** (2013) Acutis M. and Bellocchi G. @ JPI FACCE MACSUR CropM and LiveM cross-cutting activity, 2013-05-06 to 2013-05-06, Helsinki, Finland (CropM)
2. **Health, welfare and profitability in Scottish sheep farms: assessing the impacts of CAP 2015 reforms** (2014) Ahmadi B.V., Shrestha S., Thomson S.G., Barnes A.P. and Stott A.W. @ 88. Annual Conference of the Agricultural Economics Society, 2014-04-09 to 2014-04-11, Paris, France (TradeM)
3. **Predicting the implications of CAP reform using a bio-economic modelling approach** (2013) Ahmadi B.V., Thomson S., Shrestha S. and Stott A.W. @ »Developing Integrated and Reliable Modeling Tools for Agricultural and Environmental Policy Analysis« — 133. EAAE Seminar, 2013-06-15 to 2013-06-16, Crete, Greece (LiveM)
4. **Impacts of Common Agricultural Policy 2015 reforms on animal health and welfare of Scottish dairy herds** (2015) Ahmadi V. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
5. **Climate Change and Food Security: Improving the Relevance and Credibility of Global and Regional Integrated Assessments** (2014) Antle J.M. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
6. **The results of applying the CLIMSAVE (TradeM+CropM+LiveM) model to the regional case studies** (2013) Audsley E. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
7. **Welcome Address of the Director Natural Resource and Environmental Research Center** (2013) Ayalon O. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
8. **Application of a Tier 3 approach for estimating enteric fermentation in dairy cows: Advantages and disadvantages** (2014) Bannink A. @ International Livestock Modelling and Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (LiveM)
9. **Trade-offs of dietary N-reducing dietary measures on enteric methane emission and P excretion in lactating cows** (2015) Bannink A. @ »Integrated Climate Risk Assessment in

Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom

10. **FACCE-JPI Achievements to date: MACSUR** (2013) Banse M. @ FACCE-JPI 3-year Anniversary Date, 2013-10-22 to 2013-10-22, (Hub)
11. **MACSUR (Modelling European Agriculture with Climate Change for Food Security)** (2013) Banse M. @ LIAISE Annual Meeting, 2013-03-25 to 2013-03-28, Tallinn, Estonia (Hub)
12. **MACSUR European experience in addressing the complexity of climate impact research in agriculture: Lessons for replication elsewhere** (2014) Banse M. @ Global Forum on Climate Change, Food Security and Trade, FAO, 2014-06-03 to 2014-06-04, Rome, Italy (Hub)
13. **Opportunities for collaboration: MACSUR** (2013) Banse M. and Köchy M. @ 4. Annual AgMIP Workshop, 2013-10-28 to 2013-10-30, New York, U.S.A. (Hub)
14. **MACSUR – A European network of crop, livestock and trade modelling activities for assessing impacts of climate change on food security** (2013) Banse M., Köchy M. and Tiffin R. @ United Nations Convention to Combat Desertification – Scientific Conference, 2013-04-09 to 2013-04-12, Bonn, Germany (Hub)
15. **Halftime in MACSUR - what have we learned and what comes next** (2014) Banse M. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
16. **What drives meat consumption? Combining cross-country analysis with an applied trade model** (2015) Banse M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
17. **Supervised classification of bruised apples on the base of hyperspectral imaging data.** (2013) Baranowski P., Mazurek W. and Pastuszka-Wozniak J. @ International Conference on Agrophysics, 2013-06-05 to 2013-06-07, (CropM)
18. **Short presentation of partner's P139 involvement in CropM** (2013) Baranowski P., Slawinski C. and Krzyszczak J. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM, CropM)
19. **Multifractal analysis of meteorological time series to assess climate impact on chosen regions of Europe** (2015) Baranowski P. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
20. **Improving modelling of wheat responses to high temperature stress under climate change.** (2014) Barber H.M., Gooding M.J. and Semenov M.A. @ 8. ESA Congress, 2014-08-25 to 2014-08-29, Debrecen, (CropM)
21. **Assessing the impact of climate change on agriculture and a water economy with a diverse mix of water types – the Israeli case study** (2013) Baum Z. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
22. **The Economic Impact of Water Scarcity Under Diverse Water Qualities and Desalination Policies: The Case of Israel** (2014) Baum Z. @ TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway (TradeM)
23. **Assessing the Impact of Climate Change on the Israeli Water Economy via a Linked CGE and Farm-Level Model** (2013) Baum Z. and Palatnik R.R. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
24. **Collaborations with initiatives and projects outside MACSUR and AgMIP – Grassland & Livestock** (2014) Bellocchi G. and Ehrhardt F. @ International Livestock Modelling and

Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (LiveM)

25. **Fuzzy-logic based multi-site crop model evaluation** (2015) Bellocchi G. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
26. **Bayesian calibration of the Pasture Simulation model (PaSim) to simulate emissions from long-term grassland sites: a European perspective** (2014) Ben Touhami H. and Bellocchi G. @ Livestock, Climate Change and Food Security, 2014-05-19 to 2014-05-20, Madrid, Spain (LiveM)
27. **Bayesian calibration of the Pasture Simulation model (PaSim) to simulate emissions from long-term European grassland sites: a case study at Laqueuille (France)** (2013) Ben Touhami H., Lardy R., Klumpp K. and Bellocchi G. @ Greenhouse Gases & Animal Agriculture, 2013-06-23 to 2013-06-26, Dublin, Ireland (LiveM)
28. **The development of agricultural production under different socioeconomic conditions in Finland** (2013) Biewald A. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
29. **The impact of agricultural policies and different socioeconomic developments on future agricultural production in Finland** (2013) Biewald A. @ 2. GLP Open Science Meeting, 2013-09-09 to 2013-09-11, Berlin, Germany (TradeM)
30. **Quantifying and Qualifying the Impact of Agricultural Trade on Water Resources - Achievements and Challenges** (2013) Biewald A. @ Water Research Horizon Conference, 2013-06-25 to 2013-06-26, Berlin, Germany (TradeM)
31. **Land und Wasser für die globale Landwirtschaft: Herausforderungen und Lösunge** (2013) Biewald A. and Lotze-Campen H. @ Leopoldina-Symposium, Das zukünftige Modell der agrarischen Landnutzung - Intensivierung und Ökologisierung?, Halle, Germany, 2013-10-28 to 2013-10-29, (TradeM)
32. **Global valuation of agricultural, virtual blue water trade measured on a local scale** (2012) Biewald A., Rolinski S., Lotze-Campen H. and Schmitz C. @ 10. Annual meeting of the International Water Resource Economics Consortium, 2012-08-27 to 2012-08-28, Stockholm, Sweden
33. **Ethical aspects in the economic modeling of water policy options** (2015) Biewald A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
34. **Assessing modelling approaches for simulating the effect of high temperature stress on yield** (2015) Bodin P. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
35. **WP1 Tasks: Existing, tools, data, models** (2012) Bojar W. @ Kickoff Meeting and Workshop: Modelling European Agriculture with Climate Change for Food Security, 2012-10-15 to 2012-10-16, (TradeM)
36. **Application of Markov chains approach for expecting extreme precipitation changes having impact on food supply** (2014) Bojar W. and Knopik L. @ TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway (TradeM)
37. **Integrating TradeM and CropM MACSUR models for regional case studies in Poland** (2013) Bojar W. and Leszek K., Jacek Żarski, Wojciech Żarski, Cezary Sławiński, Piotr Baranowski @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
38. **Inventarisation of TradeM models** (2012) Bojar W., Sinabell F. and Verburg R. @ Kickoff Meeting and Workshop: Modelling, European Agriculture with Climate Change for Food Security, 2012-10-15 to 2012-10-16, (TradeM)
39. **Economic and Trade Models to Analyze Climate Change Risk and Food Security for European Agriculture - A Survey** (2013) Bojar W., Sinabell F. and Verburg R. @ »Exploring new ideas for trade and agriculture model integration for assessing the

impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)

40. **Methods to limit risks in agriculture in the era of climate change** (2015) Bojar W. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
41. **Application of Markov chains approach for expecting extreme precipitation changes having impact on food supply** (2014) Bojar W., Knopik L. and Żarski J. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
42. **GHG emissions mitigation potential of Norwegian dairy and beef farms** (2013) Bonesmo S., Beauchemin K.A., Harstad O.M. and Skjelvåg A.O. @ Sustainable Intensification: The pathway to low carbon farming, 2013-09-25 to 2013-09-27, (LiveM)
43. **A CGE analysis of Spanish greenhouse gas targets to 2020** (2013) Bourne M.G. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
44. **Importance of considering crop management adaptation in CC impact studies: A Pan-European integrated assessment** (2014) Britz W. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
45. **Objectives of MACSUR project and TradeM theme** (2013) Brouwer F. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
46. **Workshop Introduction** (2013) Brower F. and K. H. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
47. **Factors underlying changes in population of Phytophthora infestans in Poland** (2015) Brylińska M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
48. **What is a stronger determinant of soil respiration: soil temperature or moisture** (2015) Brzezinska M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
49. **Quantifying Uncertainties in Modeling Crop Water Use under Climate Change** (2013) Cammarano D., Rötter R.P., Asseng S., Ewert F., Rosenzweig C., Jones J.W. *et al.* @ Impacts World, International Conference on Climate Change Effects, 2013-05-27 to 2013-05-30, Potsdam, (CropM)
50. **Scenarios and related data for MACSUR2 Timothy Carter Finnish Environment** (2015) Carter T. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
51. **Quantitative assessment of current and future risks related rainfall in processing tomato in the Guadiana river basin (SW Spain)** (2013) Castañeda-Vera A., Garrido A., Ruiz-Ramos M., Sánchez-Sánchez E. and Mínguez M.I. @ European GeoSciences Union (EGU), General Assembly, 2013-04-07 to 2013-04-12, Vienna, Austria, (CropM)
52. **Ecoclimatic indicators to study crop suitability in the context of climate change** (2013) Caubel J., Garcia D.C.-A., I., Huard F., Launay M., Ripoche D., Gouache D. *et al.* @ European GeoSciences Union (EGU), General Assembly, 2013-04-07 to 2013-04-12, Vienna, Austria, (CropM)
53. **Institute of Agrophysics PAS and MACSUR presentation** (2014) Cezary S. and Jaromir K. @ Rola lasu w pochłanianiu dwutlenku węgla z atmosfery, 2014-10-22 to 2014-10-24, Tlen, Poland (CropM)
54. **How have uncertainties in projected yields changed between AR4 and AR5** (2014) Challinor A.E.A. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12,

Oslo, Norway (CropM)

55. **Climate change and Israeli Agriculture – resilience, adaptation, land use and production** (2013) Cohen S. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
56. **Introduction to the eco-hydrological model SWIM, recent applications and new developments** (2013) Conradt T. @ Solicited lecture at the Faculty of Agricultural Sciences of Baoding Normal University, Baoding, Hebei, P. R. China, 2013-10-20 to 2013-10-27,
57. **Common Agricultural Policy and climate variability changes: an impact assessment of the first-pillar reform on an agricultural area of Grana Padano in different climate scenarios** (2015) Cortignani R. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
58. **Sensitivity of crop water and N stress to soil input data in regional cropyield simulations and the implications for data aggregation effects: a case study with the COUP-model** (2015) Coucheney E. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
59. **Effects of UV radiation on pests and plant pathogens. Keynote lecture.** (2014) Dáder B., Fereres A. and Moreno A. @ Conference Horticultural Stakeholders (UV4Growth, COST-Action FA0906), 2014-03-09 to 2014-03-11, Odense, Denmark (CropM)
60. **Studying Myzus persicae performance and feeding behaviour, and associated plant viruses under increasing CO2.** (2014) Dáder B., Fereres A. and Trebicki P. @ Annual Conference of the Australian Entomological Society, 2014-09-28 to 2014-10-01, Canberra, Australia (CropM)
61. **Impact of UV-A radiation on the performance of aphids and whiteflies and on the leaf chemistry of their host plants.** (2014) Dáder B., Moreno A. and Fereres A. @ Annual Conference of the Australian Entomological Society, 2014-09-28 to 2014-10-01, Canberry, Australia (CropM)
62. **Differences in plant chemistry and crop growth under specific wavelengths of the UV region.** (2014) Dáder B., Winters A., Moreno A., Fereres A. and Gwynn-Jones D. @ Final Network Meeting of COST Action FA0906 UV4Growth. Bled, Slovenia., 2014-03-30 to 2014-04-02, (CropM)
63. **Direct and plant-mediated impact of UV-absorbing films on plant growth and performance of insect vectors of plant viruses.** (2013) Dader B., Moreno A. and Fereres A. @ 2. Annual Network Meeting, COST-Action FA0906, 2013-04-14 to 2013-04-16, Mikulov, Czech Republic (CropM)
64. **Elevated CO2 impacts bell pepper growth with consequences in the feeding behaviour and performance of the green peach aphid, Myzus persicae** (2015) Dader B. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
65. **Models for regional scale farming system evaluation of climate change mitigation options and environmental impact assessment** (2015) Dalgaard T. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
66. **Farming systems models for regional scale impact assessment in Europe - case studies of N-losses and greenhouse gas emissions** (2014) Dalgaard T., Kjeldsen C., Meyer-Aurich A., Özkan Ş., Rolinski S., Köchy M. *et al.* @ Scaling in global, regional and farm models, 2014-09-24 to 2014-09-24, (LiveM)
67. **Synergies between mitigation and adaption to climate change in grassland-based farming systems** (2014) Del Prado A., van den Pol-van Dasselaar A., Chadwick D.,

Misselbrook T., Sandars D.L., Audsley E. *et al.* @ »EGF at 50: The Future of European Grasslands – Grassland Science in Europe 19« — European Grasslands Federation (EGF) General Meeting, 2014-09-07 to 2014-09-11, Aberystwyth, Wales (LiveM)

68. **Impatto dei cambiamenti climatici sulla produzione di colza da bioenergia in un ambiente mediterraneo.** (2012) Deligios P., Ledda L., Farci R., Doro L. and Roggero P.P. @ 41. Convegno annuale Società Italiana di Agronomia, 2012-09-19 to 2012-09-21, Bari, Italy (CropM)
69. **Modeling the effects of Climate Change on dairy farms: an integration of livestock and economic models.** (2015) Dell'Unto D. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
70. **Simulating seasonal nitrous oxide emissions from maize and wheat crops grown in two different cropping systems in Atlantic Europe.** (2014) Doltra J., Olesen E., Báez D. and Chirinda N. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
71. **Climate change scenarios and simulations on adaptation of Mediterranean agriculture: preliminary results of productive and economic impact** (2013) Dono G. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
72. **Cross-Cutting Issues in Hot Spot Areas** (2013) Dono G. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
73. **Awareness of climate change for adaptation of the farm sector** (2014) Dono G. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
74. **Climate change impact on production and income of Mediterranean farming systems: a case study** (2015) Dono G. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
75. **The economic impact of changes in climate variability on milk production in the area of Grana Padano** (2015) Dono G. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
76. **Productive and economic adaptation of Mediterranean agriculture to climate change (Produktive und wirtschaftliche Anpassung der mediterranen Landwirtschaft an den Klimawandel)** (2014) Dono G., Cortignani R., Dell'Unto D., Doro L., Lacetera N., Mula L. *et al.* @ 24. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 2014-09-25 to 2014-09-26, Vienna, Austria (TradeM)
77. **Economic assessment of the impact of uncertainty associated with short-run change in climate variability in Mediterranean farming systems.** (2013) Dono G., Raffaele Cortignani, Paola Deligios, Luca Doro, Luca Giraldo, Luigi Ledda, Graziano Mazzapicchio, Massimiliano Pasqui, Pier Paolo Roggero @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel
78. **Assessing nitrogen fertilisation strategies according to climate variability : A modelling approach** (2013) Dumont B., Basso B., Bodson B., Destain J.-P. and Destain M.-F. @ »Water, Food, Energy & Innovation for a Sustainable World, Tampa, Florida.« — ASA, CSSA & SSSA International Annual Meetings, 2013-11-03 to 2013-11-06, Tampa, Florida, U.S.A.
79. **A comparison of within season yield prediction methodologies** (2013) Dumont B., Basso B., Bodson B., Destain J.-P. and Destain M.-F. @ »Water, Food, Energy & Innovation for a Sustainable World« — ASA, CSSA & SSSA International Annual Meetings, 2013-11-03 to

2013-11-06, Tampa, Florida, U.S.A.

80. **A Comparison of Optimal Nitrogen Fertilisation Strategies Using Current and Future Stochastically Generated Climatic Conditions** (2014) Dumont B., Basso B., Destain J.-P., Bodson B. and Destain M.-F. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway
81. **Vers un système de prédiction du rendement en temps réel.** (2012) Dumont B., Ferrandis V., S., Leemans V., Bodson B., Destain J.-P. and Destain M.-F. @ IXeme Seminaire STICS, Orléans, Sainte Montaine (France)., 2012-10-16 to 2012-10-16, (CropM)
82. **Assessing the potential of an algorithm based on mean climatic data to predict wheat yield.** (2012) Dumont B., Leemans V., Ferrandis Vallterra S., Vancutsem F., Seutin B., Bodson B. *et al.* @ 11. International Conference on Precision Agriculture, 2012-07-15 to 2012-07-18, Indianapolis, U.S.A. (CropM)
83. **A first step towards a real-time predictive yield support system.** (2012) Dumont B., Leemans V., Ferrandis Vallterra S., Vancutsem F., Seutin B., Bodson B. *et al.* @ International Conference on Agricultural Engineering (CIGR-AgEng), 2012-07-07 to 2012-07-12, Valencia, Spain (CropM)
84. **A Site-Specific Grain Yield Response Surface : Computing the Identity Card of a Crop Under Different Nitrogen Management Scenarios** (2013) Dumont B., Basso B., Leemans V., Bodson B., Destain J.-P. and Destain M.-F. @ »Sustainable Agriculture through ICT innovation« — EFITA-WCCA-CIGR, 2013-11-03 to 2013-11-06, Torino, Italy
85. **Yield variability linked to climate uncertainty and nitrogen fertilisation** (2013) Dumont B., Basso B., Leemans V., Bodson B., Destain J.-P. and Destain M.-F. @ 9. European Conference on Precision Agriculture, 2013-06-07 to 2013-06-11, Lleida, Spain (CropM)
86. **Yield variability linked to climate uncertainty and nitrogen fertilisation** (2013) Dumont B., Basso B., Leemans V., Destain J.P., Bodson B. and Destain M.-F. @ 9. European Conference on Precision Agriculture (ECPA), 2013-07-07 to 2013-07-11, Lleida, Spain (CropM)
87. **State of Affairs in CropM** (2013) Ewert F. and Rötter R. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (CropM)
88. **Aphid and whitefly performance is directly affected by UV radiation on horticultural crops.** (2014) Fereres A., Dáder B., Moreno A., Gwynn-Jones D. and Winters A. @ Final Network Meeting of COST Action FA0906 UV4Growth. Bled, Slovenia., 2014-03-30 to 2014-04-02, (CropM)
89. **Insect behaviour and management options under UV-deficient enclosures** (2012) Fereres A. @ WG4 mini-conference of COST Action FA0906 UV4growth “Plant responses to UV radiation: from individuals to ecosystems”, 2012-04-25 to 2012-04-26, Girona, Spain (CropM)
90. **Photoselective barriers for managing insect vectors of virus diseases in protected environments** (2012) Fereres A. @ Agricultural Film International Conference, 2012-11-06 to 2012-11-08, Madrid, Spain (CropM)
91. **Virus-vector-host plant interactions: Factors that influence the spread of hemipteran-borne plant viruses.** (2013) Fereres A. @ American Phytopathological Society Conference, 2013-08-10 to 2013-08-14, Austin, Texas, U.S.A. (CropM)
92. **Using seasonal forecasts for predicting durum wheat yield over the Mediterranean Basin** (2014) Ferrise R., Moriondo M., Pasqui M., Toscano P., Semenov M.A. and Bindi M. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
93. **The main findings of TradeM, achieved during the first year** (2013) Floor B., Franz S., Waldemar B., Øyvind H., Gabriele D. and Katharina H. @ Workshop on Regional Pilot Studies Braunschweig, Germany, 2013-06-05 to 2013-06-07, (TradeM)

94. **Climate, soil-transmitted helminths and livestock production** (2014) Fox N. @ »Modelling interactions between climate and livestock pathogen transmission« — LiveM Workshop, 2014-01-22 to 2014-01-22, (LiveM)
95. **Climate Change Impacts on European Agriculture: A Multi Model Perspective** (2014) Frank S., Witzke P., Zimmermann A., Havlik P. and Ciaian P. @ 14. EAAE Congress, 2014-08-26 to 2014-08-29, Ljubljana, Slovenia (TradeM)
96. **Model intercomparison-Globiom and CAPRI** (2013) Frank S. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
97. **Modelling livestock and grassland systems under climate change** (2014) Fung F. @ »Modelling interactions between climate and livestock pathogen transmission« — LiveM Workshop, 2014-01-22 to 2014-01-22, (LiveM)
98. **Adaptation Strategies to Climate Change for summer crops on Andalusia: evaluation for extreme maximum temperatures.** (2014) Gabaldón-Leal C., Lorite J., Mínguez I., Lizaso I., Dosio A., Sanchez E. *et al.* @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway
99. **Evaluation of local adaptation strategies to climate change of maize crop in Andalusia for the 21st century** (2013) Gabaldón C., Lorite J., Mínguez I., Dosio A., Sánchez-Sánchez E. and Ruiz-Ramos M. @ European GeoSciences Union (EGU), General Assembly, 2013-04-07 to 2013-04-12, Vienna, Austria (CropM)
100. **Vulnerabilità di frumento duro e pomodoro ed analisi di adattamento agronomico ai cambiamenti climatici nel territorio agricolo Pugliese.** (2012) Giglio L. and Ventrella D. @ 41. Convegno annuale Società Italiana di Agronomia, 2012-09-19 to 2012-09-21, Bari, Italy
101. **The implication of input data aggregation on upscaling of soil organic carbon changes** (2015) Grosz B. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
102. **Climate, insect-borne viruses and livestock production** (2014) Gubbins S. @ »Modelling interactions between climate and livestock pathogen transmission« — LiveM Workshop, 2014-01-22 to 2014-01-22, (LiveM)
103. **Short and long-run impact of climate changes on worldwide grain prices** (2013) Gutierrez L., F. Piras, P. Roggero @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
104. **Responses of soil N2O emissions and nitrate leaching on climate input data aggregation: a biogeochemistry model ensemble study** (2015) Haas E. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
105. **MACSUR – utfordringer for husdyrproduksjon i et framtidig klima (MACSUR- Challenges for livestock production in a future climate)** (2014) Harstad O.M., Bonesmo H.S. and Özkan Ş. @ Bioforsk-konferansen 2014, 2014-02-01 to 2014-02-04, Hamar, Norway (LiveM)
106. **Climate change impacts on agricultural sector: A global perspective** (2014) Havlik P. @ TradeM Stakeholder Workshop, 2014-03-24 to 2014-03-24, Vienna, Austria (TradeM)
107. **Linking bio-physical, bottom-up and top-do wn economic models to analyze climate change impacts and adaptation on Austrian agriculture** (2013) Havlík P.E.S., S. Fuss, D. Leclere, M. Obersteiner, A. Mosnier, H. Valin, N. Khabarov @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
108. **Crop production costs in Austria: Comparison of simulated results and farm**

observations (2016) Heinschink K., Lembacher F., Sinabell F. and Trible C. @ 26. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 2016-09-15 to 2016-09-16, Vienna, Austria (TradeM)

109. **Implementation of the GTAP emission database in MAGNET; applications at European and global scales** (2015) Helming J. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
110. **Linking soil organic carbon pools with measured fractions** (2014) Herbst M., Welp G., Klosterhalfen A., Amelung W., Hädicke A. and Vereecken H. @ Soil carbon modeling in agricultural and forest ecosystems, Tsukuba, Japan., 2013-11-11 to 2014-11-14, (CropM)
111. **Structural development and web service based sensitivity analysis of the Biome-BGC MuSo model** (2014) Hidy D., Balogh J., Churkina G., Haszpra L., Horváth F., Ittzés P. *et al.* @ European GeoSciences Union (EGU), General Assembly, 2014-04-28 to 2014-05-02, (LiveM)
112. **Water balance and yield estimates for field crop rotations present versus future conditions based on transient scenarios.** (2014) Hlavinka P., Kersebaum K.C., Dubrovský M., Pohanková E., Balek J., Žalud Z. *et al.* @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
113. **Effects of soil and climate input data aggregation on modelling regional crop yields** (2015) Hoffmann H. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
114. **Identifying target traits for forage grass breeding under a changing climate in Norway using the BASGRA model.** (2013) Höglind M., Persson T. and van Oijen M. @ 22. International Grasslands Congress, 2013-09-15 to 2013-09-19, Sydney, Australia (CropM)
115. **Breeding forage grasses: simulation modelling as a tool to identify important cultivar characteristics for winter survival and yield under future climate conditions in Norway.** (2014) Höglind M., Persson T. and van Oijen M. @ Conference on Genetic Resources for Food and Agriculture in a Changing Climate, 2014-01-27 to 2014-01-29, Lillehammer, Norway (CropM)
116. **Yields and harvest security in Nordic forage production in the future - examples from simulation studies using the LINGRA model** (2013) Höglind M. and Persson T. @ »Nordic Forage Model Applications- predicting forage yield and quality in a variable and changing climate« — 455. NJF Seminar, 2013-01-30 to 2013-01-31, Forssa, Finland (CropM)
117. **Europeisk landbruk i et klima i endring (MACSUR)** (2014) Höglind M. @ »Bioforsk FOKUS« — 9(2). Bioforsk-konferansen 2014, 2014-02-05 to 2014-02-06, Hamar, Norway (CropM)
118. **Identifying where future landuse allocation in Europe is robust to climate and socio-economic uncertainty** (2015) Holman I. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
119. **Supporting environmental modelling with Taverna workflows, web services and desktop grid technology. In iEMSs 2014 proceedings edited by DP Ames, NWT Quinn and AE Rizzoli (in press)** (2014) Horváth F., Ittzés P., Ittzés D., Barcza Z., Dobor L., Hidy D. *et al.* @ 7. International Congress on Environmental Modelling and Software, 2014-06-15 to 2014-06-19, San Diego, California, U.S.A. (LiveM)
120. **Progress on Tools, Data, Models** (2013) Hoveid Ø. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
121. **An economist' wish list for crop modelling.** (2014) Hoveid Ø. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (TradeM)
122. **Linking models of climate, weather, crops and economic behavior by Bayesian**

calibration (2014) Hoveid Ø. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)

123. **A prototype dynamic stochastic equilibrium model of the global food system** (2014) Hoveid Ø. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
124. **An economist's wish list for soil and crop modelling** (2015) Hoveid Ø. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
125. **A prototype stochastic dynamic equilibrium model of the global food system** (2015) Hoveid Ø. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
126. **A comparison of farm-scale models to estimate greenhouse gas emissions from dairy farms in Europe** (2015) Hutchings N. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
127. **Farm model comparison** (2014) Hutchings N., Sanders D., Özkan Ş. and De H., Michel @ International Livestock Modelling and Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (LiveM)
128. **Ammonia and nitrous oxide emissions from grazing cattle in Kenya** (2015) Ibañez M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
129. **RDAISY: a comprehensive modelling framework for automated calibration, sensitivity and uncertainty analysis of the DAISY model.** (2014) Jabloun M., Li X., Olesen E., Schelde K. and Tao F. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
130. **Field experiment in Lubelskie region to validate crop growth models in temperate climate** (2014) Jaromir K., Piotr B. and Cezary S. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
131. **Integrated Modelling: Data and Protocols** (2013) Jorgenson J. @ CIMSANS Round Table on Opportunities for New Public-Private Collaborations on Modeling of Sustainable Nutrition Security (Dublin), 2013-04-10 to 2013-04-10, (Hub)
132. **Options for Cloud computing** (2013) Jorgenson J.S. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM, Hub)
133. **Assessing the Impact of Climate Change on Vegetative Agriculture in Israel – The VALUE Model** (2013) Kahn I. and Rapaport-Rom M. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
134. **Progress report for CropM WP1 Model inter-comparison and improvement** (2013) Kersebaum C. and Bindi M. @ JPI FACCE MACSUR CropM and LiveM cross-cutting activity, 2013-05-06 to 2013-05-06, Helsinki, Finland (CropM)
135. **CropM WP1/WP2 Data sharing and handling policy** (2013) Kersebaum C., Bindi M. and Olesen J.E.A.T., M. @ JPI FACCE MACSUR CropM and LiveM cross-cutting activity, 2013-05-06 to 2013-05-06, Helsinki, Finland (CropM)
136. **A scheme to evaluate suitability of experimental data for model testing and improvement** (2014) Kersebaum C., Boote J., Jorgenson S., Kollas C., Nendel C., Wegehenkel M. *et al.* @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12,

Oslo, Norway (CropM)

137. **Modelling complex crop rotations and management across sites in Europe with an ensemble of models** (2014) Kersebaum C., Kollas C., Bindi M., Nendel C., Ferrise R., Moriondo M. *et al.* @ ASA, CSSA & SSSA International Annual Meetings, 2014-11-02 to 2014-11-05, Long Beach, CA, U.S.A. (CropM)
138. **CropM WP1 - Protocols, data formats and data classification scheme** (2013) Kersebaum C., Kollas C., Palosuo T., Bindi M. and Nendel C. @ JPI FACCE MACSUR CropM and LiveM cross-cutting activity, 2013-05-06 to 2013-05-06, Helsinki, Finland (CropM)
139. **Requirements for data from variety trials – justification and purpose (in German).** (2013) Kersebaum C. and Nendel C. @ Association of Federal Agricultural Chambers, Coordination Panel for field trials. Berlin/Germany, 2013-11-13 to 2013-11-13, (CropM)
140. **Documentation of temperature algorithms in the models HERMES, MONICA and WOFOST.** (2013) Kersebaum C., Nendel C. and Rötter R.P. @ AgMIP workshop "Wheat Response to High Temperature", 2013-06-19 to 2013-06-21, El Batan, Mexico (CropM)
141. **Analysing climate change impact on agriculture (in German).** (2012) Kersebaum K.C. @ Education seminar for water regulatory authorities of Hesse/Germany "Experiences for Water Framework Directive", Rauischholzhausen/Germany, 2012-11-27 to 2012-11-27, (CropM)
142. **Simulating crop rotations and management across climatic zones in Europe – an intercomparison study using fifteen models** (2015) Kersebaum K.C. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
143. **Modelling livestock and grassland systems under climate change** (2014) Kipling P., Saetnan E., Scollan D., Bartley D., Bellocchi G., Hutchings J. *et al.* @ »EGF at 50: The Future of European Grasslands – Grassland Science in Europe 19« — 25. European Grasslands Federation (EGF) General Meeting, 2014-09-07 to 2014-09-11, Aberystwyth, Wales (LiveM)
144. **Modelling interactions between climate and livestock pathogen transmission, Pirbright Institute, UK** (2014) Kipling P., Saetnan R., van den Pol-van Dasselaar A., Scollan D., Bartley D., Bellocchi G. *et al.* @ »Modelling interactions between climate and livestock pathogen transmission« — LiveM Workshop, 2014-01-22 to 2014-01-22, (LiveM)
145. **Overview of LiveM** (2014) Kipling P., Saetnan R., van den Pol-van Dasselaar A. and Scollan N.D. @ SOLID project workshop and annual meeting, 2014-05-21 to 2014-05-23, Helsinki, Finland (LiveM)
146. **Modelling dairy systems: Opportunities for cross-theme collaboration within MACSUR** (2013) Kipling R. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
147. **Communicating Modelling** (2014) Kipling R. and Özkan Ş. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway (LiveM)
148. **LiveM and the knowledge hub concept: Grassland and livestock modelling in MACSUR Phase 2** (2014) Kipling R. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
149. **Modelling climate variability and change: outputs available for transmission modelling** (2014) Kipling R. @ »Modelling interactions between climate and livestock pathogen transmission« — LiveM Workshop, 2014-01-22 to 2014-01-22, (LiveM)
150. **A spatially explicit integrated assessment of agricultural policy and climate change impacts on Austrian, land use and environment.** (2013) Kirchner M., Mitter H., Schönhart M., Schmid E. and Kindermann G. @ »Developing Integrated and Reliable Modeling Tools for Agricultural and Environmental Policy Analysis« — 133. EAAE Seminar, 2013-06-15 to 2013-06-16, Crete, Greece (TradeM)
151. **A spatially explicit integrated assessment of agricultural policy and climate change impacts on Austrian land use and environment.** (2014) Kirchner M., Mitter H.,

Schönhart M., Schmid E. and Kindermann G. @ »Agri-Food and Rural Innovations for Healthier Societies« — EAAE Congress, 2014-08-26 to 2014-08-29, Ljubljana, Slovenia (TradeM)

152. **How does climate change adaptation impact GHG emissions - the case of Austrian Agriculture.** (2014) Kirchner M., Schönhart M., Mitter H. and Schmid E. @ Lebensmittelversorgung, Lebensmittelsicherheit und Ernährungssouveränität Food security, safety and sovereignty, 24. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, Wien, 2014-09-25 to 2014-09-26, (TradeM)
153. **An approach to sustainability management within partnerships between heterogeneous actors – example from a Danish water catchment, dominated by dairy farms** (2015) Kjeldsen C. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
154. **AgroC - Development and evaluation of a model for carbon fluxes in agroecosystems** (2015) Klosterhalfen A., Herbst M., Schmidt M., Weihermüller L., Vanderborght J. and Vereecken H. @ European GeoSciences Union (EGU), General Assembly, 2015-12-04 to 2015-04-17, (CropM)
155. **AgroC - Development and First Evaluation of a Model for Carbon Fluxes in Agroecosystems** (2014) Klosterhalfen A., Herbst M., Schmidt M., Vereecken H. and Weihermüller L. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
156. **Meta-analysis of recent scientific evidence on climate impacts and uncertainty on crop yields in Europe** (2015) Knox J. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
157. **The FACCE knowledge hub 'MACSUR'** (2012) Köchy M. @ FACCE JPI Mapping Meeting on Core Theme 3: Assessing and reducing tradeoffs: food production, biodiversity & ecosystems services, 2012-06-11 to 2012-06-12, (Hub)
158. **The Knowledge Hub »FACCE MACSUR« Modelling European Agriculture with Climate Change for Food Security** (2014) Köchy M. @ »Our Climate – Our Future, Regional perspectives on a global challenge« — International REKLIM conference, 2014-10-06 to 2014-10-09, (Hub)
159. **FACCE MACSUR: Modelling Agriculture with Climate Change for Food Security** (2015) Köchy M. @ 2. European Climate Change Adaptation (ECCA) Conference, 2015-05-12 to 2015-05-14, (Hub)
160. **FACCE MACSUR: Modelling Agriculture with Climate Change for Food Security** (2015) Köchy M. @ Climate-smart agriculture. Global Science Conference, 2015-03-15 to 2015-03-18, Montpellier, France (Hub)
161. **FACCE MACSUR: Modelling European Agriculture with Climate Change for Food Security Opportunities for establishing cooperation and coordination** (2015) Köchy M. @ FACCE – ERA-NET Plus on Climate Smart Agriculture Kick-off meeting, 2015-09-21, Paris, France
162. **Common assumptions about future agricultural trends across MACSUR integrated case studies** (2013) Köchy M. and Banse M. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (Hub)
163. **Food security — is climate important at all?** (2013) Köchy M. and Banse M. @ Impacts World, International Conference on Climate Change Effects, 2013-05-27 to 2013-05-30, Potsdam, (Hub)
164. **Modelling Efforts and Integrated Regional Studies in FACCE MACSUR** (2013) Köchy M. and Banse M. @ 4. Annual AgMIP Workshop, 2013-10-28 to 2013-10-30, New York, U.S.A. (Hub)

165. **Integrated modelling of climate impacts on food and farming at regional to supranational scales** (2013) Köchy M., Banse M., Brouwer F., Dono G. and Gutierrez L. @ United Nations Convention to Combat Desertification – Scientific Conference, 2013-04-09 to 2013-04-12, Bonn, Germany (Hub)
166. **Introductory Presentation: Potential funding streams for LiveM** (2014) Köchy M. and Wilson A. @ International Livestock Modelling and Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (Hub)
167. **Improving yield predictions by crop rotation modelling? a multi-model comparison.** (2014) Kollas C., Kersebaum C., Bindi M., Wu L., Sharif B., Öztürk I. *et al.* @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
168. **Abiotic stresses: drought and high temperature.** (2013) Kondracka K., Nosalewicz A. and Lipiec J. @ 12. International Workshop for Young Scientists BioPhys, 2013-05-21 to 2013-05-23, Lublin, Poland (CropM)
169. **Effect of heat stress and water deficit on photosynthesis.** (2014) Kondracka K., Nosalewicz A. and Lipiec J. @ 3. Conference of Young Scientists, 2014-05-25 to 2014-05-26, Lublin, Poland
170. **Spatial Modeling as a Tool Supporting the Management of Catchment Area of Retention Reservoir** (2014) Kopacz M. and Twardy S. @ »Sustainable Development« — 7. Conference on Environmental Protection and Engineering, 2014-06-26 to 2014-06-27, Krakow, Poland (LiveM, CropM)
171. **Intercomparison of timothy models in northern countries** (2015) Korhonen P. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
172. **Adaptation to climate change in Central Europe – needs and reality** (2014) Kozyra J., Nieróbca A., Borzęcka –Walker M., Pudełko R., Żyłowska K., Łabędzki L. *et al.* @ 8. ESA Congress, 2014-08-25 to 2014-08-29, Debrecen, (CropM)
173. **Changes in winter wheat phenology in Poland during the years 1975-2011** (2014) Kozyra J., Nieróbca A. and Żyłowska K. @ 8. ESA Congress, 2014-08-25 to 2014-08-29, Debrecen, (CropM)
174. **Modelling of CO2 exchange in cultivated field** (2013) Krzyszczak J. @ Summer school: Flux measurement techniques for non CO2 GHG: methods, sensors, databases and modelling, 2013-05-04 to 2013-05-12, (CropM)
175. **Field experiment in Lubelskie region to validate crop growth models in temperate, climate** (2014) Krzyszczak J., Baranowski P. and Sławinski C. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
176. **Chamber system measurements of carbon dioxide fluxes from winter wheat field in a Lubelskie province** (2014) Krzyszczak J., Baranowski P. and Sławiński C. @ 6. Ukrainian-Polish Scientific and Practical Conference »Electronics and Information Technologies«, 2014-08-28 to 2014-08-31, Lviv-Chynadiyevo, Ukraine (CropM)
177. **Impact of climate aggregation over different scales on regional NPP modelling** (2015) Kuhnert M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
178. **Analysis of criteria for determination of less favored areas in the mountains.** (2013) Kuźniar A., Kowalczyk A. and Kostuch M. @ Priorities of sustainable rural development 2014-2020 in the light of scientific research. Institute of Technology and Life Sciences at Falenty, Poland., 2013-04-25 to 2013-04-26, (CropM)
179. **Season and temperature humidity index related changes of productive and health parameters in dairy cows and pigs** (2015) Lacetera N. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom

180. **Application of X-ray computational microtomography and modeling for estimation of the saturated water conductivity of the porous media.** (2013) Lamorski K. @ 12. International Workshop for Young Scientists BioPhys, 2013-05-21 to 2013-05-23, Lublin, Poland (CropM)
181. **Modelling soil water Dynamics Using the physical and soft-computing methods.** (2013) Lamorski K., Pastuszka T., Krzyszczak J., Slawinski C. and Witkowska-Walczak B. @ 10. International Conference on Agrophysics, 2013-06-05 to 2013-06-07, (CropM)
182. **Participatory modelling for strategy design on dairy farms** (2015) Lauwers L. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
183. **Modelling of crop growth and development as an instrument for analysis of orientations in agricultural research in the context of climate changes (context and opinions) In Romanian: Modelarea creşterii şi dezvoltării plantelor de cultură ca instrument de analiză a direcţiilor de cercetare agricolă în contextul schimbărilor climatic)** (2012) Lazar C. @ Workshop on climate change organized by Romanian Academy of Sciences (Bucharest, Romania), 2012-11-23 to 2012-11-23, (CropM)
184. **Adaptation of the food sector and socio-economic impacts, of climate change in North-East Europe : Dairy sector adaptations and socio-economic, implications of climate change in Finland and Leningrad Oblast in, Russia (ADIOSO)** (2013) Lehtonen H., Irz X., Kahiluoto H., Jansik C., Kuisma M., Kuosmanen N. *et al.* @ FICCA seminar : Research programme on climate change, 2013-04-16, Helsinki, Finland (TradeM)
185. **Endogenising yield development through management and crop rotation decisions in dynamic farm level modeling.** (2014) Lehtonen H., Liu X. and Purola T. @ 24. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 2014-09-25 to 2014-09-26, Vienna, Austria (TradeM)
186. **Farm level analysis as a key to integrated regional case studies in Finland** (2013) Lehtonen H., Rötter R. and T. P. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
187. **Northern Europe case: Scenarios for northern Europe and first outcomes of adaptation analysis** (2013) Lehtonen H.S. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
188. **Evaluating clover grass as a climate change adaptation measure in agriculture at the sector level** (2014) Lehtonen H. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
189. **Pilot study at North Savo region** (2015) Lehtonen H. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
190. **Sector level agricultural development following different adaptations to climate change** (2015) Lehtonen H. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
191. **Säkularstation und Wetterküche / Ernährung und Klimawandel** (2012) Lembcke F. and Lotze-Campen H. @ Evangelische Grundschule Potsdam, Klasse 6, 2012-12-19 to 2012-12-19,
192. **Effects of heat stress periods on milk production, milking frequency and rumination time of grazing dairy cows milked by a mobile automatic system in 2013** (2015) Lessire F. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
193. **Incentivising for climage change mitigation in the context of adaptation to climate and market changes at the farm level in North Savo region** (2014) Liu X. @ »FACCE

MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway

194. **Dynamic economic modelling of crop rotation with adaptation practices.** (2014) Liu X., Lehtonen H., Purola T., Pavlova Y. and Rötter R.P., T. @ 14. EAAE Congress, 2014-08-26 to 2014-08-29, Ljubljana, Slovenia (TradeM)
195. **Agriculture in a 4°C warmer world** (2013) Lotze-Campen H. @ A day about Future Agriculture, Ultuna/Uppsala, Sweden, 2013-10-16 to 2013-10-17,
196. **Panel Discussion: A Place at the Table** (2013) Lotze-Campen H. @ »Biotechnology, Sustainability and Climate Volatility« — 2013 Borlaug Dialogue, 2013-10-15 to 2013-10-18, Des Moines, Iowa, U.S.A.
197. **Sustainable land use and climate change: Monitoring, modelling, managing** (2013) Lotze-Campen H. @ Vortrag im Rahmen des Berufungsverfahrens zur Besetzung der W3-S-Professur Nachhaltige Landnutzung und Klimawandel, Humboldt-Universität Berlin, Landw.-Gärtn. Fakultät, 2013-01-08 to 2013-01-08,
198. **Von globalen Klimawandel zu regionalen Anpassungsstrategien** (2013) Lotze-Campen H. @ Vom globalen Klimawandel zu regionalen Anpassungsstrategien, Göttingen, Germany, 2013-09-02 to 2013-09-03,
199. **What have we Learned from Crop-Economic Model Comparison in AgMIP** (2013) Lotze-Campen H. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
200. **The grassland model intercomparison of the MACSUR (Modelling European Agriculture with Climate Change for Food Security) European knowledge hub** (2014) Ma S., Acutis M., Barcza Z., Ben T., H., Doro L., Hidy D. *et al*. @ 7. International Congress on Environmental Modelling and Software, 2014-06-15 to 2014-06-19, San Diego, California, U.S.A. (LiveM)
201. **Grassland model intercomparison of the knowledge hub MACSUR: illustrative results from the models PaSim and Biome-BGC MuSo** (2014) Ma S., Ben T., H., Lellei-Kovács E., Barcza Z., Hidy D. and Bellocchi G. @ 8. ESA Congress, 2014-08-25 to 2014-08-29, Debrecen, (LiveM)
202. **Maize production and nitrogen dynamics under current and warmer climate in Denmark: simulations with the DAISY model.** (2014) Manevski K., Børgesen D., Andersen N. and Olesen J.E. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
203. **Bayesian methods for predicting LAI and soil moisture.** (2012) Mansouri M., Dumont B. and Destain M.-F. @ 11. International Conference on Precision Agriculture, 2012-07-15 to 2012-07-18, Indianapolis, U.S.A. (CropM)
204. **Bayesian methods for predicting and modelling winter wheat biomass** (2014) Mansouri M., Dumont B. and Destain M.-F. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway
205. **Predicting Grain Protein Content of Winter Wheat** (2014) Mansouri M., Dumont B. and Destain M.-F. @ 22. European Symposium on Artificial Networks, Computational Intelligence and Machine Learning, 2014-04-23 to 2014-04-25, Bruges, Belgium
206. **Error and uncertainty of wheat multimodel ensemble projections.** (2014) Martre P.E.A. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
207. **Reducing uncertainty in prediction of wheat performance under climate change** (2015) Martre P. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
208. **Predicting the effects of climate change on pathogens** (2014) McIntyre M. @ »Modelling interactions between climate and livestock pathogen transmission« — LiveM Workshop,

2014-01-22 to 2014-01-22, (LiveM)

209. **Achieving Emission Reduction Targets by Changing Eating Habits in Norway** (2015) Milford A.B. @ »Forskermøtet 2015« — 37. Annual Meeting of the Norwegian Association of Economists, 2015-01-05 to 2015-01-06, (TradeM)
210. **Achieving Emission Reduction Targets by Changing Eating Habits in Norway** (2014) Milford A. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
211. **Outcomes from the MACSUR grassland model inter-comparison with the model CARAIB** (2014) Minet J., Laloy E., Tychon B. and François L. @ International Livestock Modelling and Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (LiveM)
212. **Can a global dynamic vegetation model be used for both grassland and crop modeling at the local scale** (2014) Minet J., Tychon B., Jacquemin I. and François L. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM, LiveM)
213. **Alternative Water Sources to Compensate For Loss of Water Availability to Agriculture due to Climate Change** (2015) Mingelgrin U. @ »Securing Food Using Non-Conventional Water Sources« — TradeM International Workshop, 2015-02-24 to 2015-02-24, (TradeM)
214. **The role of uncertainty in assessing agricultural responses to food security and climate change: A Case Study from Norway** (2014) Mittenzwei K. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
215. **The importance of climate and policy uncertainty in Norwegian agriculture** (2015) Mittenzwei K. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
216. **Modelling robust crop production protfolios to assess agricultural vulnerability to climate change.** (2014) Mitter H., Heumesser C. and E. S. @ »Agri-Food and Rural Innovations for Healthier Societies« — EAAE Congress, 2014-08-26 to 2014-08-29, Ljubljana, Slovenia (TradeM)
217. **Modelling impacts of drought and adaptation scenarios on crop production in Austria (Modellierung von Auswirkungen verschiedener Dürre- und Anpassungsszenarien auf die agrarische Pflanzenproduktion in Österreich)** (2014) Mitter H., Schmid E. and Schneider U.A. @ 24. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 2014-09-25 to 2014-09-26, Vienna, Austria (TradeM)
218. **Climate change and policy impacts on Austrian protein crop supply balances** (2015) Mitter H., Schmid E. and Sinabell F. @ 2015. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, (TradeM)
219. **Integrated climate change impact and adaptation assessment for the agricultural sector in Austria.** (2014) Mitter H., Schönhart M. and Schmid E. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (TradeM)
220. **Assessing climate change and policy impacts on protein crop production in Austria** (2013) Mitter H., Sinabell F. and E. S. @ Impacts World, International Conference on Climate Change Effects, 2013-05-27 to 2013-05-30, Potsdam, (TradeM)
221. **Climate change impacts on crop supply balances in Austria.** (2013) Mitter H., Sinabell F. and E. S. @ 41. Jahrestagung der Schweizer Gesellschaft für Agrarwirtschaft und Agrarsoziologie und 23. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 2013-09-12 to 2013-09-13, Zürich, Switzerland (TradeM)
222. **Integrated assessment of climate change and policy impacts of food security: a case, study for protein crop supplies in Austria.** (2013) Mitter H., Sinabell F. and Schmid E. @ 4. Annual AgMIP Workshop, 2013-10-28 to 2013-10-30, New York, U.S.A. (TradeM)
223. **Climate change impacts, uncertainties and implications** (2013) Müller C. @ First Workshop of the Expert Network Management of Climate change induced Risks, 2013-03-

20 to 2013-03-21, Hamburg, Germany (CropM)

224. **Impacts of Climate Change and Agricultural Modeling** (2014) Müller C. @ Capacity Building Workshop for Regional Scientists: Turn Down the Heat III: Regional Analysis (MNA/LAC/ECA), The Case for Resilience, Potsdam, Germany, 2014-03-11 to 2014-03-13, (CropM)
225. **Reversal of the land biosphere carbon balance under climate and land-use change** (2013) Müller C., Stehfest E., van Minnen J., Strengers B., von B.W., Beusen A. *et al.* @ European GeoSciences Union (EGU), General Assembly, 2013-04-07 to 2013-04-12, Vienna, Austria, (CropM)
226. **The Global Gridded Crop Model Intercomparison Project** (2013) Müller C., Elliott J @ Annual AgMIP Workshop, 2013-10-28 to 2013-10-30, New York, U.S.A. (CropM)
227. **AgMIP's Global Gridded Crop Model Intercomparison** (2014) Müller C., Elliott J @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
228. **Multi-sector interaction in climate change impact analysis** (2013) Müller C. @ Impacts World, International Conference on Climate Change Effects, 2013-05-27 to 2013-05-30, Potsdam, (CropM)
229. **Addressing challenges and uncertainties for, the use of agro-ecosystem models to, assess climate change impact and food security across scales** (2013) Nendel C., Ewert F., Rötter R.P., Rosenzweig C., Jones J.W., Hatfield J.L. *et al.* @ Climate Change and Regional Responses Conference, Dresden, 2013-05-27 to 2013-05-27, (CropM)
230. **Die Simulation von Winterweizenerträgen in Thüringen unter Verwendung von meteorologischen Daten unterschiedlicher räumlicher Auflösung.** (2013) Nendel C., Wieland R., Mirschel W., Specka X. and Kersebaum K.-C. @ »Massendatenmanagement in der Agrar- und Ernährungswirtschaft« — 33. GIL-Jahrestagung, 2013-02-21 to 2013-02-21, (CropM)
231. **The simulation of winter wheat yields in Thuringia, Germany, using meteorological data with different spatial resolution.** (2012) Nendel C., Wieland R., Mirschel W., Specka X. and Kersebaum K.C. @ 12. Congress of the European Society for Agronomy, 2012-08-20 to 2012-08-24, Helsinki, Finland; p. University of Helsinki,
232. **The agro-meteorological model for yields of winter triticale.** (2014) Nieróbca A., Kozyra J., Doroszewski A. and Żyłowska K. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway
233. **The regional trends in maize yield in Poland and its prediction according regional GLOBIOM –CAPRI baseline analysis for 2010, 2030 and 2050** (2015) Nieróbca A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
234. **Stand und Perspektiven des Sojaanbaues in Serbien (Soy bean production in Serbia – current state and future perspectives)** (2014) Nikolić U., Mitter H., Schmid E. and F. S. @ 24. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 2014-09-25 to 2014-09-26, Vienna, Austria (TradeM)
235. **The effect of combination of drought and heat stresses on plant transpiration and photosynthesis** (2015) Nosalewicz A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
236. **Methods for risk analysis and spatial upscaling of process-based models: Experiences from projects Carbo-Extreme and GREENHOUSE** (2015) Van Oijen M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
237. **MACSUR- a knowledge Hub** (2014) Øygarden L. @ National Conference- Research Council Norway- about JPI- FACCE. Oslo, Norway., 2014-09-25 to 2014-09-25, (Hub)

238. **Modelling European Agriculture with Climate change for food security.** (2013) Øygarden L., Höglind M., Harstad M. and Hoveid Ø. @ 8(2). Bioforsk Fokus, Bioforsk konferansen 2013, 2013-02-06 to 2013-02-07, Norway; pp. 372-374 *in* (*Ed*s, Fløistad E. and Gunther M.) Bioforsk konferansen 2013.
239. **Modelling The Impact Of Diseases On Greenhouse Gas Emissions In Dairy Cows.** (2015) Özkan Ş., Østergaard S. and Strøm T. @ Animal Health & Greenhouse Gas Emissions Intensity Network 2nd meeting, Montpellier, France, 2015-03-15 to 2015-03-15, (LiveM)
240. **The Relationship Between Subclinical Mastitis And Emissions In Dairy Cows** (2014) Özkan Ş., Vosough A.B., Bonesmo H., Østerås O., Stott A. and Harstad O.M. @ Animal Health & Greenhouse Gas Emissions Intensity Network Regional Meeting, Addis Abeba, Ethiopia, 2014-11-05 to 2014-11-05, (LiveM)
241. **The greenhouse gas emissions intensity of herds with mastitis** (2015) Özkan Ş. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
242. **Environmental impacts and economics of high somatic cell count in Norwegian dairy herds** (2014) Özkan Ş., Ahmadi B.V., Bonesmo H.S., Østerås O., Stott A. and Harstad O.M. @ »Economics of Animal Health and Welfare« — 476. NJF seminar, 2014-10-02 to 2014-10-03, (LiveM)
243. **Impact of animal health on greenhouse gas emissions in Norwegian dairying** (2014) Özkan Ş., Ahmadi B.V., Bonesmo H.S., Østerås O., Stott A. and Harstad O.M. @ International Livestock Modelling and Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (LiveM)
244. **Greenhouse gas emissions and mitigation potential of Norwegian dairy sector** (2014) Özkan Ş., Bonesmo H.S. and Harstad O.M. @ Scaling in global, regional and farm models, 2014-09-24 to 2014-09-24, (LiveM)
245. **The impact of climate change on agriculture and a water economy with a diverse mix of water types - the Israeli case study** (2014) Palatnik R., Baum Z., Kan I. and Rappaport-Rom M. @ World Congress of Environmental and Resource Economists, 2014-06-28 to 2014-07-02, Istanbul, Turkey (TradeM)
246. **Assessing The Impact Of Climate Change On Agriculture And A Water Economy With A Diverse Mix Of Water Types - The Israeli Case Study** (2014) Palatnik R.R. @ 89. Annual Conference, Western Economic Association International, 2014-06-27 to 2014-07-01, Denver, Colorado, U.S.A. (TradeM)
247. **Economic Impacts Of Water Scarcity Under Diverse Water Salinities** (2015) Palatnik R.R. @ Annual Conference of the European Association of Environmental, and Resource Economists EAERE 21, Helsinki, Finland, 2015-06-24 to 2015-06-27, (TradeM)
248. **Economic Impacts Of Water Scarcity Under Diverse Water Salinities** (2015) Palatnik R.R. @ »Securing Food Using Non-Conventional Water Sources« — TradeM International Workshop, 2015-02-24 to 2015-02-24, (TradeM)
249. **Economic Impacts of Water Scarcity under Diverse Water Salinities** (2015) Palatnik R. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
250. **How to assess climate change impacts on farmers' crop yields?** (2013) Palosuo T., Rötter P., Lehtonen H., Virkajärvi P. and Salo T. @ »Impacts World 2013, International Conference on Climate Change Effects« — Impacts World, International Conference on Climate Change Effects, 2013-05-27 to 2013-05-30, Potsdam, Germany
251. **Simulazione di flussi di carbonio da ecosistemi pratensi: applicazione del modello colturale ARMOSA al sito di Laqueuille (Francia)** (2014) Perego A., Sanna M., Bellocchi G. and Acutis @ 43. Convegno annuale Società Italiana di Agronomia, 2014-09-17 to 2014-09-19, (LiveM)
252. **Evaluation of the BASGRA timothy model under Nordic conditions** (2013) Persson T., Höglind M., Gustavsson A.M., Halling M., Jauhianen L., Niemeläinen O. *et al*. @ »Nordic

Forage Model Applications — predicting forage yield and quality in a variable and changing climate« — 455. NJF Seminar, 2013-01-30 to 2013-01-31, Forssa, Finland (CropM)

253. **Assessment of harvest security of timothy under climate change condition using a set of simple criteria.** (2013) Persson T. and Höglind M. @ 22. International Grasslands Congress, 2013-09-15 to 2013-09-19, Sydney, Australia (CropM)
254. **Impact of soil properties regionalization methods on regional wheat yield in southeastern Norway.** (2014) Persson T. and Kværnø S. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
255. **Impact of soil properties regionalization procedures on regional timothy dry matter yield and variability in southeastern Norway.** (2014) Persson T., Kværnø S. and Höglind M. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
256. **Determining the variability in optimal sowing date of spring cereals in South Eastern Norway** (2015) Persson T. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
257. **The FACCE-ERA-Net Plus project "Climate smart Agriculture on Organic Soils" (CAOS)** (2015) Piayda A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
258. **Multifractal analysis of chosen meteorological time series to assess climate impact in field level** (2014) Piotr B., Jaromir Krzyszczak, Cezary Sławiński @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
259. **Examining wheat yield sensitivity to temperature and precipitation changes for a large ensemble of crop models using impact response surfaces.** (2014) Pirttioja N. and al. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
260. **Probabilistic assessment of crop adaptation options under a changing climate** (2012) Pirttioja N., Fronzek S., Rötter R.P. and Carter T.R. @ Second Nordic International Conference on Climate Change Adaptation, 2012-08-29 to 2012-08-30, (CropM)
261. **Simulating Adaptive Management Using Impact Models in a Risk Framework** (2012) Pirttioja N., Fronzek S., Rötter R.P. and Carter T.R. @ AdaptationFutures, 2012-05-29 to 2012-05-31, Tucson, AZ, U.S.A. (CropM)
262. **A crop model ensemble analysis of wheat yield sensitivity to changes in temperature and precipitation across a European transect** (2015) Pirttioja N. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
263. **Pilot study: Field crop rotations modeling under present and future conditions in the Czech Republic using HERMES model** (2015) Pohanková E., Hlavinka P., Kersebaum K.C., Dubrovský M., Fischer M., Balek J. *et al.* @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
264. **Observed and simulated growth, development and yield of field-grown tomato in the Elbe lowland, the Czech Republic** (2015) Potopová V. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
265. **Productivity Implications of Extreme Precipitation Events: the case of Dutch Wheat Farmers** (2015) Powell J. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
266. **Assessing changes in farm management and farm structural change and impacts on sustainable development in a rural area in the Netherlands** (2015) Reidsma P., Bakker

M.M., Kanellopoulos A., Alam S.J., Paas W., Kros J. *et al.* @ 5. International Symposium for Farming Systems Design, 2015-09-07 to 2015-09-09, Montpellier, France (CropM)

267. **Impacts of climate and socio-economic change at farm and landscape level in the Netherlands: climate smart agriculture** (2015) Reidsma P., Bakker M.M., Kanellopoulos A., Alam S.J., Paas W., Kros J. *et al.* @ Climate-smart agriculture. Global Science Conference, 2015-03-15 to 2015-03-18, Montpellier, France (CropM)
268. **Climate change impact and adaptation research requires integrated assessment and farming systems analysis: a case study in the Netherlands** (2015) Reidsma P., Wolf J., Kanellopoulos A., Schaap B.F., Mandryk M., Verhagen J. *et al.* @ »Adapting Crops to Increased Uncertainty« — Agriculture and Climate Change Conference, 2015-02-15 to 2015-02-17, (CropM)
269. **AgriMod - The Agricultural Modelling Knowledge Hub** (2015) Rivington M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
270. **Correlation between evaluation model indicators.** (2013) Rocca A., Bellocchi G., Giussani A., Sanna M., Perego A., Fumagalli M. *et al.* @ 16. National congress of Agrometeorology, 2013-06-04 to 2013-06-06, Florence, Italy (CropM)
271. **Impact of climate change on water balance components in Mediterranean rainfed olive orchards under tillage or cover crop soil management** (2013) Rodríguez-Carretero T., Lorite J., Ruiz-Ramos M., Dosio A. and Gómez J.A. @ European GeoSciences Union (EGU), General Assembly, 2013-04-07 to 2013-04-12, Vienna, Austria, (CropM)
272. **Modelling the effects of grassland management on the carbon cycle** (2014) Rolinski S., Heinke J. and I. W. @ European GeoSciences Union (EGU), General Assembly, 2014-04-28 to 2014-05-02, (LiveM)
273. **Grazing effects on grassland productivity - Linking livestock production to grass yields** (2014) Rolinski S., Heinke J. and Weindl I. @ Livestock, Climate Change and Food Security, 2014-05-19 to 2014-05-20, Madrid, Spain (LiveM)
274. **Challenges for Agro-Ecosystem Modelling in Climate Change Risk Assessment for major European Crops and Farming systems** (2013) Rötter P., Ewert F., Palosuo T., Bindi M., Kersebaum K.C., Olesen J.E. *et al.* @ Impacts World, International Conference on Climate Change Effects, 2013-05-27 to 2013-05-30, Potsdam,
275. **Projections of climate change impacts on crop production – a global and a Nordic perspective** (2012) Rötter P., Höhn J. and Fronzek S. @ Agriculture and greenhouse gases, NJF (Association of Nordic Agronomists) seminar 453. Oslo, Norway, 2012-11-05 to 2012-11-06, (CropM)
276. **Designing new cereal cultivars as an adaptation measure using crop model ensembles.** (2014) Rötter P., Palosuo T., Semenov M., Ruiz-Ramos M., Tao F., Fronzek S. *et al.* @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
277. **Improving capacity of current crop models for simulating impacts of climatic extremes** (2013) Rötter R. @ ISI-MIP side event at at the Impacts World 2013, International Conference on Climate Change Effects, Potsdam, 2013-05-27 to 2013-05-30, (CropM)
278. **Examining wheat yield sensitivity to temperature and precipitation changes in Europe for a large crop model ensemble using impact response surfaces** (2014) Rötter R.P. and et al. @ International MACSUR/CropM PhD course, University of Florence, 2014-11-13 to 2014-11-13, Florence, Italy (CropM)
279. **Challenges for CropM in integrated (regional) assessment of climate change risks to food production** (2014) Rötter R. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
280. **Crop yield variance and yield gap analysis for evaluating technological innovations under climate change: the case of Finnish barley** (2015) Rötter R. @ »Integrated

Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom

281. **Les modèles de culture face au changement climatique : les enjeux des projets nationaux, européens et internationaux** (2015) Ruiz-Ramos M. @ 10. Colloque STICS, 2015-03-24 to 2015-04-26, Rennes, France (CropM)
282. **Improving modelled impacts on the flowering of temperate fruit trees in the Iberian Peninsula of climate change projections for 21st century** (2013) Ruiz-Ramos M., Pérez-Lopez D., Sánchez-Sánchez E., Centeno A., Dosio A. and Rodríguez A. @ European GeoSciences Union (EGU), General Assembly, 2013-04-07 to 2013-04-12, Vienna, Austria, (CropM)
283. **Improving crop simulations by bias reduction of RCM climate change projections: Evaluation on the present climate.** (2013) Ruiz-Ramos M., Rodríguez A., Dosio A., Goodess C., Harpham C., Mínguez I. *et al.* @ International Conference On Regional Climate - CORDEX 2013 A partnership between WCRP, the European Commission and IPCC 4th-7th. November 2013, Brussels, Belgium, 2013-11-04 to 2013-11-07, (CropM)
284. **Simulating wheat adaptation to climate change in Europe using an ensemble approach with impact response surfaces** (2015) Ruiz-Ramos M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
285. **Impacts of Climate Change on Agricultural Technology Management in the Transylvanian Plain, Romania** (2015) Rusu T. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
286. **State of Afairs in LiveM** (2013) Saetnan E. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM, LiveM)
287. **MACSUR LiveM - a knowledge-hub for integrated modelling of climate change impacts on livestock production systems: lessons learned and future developments** (2014) Saetnan E., Kipling P., Scollan D., Bartley D., Bellocchi G., Hutchings J. *et al.* @ Livestock, Climate Change and Food Security, 2014-05-19 to 2014-05-20, Madrid, Spain (LiveM)
288. **Are we building a better connected community** (2015) Saetnan E. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
289. **MACSUR: Modelling European Agriculture with Climate Change for Food Security** (2014) Salamon P., Banse M. and Köchy M. @ 23. World Outlook Conference, 2014-05-12 to 2014-05-13, Seville, Spain (Hub)
290. **Optimal Land-use Future Scenarios Nordic Area** (2014) Sandars D. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
291. **Understanding Europe's future ability to feed itself within an uncertain climate change and socio economic scenario space** (2015) Sandars D. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
292. **Optimal Land-use Future Scenarios Nordic Area** (2014) Sandars L. and Audsley E. @ TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway (Trade M)
293. **Uncertainty in simulating biomass yield and carbon-water fluxes from Euro-Mediterranean grasslands under climate changes** (2014) Sándor R., Ma S., Acutis M., Barcza Z., Ben T., H., Doro L. *et al.* @ International Livestock Modelling and Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (LiveM)
294. **Sensitivity and uncertainty analysis of grassland models in Europe and Israel** (2015) Sándor R. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR

Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom

295. **Ammonia and nitrous oxide emissions from grazing cattle in Kenya** (2015) Sanz-Cobena A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
296. **Agro Climate Calendar, a simple methodology to identify local adaptation for farm objectives** (2015) Schaap B.F., Reidsma P. and Verhagen J. @ Climate-smart agriculture. Global Science Conference, 2015-03-15 to 2015-03-18, Montpellier, France (CropM)
297. **Welcome Address of the Founder and Distinguished Chair of Natural Resource and Environmental Research Center** (2013) Schechter M. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
298. **Global Yield Gap Atlas; cereals in Europe** (2014) Schils R., Kersebaum K.C., Nieróbca A., Żyłowska K., Boogaard H., De Groot H. *et al*. @ 8. ESA Congress, 2014-08-25 to 2014-08-29, Debrecen, (CropM)
299. **Yield gap analysis of cereals in Europe supported by local knowledge** (2014) Schils R., Kersebaum K.C., Nieróbca A., Żyłowska K., Boogaard H., De Groot H. *et al*. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
300. **Yield gap analysis of cereals in Europe supported by local knowledge** (2015) Schils R. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
301. **The Food Equation": Taking a long/term View on World Agriculture, Climate Change and Food Security** (2014) Schmidhuber J. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
302. **Interactions between agricultural trade liberalisation and the environment - An analysis with a global land use model** (2013) Schmitz @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
303. **Linking bio-physical, bottom-up and top-down economic models to analyze climate change impacts and adaptation on Austrian agriculture.** (2013) Schönhart M., Koland O. and Schmid E. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
304. **Integrated impact analysis of agricultural adaptation and mitigation measures on landscape appearance, and biodiversity** (2013) Schönhart M., Kuttner M., Schauppenlehner T. and Schmid E. @ »Grenzen der Qualitätsstrategie im Agrarsektor« — 41. Jahrestagung der Schweizer Gesellschaft für Agrarwirtschaft und Agrarsoziologie und 23. Jahrestagung der Österreichischen, Gesellschaft für Agrarökonomie, ETH Zürich, 2013-09-12 to 2013-09-14, (TradeM)
305. **An integrated analysis on Austrian agriculture: Climate change impacts and adaptation measures.** (2013) Schönhart M., Mitter H., Schmid E., Heinrich G. and Gobiet A. @ 4. Annual AgMIP Workshop, 2013-10-28 to 2013-10-30, New York, U.S.A. (TradeM)
306. **Representative Agricultural Pathways (RAPs) for Austria: conceptual thoughts on its demand and stakeholder-driven development** (2017) Schönhart M., Mitter H., Sinabell F. and Schmid E. @ Conference on "Climate Action in Agriculture and Forestry", 2017-06-01, Brussels, Belgium (TradeM)
307. **Direct climate change impacts on cattle in Austria indicated by THI-models** (2014) Schönhart M. and Nadeem I. @ International Livestock Modelling and Research Colloquium, 2014-10-14 to 2014-10-16, Bilbao, Spain (LiveM)
308. **Integrated Assessment of Climate Change Mitigation and Adaptation Impacts at Field and Farm level in the Austrian Mostviertel Region.** (2014) Schönhart M., Schauppenlehner T., Kuttner M., Kirchner M. and Schmid E. @ TradeM International

Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway (TradeM)

309. **Integrated Land Use modelling of climate change impacts in two Austrian case study landscapes at field level** (2014) Schönhart M., Schauppenlehner T. and Schmid E. @ 14. EAAE Congress, 2014-08-26 to 2014-08-29, Ljubljana, Slovenia (TradeM)
310. **Das Mostviertel - die Fallstudie im Projekt MACSUR TradeM (The Mostviertel Region - the Austrian Regional Pilot Study in MACSUR - TradeM)** (2014) Schönhart M., Schmid E. and F. S. @ TradeM Stakeholder Workshop, 2014-03-24 to 2014-03-24, Vienna, Austria (TradeM)
311. **Integrated analysis of climate change adaptation and rural development in an Austrian case study, region.** (2013) Schönhart M., Schmid E. and Sinabell F. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
312. **Contributions from bio-eocnomic farm models to the analysis of climate change adaptation: lessons from MACSUR regional pilot studies** (2014) Schönhart M. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
313. **Integrated Assessment of Climate Change Mitigation and Adaptation Impacts at Field and Farm level in the Austrian Mostviertel Region** (2014) Schönhart M. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
314. **Analysis of climate change adaptation with bio-economic farm models: lessons from MACSUR regional pilot studies** (2015) Schönhart M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
315. **Integrated Assessment of Climate Change Mitigation and Adaptation Impacts at Landscape Level in the Austrian Mostviertel Region** (2015) Schönhart M. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
316. **Analysing stochastic dominance of soybean and maize production in Austria.** (2014) Seifried A., Sinabell F., Mitter H. and E. S. @ Lebensmittelversorgung, Lebensmittelsicherheit und Ernährungssouveränität Food security, safety and sovereignty, 24. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, Wien, 2014-09-25 to 2014-09-26, (TradeM)
317. **ELPIS: delivering local-scale climate scenarios for impact assessments. Impacts World 2013** (2013) Semenov M.A. and Stratonovitch P. @ Impacts World, International Conference on Climate Change Effects, 2013-05-27 to 2013-05-30, Potsdam,
318. **Adapting wheat for uncertain future.** (2014) Semenov M.A. and Stratonovitch P. @ 8. ESA Congress, 2014-08-25 to 2014-08-29, Debrecen, (CropM)
319. **Modelling predicts that heat stress, not drought, will increase vulnerability of wheat in Europe.** (2013) Semenov M.A. @ 4. InterDrought, 2013-09-02 to 2013-09-06, Perth, Western Australia, Australia (CropM)
320. **Delivering local-scale CMIP5-based climate scenarios for impact assessment in Europe.** (2014) Semenov M.A. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
321. **Validation of ELPIS baseline scenarios using ECA&D observed data** (2012) Semenov M.A. and Pilkington-Bennett S. @ European GeoSciences Union (EGU), General Assembly, 2012-04-22 to 2012-04-27, (CropM)
322. **Application of evolutionary algorithms for model calibration.** (2012) Semenov M.A. and Stratonovitch P. @ Genetic and Evolutionary Computation Conference (GECCO), 2012-07-07 to 2012-07-11, Philadelphia, U.S.A. (CropM)
323. **Heat tolerance in wheat identified as a key trait for increased yield potential in**

Europe under climate change (2015) Semenov M.A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom

324. **How volatile are farm incomes? The case of Italian farms** (2014) Severini S. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
325. **Effects of tillage, fertilizer and residue management on crop growth dynamics in winter wheat at Foulum, Denmark.** (2014) Sharif B. and Olesen J.E. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
326. **Probabilistic assessment of agroclimatic effects on winter rapeseed yield in Denmark.** (2014) Sharif B. and Olesen J.E. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
327. **Inter-comparison of statistical models for projecting winter oilseed rape yield in Europe under climate change** (2015) Sharif B. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
328. **Assessing The Impact Of Climate Change On Agriculture And A Water Economy With A Diverse Mix Of Water Types - The Israeli Case Study** (2014) Shechter M. @ World Congress of Environmental and Resource Economists, 2014-06-28 to 2014-07-02, Istanbul, Turkey (TradeM)
329. **The eocnomic impact of water scarcity under diverse water qualities and desalination policies** (2014) Shechter M. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
330. **An assessment of the post 2015 CAP reforms: winners and losers in Scottish farming.** (2014) Shrestha S., Vosough Ahmadi B., Thomson S. and Barnes A. @ 88. Annual Conference of the Agricultural Economics Society, 2014-04-09 to 2014-04-11, Paris, France (TradeM)
331. **Scottish beef and sheep farms - will they be affected under greening of the CAP** (2013) Shrestha S., Ahmadi B.V., Thomson S. and Barnes A. @ »Developing Integrated and Reliable Modeling Tools for Agricultural and Environmental Policy Analysis« — 133. EAAE Seminar, 2013-06-15 to 2013-06-16, Crete, Greece (LiveM)
332. **Comparing the cost effectiveness of GHG mitigation options on different Scottish dairy farm groups** (2015) Shrestha S. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
333. **Trans-SEC and the Tanzanian Case Studies Morogoro and Dodoma** (2013) Sieber S. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
334. **The Tanzanian case study in MACSUR II** (2015) Sieber S. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
335. **JPI FACCE Knowledge Hub - Modelle zur europäischen Landwirtschaft (Models for agriculture in Europe)** (2014) Sinabell F. and E. S. @ TradeM Stakeholder Workshop, 2014-03-24 to 2014-03-24, Vienna, Austria (TradeM)
336. **Exploring production and market risks in Austrian agriculture** (2014) Sinabell F., Mitter H. and Schmid E. @ 24. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 2014-09-25 to 2014-09-26, Vienna, Austria (TradeM)
337. **Integrated assessment of policy and climate change impacts: A case study on protein crop production in Austria** (2014) Sinabell F. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway

338. **Climate change and policy impacts on protein crop production: a case study on integrated modeling** (2015) Sinabell F. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
339. **Addressing the joint challenges of climate change and food security** (2015) Smith P. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
340. **Warmer, Wetter, Wilder? Climatic Evidence from the Grain Markets** (2014) Steen M. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
341. **Identification of fungi associated with dry rot of potato tubers** (2013) Stefańczyk E., Sobkowiak S. and Śliwka J. @ Classical and molecular approaches in pathogen and pest taxonomy, Warszawa Poland, 2013-09-10 to 2013-09-12, (CropM)
342. **Polish population of fungi belonging to Fusarium genus and associated with potato dry rot** (2013) Stefańczyk E., Sobkowiak S. and Śliwka J. @ Summer School of Bioinformatics, Poznań, Poland, 2013-08-19 to 2013-08-23, (CropM)
343. **Global land use response in agricultural sector models: estimating supply and area response in Argentina** (2013) Stocco L., Adenäuer M. and Zimmermann A. @ »Developing Integrated and Reliable Modeling Tools for Agricultural and Environmental Policy Analysis« — 133. EAAE Seminar, 2013-06-15 to 2013-06-16, Crete, Greece (TradeM)
344. **The role of CAP direct payment in the support and stabilisation of farm income: empirical evidences from a constant sample of Italian farms** (2015) Tantari A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
345. **Agricultural model for the Nile Basin Decision Support System** (2013) te Roller J. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
346. **Pesticide management in Scottish spring barley – insights from sowing dates** (2015) Topp C. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
347. **Synergies and trade-offs of adaptation and mitigation on dairy farms** (2015) Topp K. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
348. **Contamination of surface water bodies with biogenic substances, taking into account the impact of agriculture in the Western Carpathians.** (2012) Twardy S. @ Baltic Deal at Malopolska - training workshops for counselors within the Baltic Deal project. Agricultural Advisory Centre Malopolska. Karniowice, Poland., 2012-07-25 to 2012-07-25, (CropM)
349. **The ecological potential - sustainable development of rural areas in the Carpathians.** (2012) Twardy S. @ Third International Mountain Forum entitled Innovation in Mountainous Regions. Zakopane, Poland., 2012-10-10 to 2012-10-12, (LiveM, CropM)
350. **The usefulness of the research results conducted on the permanent grasslands for carrying out the pro-environmental management in mountain areas.** (2013) Twardy S. @ Priorities of sustainable rural development 2014-2020 in the light of scientific research. Institute of Technology and Life Sciences at Falenty, Poland., 2013-04-25 to 2013-04-26, (CropM)
351. **Comparison of Concentrations and Loads of Macronutrients Brought with Precipitation and Leaching from the Soil Profile** (2014) Twardy S. and Kopacz M. @ 7. Conference on Environmental Protection and Engineering, 2014-06-26 to 2014-06-27, Krakow, Poland (LiveM, CropM)

352. **Sustainable and durable development of mountain areas.** (2014) Twardy S. and Kopacz M. @ Workshops in 8 secondary schools - in accordance with the Project implementation schedule., 2014-05-09 to 2014-05-28, (LiveM, CropM)
353. **Green and blue water for the cultivation of tomato in Puglia. Patron Editore Bologna. 105-106. ISBN 978-88-555-3235-8.** (2013) Ventrella D. and Giglio L. @ Convegno "Agrometeorologia per la sicurezza ambientale ed alimentare", 2013-06-04 to 2013-06-06, Florence, Italy
354. **Climate change and nitrogen fertilization for winter durum wheat and tomato cultivated in Southern Italy** (2014) Ventrella D., Giglio L. and Charfeddine M. @ »The nitrogen challenge: building a blueprint for nitrogen use efficiency and food security« — 18. Nitrogen Workshop, 2014-06-30 to 2014-07-03, (CropM)
355. **Effects of climate change on soil fertility of a typical cropping system of Southern Italy** (2012) Ventrella D., Giglio L., Charfeddine M. and Castellini M. @ 12. Congress of the European Society for Agronomy, 2012-08-20 to 2012-08-24, Helsinki, Finland; pp. 480-481 *in* (*Ed*s, Stoddard F. and Mäkelä P.) University of Helsinki, Helsinki,
356. **Climate change impact on green and blue water consumptive use for winter durum wheat and tomato cultivated in Southern Italy** (2015) Ventrella D. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
357. **Cross-cutting results of session 3 on cross-theme studies** (2013) Viaggi D. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
358. **Modeling grassland with CATIMO - focus on the second cut** (2013) Virkajärvi P., Jing Q., Bélanger G., Baron V., Bonesmo H. and Young D. @ »Nordic forage model applications - predicting forage yield and quality in a variable and changing climate« — 455. NJF seminar, 2013-01-30 to 2013-01-31, Forssa, Finland (CropM)
359. **International Cooperation, World Food Affairs** (2013) Wacker F. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
360. **WP1 tasks – tasks of WP1 package** (2012) Waldemar B. @ The first meeting of the TradeM Steering Committee, 2012-09-05 to 2012-09-05, (TradeM)
361. **Methane oxidation in forest and fertilized soils** (2013) Walkiewicz A. and Brzezinska M. @ 12. International Workshop for Young Scientists BioPhys, 2013-05-21 to 2013-05-23, Lublin, Poland (CropM)
362. **Using ensembles of models in climate and crop modelling.** (2014) Wallach D., Mearns L.O., Asseng S. and Rötter R.P. @ 8. ESA Congress, 2014-08-25 to 2014-08-29, Debrecen, (CropM)
363. **Causes for uncertainty in simulating wheat response to temperature.** (2014) Wang E. and et A. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)
364. **Introduction and purpose of meeting** (2014) Wilson A. @ »Modelling interactions between climate and livestock pathogen transmission« — LiveM Workshop, 2014-01-22 to 2014-01-22, (LiveM)
365. **The impact of climate change on food security – results from a European perspective** (2013) Witzke P., Frank S., Zimmermann A., Havlík P. and Ciaian P. @ 1. International Conference on Global Food Security, 2013-09-29 to 2013-10-02, Noordwijkerhout, The Netherlands (TradeM)
366. **Climate Modelling and Sub-seasonal to Seasonal Prediction: Opportunities and Challenges** (2015) Woolnough S. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom

367. **Using SPACSYS to analyse the interaction between plant and environment in a systems approach** (2013) Wu L. and Whitmore A.P. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
368. **Effects of climatic factors, drought risk and irrigation requirement on maize yield in the northeast farming region of China over 1961 to 2010** (2015) Yin X. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
369. **Modelling regional land use and climate change adaptation strategies in NorthernGermany** (2013) Zander P. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
370. **Modelling regional land use and climate change adaptation strategies in Northern Germany** (2013) Zander P., Hecker J.-M., Hufnagel J., Porwollik V. and Svoboda N. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
371. **Modelling regional agricultural land use and climate change adaptation strategies in 4 case study regions Northern Germany** (2014) Zander P. @ »FACCE MACSUR Reports« — 4. TradeM International Workshop, 2014-11-25 to 2014-11-27, Hurdalsjø, Norway
372. **Scenarios of regional agricultural land use under climate change for 4 case study regions in Northern Germany** (2015) Zander P. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom
373. **Economic analysis of Water Harvesting Reservoirs with Internal Water Reallocation: a Case Study in Emilia Romagna, Italy.** (2013) Zavalloni M., Raggi M. and Viaggi D. @ Italian Society of Economists, SIE 54th annual conference. Bologna, Italy, 2013-10-24 to 2013-10-26, (TradeM)
374. **Water markets for climate change.** (2013) Zavalloni M., Raggi M. and Viaggi D. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel
375. **Exploring yield trends and gaps in the EU** (2014) Zimmermann A. and Adenäuer M. @ »Economics of integrated assessment approaches for agriculture and the food sector« — MACSUR TradeM International Workshop, 2014-11-25 to 2014-11-27, Müncheberg, Germany (TradeM)
376. **Food Security Assessment with CAPRI** (2013) Zimmermann A., Britz W., Adenäuer M. and Heckelei T. @ »Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security« — MACSUR TradeM Workshop, 2013-03-03 to 2013-03-05, Haifa, Israel (TradeM)
377. **MACSUR-TradeM Baseline Scenario in CAPRI** (2013) Zimmermann A. and Witzke P. @ »Global Food Security Challenges – European Research approaches« — MACSUR TradeM Workshop, 2013-11-18 to 2013-11-20, Müncheberg, Germany (TradeM)
378. **Crop yield trends and variability in the EU** (2015) Zimmermann A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom (TradeM)
379. **Climatic condition for yielding of maize in Poland in the period 1971-2010.** (2014) Żyłowska K., Nieróbca A., Kozyra J. and Syp A. @ »Modelling climate change impacts on crop production for food security« — CropM International Symposium and Workshop, 2014-02-10 to 2014-02-12, Oslo, Norway (CropM)

+ Presentations held at Kickoff meeting

Phase 2

1. **Effects of nutrient supply on mitigation in a long-term experiment.** (2017) Aranyos J.T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
2. **The feed story for dairy production systems under climate change** (2017) Bannink A., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
3. **Multifractal properties of spatially aggregated meteorological data – a regional study.** (2016) Baranowski P., Krzyszczak J., Hoffmann H. and Sławiński C. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
4. **Assessing the Importance of Accounting for the Impacts of Global Climate Change on Relative Competitiveness and International Trade in the Agricultural Sector** (2017) Beach R., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
5. **Creating a dynamical farmer population model at country scale level.** (2017) Beckers V., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
6. **Land surface interactions modeling (Agent-Based Model – Dynamic Vegetation Model) over Belgium: current state and crop yield assessment for future (at the Belgian and European scales).** (2017) Beckers V., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
7. **Sensitivity of a grassland model ensemble to climate change factors: the MACSUR approach.** (2017) Bellocchi G., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
8. **Identity-based analysis of GHG emissions from agriculture.** (2016) Bennetzen E., Smith P. and Porter J.R. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
9. **Representative Agricultural Pathways for Europe** (2016) Biewald A. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
10. **Data driven dairy decision for farmers** (2016) Blanco-Penedo et al. I. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
11. **Markov chain as a model of daily total precipitation and a prediction of future natural events** (2015) Bojar W., Żarski J., Knopik L., Kuśmierek-Tomaszewska R., Sikora M. and Dzieża G. @ FACCE MACSUR Joint Workshops 2015, 2015-10-27 to 2015-10-30, Braunschweig, Germany (CropM, TradeM)
12. **Markov Chain as a Model of Daily Total Precipitation and a Prediction of Future Natural Events.** (2016) Bojar W., Żarski J., Knopik L., Kuśmierek-Tomaszewska R., Sikora M. and Dzieża G. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM, TradeM)
13. **Kujawy & Pomorze regional XC approach** (2016) Bojar W., Knopik L., Żarski J., Kuśmierek-Tomaszewska R., Żarski W., Sikora M. *et al.* @ MACSUR2 FINAL CONFERENCE IN BERLIN: 22-24/05/2018, 2016-05-23 to 2016-05-25, (XC)
14. **The problem of a series of days without rainfall in a view of efficiency of agricultural output under climate change.** (2017) Bojar W., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
15. **Sentinel site data for crop model improvement - definition and characterization** (2015) Boote K.J., Porter C., Jones J.W., Thorburn P.J., Kersebaum K.C., Hoogenboom G. *et al.* @ 7. Improving Modeling Tools to Assess Climate Change Effects on Crop Response,

Advances in Agricultural Systems Modeling, U.S.A.; p. *in* (*Ed*s, Hatfield J.L. and Fleisher D.) ASA, CSSA, and SSSA, Madison, WI, Advances in Agricultural Systems Modeling. *doi*: 10.2134/advagricsystmodel7.2014.0019

16. **Modelling the impacts of seasonal drought on herbage growth under climate change** (2016) Calanca P. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
17. **Uncertainties of different weather data input on three multi-models simulations of yield and water use** (2016) Cammarano D., Rivington M., Matthew K.B., Miller D.G. and Bellocchi G. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
18. **Comparing annual wheat yield sensitivity to climate at different sites using impact response surfaces.** (2017) Carter T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
19. **Cost-effectiveness of greenhouse gases mitigation measures in the Andean agriculture: an economic and environmental perspective** (2017) Cayambe J., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany
20. **What does the Paris Agreement mean for crop-climate modelling?** (2016) Challinor A. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
21. **A new version of ORCHIDEE-GM with coupled carbon-nitrogen-phosphorus cycles: parameter calibration and model evaluation.** (2017) Chang J., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
22. **Impact of maize management variability modeled as decision rules on yield and Drainage at the regional scale.** (2016) Constantin J., Bergez J.-E., Raynal H., Hoffmann H. and Ewert F. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
23. **Integrating the impact of climate change, price changes and recent CAP orientation on Mediterranean farming systems** (2017) Cortignani R., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
24. **The role of spatial patterns of soil types for data aggregation effects in crop modelling** (2016) Coucheney E., Eckersten H., Jansson P.E., Ewert F., Gaiser T., Hoffmann H. *et al*. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
25. **Spatial aggregation for crop modelling at regional scales: the effects of soil variability** (2017) Coucheney E., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
26. **Watch It Grow, an innovative platform for a sustainable growth of the Belgian potato production.** (2017) Curnel Y., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
27. **Multi-criteria tools for the assessment and implementation of geographically targeted measures to mitigate nutrient losses and adapt to climate change - examples from Denmark** (2017) Dalgaard T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
28. **Wheat grain yield and water use efficiency improved under climate change condition in semi-arid regions as predicted by APSIM crop model** (2017) Deihimfard R., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
29. **Recovering the costs of irrigation water with different pricing methods under Climate Change: insights from a Mediterranean case study** (2017) Dell'Unto D., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
30. **Food and nutrition security in Europe – a quantification of multi-stakeholder scenarios**

(2016) Deppermann et al. A. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany

31. **Exploring grass-based beef production under climate change by integration of grass and cattle growth models** (2016) Van der Linden A. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
32. **User co-design of state-of-the-art climate simulations: towards a better-informed agricultural sector** (2017) van der Linden E., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
33. **Assessing the role of farm-level adaptation in limiting the local economic impacts of more frequent extreme weather events in Dutch arable farming systems.** (2017) Diogo V., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
34. **World food supply and water resources: an agricultural-hydrological perspective (AgroHyd)** (2016) Drastig et al. K. @ »Modelling Grassland-Livestock Systems under Climate Change« — LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
35. **Does the effect of the choice of crops has a stronger influence on regional water resources than those of climate variability** (2017) Drastig K., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
36. **Using crop modelling to determine the meteorological conditions to be implemented in an Ecotron facility - Prerequisites to improve the experimental design** (2017) Dumont B., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
37. **Economic assessment of greenhouse gas mitigation on livestock farms** (2016) Eory et al. V. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
38. **Farm management and sustainability indicators: What and how to include in farm scale models** (2016) Eory V. and Hutchings N. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
39. **Scaling up crop models for large area application.** (2015) Ewert F., Hoffmann H. and WP3 partners @ AgMIP and partners session at tripartite meetings (ASA-CSSA-SSA), 2015-11-15 to 2015-11-17, Minneapolis, U.S.A. (CropM)
40. **Fuzzy-logic based multi-site crop model evaluation in Europe** (2016) Ferrise R., Bindi M., Acutis M. and Bellocchi G. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
41. **Probabilistic assessment of adaptation options from an ensemble of crop models: a case study in the Mediterranean** (2017) Ferrise R., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
42. **Towards sustainable livestock production systems: Analyzing ecological constraints to grazing intensity** (2016) Fetzel et al. T. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
43. **Spatially explicit estimation of climate change related heat stress on the milk production of dairy cows in the United Kingdom** (2017) Fodor N., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
44. **Lifetime nitrogen efficiency of dairy cattle: Model description and sensitivity analysis** (2016) Foskolis A. and Moorby J. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-

15 to 2016-06-16, Potsdam, Germany

45. **Classifying simulated wheat yield responses to changes in temperature and precipitation across a European transect.** (2016) Fronzek S., Pirttioja N., Carter T.R., Bindi M., Hoffmann H., Palosuo T. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
46. **Case 5: Design future climate-resilient barley cultivars using crop model ensembles** (2016) Fulu T. @ AdaptationFutures, 10-13 May 2016, Rotterdam, Netherlands
47. **Heat stress effects in milk yield and milk traits at farm scale** (2016) Galán et al. E. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
48. **Modelling GHG mitigation co-benefits and trade-offs after implementing adaptation measures to adapt from heat stress in dairy farms** (2017) Galán E. @ 3. European Climate Change Adaptation (ECCA) Conference, 2017-06-05 to 2017-06-09, Glasgow, United Kingdom (LiveM)
49. **Regional adaptation of crop rotations as key factor to improve sustainability - integrative assessment of agricultural, ecological and economic impacts** (2017) Glemnitz M., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
50. **iPot & BELCAM : two precision agriculture projects for the potato crop** (2016) Goffart J.-P. @ EAPR (Agro-Physiology Section), 2016-09-26 to 2016-09-29, (CropM)
51. **Plant trait-based assessment of the Pasture Simulation model** (2016) Graux A.-I., Klumpp K., Ma S., Martin R. and Bellocchi G. @ 8. International Congress on Environmental Modelling and Software, 2016-07-10 to 2016-07-14, Toulouse, France (LiveM)
52. **Implications of input data aggregation on upscaling of soil organic carbon changes** (2017) Grosz B., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
53. **Simulation of the the landscape scale nitrogen cycling and redistribution with the coupled hydrology biogeochemistry model CMF-LandscapeDNDC.** (2016) Haas E., Klatt S., Kiese R., Butterbach-Bahl K., Kraft P. and Breuer L. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
54. **Responses of soil nitrous oxide emissions and nitrate leaching on climate, soil and management input data aggregation: a biogeochemistry model ensemble study.** (2016) Haas E., R. Kiese, Klatt S., Hoffmann H., Zhao G., Ewert F. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
55. **Impacts of Climate Change Adaptation Options in Agriculture on Soil Functions: Examples from European Case Studies** (2017) Hamidov A., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
56. **Index-based costs of livestock production (INCAP.I) in Austria – the suckler cow and beef calf production activity** (2016) Heinschink et al. K. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
57. **Drivers and trends for agricultural soil management – a foresight study for Germany** (2017) Helming K., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
58. **An integrated modelling approach to assess optimisation potentials for cattle housing climate** (2016) Hempel et al. S. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
59. **Effect of spatial averaging on multifractal properties of meteorological time series**

(2016) Hoffmann H., Baranowski P., Krzyszczak J. and Zubik M. @ »European GeoSciences Union (EGU), General Assembly 2016Geophysical Research Abstracts« — 18. European GeoSciences Union (EGU), General Assembly, 2016-04-17 to 2016-04-22, Vienna, Austria, (CropM)

60. **Soil data aggregation effects in regional yield simulations** (2016) Hoffmann H., Zhao G., Asseng S., Bindi M., Cammarano D., Constantin J. *et al.* @ 6. AgMIP Global Workshop, 2016-06-28 to 2016-06-30, Montpellier, France,
61. **Analysing data aggregation effects on large-scale yield simulations.** (2016) Hoffmann H., Zhao G., Asseng S., Bindi M., Cammarano D. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
62. **Extending the BASGRA model for timothy grass with functions to simulate impacts of climate change and sward management on yield and nutritive value.** (2017) Höglind M., Persson T. and Van Oijen M. @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
63. **Can we be certain about future landuse change in Europe** (2017) Holman I., Janes V., Sandars D. and Brown C. @ 3. European Climate Change Adaptation (ECCA) Conference, 2017-06-05 to 2017-06-09, Glasgow, United Kingdom (TradeM)
64. **How do models treat climate change adaptation?** (2016) Holman I. @ AdaptationFutures, 10-13 May 2016, Rotterdam, Netherlands
65. **Can we be certain about future landuse change in Europe? A multi-scenario, integrated-assessment analysis** (2017) Holman I., Brown C., Janes V. and Sandars D. @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
66. **Wanting it all - is a stakeholders' Vision for Europen comaptaible with meeting Europe's food demand under high end climate change** (2017) Holman I. and Frantzeskaki @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
67. **What are the risks of food price changes? A time series analysis** (2016) Hoveid Ø. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
68. **What are the risks of food price changes? A time series analysis.** (2017) Hoveid Ø., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
69. **Does collaborative farm-scale modelling address current challenges and future opportunities** (2017) Hutchings N., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
70. **Rethinking farm-scale modelling to meet new challenges and possibilities** (2017) Hutchings N., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
71. **Impacts of climate change on SOC dynamic and crop yield of Italian rainfed wheat-maize cropping systems managed with conventional or conservation tillage practices** (2016) Iocola I., Antichi D., Basso B., Dalla Marta A., Danuso F., Doro L. *et al.* @ »The agronomical research towards 2030: general objectives of sustainable development« — Annual Conference of Italian Society of Agronomy, 2016-09-20 to 2016-09-22, Sassari, Italy (CropM)
72. **Climate change adaptation in maize production in Serbia** (2016) Jancic M. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
73. **The abiotic and biotic impacts of climate change on potato agriculture** (2016) Jennings S., Koehler A.-K., Sait S. and Challinor A. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
74. **Integrated modelling of agricultural adaptation and the value of precipitation information in a semi-arid Austrian region** (2017) Karner K., (submitter) @ MACSUR

Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)

75. **Modelling cover crop effects in a corn-soybean rotation on water and nitrogen tile drain fluxes** (2016) Kersebaum K.C., Malone R.W., Kaspar T.C., Ma L. and Jaynes D.B. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
76. **Comparing the site sensitivity of crop models using spatially variable field data from precision agriculture.** (2017) Kersebaum K.C., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
77. **Modelling plant disease and pest effects on crop performances.** (2017) Kersebaum K.C., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
78. **Developing a framework for critical assessment of stakeholder engagement activities.** (2017) Kipling R., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
79. **Stakeholder engagement and the perceptions of researchers: How agricultural modellers view challenges to communication** (2016) Kipling R. and Özkan Ş. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
80. **MACSUR – Modelling European Agriculture with Climate Change for Food Security** (2016) Köchy M. @ FACCE Cluster 2 Workshop "Support by policy and research for adaptation to climate change in farming systems and food-related industries", 2016-10-19 to 2016-10-20, Bonn, Germany (Hub)
81. **MACSUR?3! The future of MACSUR** (2016) Köchy M. @ »Modelling Grassland-Livestock Systems under Climate Change« — LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany (Hub)
82. **Progress in Cross-cutting activities in FACCE MACSUR** (2016) Köchy M. @ FACCE MACSUR XC Workshop 2016, 2016-10-13, Gardermoen, Norway (Hub)
83. **German agricultural economy baseline (Thünen baseline): Users, process, experience** (2016) Köchy M., Banse M. and Offermann F. @ FACCE Cluster 2 Workshop "Support by policy and research for adaptation to climate change in farming systems and food-related industries", 2016-10-19 to 2016-10-20, Bonn, Germany (Hub)
84. **Impact of heat stress and water deficit on wheat gass exchange (in polish)** (2015) Kondracka K., Nosalewicz A. and Lipiec J. @ VIII symposium of PhD students "Current problems in Life Sciences", 2015-10-29, (CropM)
85. **Intercomparison of timothy models in northern countries** (2016) Korhonen P., Palosuo T., Höglind M., Persson T., Oijen M.V., Jégo G. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
86. **Process-based modelling of the nutritive value of forages: a review** (2017) Korhonen P., Virkajärvi P., Bellocchi G., Curnel Y., Wu L., Jego G. *et al.* @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
87. **The impact of climate change on maize phenology in Poland under 10 different RCM scenarios** (2017) Król A., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
88. **Spatial analysis of multifractal spectra of the MERRA II meteorological time series** (2017) Krzyszczak J., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
89. **Impact of climate aggregation over different scales on regional NPP modelling** (2016) Kuhnert M. and the MACSUR scaling group team @ »Geophysical Research AbstractsEuropean GeoSciences Union (EGU), General Assembly 2016« — 18. European GeoSciences Union (EGU), General Assembly, 2016-04-17 to 2016-04-22, Vienna, Austria (CropM)

90. **Effects of climate data aggregation on regional net primary production modelling** (2016) Kuhnert M., Yeluripati J., Smith P., Hoffmann H., Constantin J., Coucheney E. *et al.* @ International Congress on Environmental Modelling and Software, 2016-07-10 to 2016-10-13, Toulouse, France (CropM)
91. **Impacts of soil and weather data aggregation in spatial modelling of net primary production of croplands** (2016) Kuhnert M., Yeluripati J., Smith P., Hoffmann H., Constantin J., Coucheney E. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-03-15 to 2016-03-17, Berlin, Germany (CropM)
92. **Effect of different levels of calibration in rotation schemes simulated in five European sites in a multi-model approach.** (2016) Lana M., Kersebaum K.C., Kollas C., Yin X., Nendel C., Manevski K. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
93. **Comparison of two calibration levels on the simulation of soil water content using nine crop models under different rotation schemes in five European sites.** (2017) Lana M., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
94. **Modelling heat stress on livestock: how can we reach long-term and global coverage** (2016) Leclère D. and Havlík P. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
95. **Case 2: More strategic farm management needed to adapt to climate change in the North Savo region** (2016) Lehtonen H. @ AdaptationFutures, 10-13 May 2016, Rotterdam, Netherlands
96. **Evaluating competitiveness of clover-grass as a resilient feed production option in Finland** (2016) Lehtonen H. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
97. **Modelling of carbon cycle in grassland ecosystems of diverse water availability using Biome-BGCMuSo.** (2017) Lellei-Kovács E., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
98. **Assessment of soil and climate change data aggregation impact on crop yield simulation: from local to regional study in NRW, Germany** (2017) Maharjan G.R., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
99. **Modelling the implications of variation in phenology and leaf canopy development for wheat adaptation to climate change.** (2017) Manschadi A., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
100. **Assessment of viticulture and winemaking vulnerability in the expected conditions of climate change in Ararat valley and foothills.** (2017) Margaryan V., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
101. **The vulnerability and risk assessment of agricultural crops in the conditions of expected climate change in the Republic of Armenia.** (2017) Margaryan V., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
102. **Assessing the impact of agro-climatic factors and farm characteristics on the yield variation of the Norwegian fruit sector** (2016) Marton T. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
103. **Observed Crop-Yield Response Economic and Agro-climatic Factors in Austria - a Spatial Analysis** (2017) Marton T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
104. **A pan-European analysis of the spatio-temporal patterns of yield gap and abiotic stresses for wheat** (2017) Martre P., (submitter) @ MACSUR Science Conference, 2017-

05-22 to 2017-05-24, Berlin, Germany (CropM)

105. **Is agriculture off the hook in the EU's 2030 Climate Policy** (2016) Matthews A. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
106. **INNO Mil-CH4 GHG Emissions from Milk Production** (2016) Menardo et al. S. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
107. **Laboratory and field scale: two approaches for the evaluation of GHG emissions from dairy cows** (2017) Menardo S., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
108. **Opportunities for soil carbon sequestration under old and new grazed grassland in the Netherlands.** (2017) Van Middelkoop J., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
109. **Knowledge and meat reduction: The case of "Meat Free Monday" in the Norwegian Armed Forces** (2017) Milford A. @ »Forskermøtet 2017« — 39. Annual Meeting of the Norwegian Association of Economists, 2017-01-03 to 2017-01-04, Oslo, Norway (TradeM)
110. **Economic and cultural drivers for national meat consumption levels** (2017) Milford A. @ 3. Global Food Symposium, 2017-05-28 to 2017-05-29, Göttingen, Germany (TradeM)
111. **Is a green tax on red meat a feasible strategy to achieve Norwegian GHG-emission targets for agriculture** (2017) Mittenzwei K., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
112. **Web-based service of farm-level future climate and agro-information with RCP climate change scenarios** (2017) Moon K.H., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
113. **Sustainable agricultural intensification: indicators and metrics for multi-scale modeling.** (2017) Mouratiadou I., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
114. **Impact of Climate Change on the milk production of dairy cows in the United Kingdom** (2017) Fodor N., Foskolos A., Topp K. and Foyer C. @ 3. European Climate Change Adaptation (ECCA) Conference, 2017-06-05 to 2017-06-09, Glasgow, United Kingdom (CropM, LiveM)
115. **Soil nitrogen mineralisation simulated by crop models across different environments and the consequences for model improvement** (2016) Nendel C., Thorburn P., Melzer D., Cerri C.E.P., Claessens L., Aggarwal P.K. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
116. **Addressing uncertainty in model input and evaluation data** (2016) Nicklin K. and Challinor A. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
117. **Framework of stochastic gross margin volatility modeling of crop rotation with farm management practices** (2016) Niemi J. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
118. **Wheat performance under drought as accompanied by aluminium toxicity or heat stress** (2016) Nosalewicz A., Siecińska J., Lipiec J. and Kondracka K. @ »Soil, Plant & Climate« — 11. International Conference on Agrophysics, 2016-09-26 to 2016-09-28, (CropM)
119. **Comparison of wheat models and their sensitivity towards tillage and N fertilization with different calibration approaches.** (2016) Olesen J.E., Sharif B., Plauborg F., Yin X., Bindi M., Doro L. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
120. **Climate related challenges and possibilities for the dairy industry.** (2017) Olesen J.E.

@ 44. Nordic Dairy Congress, 2017-06-07 to 2017-06-09, (LiveM)

121. **Observed impacts and adaptation in European cropping systems** (2017) Olesen J.E., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
122. **Climate-neutralizing managed landscapes in Sweden.** (2017) Olin S., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
123. **Targeting and prioritization of interventions for reducing enteric methane emissions: findings and lessons from 13 countries.** (2017) Opio C., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
124. **How does the projected climate change impact on dry matter yields, greenhouse gas emissions and economics in Norwegian dairy farming systems** (2017) Özkan Gülzari Ş., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
125. **How to achieve higher yield levels in North Savo – means and challenges indicated by farmers.** (2017) Palosuo T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
126. **Comparing the performance of nutritive value predictions in three timothy models** (2017) Persson T., Höglind M., Van Oijen M., P. K., Palosuo T., Jégo G. *et al.* @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
127. **iPot: Improved potato monitoring in Belgium using remote sensing and crop growth modelling** (2016) Piccard I., Gobin A., Curnel Y., Goffart J.-P., Planchon V., Wellens J. *et al.* @ »Geophysical Research Abstracts« — 18. European GeoSciences Union (EGU), General Assembly, 2016-04-17 to 2016-04-22, Vienna, Austria (CropM)
128. **Climate and animal monitoring for adapted smart dairy barns** (2017) Pinto S. @ 3. European Climate Change Adaptation (ECCA) Conference, 2017-06-05 to 2017-06-09, Glasgow, United Kingdom (LiveM)
129. **Using impact response surfaces to analyse the likelihood of impacts on crop yield under a changing climate.** (2017) Pirttioja N., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
130. **Effect of climate changes on plant disease under simulated conditions: challenges and limits** (2017) Pugliese M., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
131. **Scenario analysis of alternative management options on the forage production and greenhouse gas emissions in Mediterranean grasslands** (2016) Pulina A., Bellocchi G., Seddaiu G. and Roggero P.P. @ 116. Cahiers Options Méditerranéennes, 19th Meeting of the Sub-Network on Mediterranean Pastures of the FAO-CIHEAM International Network for the Research and Development of Pastures and Fodder Crops, 2016-06-14 to 2016-06-16, Zaragoza, Spain; pp. 263-266 19th Meeting of the Sub-Network on Mediterranean Pastures of the FAO-CIHEAM International Network for the Research and Development of Pastures and Fodder Crops.
132. **Future climate change, yield variation, and impacts on farm management: a case study at a pilot regions in Finland** (2017) Purola T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
133. **Evaluation of CERES Wheat and Rice Model for changing Climatic Conditions in Haryana, India** (2017) Rana M., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
134. **Integrated assessment of farm level adaptation in Flevoland, the Netherlands: what did we learn from multiple methods and model chains** (2017) Reidsma P., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
135. **Data aggregation does not reduce signals of heat and drought stress in large area yield simulations.** (2016) Rezaei E.E., Siebert S. and Ewert F. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)

136. **Analyzing the impact of changing size and composition of a crop model ensemble** (2017) Rodríguez A., Ruiz-Ramos M., Palosuo T., Ferrise R., Lorite I.J., Bindi M. *et al.* @ European GeoSciences Union (EGU) General Assembly, 2017-04-23 to 2014-04-28, (CropM)
137. **Effect of changing size and composition of a crop model ensemble on impact and adaptation response surfaces** (2017) Rodríguez A., Ruiz-Ramos M., Palosuo T., Ferrise R., Lorite I.J., Bindi M. *et al.* @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
138. **Managing Agricultural Greenhouse Gases Network (MAGGnet): Exploring Greenhouse Gas Mitigation Potential of Cropland Management Practices** (2016) Roggero P.P. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
139. **Assessment of climate change impacts on SOC dynamic in rainfed cereal cropping systems managed with contrasting tillage practices using a multi model approach** (2017) Roggero P.P., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
140. **Modelling nitrous oxide emissions of high input maize crop systems** (2017) Roggero P.P., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
141. **Effects of grassland management on the global carbon cycle.** (2017) Rolinski S., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
142. **Modelling the impact of rural frontier migration on tropical deforestation.** (2017) Van Rompaey A., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
143. **Introduction to MACSUR — methodology for integrated assessment** (2016) Rötter L.R. @ AdaptationFutures, 10-13 May 2016, Rotterdam, Netherlands
144. **Analysis of crop yield variability and yield gaps for maize and wheat in diverse climatic zones.** (2016) Rötter R.P., J.H., Kassie B.T., Paff K., Palosuo T., C.Y. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
145. **Yield gap and variability analysis for different aro-technologies for maize and wheat (YGV study)** (2015) Rötter R.P., Höhn J.K., Palosuo T., Kassie B.T., Paff K., Tao F. *et al.* @ 2. Global Food Security Conference, 2015-10-10- to 2015-10-15, Ithaca, U.S.A. (CropM)
146. **Impact response surface analysis of temperature and precipitation for wheat along a European transect** (2015) Rötter R.P., Pirttioja N.K., Fronzek S., Carter T., Palosuo T. and et al. @ AgMIP and partners session at tripartite meetings (ASA-CSSA-SSA), 2015-11-15 to 2015-11-17, Minneapolis, U.S.A.
147. **Parametrization of a crop model using a regional agronomical database: rice in Camargue with STICS.** (2016) Ruget F., Buis S., Irfan K., Delmotte S., Mouret J.-C., Ridaura S.L. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
148. **Adaptation response surfaces from an ensemble of wheat projections under climate change in Europe** (2016) Ruiz-Ramos M., Ferrise R., Rodríguez A., Lorite I.J., Pirttioja N., Fronzek S. *et al.* @ Geophysical Research Abstracts. European GeoSciences Union (EGU), General Assembly, 2016-04-17 to 2016-04-22, Vienna, Austria (CropM)
149. **Wheat yield potential in Europe under climate change explored by adaptation response surfaces** (2016) Ruiz-Ramos M., Ferrise R., Rodríguez A., Lorite I.J., Tao F., Pirttioja N. *et al.* @ 6. AgMIP Global Workshop, 2016-06-28 to 2016-06-30, Montpellier, France (CropM)
150. **An ensemble of projections of wheat adaptation to climate change in europe analyzed with impact response surfaces.** (2016) Ruiz-Ramos M., Ferrise R., Rodríguez A., Lorite

I.J., Tao F., N.Pirttioja *et al*. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)

151. **Impacts of climate change on agricultural technology management in the Transylvanian Plain, Romania** (2016) Rusu T. @ 7 (5). Journal of Earth Science & Climatic Change, 5th International Conference on Earth Science & Climate Change, 25-27 July 2016, Bangkok, Thailand; p. Suppl. 96 5th International Conference on Earth Science & Climate Change. *doi*: 10.4172/2157-7617.C1.025
152. **Effects of Tillage Practices on Soil Organic Carbon and Soil Respiration** (2016) Rusu T., Moraru P.I., Bogdan I. and Pop A.I. @ European GeoSciences Union (EGU) General Assembly, 2016-04-17 to 2016-04-22, (CropM)
153. **Heat waves during number of grain determination reduce yield in different cultivars of durum wheat.** (2016) Sanctis G.D., Toreti A., Belocchi A. and Quaranta F. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
154. **A comparison of greenhouse gas (GHG) emissions from dairy farms by four systems models with eight agro-climatic scenarios** (2016) Sandars et al. D. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
155. **A scenario-neutral approach to understanding the regional land use change and food supply consequences of future climate and socio economic change** (2017) Sandars D.L., Audsley E. and Holman I. @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
156. **Global Research Alliance on Greenhouse Gases - benchmark and ensemble crop and grassland model estimates** (2016) Sándor et al. R. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
157. **Yield gaps of cereals across Europe.** (2017) Schils R., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
158. **Integrated Assessment of Climate Change Impacts on Farms and Ecosystems in a Grassland Dominated Austrian Landscape** (2016) Schönhart et al. M. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
159. **Climate change and the policy agenda in Austria** (2015) Schönhart M. @ FACCE MACSUR Joint Workshops 2015, 2015-10-27 to 2015-10-30, Braunschweig, Germany, (TradeM)
160. **Contributions of MACSUR bio-economic farm models to the analysis of ESS under climate change: lessons from European regional pilot studies** (2015) Schönhart M. @ FACCE MACSUR Joint Workshops 2015, 2015-10-27 to 2015-10-30, Braunschweig, Germany, (TradeM)
161. **Case 1: Integrated assessment of climate change mitigation and adaptation trade-offs in Austria** (2016) Schönhart M. @ AdaptationFutures, 10-13 May 2016, Rotterdam, Netherlands (TradeM)
162. **Evidenz veränderter zukünftiger landwirtschaftlicher Risiken durch Klimawandel in der wissenschaftlichen Literatur** (2016) Schönhart M. @ AWI-Seminar „Risiken und Risikomanagement in der Landwirtschaft“, 2016-12-05 to, Vienna, Austria (TradeM)
163. **Contributions from bio-economic farm models to the analysis of climate change adaptation: lessons from European regional pilot studies** (2015) Schönhart M., Dono G., Hoveid Ø., Lehtonen H. and Zander P. @ 29. International Conference of Agricultural Economists, 2015-08-08 to 2015-08-14, Milan, Italy, (TradeM)
164. **Integrated assessment of climate change impacts on farms and ecosystems in a grassland dominated Austrian landscape** (2016) Schönhart M., Schaumberger A., Sinabell F. and Schmid E. @ LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany, (TradeM)

165. **Integrated landscape modelling of climate change impacts, mitigation and adaptation policies in Austria – results from a cropland-dominated case study** (2015) Schönhart M., Schauppenlehner T., Kuttner M., Kirchner M. and Schmid E. @ International Scientific Conference Agrarian Perspectives XXIV and 25th Annual Conference of the Austrian Society of Agricultural Economics, 2015-09-16 to 2015-09-18, Prague, Czech Republic, (TradeM)
166. **Institute for Prospective Technological Studies (IPTS), Sevilla.** (2016) Schönhart M. and Schmid E. @ Global Land Programme Open Science Meeting, 2016-10-24 to 2016-10-27, Beijing, China (TradeM)
167. **Integrated modelling to quantify impacts of +1.5°C and uncertain precipitation sums on Austrian agriculture** (2017) Schönhart M. and Schmid E. @ 3. European Climate Change Adaptation (ECCA) Conference, 2017-06-05 to 2017-06-09, Glasgow, United Kingdom (TradeM)
168. **Rural development policies in the EU** (2015) Schönhart M. and Sinabell F. @ FACCE MACSUR Joint Workshops 2015, 2015-10-27 to 2015-10-30, Braunschweig, Germany, (TradeM)
169. **Integrated assessment of climate change impacts on a grassland dominated Austrian landscape** (2015) Schönhart M., Sinabell F. and Schmid E. @ 150. EAAE Seminar, 2015-10-22 to 2015-10-23, Edinburgh, United Kingdom, (TradeM)
170. **Integrated impact modelling of climate change and adaptation policies on land use and water resources in Austria"** (2017) Schönhart M., Zessner M., Blaschke A., Parajka J., Hepp G., Strenn B. *et al.* @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
171. **Uncertainties from Climate Change on Farms and Ecosystem Services of a Grassland Dominated Austrian Landscape** (2016) Schönhart M. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
172. **Representative Agricultural Pathways (RAPs) for Austria: conceptual thoughts on its demand and stakeholder-driven development.** (2017) Schönhart M., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (TradeM)
173. **Assessing priorities for enhancing adaptive capacity of agricultural systems to climate change using fuzzy logic-based approaches** (2017) Seddaiu G., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
174. **How is crop growth model calibration performed? Results of a survey.** (2017) Seidel S.J., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
175. **Designing wheat ideotypes for a changing climate.** (2016) Semenov M.A. and Stratonovitch P. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
176. **Increasing wheat yield potential and stability under climate change will require tolerance to drought during reproductive development** (2017) Semenov M., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
177. **Modelling GHG mitigation co-benefits and trade-offs after implementing adaptation measures to adapt from heat stress in dairy farms** (2017) Shrestha S., Eory V. and Topp K. @ 3. European Climate Change Adaptation (ECCA) Conference, 2017-06-05 to 2017-06-09, Glasgow, United Kingdom (LiveM)
178. **Sensitivity of winter oilseed rape production in Denmark towards climate change using regression techniques.** (2016) Sharif B., Makowski D., Plauborg F. and Olesen J.E. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
179. **Impacts of climate change on Scottish beef farms – integrating crop production and**

economy in a meta-model. (2017) Shrestha S., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)

180. **Water relations in Al-sensitive and Al-tolerant wheat under combined drought stress and aluminium toxicity** (2017) Siecińska J. and Nosalewicz A. @ 16. International Workshop for Young Scientists BioPhys, 2017-06-01 to 2017-06-03, (CropM)
181. **Influence of environmental climate conditions on animal welfare criteria of lactating dairy cows** (2017) Siemens T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
182. **Explicit cost accounting for analyses on climate change adaptation, mitigation and ecosystem service provision in agriculture** (2016) Sinabell F., Heinschink K. and Tribl C. @ 8. International Congress on Environmental Modelling and Software, 2016-07-10 to 2016-07-14, Toulouse, France (TradeM)
183. **Wirtschaftliche Herausforderungen für die Landwirtschaft** (2016) Sinabell F. @ 5. Umweltökologisches Symposium, Landwirtschaft 2030 – Auswirkungen auf Boden, Wasser und Luft, 2016-04-05 to 2016-04-06, Irdning-Donnersbachtal, Austria; pp. 11-13 HBLA Raumberg-Gumpenstein, Irdning-Donnersbachtal, Landwirtschaft 2030 – Auswirkungen auf Boden, Wasser und Luft.
184. **Yield potentials and yield gaps of soybeans in Austria** (2016) Sinabell F., Heinschink K., Mechtler K., Mitter H., Schmid E. and Zimmermann A. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (TradeM)
185. **Adaptation to climate change in the European agriculture: A new tool for explicit cost accounting** (2016) Sinabell F. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
186. **Yield potentials and yield gaps in soybean production in Austria - a biophysical and economic assessment** (2016) Sinabell F. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
187. **EU and global climate mitigation policies – open discussion** (2017) Schimmelpfennig S. @ 3. European Climate Change Adaptation (ECCA) Conference, 2017-06-05 to 2017-06-09, Glasgow, United Kingdom (TradeM)
188. **Modelling production and environmental impacts of perennial cropping systems with the STICS model** (2017) Strullu L., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
189. **Simulation of perennial ryegrass quality traits using PaSim in a breeding context** (2017) De Swaef T., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
190. **Using crop model ensembles to design future climate-resilient barley cultivars** (2016) Tao F., Rötter R.P., Palosuo T., Hernández C.G., Mínguez M.I., Semenov M. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
191. **Contribution of uncertainties from model structure, parameters and climate scenarios in climate change impact projections** (2017) Tao F., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
192. **Case 4: Adaptation of European dairy farms to climate change: a case study approach** (2016) Topp K. @ AdaptationFutures, 10-13 May 2016, Rotterdam, Netherlands
193. **Modelling climate change adaptation in European agriculture: Challenges and priorities.** (2017) Topp K., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
194. **Tools to support farmer decision – making in arable cropping systems.** (2017) Topp K., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)

195. **Impact of climate change on winter durum wheat cultivated in Southern Italy: effect of extreme weather events.** (2016) Ventrella D. and Garofalo P. @ 8. International Congress on Environmental Modelling and Software, 2016-07-10 to 2016-07-14, Toulouse, France (CropM)
196. **Evaluation of crop residue management as a strategy of adaptation and mitigation to climate change** (2016) Ventrella D., Giglio L., Bindi M., Basso B., Bonciarelli U., Dalla Marta A. *et al.* @ »The agronomical research towards 2030: general objectives of sustainable development« — Annual Conference of Italian Society of Agronomy, 2016-09-20 to 2016-09-22, Sassari, Italy (CropM)

197. **Crop residue management as a strategy of adaptation and mitigation to climate change** (2017) Ventrella D., Giglio L., Bindi M., Basso B., Bonciarelli U., Dalla Marta A. *et al.* @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
198. **Durum wheat yield and protein stability depending on residue management in a long term experiment in Southern Italy** (2016) Ventrella D. @ »Growing landscapes – Cultivating innovative agricultural systems« — 14. ESA 14, Edinburgh, UK (CropM)
199. **The time factor in the long term resarches: statistichal and modelling approaches** (2016) Ventrella D. @ »New adversities and new services for agroecosystems« — 29. National Conference of Italian Agrometeorology, 2016-04-14 to 2016-04-16, (CropM)
200. **Multi-model approach for assessing sunflower food value chain in Tanzania** (2017) Vilvert E., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
201. **Modelling responses of forages to climate change with a focus on nutritive value** (2016) Virkajärvi et al. P. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
202. **Process-based modelling of the nutritive value of forages: a review.** (2017) Virkajärvi P., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
203. **The effect of season, month and temperature humidity index on the occurrence of clinical mastitis in dairy heifers** (2016) Vitali A. @ »Modelling Grassland-Livestock Systems under Climate Change« — 8. LiveM2016: International livestock modelling conference, 2016-06-15 to 2016-06-16, Potsdam, Germany
204. **Heat stress impact on productive efficiency and GHG emission intensity in dairy cow.** (2017) Vitali A., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (LiveM)
205. **Modelling the impact of soil management on soil functions.** (2017) Vogel H.-J., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
206. **The problem of series of days without rainfall in a view of efficiency of agricultural output under climate change** (2016) Waldemar Bojar L.K., Renata Kuśmierek-Tomaszewska, Jacek Żarski @ MACSUR Science Conference 2017-05-22 to 2017-05-24, Berlin, Germany (and a prediction of future natural events)
207. **A framework for evaluating uncertainty in crop model predictions.** (2016) Wallach D., Thorburn P., Asseng S., Challinor A.J., Ewert F., Jones J.W. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
208. **When and why to predict using the mean or median of a crop multi-model ensemble** (2017) Wallach D., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
209. **Uncertainty in future European irrigation water demand.** (2016) Webber H., Oomen R.,

Gaiser T., Teixeira E., Zhao G., Srivastava A. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)

210. **Incremental crop management adaptations to climate change: an integrated assessment for European agriculture** (2016) Webber H., Zimmermann A., Zhao G., de Vries W., Kros H., Wolf J. *et al.* @ 6. AgMIP Global Workshop, 2016-06-28 to 2016-06-30, Montpellier, France,
211. **Recent advances in integrated assessments of climate change impacts on European agriculture.** (2017) Webber H., (submitter) @ MACSUR Science Conference, 2017-05-22 to 2017-05-24, Berlin, Germany (CropM)
212. **Specification of nitrogen use in regional climate impact assessment studies** (2015) Webber H., Zhao G., Britz W., deVries W., Wolf J., Gaiser T. *et al.* @ 5. International Symposium for Farming Systems Design, 2015-09-07 to 2015-09-10, Montpellier, France
213. **Agriculture and land use in the Commission proposals for the 2030 Climate and Energy Framework** (2016) Wehrheim P. @ »Assessing climate change adaptation and mitigation options« — TradeM International Workshop, 2016-10-09 to 2016-10-12, Tromsø–Trondheim, Norway
214. **Emerging infectious disease challenges** (2016) Wilson A. @ STAR-IDAZ (Global Strategic Alliances for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses) Foresight workshop on Emerging Infectious Disease Challenges, 2014-06-16 to 2014-06-16, (LiveM)
215. **Simulating the impact of winter conditions on the survival and yield potential of winter wheat.** (2016) de Wit A., Rötter R.P., Palosuo T., Bergjord A.K., Virchenko O. and Kleshenko A. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
216. **Uncertainty in simulating N uptakes, N leaching and N use efficiency in crop rotation systems across Europe** (2016) Yin X., Kersebaum K.C., Kollas C., Armas-Herrera C.M., Baby S., Beaudoin N. *et al.* @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
217. **The Pasture Simulation model - evaluation of plant acclimatory effects on grassland systems in France** (2016) Zaka S., Sándor R., Martin R., Louarn G., Klumpp K., Borras D. *et al.* @ 8. International Congress on Environmental Modelling and Software, 2016-07-10 to 2016-07-14, Toulouse, France (LiveM)
218. **Vulnerability of grain maize yield under meteorological droughts: a comparasion of commercial and subsistence farms in South Africa** (2016) Zhao G., Hoffmann M. and Schellberg J. @ International Crop Modelling Symposium iCROPM 2016, 2016-05-15 to 2016-05-17, Berlin, Germany (CropM)
219. **Yield trends and variability in the EU** (2015) Zimmermann A. @ »Integrated Climate Risk Assessment in Agriculture & Food« — MACSUR Science Conference, 2015-04-08 to 2015-04-10, Reading, United Kingdom (TradeM)

B7. Organized major international congresses

Phase 1

1. **Global Food Security Challenges – European Research approaches: Case studies in MACSUR TradeM** (2013) 2013-11-18 to 2013-11-20, Müncheberg, Germany. *Goal*: Exchange of MACSUR activities, engagement of stakeholders, discussion of test cases across themes and modules. *Attendance:* 70. *Organized by* ZALF. http://www.macsur.eu/index.php/downloads/hub-newsletters/file/MACSUR%20Hub%20Newsletter%202013-06%252Epdf. (TradeM)
2. **International Livestock Modelling and Research Colloquium** (2014) 2014-10-14 to 2014-10-

16, Bilbao, Spain. *Goal*: Conference/networking. *Attendance:* 50. *Organized by* BC3, Aberystwyth University and Wageningen University. http://www.livem2014bilbao.com. (LiveM)

3. **AgMIP Wheat Workshop** (2014) 2014-06-24 to 2014-06-26, Clermont-Ferrand, France. *Goal*: Conference/networking/report on progress of AgMIP-Wheat. *Attendance:* 73. *Organized by* INRA, University of Florida and University of Bonn. (CropM)
4. **CropM International Symposium and Workshop »Modelling climate change impacts on crop production for food security«** (2014) 2014-02-10 to 2014-02-12, Oslo, Norway. *Goal*: Knowledge exchange and networking. *Attendance:* 120. *Organized by* MTT Finland and Norwegian MACSUR partners. http://macsur.eu/index.php/international-symposium-and-workshop. (CropM)
5. **TradeM International Workshop »Economics of integrated assessment approaches for agriculture and the food sector«** (2014) 2014-11-25 to 2014-11-27, Hurdalsjø, Norway. *Goal*: to critically discuss the state-of-the-art and future perspectives of integrated assessment approaches; to study and assess examples of applied modelling approaches integrating crop, livestock, and economic models; to foster international collaboration in the research areas of food security, climate change, and agrosystem modelling; and to plan and identify next steps to achieve TradeM contributions to MACSUR goals. *Attendance:* 33. *Organized by* Norwegian Agricultural Economics Research Institute (NILF). http://macsur.eu/index.php/tradem/2015-03-09-10-38-26. (TradeM)
6. **MACSUR Science Conference »Integrated Climate Risk Assessment in Agriculture and Food«** (2015) 2015-04-08 to 2015-04-09, Reading, United Kingdom. *Goal*: Knowledge exchange and networking. *Attendance:* 120. *Organized by* Reading University. http://ojs.macsur.eu/index.php/Reports/issue/view/8. (Hub)
7. **Breeding Plants to Cope with Future Climate Change** (2014) 2014-06-16 to 2014-06-18, Leeds, United Kingdom. *Goal*: Dissemination and discussions. *Attendance:* 101. *Organized by* University of Leeds. (CropM)

Phase 2

1. **LiveM2016: International Livestock Modelling Conference »Modelling Grassland-Livestock Systems Under Climate Change«** (2016) 2016-06-15 to 2016-06-16, Potsdam, Germany. *Goal*: 1) Presented advances in the modelling of grassland-livestock production systems in the context of future food security and sustainable production under climate change. 2) Highlighted the future challenges and research priorities for livestock and grassland modelling. 3) Brought together modellers across nations and disciplines to share ideas, spread best practice and develop new collaborations as part of an integrated research community. *Attendance:* 50. *Organized by* Potsdam Institute of Climate Impact Research, Institute for Agricultural Technology and Bioeconomy and Aberystwyth University. https://www.cambridge.org/core/journals/advances-in-animal-biosciences/issue/BE6415FF742AC46A8942A2D773ED8B72. (LiveM)
2. **iCROPM2016** (2016) 2016-03-15 to 2016-03-17, Berlin, Germany. *Goal*: Model improvement, generation and use of experimental data, and on advancements in model applications considering new methods of model intercomparison, uncertainty propagation and scaling. *Attendance:* 350. *Organized by* ZALF. http://macsur.eu/index.php/cropm/icropm2016. (CropM)
3. **MACSUR Science Conference** (2017) 2017-05-20 to 2017-05-22, Berlin, Germany. *Goal*: Exchange on scientific achievements, planning of future collaboration, discussion of new projects. *Attendance:* 115. *Organized by* Institute T. http://macsur.eu/macsur2017. (Hub)

B8. Press, radio, TV, and internet appearances

Phase 1

1. **Description of the project MACSUR goals and progress in the tasks realization** (2013) Bojar W. Website of the UTP, Available at: http://wz.utp.edu.pl/index.php/projekty-i-badania/640-projekt-mascur-qszczegolowa-ocena-ryzyka-zwiazanego-ze-zmiana-klimatu-dla-europejskiego-rolnictwa-oraz-bezpieczenstwa-zywnosciowego.html (TradeM)
2. **Website of the UTP Description of the project MACSUR goals and progress in the tasks realization** (2013) Bojar W. Available at: http://wz.utp.edu.pl/index.php/projekty-i-badania/640-projekt-mascur-qszczegolowa-ocena-ryzyka-zwiazanego-ze-zmiana-klimatu-dla-europejskiego-rolnictwa-oraz-bezpieczenstwa-zywnosciowego.html (TradeM)
3. **Spanish student in Horsham to study capsicum pests** (2014) DEPI News - Grampians. 2014-10-16, Available at: http://www.depi.vic.gov.au/about-us/media-centre/media-releases/spanish-student-in-horsham-to-study-capsicum-pests2 (CropM)
4. **Wie höhere Produktivität im Agrarsektor der Wirtschaft nutzt (Benefits of a productive agricultural sector for the economy)** (2014) Kronenzeitung, Expertenforum, 2014-06-07, Austria. (TradeM)
5. **Forscher ergründen Zusammenhänge zwischen Klimawandel und Ernährung' by KlimAktiv gGmBh** (2012) KlimAktiv, 2012-08-27, Germany. Available at: http://www.klimaktiv.de/article389_13660.html (Hub)
6. **vTI koordiniert neues Forschungsprojekt Macsur** (2012) Agra-Europe, 35/12, Germany. (Hub)
7. **Interview with M. Köchy on 'Alle Wetter' HR3 German public TV** (2012) HR3, 2012-09-03, Frankfurt, Germany. Available at: http://www.macsur.eu/index.php/media-coverage (Hub)
8. **Klimafolgen für Lebensmittel** (2012) Regjo. Das Regional-Journal für Südostniedersachsen, 05.2012, Germany. (Hub)
9. **Wie wirkt sich der Klimawandel auf die Landwirtschaft aus?' Radio interview with Dr. Martin Banse on NDR Info show "logo!"** (2012) NDR Info, 2012-10-05, Germany. Available at: http://www.macsur.eu/index.php/media-coverage (Hub)
10. **Cambiamenti climatici, esperti da tutto il mondo** (2014) La Nuovo Sardegna, 2014-04-01, (Hub)
11. **Publication of a website (active until 2015-05-31) about FACCE and MACSUR activities in Belgium, with a blog about conferences and events related to topics of MACSUR** (2013) Minet J. facce.be, (CropM, LiveM)
12. **Call for TradeM workshop in Haifa, Israel** (2013) Website of EAERE-European Association of Environmental and Resource Economists, Available at: http://www.eaere.org/conf.html (TradeM)
13. **Studio Campus of the regional radio station (science meets journalism)** (2014) Rolinski S. and Biewald A. RBB, 2014-02-18, Germany. Available at: http://www.rbb-online.de/extra/rbb-science-scanner/beitraege/studiocampus.html (TradeM)
14. **Nachhaltige Landwirtschaft - Erfolge sind da, der Weg ist aber noch lang (Sustainable agriculture - sucess is there but there is still a long way to go)** (2014) Kronenzeitung, Expertenforum, 3, Austria. (TradeM)
15. **Wie höhere Produktivität im Agrarsektor der Wirtschaft nutzt (Benefits of a productive agricultural sector for the economy)** (2014) Kronenzeitung: Expertenforum, 2014-06-07, Austria. (TradeM)
16. **W Europie szerzą się nowe genotypy *Phytophthora infestans*, organizmu powodującego zarazę ziemniaka - a popular science article, in Polish** (2013) Śliwka J.

Ziemniak Polski, 2, Available at: http://agro.icm.edu.pl/agro/element/bwmeta1.element.agro-7f12783f-ce79-4c45-8c78-f01f1fcb9265/c/Microsoft_Word_--2.pdf (CropM)

17. **Grzyby z rodzaju Fusarium powodujące suchą zgniliznę bulw ziemniaka - a popular science article, in Polish** (2013) Sobkowiak S. and Śliwka J. Ziemniak Polski, Available at: http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.agro-8b4866dc-596c-4db7-bcaf-64116e94175d/c/Microsoft_Word_-.pdf (CropM)
18. **Costing the Earth: Outbreak, Radio interview with A. Wilson** (2012) BBC Radio 4, 2012-03-21, United Kingdom. Available at: http://www.bbc.co.uk/programmes/b01dhrmz (LiveM)
19. **Radio interview with A. Wilson on bluetongue control for Science in Action** (2014) BBC World Service, 2014-10-24, Available at: http://www.bbc.co.uk/programmes/p028rzbd (LiveM)

Phase 2

1. **Interview with representatives of Association of Agricultural Leasers and Owners in Poland (Stowarzyszenie Dzierżawców i Właścicieli Rolnych) to gather opinions on important risk factors in farming in a view of climate change and possible adaptation activities supported by changes in CAP** (2016) 2016-04-28, Available at: http://www.pracodawcyrolni.pl/indexpl.php (CropM, TradeM)
2. **COP21 Guest blog – Prof. Christine Foyer: Modelling European Agriculture with Climate Change for Food Security (MACSUR) -A FACCE-JPI Knowledge Hub** (2015) Foyer C. University of Leeds Blog, Available at: http://sustainability.leeds.ac.uk/cop21-guest-blog-prof-christine-foyer/ (CropM)
3. **Nye klimakrav kan udradere en stor del af Danmarks landbrugsproduktion** (2016) Olesen J.E. Finans, 2016-05-16, Available at: http://finans.dk/finans/erhverv/ECE8657677/nye-klimakrav-kan-udradere-en-stor-del-af-danmarks-landbrugsproduktion/?ctxref=ext (CropM)
4. **Press release on the occasion of the COP21 meeting, Paris** (2015) Köchy M. MACSUR Press release, 2015-12-22, Braunschweig, Germany. Available at: http://macsur.eu/index.php/about/news-archive#20160107 (Hub)
5. **Should food security be a priority for the EU?** (2016) Leclère D. IIASA Nexus Blog, 5, Austria. Available at: http://blog.iiasa.ac.at/2016/10/04/should-food-security-be-a-priority-for-the-eu/ (TradeM)
6. **Should EU increase its funding to research on food security?** (2016) Leclère D. ResearchGate Discussion, 2016·10·04, Available at: https://www.researchgate.net/post/Should_EU_increase_its_funding_to_research_on_food_security (TradeM)
7. **Dem Fortschritt auf der Spur. LE 14-20.** (2016) Leimüller G. and Sinabell F. netzwerk zukunftsraum land, 2.16, Germany. (TradeM)
8. **Unit 2: Das Mosaik der Folgen des Klimawandels - Folgen sind heute schon meßbar** (2015) Lotze-Campen H. Massive Open Online Course (MOOC), 2015-05-28 to 2015-05-29, (TradeM)
9. **Unit 4: Klimarisiken. Eine Definition** (2015) Lotze-Campen H. Massive Open Online Course (MOOC), 2015-05-28 to 2015-05-29, (TradeM)
10. **Unit 11: Globales Gesamtbild der zu erwartenden Folgen** (2015) Lotze-Campen H. Massive Open Online Course (MOOC), 2015-05-29, (TradeM)
11. **Unit 6: Globale Folgen des Klimawandels in einzelnen Sektoren** (2015) Lotze-Campen H. Massive Open Online Course (MOOC), 2015-05-28 to 2015-05-29, (TradeM)
12. **Unit 7: Mehr Extreme!** (2015) Lotze-Campen H. Massive Open Online Course (MOOC),

2015-05-28 to 2015-05-29, (TradeM)

13. **MOOC** (2015) Lotze-Campen H. Tagesspiegel, 2015-11-14, Germany. Available at: http://www.tagesspiegel.de/wissen/der-mooc-zum-klimagipfel-klueger-mit-dem-klima-kurs/12542926.html (TradeM)
14. **Hohe Wahrscheinlichkeit für Dürren - und Flucht** (2016) Lotze-Campen H. Bayern 2, 2016-02-11, Germany. (TradeM)
15. **Jetzt dabei sein! Top-Wissenschaftler erklären den Klimawandel** (2016) Lotze-Campen H. Eco-World.DE, 2016-04-11, Germany. Available at: www.eco-world.de (TradeM)
16. **Online-Vorlesung: Klimawandel und seine Folgen** (2016) Lotze-Campen H. Deutsches Klimaportal, 2016-05-09, Germany. Available at: www.deutschesklimaportal.de (TradeM)
17. **Klimawandel verstärkt Klimaflucht** (2016) Lotze-Campen H. Klimaretter, 2016-05-20, Germany. Available at: www.klimaretter.info (TradeM)
18. **Die Millionen vergessener Flüchtlinge** (2016) Lotze-Campen H. Creditreform-Magazin.DE, 2016-05-20, Germany. Available at: www.creditreform-magazin.de (TradeM)
19. **PIK: Migration im Zeitalter des Klimawandels** (2016) Lotze-Campen H. Deutsches Klimaportal, 2016-05-24, Germany. Available at: www.deutschesklimaportal.de (TradeM)
20. **Klimawandel und Landwirtschaft** (2016) Lotze-Campen H. RBB Inforadio, 2016-07-03, Germany. (TradeM)
21. **Die Ressourcen der Erde: Die Welt ist nicht genug** (2016) Lotze-Campen H. Tagesspiegel, 2016-08-07, Germany. Available at: www.tagesspiegel.de (TradeM)
22. **Eine Welt ist nicht genug** (2016) Lotze-Campen H. Die Zeit, 2016-08-08, Germany. Available at: www.zeit.de (TradeM)
23. **Kosten für Nahrungsmittel könnten steigen** (2016) Lotze-Campen H. Deutschlandfunk, 2016-08-29, Germany. (TradeM)
24. **Klimawandel sorgt für Wohlstandsverluste des Agrarsektors** (2016) Lotze-Campen H. TopAgrar, 2016-08-30, Germany. Available at: www.topagrar.com (TradeM)
25. **Climate change: Trade liberalization could buffer economic losses in agriculture** (2016) Lotze-Campen H. SCIENMAG, 2016-09-24, Available at: http://www.scienmag.com (TradeM)
26. **Kann Freihandel die Folgen des Klimawandels abfedern** (2016) Lotze-Campen H. Euractiv.DE, 2016-09-27, Germany. Available at: www.euractiv.de (TradeM)
27. **Online-Vorlesung startet wieder neu: Deutschlands Top-Klimawissenschaftler erklären den Klimawandel** (2016) Lotze-Campen H. Deutsches Klimaportal, 2016-09-28, Germany. Available at: www.deutschesklimaportal.de (TradeM)
28. **Freier Agrarhandel kann Klimafolgen mindern** (2016) Lotze-Campen H. Dlz Agrarmagazin, 2016-10-01, Germany. (TradeM)
29. **Klimawandel und Landwirtschaft** (2016) Lotze-Campen H. RBB Inforadio, Wissenswerte, 2016-10-16, Germany. (TradeM)
30. **Forscher: Schon 90 Milliarden Euro Klimaschäden seit 1970** (2016) Lotze-Campen H. Boerse.DE, 2016-11-03, Germany. Available at: www.boerse.de (TradeM)
31. **Klimaschutz - Esst weniger Fleisch!** (2016) Lotze-Campen H. Deutschlandradio Kultur, 2016-11-04, Germany. (TradeM)
32. **Im Prinzip wissen wir, was zu tun ist** (2016) Lotze-Campen H. Agrarzeitung, 45, 2016-11-11, Germany. (TradeM)
33. **Treibhausgasneutrale Landwirtschaft- Von der Biodiversität bis zum Emissionshandel** (2016) Lotze-Campen H. Deutschlandradio Kultur, 2016-11-21, Germany. (TradeM)
34. **Wir müssen uns vorbereiten** (2016) Lotze-Campen H. 2016-11-4, Available at: www.leibniz-gemeinschaft.de (TradeM)
35. **Thesen für den Klimaschutz - Der ewige Patient: Das Weltklima** (2016) Lotze-Campen H. Online Zeitung www.dnn.de, 2016-12-23, Germany. Available at: www.dnn.de (TradeM)
36. **Der ewige Patient: Das Weltklima** (2016) Lotze-Campen H. Lübecker Nachrichten, 2016-12-25, Germany. (TradeM)

37. **Fleisch** (2017) Lotze-Campen H. Inforadio Berlin, 2017-01-11, Germany. (TradeM)
38. **Presentation of Research on Climate change and Agriculture- Macsur presentation (In Norwegian)** (2015) MACSUR Norwegian Consortium. NIBIO webpage news, Available at: http://www.nibio.no/nyheter/forskar-p-klimatilpassing-i-landbruket (CropM, LiveM, TradeM)
39. **L'agriculture devra s'adapter aux changements climatiques (Popularization article on climate change effects an agriculture in Belgium)** (2015) Minet J. La Lettre Paysanne, 2015-12-05, Available at: http://orbi.ulg.ac.be/handle/2268/189358 (CropM, LiveM, TradeM)
40. **Klimawandel: Gefahr oder Chance?** (2017) Mitter H. Top Agrar Österreich, 6/2017, Austria. (TradeM)
41. **Gode løsninger skabes sammen. Opinion paper.** (2016) Olesen J.E. Landbrugsavisen, 2016-09-26, Available at: http://dnmark.org/?p=2702&lang=en (CropM)
42. **Klimaforandringerne påvirker valget af afgrøder** (2016) Olesen J.E. Klimatilpasning.DK, 2016-08-18, Available at: http://www.klimatilpasning.dk/sektorer/landbrug/afgroeder.aspx (CropM)
43. **Det bliver dyrt for Europa, at klimaet bliver varmere og varmere** (2017) Olesen J.E. Jyllandsposten, 2017-01-24, Available at: http://jyllands-posten.dk/indland/ECE9315503/det-bliver-dyrt-for-europa-at-klimaet-bliver-varmere-og-varmere (CropM)
44. **Newspaper article, based on PhD thesis Maryia Mandryk: 'A good climate for peas'** (2016) Reidsma P. Trouw, 2016-03-29, (CropM)
45. **TV and radio interview for regional station, on the impact of weather extremes for potatoes and onions** (2016) Reidsma P. 2016-05-27, Available at: http://www.omroepzeeland.nl/nieuws/2016-05-27/1007489/weerextremen-funest-voor-aardappel-en-ui-video. (CropM)
46. **Quest for climate-proof farms: Climate change is a major threat to food production, so researchers are working with farmers to make agriculture more resilient** (2015) Schiermeier Q. Nature, 523, Available at: http://dx.doi.org/10.1038/523396a (Hub)
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48. **Wer profitiert von TTIP und warum sind so viele dagegen? (Who benefits from TTIP and why are so many people opposing this agreement?)** (2015) Sinabell F. VÖS Magazin, 3-2015, (TradeM)
49. **Ohne Investitionen kommen wir nicht weiter!** (2016) Sinabell F. dlz magazin, Dezember 2016,
50. **Was bedeutet der Brexit für die Landwirtschaft?** (2016) Sinabell F. Der Fortschrittliche Landwirt, 14/2016, Austria. (TradeM)
51. **Wir lassen Potenzial liegen. Interview with F. Sinabell** (2017) Bauernzeitung, 3, (TradeM)
52. **Preisfaktoren im Überblick. (Factors affecting prices)** (2015) Sinabell F. Die Landwirtschaft, August 2015, (TradeM)
53. **Evaluierbar?** (2016) Sinabell F. LandInForm. Deutsche Vernetzungsstelle Ländliche Räume, 2/2016, Germany. (TradeM)
54. **Die Wirkungen des Programms LE 07-13 auf Wertschöpfung, Beschäftigung und Indikatoren zur Lebensqualität** (2016) Sinabell F., Kirchner M., Pennerstorfer D. and Streicher G. Ländlicher Raum, März 2016, Available at: https://www.bmlfuw.gv.at/land/laendl_entwicklung/ Online-Fachzeitschrift-Laendlicher-Raum.html (TradeM)
55. **Gibt es einen Zusammenhang zwischen Agrarpreisen und dem Rohölpreis? (Are there linkages between prices of fossil oil and agricultural commodities?)** (2016) Sinabell F.

and Morawetz U. ÖGA-Blog, März 2016, Austria. Available at: http://oega.boku.ac.at/index.php?id=247 (TradeM)

56. **Ist Mais unentbehrlich?** (2015) Sinabell F., Sommer M., Kappert R. and Kaul H.P. Der Pflanzenarzt, 68(6-7), (TradeM)
57. **2017 Newsbrokers – Silent Reportage™ XLIII – Ilmastonmuutos ja naudanlihan tuotanto Suomessa - Asiantuntijahaastatteluja 2016-2017 (2017 Newsbrokers – Silent Reportage™ XLIII – Climate change and beef production in Finland - Expert interviews 2016-2017)** (2017) Virkajärvi P. 2017-06-09, Available at: http://www.newsbrokers.fi/ladattavat-reportaasit (LiveM)
58. **Landwirtschaft: Mehr Handel könnte die Antwort auf den Klimawandel sein** (2016) WiWo.DE. 2016-09-13, Germany. Available at: http://www.wiwo.de/technologie/green/living/landwirtschaft-mehr-handel-koennte-die-antwort-auf-den-klimawandel-sein/14539308.html (TradeM)

B9. New external grant and total amount of new external grant money, the application resulting from MACSUR activities

Phase 1

1. **IC-FAR — LInking Long Term Observatories with Crop Systems Modeling For a better understanding of Climate Change Impact, and Adaptation StRategies for Italian Cropping Systems.** National Project funded by the Ministry of Education, University and Research, linked with MACSUR (CropM, reported by M. Köchy, 09.07.2013)
2. **Integrated modelling of Nordic farming systems for sustainable intensification under climate change** (CropM, reported by M. Köchy, 10.07.2013)
3. **AGROSCENARI – Scenari di adattamento dell'agricoltura italiana ai cambiamenti climatici** (CropM, reported by M. Köchy, 18.12.2013)
4. **PLUMES — Pathways for linking uncertainties in model projections of climate and its effects**, Academy of Finland for MTT and two other Finnish institutes. (CropM, reported by M. Köchy, 15.05.2014)
5. **Modelling and Assessing Surface Change impacts on Belgian and Western European climate (MASC)**. Research project with some partners involved in MACSUR funded by the Belgian Federal Science Policy (BELSPO): (CropM, reported by J. Minet, 20.05.2014)
6. **Adaptation in Austrian cattle and milk production (ADAPT-CATMILK)**. Austrian Climate Research Programme research grant. Partners: WIFO, BOKU, University Cranfield, Thünen Institute (TradeM, reported by M. Schönhart, 20.05.2014)
7. **Transferencia científico-tecnológica para evaluación del impacto del cambio climático en los sistemas agrarios de Ecuador y los recursos hídricos** (CropM, reported by M. Ruiz-Ramos, 21.05.2015)

Phase 2

1. **New research project "Pathways linking uncertainties in model projections of climate and its effects (PLUMES)"** funded by the Academy of Finland, 2014-2018 (CropM, reported by S. Fronzek, 02.07.2015)
2. **New research project "Metrics, Models and Foresight for European Sustainable Food and Nutrition Security (SUSFANS)"** funded by the European Commission, 2015-2019 (TradeM, reported by A. Zimmermann, 02.07.2015)
3. **Participatory Development of Representative Agricultural Pathways for Austria (RAPs.AT)**. Austrian Climate Research Programme research grant. Partners: BOKU, WIFO, PIK, OSU (TradeM, reported by M. Schönhart, 27.07.2016)

4. **FACCE SURPLUS project »Assessing options for the SUSTainable intensification of Agriculture for integrated production of food and non-food products at different scales (SUSTAg)«** (, reported by M. Köchy, 11.11.2016)
5. **FACCE EraNet+ ClimateCafe** (reported by M. Köchy, 11.11.2016)
6. **DIVERSify: Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability**, H2020 Call: H2020-SFS-2016-2017; (Sustainable Food Security – Resilient and resource-efficient value chains) Topic: SFS-02-2016. Stage II. (CropM, reported by M. Inés Mínguez, 03.05.2017)
7. **Targets for Sustainable and Reslient Agriculture - FACCE JPI Surplus** (CropM, reported by A. Whitmore, 05.06.2017)
8. **"NuRa – Grass to Profit"**, 2015-2018. Funded by the European Agricultural Fund for Rural Development. (LiveM, reported by Panu Korhonen 09.06.2017)

B10. Supervised theses

Phase 1

1. **Scaling methods in using crop moellingfor climate impactassessment** (2014) Angulo C. *PhD thesis*. University of Bonn, Bonn,
2. **Effect of abiotic stresses on activity of selected antioxidant enzymes in wheat** (in progress) Bulak P. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences,
3. **Uncertainty linked to crop modelling in order to develop decision support tools** (2014) Dumont B. *PhD thesis*. Gembloux Agro-Bio Tech, University of Liege, Liège, Belgium.
4. **Improving the methodology for global agricultural water availability and identifying hot spots for potential dam sites in East-Africa** (2013) Högner K. *M.Sc. thesis*, Potsdam Institute for Climate Impact Research,
5. **The effect of combined drought and heat stress on growth, photosythetic activity and water relationship of spring wheat (*Triticum aestivum* L. cv. Łagwa)** (2016) Kondracka K. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences, Poland.
6. **Operationalising sustainability impact assessment of land use scenarios in developing countries : a stakeholder-based approach with case studies in China, India, Indonesia, Kenya, and Tunisia.** (2013) König H. *PhD thesis*. Leibniz-Zentrum für Agrarlanschaftsforschung e.V., Müncheberg, Germany.
7. **Extensive sheep grazing in terms of the mountain pastures protection** (in progress) Matoga W. *PhD thesis*. Institute of Technology and Life Science at Falenty, Falenty, Poland.
8. **Adaptation scenarios of Mediterranean forage systems to climate change** (2014) Mula L. *PhD thesis*. University of Sassari, Sassari, Italy.
9. **Stand und Perspektiven des Sojaanbaues in Serbien - Untersuchung auf Gemeindeebene** (2014) Nikolic U. *M.Sc. thesis*, Department für Wirtschafts- und Sozialwissenschaften, Universität für Bodenkultur Wien, Vienna, Austria.
10. **Impacts of climate change and socio-economic drivers on dairy farms in 'the Baakse Beek', the Netherlands** (2013) Paas W. *M.Sc. thesis*,
11. **The impact of soil physical properties modified by post-fermentation sludge on GHG emission** (in progress) Patuszka T. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences,
12. **Landwirtschaftliche Erträge und ihre ökonomischen Einflussfaktoren** (2014) Schäfer A.S. *B.Sc. thesis*, Institute for Food and Resource Economics, University of Bonn, Bonn, Germany. phase 1
13. **Die Rolle der landwirtschaftlichen Primärproduktion bei der Gewährleistung globaler**

Ernährungssicherung (2013) Schmidt C. *B.Sc. thesis*, Institute for Food and Resource Economics, University of Bonn, phase 1

14. **Estimating the benefit-cost ratio of infrastructural measures to increase water supply for irrigation on a global scale** (2013) Schürkmann A. *M.Sc. thesis*, Potsdam Institute for Climate Impact Research,
15. **Zeitliche, betriebliche und regionale Analyse des Sojaanbaus und ökonomischer Risikovergleich des Soja- und Maisanbaus in Österreich.** (2014) Seifried A. *M.Sc. thesis*, Department für Wirtschafts- und Sozialwissenschaften, Universität für Bodenkultur, Vienna, Austria.
16. **Changes in the quality of surface water bodies against the background of the implementation of the sustainable development program of rural areas in the catchment** (2012) Świerk W. *PhD thesis*. Institute of Technology and Life Science at Falenty, Poland.
17. **Effect of soil-water conditions on methane oxidation in agricultural soils** (in progress) Walkiewicz A. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences,
18. **Improving a grass yield model to assess impacts of climate change on grass yields around 2050 at plot level in the Dutch region Baakse Beek** (2013) Zhou Z. *M.Sc. thesis*, Plant Production Systems Group, Wageningen University, Wageningen, the Netherlands.

Phase 2

1. **Effect of abiotic stresses on activity of selected antioxidant enzymes in wheat** (in progress) Bulak P. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences,
2. **Satellite remote sensing priorities for better assimilation in crop growth models: winter wheat LAI and grassland mowing dates case studies** (2015) Curnel Y. *PhD thesis*. Université Catholique de Louvain, Louvain, Belgium.
3. **Soil CO2 emissions and C stock as ecosystem services: a comparison between transhumant and conventional farming systems** (2017) Francioni M. *PhD thesis*. Università Politecnica delle Marche, Italy.
4. **Response of maize and olive to climate change under the semi-arid conditions of Southern Spain** (2016) Gabaldón Leal C. *PhD thesis*. Universidad Politécnica de Madrid, Madrid, Spain.
5. **Crop improvement and global food security** (2016) Hark N. *B.Sc. thesis*, Institute for Food and Resource Economics, University of Bonn, Bonn, Germany. phase 2
6. **Past experience supports future choices for cropping systems management: the Italian long-term agro-ecosystem experiments (LTAEs) through the IC-FAR network** (2017) Iocola I. *PhD thesis*. University of Sassari, Sassari, Italy.
7. **The effect of combined drought and heat stress on growth, photosythetic activity and water relationship of spring wheat (*Triticum aestivum* L. cv. Łagwa)** (2016) Kondracka K. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences, Poland.
8. **How vulnerable are the world's undernourished to food price strikes?** (2016) Ludwigs P. *B.Sc. thesis*, Institute for Food and Resource Economics, University of Bonn, Bonn, Germany. phase 2
9. **Integrated assessment of farm level adaptation to climate change in agriculture – an application to Flevoland, The Netherlands** (2016) Mandryk M. *PhD thesis*. Plant Production Systems Group, Wageningen University, Wageningen, the Netherlands.
10. **Extensive sheep grazing in terms of the mountain pastures protection** (in progress) Matoga W. *PhD thesis*. Institute of Technology and Life Science at Falenty, Falenty, Poland.
11. **Estimation du contenu en chlorophylle de la pomme de terre par télédétection hyperspectrale aéroportée** (2016) Mestdagh M. *M.Sc. thesis*, Université Catholique de Louvain, Louvain, Belgium.

12. **The impact of soil physical properties modified by post-fermentation sludge on GHG emission** (in progress) Patuszka T. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences,
13. **Using farm level modelling to analyse adapation of Nordic farming systes to climae variability and change** (in progress) Purola T. *PhD thesis*. University of Helsinki,
14. **El uso de Superficies de Respuesta para el análisis de la adaptación de los cultivos al cambio climático y la incertidumbre asociada** (2016) Rodríguez A. *MSc. thesis*, Universidad de Castilla-La Mancha,
15. **Data mining techniques for quantifying and projecting crop yield responses to climate change** (2017) Sharif B. *PhD thesis*. Aarhus University, Aarhus, Denmark.
16. **Comparing bio-economic farm models: evaluating uncertainty of impacts of climate and socio-economic changes on arable farming in Flevoland (the Netherlands)** (2015) Tsutsumi Y. *M.Sc. thesis*, Plant Production Systems Group, Wageningen University, Wageningen, the Netherlands.
17. **Effect of soil-water conditions on methane oxidation in agricultural soils** (in progress) Walkiewicz A. *PhD thesis*. Institute of Agrophysics of the Polish Academy of Sciences,

B10. Joint patents (between partners or resulting from project)

Phase 1

Patent application entitled "The mobile set lifting - weight". Declaration No.: P.401855 submitted to the Polish Patent Office. Smoroń S. (2012) (CropM, LiveM)

Device for measuring the precipitation water leaching from a soil profile. Patent No. P.389892 granted by the Polish Patent Office. Decision of 14.08.2012. Twardy S, Kopacz M. (2012) (CropM)

Phase 2

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B11. New collaborations

Phase 1

1. **Setting-up of a regional network related to FACCE and MACSUR in Wallonia, Belgium** (see www.facce.be) (CropM, LiveM, reported by J. Minet, 09.07.2013)
2. **Submission of a research project within the Belgian partners involved in MACSUR to a Belgian national funding scheme**. Unfortunately rejected. (CropM, LiveM, reported by J. Minet, 09.07.2013)
3. **Coordination of Spanish participation in the Joint Programming Initiative "Agriculture, Food Security and Climate Change (FACCE-JPI)". Phase I.** http://www.chil.org/profile/spanish.macsur/main (CropM, TradeM, LiveM, reported by M Ruiz-Ramos, 09.07.2013)
4. **Coordination of Spanish participation in the Joint Programming Initiative "Agriculture, Food Security and Climate Change (FACCE-JPI)". Phase II.** http://www.chil.org/profile/spanish.macsur/main (CropM, TradeM, LiveM, reported by M Ruiz-Ramos, 09.07.2013)
5. **Soy Bean Production in the River Danube Basin**. Research proposal submitted to the Austrian Climate Change Research Program ACRP. (TradeM, reported by F. Sinabell, 10.09.2013)

6. **Technical efficiency and challenges of the agricultural sector in Austria and New Zealand**. Research proposal submitted to the Austrian Chamber of Agriculture (TradeM, reported by F. Sinabell, 10.05.2014)
7. **Coordination of a joint proposal in the Joint Programming Initiative "Agriculture, Food Security and Climate Change (FACCE-JPI)". Phase II.** http://www.chil.org/profile/spanish.macsur/main (Partners participating: MTT Agrifood Finland, University of Bonn, INRA France, Polytechnical University of Madrid) (TradeM, reported by A. Biewald, 15.05.2014)
8. **Submission of two research projects with partners involved in MACSUR and private partners to the call FACCE/ERANET+ Climate Smart Agriculture** (LiveM, reported by J. Minet, 20.05.2014)
9. **FACCE-ERA-NET+ on Climate Smart Agriculture: Joint application, Project Acronym: NEMANICHE - Predicting and testing climate change-induced range shifts in phytopathogenic nematodes in the European agricultural biosphere;** date to be decided, September 2014. (TradeM, reported by C.Hoffmann, 20.05.2014)
10. **Norwegian partners participating in 3 submissions with partners in MACSUR to the call FACCE/ERANET+ Climate Smart Agriculture** (CropM, TradeM, reported by L. Øygarden, 26.05.2014)
11. **Submission to Norwegian Research council (April 2014) application involving MACSUR partners Norway, MTT Finland, Potsdam** (CropM, TradeM, reported by L. Øygarden, 26.05.2014)
12. **JPI- FACCE- SURPLUS. Coordination of a joint application "Towards sustainably intensified and resilient production systems in European Agriculture. Prospects for integrating dairy and bioenergy production systems (DAIRYENERGY)"**, submitted 04.03.2015. MACSUR partners from Norway, Belgium, Italy. (CropM, reported by L. Øygarden, 28.06.2015)
13. **H2020 SFS18-2015. FairFarm**. Stage-2-proposal submitted June 2015. MACSUR partners EURAC, Thünen Institute, James Hutton Institute and non-MACSUR members. (Hub, reported by M. Köchy, 08.07.2015)

Phase 2

1. **H2020 SFS42-2016. PEANUTSSA.** Stage-1-proposal submitted February 2016. MACSUR partners Thünen Institute, ILVO, SRUC, James Hutton Institute and non-MACSUR members. (Hub, reported by M. Köchy, 25.02.2016)
2. **H2020 Water 2b. 'Sustainable Integrated Management FOR the NEXUS of water-land-food-energy-climate for a resource-efficient Europe — SIM4NEXUS'**, MACSUR Partners: LEI Wageningen UR (Netherlands), PIK (Germany), UPM (Spain) (TradeM, reported by F. Brouwer, 25.04.2016)
3. **FACCE-JPI ERA-NET SuSan application**. Norwegian partner (NMBU) is involved in the consortium (Application submitted March 2016) (LiveM, reported by Ş. Özkan, 26.04.2016)
4. **EC COST application** (result of the links developed between MACSUR animal health task and Global Research Alliance's Animal Health Network). Norwegian partner (NMBU) is involved in the consortium (Application submitted April 2016) (LiveM, reported by Ş. Özkan, 26.04.2016)
5. **H2020 SFS49**, Proposal submitted (TradeM, CropM, LiveM, Hub, reported by M. Köchy, 19.01.2017)
6. **H2020-RUR-2016-2017**, Stage 2 proposal on "Integrated Decision Support for Agriculturel and Forestry in Europe" for (CropM, reported by I. Holman, 09.06.2017)

7. **Polish national startegic project LCAgri** (www.lcagri.iung.pulawy.pl) was created by MACSUR partners 125 and 139 for conducting research on climate change risk assesment for agriculture and food security with collaboration of MACSUR partners (CropM, reported by J. Kozyra)

B12. Scientific acknowledgements (Prizes, honorary doctorates, memberships in scientific academies, major international duties, etc.)

Phase 1

1. Porter, John (2014) Lead author of IPCC AR5-WG2 Chapter on food security (CropM)
2. Sinabell, Franz (2012) nominated by AUSTRIA to the Steering Committee of the High Level Panel of Experts on food security and nutrition (HLPE), which will provide regular inclusion of structured expertise as an important input to the reformed Committee on World Food Security (CFS). (TradeM)
3. Kersebaum, Kurt Christian (Leibniz Centre ZALF (Müncheberg, Germany), selected by Soil Science Society of America for this years' L.R. Ahuya Agricultural Systems Modeling Award (CropM)

Phase 2

1. John R. Porter (2015) elected as fellow by the European Academy of Sciences. (CropM)
2. John R. Porter (2016) dubbed knight of the French Order of Agriculture Merit for his contribution to agriculture (CropM)
3. André Bannink received professorship in 2015 under the Chinese Academy of Sciences (CAS), under the CAS President's International Fellowship Initiative. (LiveM)

B14. Data access: new datasets or data/model assets generated in MACSUR

Data has been published and deposited in AgriMod (http://agrimod.org), the Open Data Journal of Agricultural Research (http://odjar.org), or at the GeoNetwork Archive at University of Aarhus.
11 Datasets in the GeoNetwork Archive will be publicly available once the corresponding data use agreements have been confirmed. Many more data sets have been created and are stored decentrally but have not been reported.

Phase 1

1. **CAPRI data set for the analysis of the baseline scenarios within TradeM** (2014) Sinabell F., *Stored at* http://macsur.eu (restricted to MACSUR partners).

Phase 2

1. **BELAIR data set** Belgian Science Policy Office (BELSPO), *Stored at* http://belair.vgt.vito.be.
2. **Data set generated for model evaluation of N2O emissions from soils cropped with maize** Roggero P.P.,
3. **Coherent multi-variable field data set of an intensive cropping system for agro-ecosystem modelling from Müncheberg, Germany** (2016) Mirschel W., Barkusky D., Hufnagel J., Kersebaum K.C., Nendel C., Laacke L. *et al.* Open Data Journal for Agricultural Research 2: 1-10. *doi*: 10.18174/odjar.v2i1.15412

4. **Local-scale CMIP5-based climate scenarios for MACSUR2 generated with the LARS-WG weather generator for 5 GCMs: EC-EARTH, GFDL-CM3, HadGEM2-ES, MIROC5, and MPI-ESM-MR; 2 RCPs: RCP4.5 and RCP8.5; 4 periods: baseline (1980-2010), near-term (2021-2040), mid-term (2041-2060) and long-term (2081-2100); 15 European sites** (2015) Semenov M., *Stored at* dropbox folder, contact M. Semenov for further questions.
5. **Long-term soil hydrological data of a Pleistocene region in North-East Germany** (2017) Schindler U.G. Open Data Journal for Agricultural Research 3: 4-9. *doi*: 10.18174/odjar.v3i1.15764
6. **Soil hydraulic functions of international soils measured with the Extended Evaporation Method (EEM) and the HYPROP device** (2017) Schindler U.G. and Müller L. Open Data Journal for Agricultural Research 3: 10-16. *doi*: 10.18174/odjar.v3i1.15763

B15. Other activities (listed by categories)

B15a) New technologies

Phase 1

1. **MACSUR CropM database**. Data catalogue. Hansen, J.G. et al. (2014). http://agro.au.dk/macsur-catalog (CropM)
2. **MACSUR data visualization platform**, Hansen, J.G. et al. (2014). http://agro.au.dk/macsur-toolbox (CropM)
3. **Working with SEMAGROW** to provide data hosting/publishing system using Open Journal Systems. Jorgenson J., Janssen, S. (2013) (Hub, CropM)
4. **Software for the evaluation and classification of data sets for modelling**. Jorgenson, J.S., Kersebaum, K.C.,, Kollas, C. et al. (2014) (Hub, CropM)
5. **Integration of the HERMES crop growth sub-module into the AMBAV system of the German Weather Service (DWD)**. Kersebaum (during 2013-14) (CropM)
6. **AgroC: An agroecosystem model**. Klosterhalfen et al. (2014). (CropM)
7. **AGROCLIMA-SSP v.2.0** (Software, scientific support to policies tool, delivered to Spanish administration, in Spanish). Ruiz Ramos, M, Mínguez, M and Rodríguez, M.I. (2014). (CropM)
8. **Incorporation of the CMIP5 climate projections in to the ELPIS dataset of local-scale climate scenarios for Europe**. Semenov M (during 2013-14) (CropM)
9. **Software AgriCLIM expert system for automatic calculation of agroclimatic indicators in Europe – version for wheat** Trnka et al (2014). (CropM)

Phase 2

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B15b) Miscellaneous

Phase 1

1. **Attended AgMIP development sprint in Wageningen** June 19-21, and initiated collaboration efforts regarding model and dataset integration that will encourage the use of standardised protocols and formats. Jorgenson, J. (2013) (Hub)

2. **Starting a new experiment in south-east of Poland for gathering highest quality data for calibration and validation of crop models including climate change**. Slawinski, C. (2013) (CropM)
3. **Gathered data and other information (current and historical) on changes in grass biomass production** taking into account the elevation of land above sea level and diversified slope exposures. These materials will be used for a dissertation and developed in the form of scientific publications. Also there is collected data on the quantity and quality of biomass depending on the differentiated frequency of sward use. Twardy, S. (2013) (CropM, LiveM)
4. **MACSUR CropM Report on Characterizing and Quantifying Uncertainty**: D C4.1.2. A framework structure to integrate improved methods for uncertainty evaluation, and protocols for methods application. Wallach, D., Rivington, M., Mearns, L. O., Antle, J. (2014).(CropM)

Phase 2

1. **MACSUR became member of the Global Alliance for Climate-Smart Agriculture** Köchy, M. (2016) (Hub)
2. **Nominations of two MACSUR experts for the Steering Committee of the High-Level Panel of Experts for FAO's Committee on World Food Security**. Köchy, M. (2016) (Hub)

C Networking

C2. Theme or cross-theme meetings

Phase 1

1. **Project Steering Committee meeting** (2014) 2014-04-02, Sassari, Italy. *Goal*: Planning. *Attendance:* 12. *Organized by* Institute T. (Hub)
2. **MACSUR CropM workshop, Work Packages 1, 2 and 4** (2013) 2013-05-06 to 2013-05-07, *Goal*: Planning. *Attendance:* 27. *Organized by* CropM MACSUR. (CropM)
3. **JPI FACCE MACSUR CropM and LiveM cross-cutting activity** (2013) 2013-05-06 to 2013-05-06, Helsinki, Finland. *Goal*: Planning of future work. *Attendance:* 15. *Organized by* MTT. (CropM, LiveM)3. **Project Steering Committee meeting** (2013) 2013-02-18 to 2013-03-19, The Hague, The Netherlands. *Goal*: Planning. *Attendance:* 10. *Organized by* LEI. (Hub)
4. **Project Steering Committee meeting** (2014) 2014-09-04 to 2014-09-05, The Hague, The Netherlands. *Goal*: Planning. *Attendance:* 10. *Organized by* LEI. (Hub)
5. **LiveM Leaders meeting and theme review** (2013) 2013-09-16 to 2013-09-17, Reading, United Kingdom. *Goal*: To develop future plans, review progress and identify challenges. *Attendance:* 12. *Organized by* LiveM and Aberystwyth University. (LiveM)
6. **Project Steering Committee meeting** (2013) 2013-09-17 to 2013-09-18, Reading, United Kingdom. *Goal*: Planning. *Attendance:* 10. *Organized by* Reading University. (Hub)
7. **Project Steering Committee meeting** (2015) 2015-04-07, Reading, United Kingdom. *Goal*: Planning. *Attendance:* 12. *Organized by* Reading University. (Hub)
8. **CropM WP leaders meeting** (2015) 2015-10-29, Braunschweig, Germany. *Goal*: Regular Meeting for update and further planning. *Attendance:* 10. *Organized by* Bonn U.O. internal minutes. (CropM)
9. **CropM WP leaders meeting** (2012) 2012-06-12 to 2012-06-13, Bonn, Germany. *Goal*: Planning of CropM in MACSUR1. *Attendance:* 12. *Organized by* University of Bonn.

internal minutes. (CropM)
10. **Project Steering Committee meeting** (2012) 2012-06-11 to 2012-06-12, Bonn, Germany. *Goal*: Planning. *Attendance:* 7. *Organized by* University of Bonn. (CropM)
11. **CropM WP leaders meeting** (2013) 2013-02-25 to 2013-02-25, Schiphol, The Netherlands. *Goal*: Regular Meeting for update and further planning. *Attendance:* 14. *Organized by* University of Bonn, LAP. internal minutes. (CropM)
12. **CropM WP leaders meeting** (2013) 2013-12-04 to 2013-12-04, Berlin, Germany. *Goal*: Regular Meeting for update and further planning. *Attendance:* 13. *Organized by* University of Bonn, LAP. internal minutes. (CropM)
13. **CropM WP leaders meeting** (2014) 2014-11-14 to 2014-11-14, Florence, Italy. *Goal*: Regular Meeting for update and further planning. *Attendance:* 13. *Organized by* Florence U.O. internal minutes. (CropM)
14. **CropM WP leaders meeting** (2015) 2015-04-09 to 2015-04-09, Reading, United Kingdom. *Goal*: Regular Meeting for update and further planning. *Attendance:* 11. *Organized by* Reading U.O. internal minutes. (CropM)
15. **CropM WP leaders meeting** (2014) 2014-04-02 to 2014-04-02, Sassari, Italy. *Goal*: Regular Meeting for update and further planning. *Attendance:* 8. *Organized by* University of Sassari. internal minutes. (CropM)

Phase 2

1. **Project Leadership Team meeting** (2016) 2016-03-18 to 2016-03-18, Berlin, Germany. *Goal*: MACSUR strategy. *Attendance:* 5. *Organized by* Thünen Institute. (Hub)
2. **Project Leadership Team meeting** (2016) 2016-09-08 to 2016-09-09, Berlin, Germany. *Goal*: MACSUR strategy. *Attendance:* 5. *Organized by* Thünen Institute. (Hub)
3. **CropM WP leaders meeting** (2016) 2015-10-29, Berlin, Germany. *Goal*: Regular Meeting for update and further planning. *Attendance:* 12. *Organized by* Bonn U.O. internal minutes. (CropM)
4. **CropM WP leaders meeting** (2017) 2017-01-20, Berlin, Germany. *Goal*: Regular Meeting for update and further planning. *Attendance:* 11. *Organized by* Bonn U.O. internal minutes. (CropM)
5. **CropM WP leaders meeting** (2017) 2017-05-23, Berlin, Germany. *Goal*: Regular Meeting for update and further planning. *Attendance:* 12. *Organized by* Bonn U.O. internal minutes. (CropM)
6. **Project Steering Committee meeting** (2015) 2015-12-09, Bonn, Germany. *Goal*: Strategic planning. *Attendance:* 12. *Organized by* University of Bonn. (Hub)
7. **Project Leadership Team meeting** (2016) 2016-11-04 to 2016-11-04, The Hague, The Netherlands. *Goal*: MACSUR strategy. *Attendance:* 5. *Organized by* Wageningen UR. (Hub)

C3.Consortium meetings (whole MACSUR)

Phase 1

1. **Workshop on Within Theme and Cross-cutting Activities for MACSUR2** (2015) 2015-04-10 to 2015-04-11, Reading, United Kingdom. *Goal*: Planning and networking. *Attendance:* 100. *Organized by* University R. http://ojs.macsur.eu/index.php/Reports/issue/view/8. (Hub)
2. **MACSUR Kickoff Workshop** (2012) 2012-10-15 to 2012-10-16, Berlin, Germany. *Goal*:

Planning, networking. *Attendance:* 140. *Organized by* Thünen Institute. http://ojs.macsur.eu/index.php/Reports/issue/view/1. (Hub)

3. **MACSUR Cross-Theme Workshop: Regional Pilot Studies and Scenarios** (2013) 2013-06-05 to 2013-06-07, Braunschweig, Germany. *Goal*: Agreement on scenarios and case studies. *Attendance:* 30. *Organized by* Thünen Institute. http://www.macsur.eu/images/reports/RegionalPilotStudiesWorkshop.pdf. (Hub)
4. **FACCE-MACSUR Mid-Term Scientific Conference – 'Achievements, Activities, Advancement** (2014) 2014-04-01 to 2014-04-04, Sassari, Italy. *Goal*: Presentation of results to stakeholders, planning, capacity building, networking. *Attendance:* 120. *Organized by* Thünen Institute and University of Sassari. http://ocs.macsur.eu/index.php/Hub/Mid-term. (Hub)

Phase 2

1. **FACCE MACSUR Joint Workshops** (2015) 2015-10-27 to 2015-10-30, Braunschweig, Germany. *Goal*: Update and planning of MACSUR cross-cutting activities. *Attendance:* 110. *Organized by* Thünen Institute. http://ojs.macsur.eu/index.php/Reports/article/view/H0.3-M1/262. (Hub)
2. **MACSUR XC Workshop 2016** (2016) 2016-10-13 to 2016-10-13, Oslo, Norway. *Goal*: Aims of the workshop (1) highlight progress in the cross-cutting activities (2) facilitate collaboration across Themes for achieving the planned project deliverables (3) contributions to a paper on Research gaps in modelling European agriculture with climate change for food security.". *Attendance:* 24. *Organized by* Thünen Institute. (Hub)

C4.Workshops

Phase 1

1. **1st meeting for Coordination of Spanish participation in the Joint Programming Initiative "Agriculture, Food Security and Climate Change (FACCE-JPI)". Phase I** (2012) 2012-03-15 to 2012-03-15, *Goal*: Planning. *Attendance:* 14. *Organized by* CEIGRAM and Technical University of Madrid. http://www.chil.org/profile/spanish.macsur/main.
2. **2nd meeting for Coordination of Spanish participation in the Joint Programming Initiative "Agriculture, Food Security and Climate Change (FACCE-JPI)". Phase I** (2012) 2012-09-26 to 2012-09-26, *Goal*: Planning. *Attendance:* 16. *Organized by* CEIGRAM and Technical University of Madrid. http://www.chil.org/profile/spanish.macsur/main. (CropM/LiveM/TradeM)
3. **A seminar on presenting the objectives of FACCE-JPI MACSUR project and discussing the participation of the Institute of Agrophysics PAS in this project (cooperation between partners: 139, 158, 162)** (2012) 2012-10-29 to 2012-10-29, Poland. *Goal*: Internal networking. *Attendance:* 40. *Organized by* Sciences I.O.A.P.A.O. (CropM)
4. **A series of one-day meetings between partners 139, 158, 162 concerning realization of tasks in CropM module.** (2013) 2013-03-20 to 2013-05-29, Lublin, Poland. *Goal*: Planning. *Attendance:* 6. *Organized by* Institute of Agrophysics Polish Academy of Sciences L., Poland. (CropM)
5. **Meeting of the TradeM and CropM partners on common research carried out for contribution to MACSUR goals** (2013) 2013-05-15 to 2013-05-15, Lublin, Poland. *Goal*: Planning. *Attendance:* 5. *Organized by* University of Technology and Life Sciences in

Bydgoszcz and Institute of Agrophysics Polish Academy of Sciences in Lublin P. (TradeM, CropM)

Phase 2

See D2 (Training workshops) and D3 (Expert workshops)

C7. Links to national projects or facilities

Phase 1

Collaborations with directorates of 8 secondary schools where workshops and trainings for 8 · 20 = 160 students of secondary schools were conducted. There were distributed instructional materials prepared in advance. (CropM, LiveM, reported by S. Twardy, 22.05.2014)

Phase 2

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C8. Links created to other EU or international groups

Phase 1
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Phase 2

Links of Italian partners created to other EU groups: with the collaboration started with Edwin Haas (Gerrmany) and Stefan Olin (Sweden). There is an Australian link created with Matthew Harrison. In Europe there is also an active contact in Germany (for the Monica model) and in Poland (for Stics). (CropM, reported by P.P. Roggero, 31.05.2017)

C9. Stakeholder interactions

Phase 1

1. **Potential synergic effects between MACSUR models and the UTP team other models.** *Goal*: synergic effects are addressed to stakeholders:farmers, politicians, self government agendas, e.g. devoted problem of development of farmer cooperation within the EU countries. *Organized by* Bojar W., Biegniewski J. and Depta P. (TradeM)
2. **Coordinated by the www.dnmark.org research alliance a series of workshops are organized with local farmers about scenarios for future farming, and methods are reviewed together with other similar methods applied in MACSUR** *Organized by* Dalgaard T. (LiveM)
3. **Utfordringer for husdyrproduksjon i et fremtidig klima (Challenges for livestock production under changing climate) Bioforsk conference 2014. (National meeting-research, stakeholders,media)** (2014) 2014-02-05, *Organized by* Harstad O.M. (LiveM, CropM)
4. **Europeisk landbruk i et klima i endring- MACSUR (European agriculture under changing climate - Macsur). Bioforsk Conference 2014. (National conference-research-**

stakeholders-media) (2014) 2014-02-05, *Organized by* Höglind M. (CropM)

5. **Meeting with Junge DLG (Young German Farmers Ass.) on climate change impacts on farming imcomes. Braunschweig, 30 pers.** (2015) 2015-03-06, *Organized by* Köchy M. and Banse M. (Hub)
6. **FACCE MACSUR workshop for policymakers** (2015) »Climate-change impacts on farming systems in the next decades — why worry when you have CAP?«, 2015-05-06, Brussels, Belgium. *Goal*: Stakeholder interaction and learning. *Attendance:* 45. *Organized by* MACSUR-Hub. http://macsur.eu/index.php/events/macsur-workshop-for-policymakers. (LiveM, CropM, TradeM)
7. **Presentation of MACSUR activities at the international agricultural event "Foire de Libramont 2013"** (2013) 2013-07-30, *Organized by* Minet J. (CropM, LiveM)
8. **Workshop at the Spanish Agency of Meteorology, on Meteo and Climate Services for Agriculture. Presentation "Crop models and climate projections"** (2013) 2013-05-30, *Organized by* Minguez I., Ruiz-Ramos, M. (CropM)
9. **Paljonko lisämaasta kannattaa maksaa? (How much to pay for additional farmland?)** (2013) 2013-11-26 to 2013-11-26, Nivala, Finland. *Goal*: Stakeholder information. *Attendance:* 37 participants, mostly farmers, and 4 researchers. *Organized by* MTT. http://www.metla.fi/hanke/7515/index.htm. (TradeM)
10. **Pohjois-Savon maatalouden sopeutuminen ilmastonmuutokseen (Agricultural adaptation to climate change in North Savo region)** (2014) 2014-11-20 to 2014-11-20, Kuopio, Finland. *Goal*: Stakeholder interaction. *Attendance:* 35. *Organized by* MTT. http://www.mtt.fi/modags/modags_KuopioSeminar.html. (TradeM, LiveM, CropM)
11. **The NRD-UNISS team actively participated to local events and activities organised by different local actors (Cooperatives, Local Committees, Council etc.) in the regional pilot study area. This participation aimed at both extending the Macsur exploration of the local dynamics, and contextualizing and better framing NRD-UNISS research through a bidirectional communication pathway.** *Organized by* Roggero P.P. (CropM, LiveM)
12. **Several interviews to different stakeholders (experts, technicians, professionals, "ordinary people", etc.) aiming to investigate their perception about climate change and the impacts generated by their activities on this change. These interviews were synthesized in video-spots that were broadcasted during the MACSUR mid-term meeting held in Sassari on 1-4 April 2014.** *Organized by* Roggero P.P. (CropM, LiveM)
13. **Two meetings (December 13, 2013; January 15, 2014) with the governing board of the Arborea Farmers' Cooperative and some associates were organized aiming to develop further common understanding on the kind of adaptive strategies suitable at local level, using modelling outcomes as boundary object to engage dialogue with stakeholders. These activities were developed also in the context of regional innovation projects that are strongly linked to some key issues of LiveM and that represent a complementary process to feed the MACSUR follow-up with new scenarios in the context of ongoing regional pilot studies.** (2014) 2014-01-15, *Organized by* Roggero P.P. (CropM, LiveM, TradeM)
14. **Workshop at the Ministry of Economy and Innvation, Spanish Institute of Agricultural Research. Presentation "The Spanish participation in MACSUR"** (2013) 2013-04-22, *Organized by* Ruiz-Ramos M. (CropM)
15. **Regional Pilot Case Study Mostviertel – AT. Project presentation and discussion. FACCE MACSUR. WIFO Wien** (2014) 2014-03-24, Vienna, Austria. *Organized by* Schönhart M., Schmid E. and Sinabell F. (TradeM)
16. **Regional Pilot Case Study Mostviertel – AT. Discussion of case study results with advisors and farmers, Amstetten, Lower Austria** (2015) 2015-05-21, Vienna, Austria. *Organized by* Schönhart M., Mitter, H. (TradeM)
17. **Bulle oder Bär? Trends an den internationalen Märkten (bull or bear - trends on global**

markets). 60. Wintertagung, Fachtagung Unternehmen Bauernhof, Wieselburg (2013) 2013-01-13, *Organized by* Sinabell F. (TradeM)

18. **Entwicklung der Landwirtschaft - nationale und internationale Trends (Agricultural development - national and international trends) Wintertagung Fachschule Mistelbach, Mistelbach** (2013) 2013-01-13, *Organized by* Sinabell F. (TradeM)
19. **Herausforderungen an die österreichische Agrarwirtschaft (Challanges for the Austrian agricultural sector). Studientag Umweltpädagogik, Hochschule für Agrar- und Umweltpädagogik, Wien** (2013) 2013-01-15, *Organized by* Sinabell F. (TradeM)
20. **Agrarzukunft 2030 – nationale und internationale Trends – ein Ausblick unter Unsicherheit (Agriculture 2030 - national and international trends - an outlook under uncertainty). Agrarforum Exklusiv, Amt der OÖ Landesregierung, Linz** (2013) 2013-06-02, *Organized by* Sinabell F. (TradeM)
21. **JPI FACCE Knowledge Hub Modelle zur europäischen Landwirtschaft. Projektpräsentation und –diskussion FACCE MACSUR. WIFO Wien** (2014) 2014-03-24, *Organized by* Sinabell F. (TradeM)
22. **Organic fertilizers management and low-cost pro-environmental pastoral economy in mountain areas. Meeting with stakeholders in Grywałd (Poland, the Krościenko community).** (2012) 2012-07-25, *Organized by* Twardy S. http://www.modr.pl/index.php?wyd=210. (LiveM, CropM)
23. **The rational management of mountain pastures under conditions of low-cost means of agricultural production** (2014) 2014-07-22, *Organized by* Twardy S. (LiveM, CropM)
24. **Colloque du réseau Agriculture - Changements Climatiques** (2015) 2015-05-20, Arlon, Belgium. *Goal*: conference/networking. *Attendance:* 35. *Organized by* Université de Liège. http://www.macsur.ulg.ac.be/projet-macsur/20-mai-2015. (LiveM/CropM)
25. **Adaptation strategies of Italian agricultural systems to climate change** (2013) 2013-06-19, Cagliari, Italy. *Goal*: Workshop with stakeholders including regional and national policy makers. *Attendance:* 150. *Organized by* Sassari U.O. (CropM/LiveM/TradeM)
26. **Austrian MACSUR Stakholder Workshop** (2013) 2013-05-24 to 2013-05-24, *Goal*: stakeholder participation. *Attendance:* 15. *Organized by* WIFO (Austrian Institute of Economic Research). distributed among participants, available upon request. (TradeM)
27. **Quel climat pour l'agriculture? Quelle agriculture pour le climat? Workshop of the FACCE-WB network (Belgium FACCE)** (2015) 2015-05-20, Arlon, Belgium. *Goal*: General scientific workshop for Belgian scientitst working on relatonships between agriculture and climate change. *Attendance:* 35. *Organized by* University of Liège. http://www.macsur.ulg.ac.be/projet-macsur/20-mai-2015. (CropM, LiveM)

Phase 2

1. **EIP-AGRI Focus Group "Reducing emissions from cattle farming"** (2016) 2016-02 to 2017-01, Brussels, Belgium. *Organized by* Amon B. https://ec.europa.eu/eip/agriculture/en/content/reducing-emissions-cattle-farming. (LiveM)
2. **Nutrient cycles accounting and impact assessment technical advisory group under the FAO-Livestock Environmental Assessment and Performance (LEAP) Partnership** (2016) 2016-08 to 2016-12, *Organized by* Amon B. http://www.fao.org/Ag/againfo/home/en/news_archive/2016_LEAP_first-meeting-TAG.html. (LiveM)
3. **Nurmet ja ilmastonmuutos – rehuntuotannon ratkaisuja? (Grasslands and climate change - solutions for forage production)** (2016) 2016-11-30, Joensuu, Finland. *Organized by*

Korhonen P. http://www.ilmase.fi/site. (LiveM)

4. **Maatilan talous ja ilmastoviisaat ratkaisut – löytyykö keinoja parantaa tilan taloudellista tulosta? (Farm economy and climate smart solutions - means to improve economic result of a farm?)** (2016) 2016-04-15, Tampere, Finland. *Organized by* Lehtonen H. http://www.ilmase.fi/site. (TradeM)
5. **Summary outcomes from group discussions from workshop "Kohti parempia satoja" (Towards improved yields)** (2016) 2016-11-08, Iisalmi, Finalnd. *Attendance:* 64. *Organized by* Lehtonen H., Palosuo, T., Virkajärvi, P., Korhonen, P. (TradeM, CropM, LiveM)
6. **Migration als letzter Ausweg? Podienreihe Folgen des Klimawandels** (2017) 2017-05-24, Berlin, Germany. *Organized by* Lotze-Campen H. (TradeM)
7. **Meeting with national stakeholders in Norway** (2016) 2016-06-08, Gardermoen, Norway. *Goal*: Presentation of the Norwegian case study. *Organized by* MACSUR Norwegian Consortium. (CropM, LiveM, TradeM)
8. **Presentation at meeting of the FACCE Stakeholder Advisory Board** (2016) 2016-04-18, *Organized by* MACSUR-Hub. (Hub)
9. **FACCE MACSUR Workshop for policymakers** (2016) »Supporting policies for climate change adaptation and mitigation for European agriculture«, 2016-05-24, Brussels, Belgium. *Goal*: Informing about MACSUR regional case studies, mitigation potentials, and addressing the implications of the Paris agreement on climate change and of the EU Common Agricultural Policy for European agriculture. *Attendance:* 19. *Organized by* Thünen Institute. (Hub)
10. **FACCE MACSUR Workshop for policy makers** (2017) »Climate change, adaptation and mitigation in agriculture across Europe«, 2017-05-11, Brussels, Belgium. *Goal*: Showing expected and observed climate change impacts across Europe, identifying mitigation adaptation scenarios. *Attendance:* 25. *Organized by* Thünen Institute. http://macsur.eu/index.php/events/macsur-workshop-for-policymakers-2017. (Hub)
11. **General framework for model evaluation and comparison – Stakeholder Round Table** (2016) 2016-05-23, *Goal*: presenting and validating a common and shared framework to evaluate models performances. To this aim, stakeholders were involved to expand horizons beyond structured numeric analyses for model evaluation and integrate their perspective in a deliberative and legitimate process. *Attendance:* 13. *Organized by* University of Florence and INRA. (CropM, LiveM)

D Capacity building

D2. Training workshops

Phase 1

1. **Modeling climate effects on crops and cropping systems** (2013) 2013-09-23 to 2013-09-29, Aarhus, Denmark. *Goal*: Training of PhD studnets. *Organized by* Aarhus University. (CropM)
2. **Best practice in communicating modelling** (2016) 2016-06-14 to 2016-06-14, Potsdam, Germany. *Goal*: The aim of this interactive workshop is to improve skills in clear and effective communication to all audiences through discussions of audience expectations, appropriate vocabulary, and best practice for oral presentations. Participants are encouraged to bring examples of their own work to discuss with colleagues. *Attendance:* 20. *Organized by* Aberystwyth University. (LiveM)

3. **Modelling climate impacts on water and energy use in European irrigated agriculture** (2015) 2015-05-05 to 2015-05-07, Cranfield, United Kingdom. *Goal*: Training. *Attendance:* 13. *Organized by* Cranfield University. (CropM)
4. **A beginners seminar on "Ecological Modelling"** (2013) 2013-08-05 to 2013-08-08, Taru, Estonia. *Goal*: Training. *Organized by* Sciences E.U.O.L. (CropM)
5. **Dynamic land use optimization under global change, University of Natural Resources and Life Sciences; training by Uwe Schneider (Hamburg University)** (2013) 2013-03-11 to 2013-03-15, Vienna, Austria. *Goal*: This course tought applied mathematical programming for the assessment of land use decisions, policies, and impacts and concentrated on the formulation and interpretation of related optimization models. Students within and outside MACSUR, mainly TradeM, received training in applied programming modelling including devopment of interfaces to LiveM and CropM. *Attendance:* 10. *Organized by* Institute for Sustainable Economic Development at University of Natural Resources and Life Sciences. (TradeM)
6. **An integrative analysis of the Austrian agri-environmental program - observations and options for improving its effectiveness** (2014) 2014-06-26 to 2014-06-26, Lincoln, New Zealand. *Goal*: Networking. *Organized by* Lincoln University and Sinabell F. (TradeM)
7. **Integrated land use modelling. Training, held by Mathias Kirchner, Hermine Mitter, Ewin Schmid, Martin Schönhart** (2014) 2014-04-07 to 2014-04-11, Vienna, Austria. *Goal*: The module aimed at strengthening skills in advanced land use optimization modelling by integrating disciplinary concepts, data, methods and scenarios. The students shall be able to build bottom-up land use optimisation models at farm to landscape scale as well as at regional to global scale and to perform integrated impact analysis of climate change, trade, and policy on agricultural land use, production and environment. Students within and outside MACSUR, mainly TradeM, recieved training in applied programming modelling including devopment of interfaces to LiveM and CropM themes. *Attendance:* 11. *Organized by* Institute for Sustainable Economic Development at University of Natural Resources and Life Sciences. (TradeM)
8. **Carbon turnover modelling, development, validation and application** (2014) 2014-12-10 to 2014-12-10, Lublin, Poland. *Goal*: Useful information for PhD students. *Attendance:* 16. *Organized by* Institute of Agrophysics of the Polish Academy of Sciences. (CropM)
9. **Model oriented field experiments for climate change impact assessment** (2014) 2014-11-10 to 2014-11-13, Florence, Italy. *Goal*: Training of PhD students. *Attendance:* 25. *Organized by* Florence U.O. (CropM)
10. **Modelling European Agriculture with Climate Change for Food Security** (2014) 2014-03-23 to 2014-03-26, Haifa, Israel. *Goal*: Workshop for training graduated and PhD students as well as stakeholders. *Attendance:* 25. *Organized by* University of Haifa and ZALF. (TradeM)
11. **Sustainability assessment of land use scenarios: what needs to be considered and how can it be done** (2014) 2014-03-23 to 2014-03-26, Haifa, Israel. *Goal*: Understand formalized processes of decision making as well as decision makers needs for evidence. 2. Provide training on integrated modeling/assessments. For this purpose the Framework for Participatory Impact Assessment (FoPIA) was introduced to provide an integrated and well-established method that guides experts and/or decision makers through a policy impact assessment while emphasizing: (i) the development of scenarios, (ii) the analysis of the regional sustainability context, (iii) assessment of possible policy impacts and sustainability trade-offs. The case study dealt with the biosphere reserve of Ramat Menashe. The participants submitted working papers with academic literature review and scientific analysis of biosphere reserve of Ramat Menashe. *Attendance:* 16. *Organized by* University of Haifa and ZALF. (TradeM)
12. **The art of crop modelling. Quantifying crop growth in face of global food security and climate effects through modelling tools.** (2013) 2013-03-04 to 2013-03-08, Wageningen,

The Netherlands. *Goal*: Training of PhD students. *Attendance:* 30. *Organized by* UR W. (CropM)

13. **CAPRI Graphical User Interface (GUI) training** (2013) 2013-11-18 to 2013-11-18, Berlin, Germany. *Goal*: To enable participants to extract data from the CAPRI model. *Attendance:* 10. *Organized by* WIFO. (TradeM)
14. **MACSUR modelling workshop "Working with dynamic crop models"** (2014) 2014-05-19 to 2014-05-23, Müncheberg, Germany. *Goal*: Training. *Attendance:* 34. *Organized by* ZALF. (CropM)

Phase 2

1. **Modelling Climate Effects on crops and cropping systems** (2015) 2015-08-24 to 2015-08-30, Foulum, Denmark. *Goal*: This course aims at giving the Ph.D. student a thorough background in the development, evaluation and use of models of crops and cropping systems in the context of climate change. The course will include a combination of lectures, hands-on model development, and hands-on evaluation and use of existing models. Lectures and exercises will cover all steps in the modeling process: qualitative and quantitative model formulation, parameter estimation, and model validation and analysis. Parts of the modeling process will be exemplified using a simple simulation tool (PowerSim) and parts by using the simulation model DAISY. The practical and theoretical exercises will be conducted in groups. Each practical exercise will result in a short exercise report from each student. These reports will make up the students personal course portfolio. *Attendance:* 16. *Organized by* Aarhus University. (CropM)
2. **Modelling Climate Effects in the Soil-Crop System** (2017) 2017-08-28 to 2017-09-03, Foulum, Denmark. *Goal*: This course aims at giving the PhD student a thorough background in the development, evaluation and use of models of crops and cropping systems in the context of climate change. The course will include a combination of lectures, hands-on model development, and hands-on evaluation and use of existing models. *Attendance:* NA. *Organized by* Aarhus University. (CropM)
3. **Agricultural Production and Policy Impact Modelling** (2015) 2015-03-03 to 2015-05-05, Vienna, Austria. *Goal*: Perform climate change and polciy impact analyses on agriculture using GAMS (General Algebraic Modeling Systems); learn good model building in GAMS; build models at farm to regional scale as well as partial equilibrium models; interpret and synthesize model results". *Attendance:* 12. *Organized by* BOKU. https://online.boku.ac.at/BOKUonline/wblv.wbShowLvDetail?pStpSpNr=270884&pSprachNr=1&pMUISuche=FALSE. (TradeM)
4. **Integrated Land Use Modelling** (2015) 2015-04-20 to 2015-04-24, Vienna, Austria. *Goal*: The module aims at strengthening skills in advanced land use optimization modelling by integrating disciplinary concepts, data, methods and scenarios. The students shall be able to build bottom-up land use optimisation models at farm to landscape scale as well as at regional to global scale and to perform integrated impact analysis of climate change, trade, and policy on agricultural land use, production and environment. *Attendance:* 10. *Organized by* BOKU. https://online.boku.ac.at/BOKUonline/wblv.wbShowLvDetail?pStpSpNr=271883&pSprachNr=1&pMUISuche=FALSE. (TradeM)
5. **Dynamic land use optimization under global change** (2016) 2016-06-13 to 2016-06-17, Vienna, Austria. *Goal*: This course teaches applied mathematical programming for the assessment of land use decisions, policies, and impacts and concentrates on the formulation and interpretation of related optimization models. *Attendance:* 10. *Organized by* BOKU. (TradeM)

6. **Integrated Land Use Modelling** (2016) 2016-06-06 to 2016-06-10, *Goal*: The module aims at strengthening skills in advanced land use optimization modelling by integrating disciplinary concepts, data, methods and scenarios. The students shall be able to build bottom-up land use optimisation models at farm to landscape scale as well as at regional to global scale and to perform integrated impact analysis of climate change, trade, and policy on agricultural land use, production and environment. *Attendance:* 10. *Organized by* BOKU. (TradeM)
7. **Advanced Crop Physiology (Online course)** (2017) 2017-02-27 to 2017-06-22, *Goal*: The development of a multidisciplinary e-learning course was completed in January 2017 and the course is now running for the first time from February to June 2017 with 12 international students and joint teaching by teachers from the University of Copenhagen and Lincoln University, New Zealand. The course is based on 6 E-learning modules (E-modules). Each E-module is composed of 1) an introduction, 2) an overview of the learning objectives, 3) a number of online learning activities and 4) a list of learning resources. The online learning activities consist of academic discussions, self-tests and calculation exercises. The course is not completed yet, but so far it is working well and the feedback from the first batch of students is good. ". *Attendance:* 12. *Organized by* University of Copenhagen and Lincoln University.
8. **The Art of Modelling (PhD course)** (2017) 2017-06-12 to 2017-06-23, Wageningen, The Netherlands. *Goal*: This is not a dedicated crop modelling course, but will feature examples from crop production as one of the key elements of the course. The course comprises four blocks: 1) Systems dynamics with examples from crop production & population ecology, 2) Partial differential equations & modelling in space, 3) Model performance & model evaluation and 4) Reflection & reporting ". *Attendance:* NA. *Organized by* Wageningen UR.

D3. Specialist workshops

Phase 1

1. **Model linkage (1)** (2015) 2015-10-29 to 2015-10-29, Braunschweig, Germany. *Goal*: Technical workshop exploring methods of model linkage at farm-scale. *Attendance:* 15. *Organized by* Aarhus University. (LiveM)
2. **Challenges and research priorities for livestock health and pathogen modelling in the context of climate change; joint meeting of LiveM health and pathogen modelling group and the GRA AHN** (2015) 2015-06-24 to 2015-06-25, Reading, United Kingdom. *Goal*: Identifying challenges and research priorities for livestock health and pathogen modelling in the context of climate change, as basis of subsequent review paper (horizon scanning); day 2 joint workshop with GRA AHN for networking between groups and planning joint actions. *Attendance:* 15 (day 1); 25 (day 2). *Organized by* Aberystwyth University. (LiveM)
3. **Joint modelling workshop LiveM - TradeM** (2013) 2013-11-18 to 2013-11-18, Aberytwyth, United Kingdom. *Goal*: To develop mutual understanding of interests and plan future collaborative interactions. *Attendance:* 10. *Organized by* LiveM and Aberystwyth University. (LiveM)
4. **Discussing instrumentation and methodology of C02 measurement in field experiments** (2013) 2013-01-28 to 2013-01-28, Poznan, Poland. *Goal*: Reflection on methodology to be used in field experiments. *Attendance:* 8. *Organized by* Poznan University of Life Sciences and Institute of Agrophysics Polish Academy of Sciences. (CropM)

5. **Modelling adaptation (1)** (2015) 2015-10-28 to 2015-10-28, Braunschweig, Germany. *Goal*: Interactive workshop focussed on identifying different aspects of, and priorities for, modelling climate change adaptation. *Attendance:* 10. *Organized by* SRUC. (LiveM)
6. **Relating grassland and farmscale modelling** (2015) 2015-10-29 to 2015-10-29, Braunschweig, Germany. *Goal*: Exploration of the requirements of farm-scale models for grassland data, and livestock information used by grassland models, to facilitate collaboration and potential model linkage. *Attendance:* 15. *Organized by* Swedish University of Agricultural Sciences. (LiveM)
7. **Modelling interactions between climate and livestock pathogen transmission** (2014) 2014-01-22 to 2014-01-22, Woking, United Kingdom. *Goal*: To review the state of the art in disease modelling and develop ideas for collaborative activities. *Attendance:* 20. *Organized by* LiveM and Pirbright Institute. (LiveM)
8. **Monitoring Soil Properties at Different Scales** (2014) 2014-11-19 to 2014-11-20, Braunschweig, Germany. *Organized by* Thünen Institute. http://macsur.eu/index.php/eventlist/icalrepeat.detail/2014/11/19/41/9/monitoring-soil-properties-at-different-scales. (CropM)
9. **Modelling capacities for agricultural policy support in Europe** (2012) 2012-06-05 to 2012-06-05, Müncheberg, Germany. *Goal*: Knowledge exchange. *Attendance:* 22. *Organized by* Trade-M, ZALF, LIAISE and EC-JRC. (TradeM)
10. **Soil Minimum Tillage Systems, 7th International Symposium** (2013) 2013-05-02 to 2013-05-03, Cluj-Napoc, Romania. *Goal*: Conservative tillage systems: minimum tillage and no-tillage. Research systems for soil, water and carbon preservation. Technological alternatives in conservative agriculture system. Research priorities concerning soil tillage, land improvement and environmental protection. *Attendance:* 120. *Organized by* University of Agricultural Sciences and Veterinary Medicine. http://www.usamvcluj.ro/SMDT/symposium2013/index.php. (CropM)
11. **CropM Scaling workshop** (2013) 2013-07-05 to 2013-07-05, Bonn, Germany. *Attendance:* 22. *Organized by* University of Bonn. (CropM)
12. **TradeM International Workshop – Exploring New Ideas for Trade and Agriculture** (2013) 2013-03-03 to 2013-03-05, Haifa, Israel. *Goal*: Review and discussion of the models involved in analyzing the effects of climate change on food security. Introducing innovative ideas that combine economic models with crops and livestock models. *Attendance:* 100. *Organized by* University of Haifa. http://macsur.eu/index.php/files/MACSUR%20TradeM/TradeM%20Workshop%20Haifa%202013. (TradeM)
13. **TradeM International Workshop – Securing Food Using Non-Conventional Water Sources** (2015) 2015-02-24 to 2015-02-24, Haifa, Israel. *Goal*: Knowledge exchange and networking. *Attendance:* 70. *Organized by* University of Haifa. https://drive.google.com/folderview?id=0B4oPwB7wQMT9flVTQndXY3piekVzcU9Oa1ppOV9kbUFfV3JuVml0ZExPWUlzWFJMMGFPT2s&usp=sharing. (TradeM)
14. **Nordic Forage Model Applications: predicting forage yield and quality in a variable and changing climate** (2013) 2013-01-30 to 2013-01-31, Uppsala, Sweden. *Goal*: This seminar will enhance validation and calibration of models of forage growth, and thrive to enhance versatile utilisation of the vast existing data of forage experiments in Nordic and Baltic countries in the development and use of models to study the effect of climate change on forage production, and to evaluate strategies for adaptation. *Attendance:* 100. *Organized by* Nordic Association of Agricultural Scientists. (CropM)

Phase 2

1. **Livestock health and disease modelling workshop (Livestock animal health tasks workshop) - Joint workshop of MACSUR and Global Research Alliance (GRA) Animal Health Network (AHN)** (2015) 2015-06-24 to 2015-06-25, Reading, United Kingdom. *Goal*: Identify research priorities and challenges in modelling livestock health and pathogens in the context of climate change (MACSUR task workshop). Develop links between two networks, discuss research priorities, identify complementary areas of research (Joint workshop). *Attendance:* 26 (Joint workshop). *Organized by* Norwegian University of Life Sciences, University of Tuscia, Aberystwyth University and GRA AHN. http://globalresearchalliance.org/wp-content/uploads/2015/10/AHN-Report_Joint-Workshop-of-Animal-Health-Network-and-MACSUR_2015.pdf. (LiveM)
2. **Challenges and research priorities for grassland modelling in the context of climate change** (2015) 2015-06-17 to 2015-06-19, Wageningen, The Netherlands. *Goal*: Identifying challenges and research priorities for grassland modelling in the context of climate change as basis of subsequent review paper. *Attendance:* 15. *Organized by* Wageningen University. (LiveM)
3. **Model linkage (2)** (2016) 2016-06-14 to 2016-06-14, Potsdam, Germany. *Goal*: To build on the outcomes of the first workshop and make concrete process with writing a task paper on this topic. *Attendance:* 10. *Organized by* Aarhus University. (LiveM)
4. **XC1 Workshop** (2017) 2017-05-22 to 2017-05-22, Berlin, Germany. *Goal*: Planning of future work. *Attendance:* 10. *Organized by* INRA. (XC)
5. **Modelling nutritive value of grasslands** (2016) 2016-09-08 to 2016-09-09, Trondheim, Norway. *Goal*: Development of MACSUR activities on modelling the nutritive value of grassland swards under climate change, with aim of producing a peer reviewed paper by early 2017. *Attendance:* 8. *Organized by* Luke. (LiveM)
6. **Second Workshop on Animal Health and Climate Change** (2016) 2016-10-14 to 2016-10-14, Ås, Norway. *Goal*: Development of MACSUR activities on modelling the impacts of livestock health and pathogens on GHG emissions, with aim of producing a peer reviewed paper by early 2017. *Attendance:* 5. *Organized by* NMBU and Tuscia University. (LiveM)
7. **Modelling adaptation (2)** (2016) 2016-06-14 to 2016-06-14, Potsdam, Germany. *Goal*: To build on the outcomes of the first workshop and discuss specific aspects of modelling adaptation, including planning for writing a peer reviewed paper on this topic. *Attendance:* 10. *Organized by* SRUC. (LiveM)
8. **CropM Scaling Workshop** (2017) 2017-06-15 to 2017-06-16, Uppsala, Sweden. *Goal*: Presentation of results and achievements from Phase 2. Planning of modelling strategies and protocols for ensemble modelling linked to climate change and management. Planning of manuscripts and publications. Plan for final meetings and discussion of future collaboration. *Attendance:* 15. *Organized by* Swedish Agricultural University. (CropM)
9. **MACSUR - Impact of scales on crop modelling (CropM WP3)** (2015) 2015-06-15 to 2015-06-16, Aberdeen, United Kingdom. *Goal*: Updating the status of the ongoing work in the MACSUR scaling execise and further planning for new goals in the task. *Attendance:* 14. *Organized by* University of Aberdeen. (CropM)
10. **Soil Minimum Tillage Systems, 8th International Symposium** (2015) 2015-06-25 to 2015-06-26, Cluj-Napoca, Romania. *Goal*: Conservative tillage systems: minimum tillage and no-tillage. Research systems for soil, water and carbon preservation. Technological alternatives in conservative agriculture system. Research priorities concerning soil tillage, land improvement and environmental protection. *Attendance:* 80. *Organized by* University of Agricultural Sciences and Veterinary Medicine. http://www.usamvcluj.ro/SMDT/symposium2015/index.php. (CropM)
11. **Feeding livestock: forage production, feed quality, efficiency of feed resource use and animal protein production (XC11)** (2015) 2015-10-27 to 2015-10-27, Braunschweig,

Germany. *Goal*: Overview on studies and research activities relevant for the animal feed story and development of region specific livestock diets. Scanning and evaluating what aspects are relevant for the development of the livestock feed story (in particular in relation to feed proteins), and which relationships exist with other tasks and themes within MACSUR. *Attendance:* 15. *Organized by* Wageningen University & Research and Institut für Agrartechnik und Bioökonomie. (LiveM)

12. **IRS-2 workshop** (2017) 2017-05-23 to 2017-05-23, Berlin, Germany. *Goal*: Planning of future work. *Attendance:* 30. *Organized by* University of Bonn. (CropM)
13. **Project Steering Sub-Committee meeting** (2015) 2015-09-14, Braunschweig, Germany. *Goal*: Drafting of paper. *Attendance:* 4. *Organized by* Thünen Institute. (Hub)

D4. Established scientific and technical staff

Phase 1

Country	*Persons*	*Full time equivalents*
BE	1	28.8
DE	13	87.3
DK	24	108.9
ES	1	18
FR	2	33
HU	1	6
IL	2	48
IT	7	75
NO	1	20
PL	3	10
TI	2	39
UK	2	57
Total	59	531

Phase 2

Country	*Persons*	*Full time equivalents*
DE	6	31.0
IT	6	47.5
SE	1	4.0
UK	2	24.0
Total	15	106.5

E Project coordination and management

Several proposed deliverables and milestones had to be cancelled because task leaders left MACSUR or had been assigned to other duties at their home institution or because funding did not correspond to that assumed while writing the proposal. These circumstances could not be redressed by in-kind contributions from other persons or institutions.
As a consequence, several other tasks could not be completed either.

E1. Deliverables performed

Deliverable ID	Description	Month planned	Month achieved
H0.1-D	Research gap mapping (M24)	2017-05	2017-05
H0.2-D	Hub meetings	2017-05	2017-05
H0.2-D	FACCE MACSUR website (continuously)	2017-05	2017-05
H0.3-D	Dissemination of outputs (continuously)	2017-05	2017-05
H1/XC1-D	Output from the individual tasks	2017-05	2017-05
H1/XC2-D	Output from the individual tasks	2017-05	2017-05
H1/XC3-D	Publication draft (April 2017)	2017-04	cancelled
H1/XC4-D	Output from the individual tasks	2017-05	2017-05
H1/XC6-D	Paper, recommendation/protocol (April 2017)	2017-04	ongoing
H1/XC7-D	Publication draft, titled "Comprehensive assessment of climate change impacts on European agriculture" (April 2017)	2017-05	cancelled
H1/XC8-D	Contribution to D-H0.1 Research Gap Report	2017-04	2017-05
H1/XC9-D	Output from the individual tasks	2017-05	2017-06
H1/XC11-D	Output from the individual tasks	2017-05	2017-05
H1/XC14-D	Publication draft, titled “Impacts of agricultural adaptation scenarios on ecosystem services and rural development” (April 2017)	2017-04	2017-03
H1/XC15-D	Output from the individual tasks	2017-05	2017-05
H1/XC16-D	Report, titled “RAPs at the small and at the large: how representative agricultural pathways can be implemented a global as well a local level” (May 2017)	2017-05	2017-06
C0.1-D	CropM website (contribution to website of Knowledge Hub) (from Month 1 on with regular updates)	2017-05	2017-05
C0.2-D	Regular (3-monthly) newsletters (contribution to newsletters of the Knowledge Hub)	2017-05	2017-05
C0.3-D	Report about the achievements of crop modelling for assessing the risks of climate change on food security in MACSUR2 and next steps to be taken (Month 22)	2017-03	
C1.1-D1	Data sets of spatial variable data from Precision Agriculture data (Month 4)	2015-09	2015-10
C1.1-D2	Paper on site sensitivity of models regarding yields and water and N dynamics (Month 24)	2017-05	2017-05

C1.2-D	Paper on model responses to selected adverse weather conditions (Month 24)	2017-05	2017-05
C1.3-D	Paper on long term effects of cropping and managements systems on soil organic matter, C/N dynamics and crop growth (Month 24)	2017-05	2017-06
C1.4-D	Paper on modeling different cropping systems	2017-05	2017-06
C1.5-D	Paper on integration of pest and disease models into crop models	2017-05	2017-05
C1.6/XC1.1-D1	Needs of model improvement (June 2016)	2016-10	2017-03
C1.6/XC1.1-D2	Chapter on the relation between micrometeorological conditions and plant physiology (April 2017)	2017-04	2017-06
C1.7/XC1.3-D	Links established with other consortia (June 2016)	2016-06	2017-06
C2.1-D	Overview of datasets available for modelling in MACSUR (Month 14)	2016-07	2017-01
C2.2-D	Local-scale climate scenarios (Month 12)	2016-04	2016-05
C2.3-D	Data gaps for crop modelling (Month 20)	2017-03	2017-05
C2.4-D	Evaluation of impact of data quality on crop model simulations (Month 24)	2017-05	
C2.5-D	Observed adaptations (Month 24)	2017-05	
C2.6-D	Empirical crop yield responses to climatic variation (Month 24)	2017-05	
C3.1-D	Overview of progress in scaling methods (Month 12)	2016-10	
C3.2-D	Datasets published as part of ODJAR, and description of decision on sharing mechanism plus implementation (Month 12)	2016-05	ongoing
C3.3-D	Report on results of scaling exercises (Month 18)	2016-11	2016-04
C3.4-D	Evaluation of scaling methods for other crops, regions and impact variables (Month18)	2016-11	2016-04
C3.5-D	Report on results of application of scaling methods for integrated modelling (Month 18)	2016-11	2016-04
C3.6/XC2.1-D	Review of scaling methods (April 2017)	2017-04	
C4.1-D	Overview paper submitted: on comprehensive framework for assessment of error and uncertainty in crop model predictions (Month 12)	2016-05	2016-08
C4.2-D	Refereed article submitted: use of multi-model ensembles to simulate climate impacts on crop production (Month 18)	2016-11	2016-10
C4.3-D1	Refereed article submitted: on classifying crop model behaviour of a large ensemble	2017-05	2016-10
C4.3-D2	Refereed overview article submitted: on reasons for different crop model behaviour - genealogy, process descriptions, etc.	2017-05	2016-10
C4.4-D	Refereed article submitted: Crop model sensitivity to climate, CO2 and adaptations in a Mediterranean region Europe, lead	2017-05	2016-09
C4.5-D	Refereed article submitted: Performance of ensemble model-designed future barley cultivars at two contrasting	2017-05	2016-11

	sites in Europe, lead		
C4.6-D	A manuscript submitted to a referee journal on high-yielding wheat ideotypes across Europe by the refined Sirius model incorporated responses to extreme events, lead	2017-05	cancelled
C4.7/XC3.1-D	Review paper and/or special issue on studies and research activities relevant for uncertainty assessment and quantification in crop, feed and livestock production in MACSUR (January 2017)	2017-01	cancelled
C4.8/XC3.2-D1	Documents summarizing all uncertainty related activities of interest to MACSUR to be communicated at the MACSUR Scientific Conference (2016) and with the MACSUR Newsletter (bi-yearly (June 2016)).	2016-06	2016-09
C4.8/XC3.2-D2	Documents summarizing all uncertainty related activities of interest to MACSUR to be communicated at the MACSUR Scientific Conference (2016) and with the MACSUR Newsletter (bi-yearly (May 2017)).	2017-05	cancelled
C5.1-D	Learning material of the PhD schools and qualified students (Months 6, 12, 18 and 24).	2017-05	cancelled
C5.2/XC4.2-D	Online training for agricultural professionals active (extent and detail of the resource to be determined in C5-D:1) (May 2016)	2017-03	cancelled
C6.1/XC6.3-D1	Preliminary report on synopsis of case studies from a European perspective (December 2016)	2016-12	2016-05
C6.1/XC6.3-D2	Final report and manuscript on synopsis about lessons learned from the XC6.3 task (June 2017)	2017-05	2017-05
C6.2/XC7.2-D1	Deliver ensembles of EU-wide/global consistent sets of crop yield changes in common protocol format to XC7.4 (June 2016)	2016-06	
C6.2/XC7.2-D2	Chapter on the involved models and modelling results in the joint publication ‘comprehensive assessment of climate change impacts on European agriculture’ (April 2017)	2017-04	
C6.3/XC9.1-D1	Publication draft, titled "Yield gaps of cereals in Europe, using a stratified sampling approach " (April 2017)	2017-04	2016-06
C6.3/XC9.1-D2	On line maps of cereal production and yield gaps are presented in the Global Yield Gap Atlas (www.yieldgap.org) (Oct 2016)	2016-12	2016-12
C6.3/XC9.1-D3	Workshop to explore the state-of-the-art in quantifying yield gaps in grassland (Oct 2016) organisation by P128 and P173	2016-10	2016-10
C6.4/XC15.1-D	Review paper and/or special issue on studies and research activities relevant for GHG mitigation in crop, feed and livestock production in MACSUR (January 2017)	2017-01	cancelled
C6.5/XC15.3-D	Summary synthesis of activities on the field of GHG mitigation performed by othere consortia/projects to be reported to MACSUR partners via the MACSUR Newsletter (bi-yearly) (June 2016, May 2017).	2017-05	cancelled
L0.1-D	Theme meetings held (month 12 and 24)	2017-05	2017-05
L0.2-D1	LiveM position paper submitted (month 3)	2015-08	2016-01
L0.2-D2	Report on strategy for the continuation of activities beyond 2017 (month 18)	2016-11	2016-11

L1.1-D1	Report (before month 12)	2016-05	2016-05
L1.1-D2	Report (before month 20)	2016-12	2017-04
L1.2-D1	Report (before month 12)	2016-05	2016-05
L1.2-D2	Report (before month 20)	2016-12	2017-04
L1.3-D1	Report (before month 12)	2016-05	2017-06
L1.3-D2	Report (before month 20)	2016-12	cancelled
L1.4-D1	Report (before month 12)	2016-05	2017-06
L1.4-D2	Report (before month 20)	2016-12	2017-06
L2.1-D1	Report (before month 12)	2016-05	2016-07
L2.1-D2	Report (before month 20)	2016-12	2017-04
L2.2-D1	Report (before month 12)	2016-05	2016-07
L2.2-D2	Report (before month 20)	2016-12	2017-06
L2.3-D1	Report (before month 12)	2016-05	2017-04
L2.3-D2	Report (before month 20)	2016-12	2017-06
L2.4-D1	Report (before month 20)	2016-12	2017-06
L3.1/XC1.2-D1	Review of metrics for model evaluation (June 2016)	2016-06	
L3.1/XC1.2-D2	Common protocol for model evaluation (April 2017)	2017-04	
L3.2/XC4.1-D1	Report describing the MACSUR phase 2 training strategy, including a timeline for and the focus and extent of training resources, and a plan for attracting funding for continuation of training structures beyond 2017 (July 2015)	2015-07	2015-07
L3.2/XC4.1-D2	An on-line signposting resource assembled and made available for scientist and students working in the field of agricultural modelling (November 2015)	2015-11	2015-08
L3.3/XC6.2-D1	Report on shared framework for comparative analysis of case studies (December 2015)	2015-12	2015-12
L3.3/XC6.2-D2	Report on preliminary outcomes of the comparative analyses based on IAM (December 2016)	2016-12	2017-05
L3.3/XC6.2-D3	Report on comparative SWOT analysis (February 2017)	2017-02	2017-02
L3.3/XC6.2-D4	Paper(s) on case study comparative analysis at regional or pan European scales (June 2017)	2017-05	
L3.4/XC7.3-D1	Deliver ensembles of EU-wide/global consistent set(s) of grassland yield changes in common protocol format to XC7 (June 2016)	2016-06	
L3.4/XC7.3-D2	Chapter on the involved models and modelling results in the joint publication ‘comprehensive assessment of climate change impacts on European agriculture’ (April 2017)	2017-04	
L3.5/XC11.1-D	Review paper and/or special issue on of novel developments in livestock diets including alternative protein sources (November 2016)	2016-11	2016-11
L3.6/XC11.2-D1	Paper on future livestock diets for main European regions under conditions of climate change and reduction of protein	2017-05	cancelled

	imports including aspects of on competitiveness and land use implications of protein feed production (Month 24)		
L3.7/XC14.4-D	Draft publication on “impacts of agricultural adaptation scenarios on ecosystem services and rural development”: chapter on results (May 2017)	2017-05	2017-03
L3.8/XC15.2-D	Document about “Evaluation of mitigation vs. adaptation strategies“ to be shared among MACSUR2 (Sept 2016)	2016-09	cancelled
T0.1-D	Regular (6-monthly) progress report	2017-05	2017-05
T0.2-D	Regular reports to the Knowledge Hub management (Months: 06, 12, 18, 24)	2017-05	2017-05
T1.2/XC16.1-D	Paper on challenges to European farmers to address global food security (January 2016)	2016-01	cancelled
T1.2/XC16.2-D	Framework report. Description of the different RAPs and definition of necessary data input (January 2016).	2016-01	2017-06
T1.2/XC16.4-D	RAPs documentation (November 2016)	2016-11	cancelled
T1.3-D1	presentations at international conferenc(es) are made	2017-05	2017-05
T1.3-D2	organized session at conferenc(es) take place	2017-05	2017-05
T1.3-D3	conference is taking place	2017-05	2017-05
T1.4-D1	Outlines of chapters (M12)	2016-05	cancelled
T1.4-D2	manuscripts are ready for publication (M18)	2016-11	cancelled
T1.4-D3	published book (M24)	2017-05	cancelled
T2.4/XC9.2-D1	Publication draft, titled "Underlying drivers for yield gaps of cereals in Europe" (April 2017)	2017-04	cancelled
T2.4/XC9.2-D2	Online maps of cereal production, yield gaps and underlying drivers are presented in the Wageningen UR (+ partners) Benchmarking Atlas (April 2017)	2017-04	cancelled
T2.4/XC9.3-D1	Publication draft, titled "Sustainable options to decrease yield gaps of cereals in Europe" (April 2017)	2017-04	2017-04
T2.4/XC9.3-D2	Storylines of cases are presented in the Wageningen UR (+ partners) Benchmarking Atlas, together with the related maps (April 2017)	2017-04	2016-10
T2.4/XC9.3-D3	Report on the integrated model based analysis on the implications and sustainability of the decreased yield gaps on selected case study cases (April 2017)	2017-04	2017-04
T2.5-D	Report on the findings (October 2016)	2016-10	2016-10
T2.6/XC14.1-D	Draft publication on “impacts of agricultural adaptation scenarios on ecosystem services and rural development”: chapter on analytical framework (October 2016)	2016-10	2016-10
T2.6/XC14.2-D	Draft publication on “impacts of agricultural adaptation scenarios on ecosystem services and rural development”: chapter on model competences (October 2016)	2016-10	2016-10
T2.6/XC14.2-D	Draft publication on “impacts of agricultural adaptation scenarios on ecosystem services and rural development”: chapter on model competences (Januar 2017)	2017-01	2016-10
T2.6/XC14.3-D	Draft publication on “impacts of agricultural adaptation scenarios on ecosystem services and rural development”:	2017-05	2017-03

	chapter on gap analysis in assessment methods (May 2017)		
T3.1/XC6.1-D1	List of case studies, archives of datasets for model calibration, models and integrated assessment procedures for each case study (December 2015)	2016-12	(2017-05)
T3.1/XC6.1-D2	Report on preliminary assessment of climate change on relevant crops/live/grasslands	2017-05	2017-05
T3.1/XC6.1-D3	Report on preliminary assessment of climate change at case study (i.e. food chain, farm type or district scales) (December 2016)	2016-12	
T3.1/XC6.1-D4	Paper(s) on case study assessments (June 2017)	2017-05	(2017-05)
T3.2/XC7.1/XC16.3-D1	Result tables (June 2016)	2016-06	cancelled
T3.2/XC7.1/XC16.3-D2	Chapter on the baseline in the joint publication 'Comprehensive assessment of climate change impacts on European agriculture' (April 2017)	2017-04	cancelled
T3.2/XC7.4-D1	Protocol for data exchange with XC7.2 and XC7.3 (Dec 2015)	2015-12	cancelled
T3.2/XC7.4-D2	Chapter on the integrated analysis in the joint publication (April 2017)	2017-04	cancelled
T3.2/XC7.5-D1	Main conclusions from the regional case studies for the European level impact analysis (February 2017)	2017-02	2016-10
T3.2/XC7.5-D2	Chapter on regional validation in the joint publication 'comprehensive assessment of climate change impacts on European agriculture' (April 2017)	2017-04	2017-02
T3.6-D	Draft paper (October 2016)	2016-10	2016-10
T4.1/XC4.3-D1	Curriculum and announcement for course on policy impact assessment (M01)	2015-06	2016-06
T4.1/XC4.3-D2	Report on achievements of modelling course (M24)	2017-05	2017-05
T4.2/XC4.4-D1	Curriculum and announcement for international modelling workshop (M01)	2015-06	2016-06
T4.2/XC4.4-D2	Report on achievements of modelling course (M24)	2017-05	2017-05

E2. Milestones achieved

Deliverable ID	Description	Month planned	Month achieved
H0.1-M	Outline of the research gap report in collaboration with Theme leaders (M12)	2016-05	2016-11
H0.2-M	Regular progress reports (M6, M12, M18, M24)	2017-05	2017-05
H0.2-M1	Progress report (M06)	2015-11	2015-11
H0.2-M2	Progress report (M12)	2016-05	2016-05
H0.2-M3	Progress report (M18)	2016-11	2016-11
H0.2-M4	Progress report (M24)	2017-05	2017-02

H0.3-M	Upload of workshop presentations	2017-05	2017-06
H0.3-M1	Upload of workshop presentation	2017-05	2015-10
H0.3-M2	Upload of workshop presentation	2017-05	2016-07
H0.3-M3	Upload of workshop presentation	2017-05	2016-11
H0.3-M4	Upload of workshop presentation	2017-05	2017-06
H1/XC1-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
H1/XC2-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
H1/XC3-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	cancelled
H1/XC4-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
H1/XC6-M	Presentation of approach at a MACSUR2 workshop (April 2016)	2016-10	2016-10
H1/XC7-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
H1/XC8-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
H1/XC9-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
H1/XC11-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
H1/XC15-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2017-05
H1/XC16-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
C0.1-M	Kick-off meeting of CropM (Month 1)	2015-06	2015-04
C0.2-M	CropM progress workshop (Month 5)	2015-10	2015-10
C0.3-M	CropM progress workshop (Month 12)	2016-05	2016-03
C0.4-M	CropM final workshop (Month 21)	2017-02	2017-05
C1.1-M	Model performance on spatial variable inputs (Month 20)	2017-01	2017-02
C1.2-M1	Approaches for extreme events are integrated in crop models (Month 9)	2016-02	2016-03
C1.2-M2	Validated models implementing approaches for selected extremes (Month 22)	2017-03	2017-05
C1.3-M1	Comparison of models applied to long-term experiments (Month 15)	2017-03	2017-05
C1.3-M2	Long term effects of cropping and management systems under current and future climate conditions from transient runs of a model ensemble (Month 20)	2017-04	2017-05
C1.4-M1	Data sets for selected cropping systems available for modelers (Month 9)	2016-10	2017-01
C1.4-M2	Inter-comparison of models for new cropping system available (Month 22)	2017-03	2017-05
C1.5-M1	Survey of relevant pest and diseases in European regions (Month 5)	2015-10	2015-10
C1.5-M2	Approaches for pests and diseases available for implementation (Month 12)	2016-05	2016-05

C1.5-M3	Verification of models implementing pest and diseases effects (Month 22)	2017-03	2017-05
C1.6/XC1.1-M1	Progress presentation at MACSUR2 conference (October 2016)	2016-10	2016-10
C1.6/XC1.1-M2	Science-stakeholders workshop (April 2016)	2016-04	2016-05
C1.7/XC1.3-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2017-05
C2.1-M	All datasets of partners critically reviewed and list of those available for modelling exercises in MACSUR catalogued and accessible to the project partners (Month 12)	2016-05	2017-01
C2.2-M	A document describing methodology of preparing local-scale climate change scenarios based on the CMIP5 multi-model ensemble for RCP4.5 and RCP8.5 for the experimental sites and pilot regions (Month 12)	2016-05	2016-05
C2.3-M	Data gaps for crop modelling identified (Month 14)	2017-03	2017-05
C2.4-M	Impact of data quality on crop model simulations quantified (Month 16)	2016-09	2016-09
C2.5-M	On-line web tool for visualizing experimental and modelling results. (Month 12)	2016-05	2017-01
C2.6-M	Europe-wide distribution of a electronic questionnaire dealing with the observed adaptation measures in the European agriculture. (Month 10)	2016-03	2017-01
C2.7-M	Crop yield responses of key crops to climatic variation quantified (Month 12)	2016-05	2016-07
C3.1-M	Overview of progress in scaling methods (Month 12)	2016-10	
C3.2-M	Decision of data sharing mechanism for scaling exercise and determination of relevant data sets for OdJAR.org (Month 6)	2015-11	2015-12
C3.3-M	Completion of Protocol for upscaling methods to be compared (Month 6)	2015-11	2015-11
C3.4-M	Decision on regions, crops and impact variables to be considered in the comparison of upscaling methods (Month 6)	2015-11	2015-11
C3.5-M	Decision on models and scaling methods to be used in integrated assessment study (Month 6)	2015-11	2015-11
C3.6/XC2.1-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
C4.1-M1	A library of previous studies of model comparison, based on the wealth of experience represented by the partners of MACSUR (Month 12).	2017-04	
C4.1-M2	A document that shows how different approaches to model evaluation are related, how best to apply each approach (protocols), and how to use them together to obtain a better overall picture of crop model uncertainty and the contributions to that uncertainty (Month 12).	2016-05	2016-05
C4.1-M3	Results of applying these protocols in different situations, with an analysis of uncertainty and its components and how they depend on the context of prediction or projection, and on output being simulated (Month 12).	2016-05	2016-05

C4.2-M1	Document that identifies the questions and choices involved in building and analyzing MMEs, based on the experience in both the crop modeling and climate modeling communities (Month 12).	2016-05	2016-05
C4.2-M2	Document that makes recommendations of best practices for creating and analyzing MMEs (Month 12).	2016-05	2016-05
C4.2-M3	Document that identifies important future research directions in this area (Month 15).	2016-08	2016-08
C4.3-M1	Documentation of model sensitivity for an ensemble of 26 models that distinguishes differences in model response attributable to climate – with a classification scheme for different model behaviour (Month 15).	2016-08	2016-03
C4.3-M2	Document on future research needs in this area (Month15).	2016-10	2016-10
C4.4-M1	Documentation of selected climate change adaptation options for cereal cultivation regions in the Mediterranean (exemplified for N Spain), Nordic (Finland) and central parts (Germany) of Europe (Month18)	2016-11	2016-09
C4.4-M2	Document on differences in crop model behaviour of simulating effects of adaptation in contrasting agro-environments - with an outlook on future research needs in this area (Month 18).	2016-11	2016-09
C4.5-M	Document on differences in crop model behaviour in designing new, more climate resilient crop cultivars - with an outlook on future research needs in this area (Month 18).	2016-11	2016-11
C4.6-M1	Parameter induced uncertainty quantification for simulating yield, carbon and nitrogen cycling for the MACSUR test site (Month18)	2016-11	2017-05
C4.6-M2	Uncertainty quantification for simulating yield, C and N cycling for a MACSUR test site (Month 18)	2016-11	2017-05
C4.7/XC3.1-M1	Document summarizing all uncertainty related activities in MACSUR. To be communicated with the MACSUR Newsletter at least bi-yearly (June 2016, May 2017)	2017-05	cancelled
C4.7/XC3.1-M2	Workshop on the review of studies and research activities relevant for uncertainty assessment and quantification in crop, feed and livestock production in MACSUR (May 2016)	2016-05	2016-03
C4.7/XC3.1-M3	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2017-05
C4.7/XC3.1-M4	Summary document on uncertainty and risk in MACSUR (Oct 2016)	2016-10	
C4.8/XC3.2-M1	Bi-yearly communicating external activities and research findings within MACSUR2 (June 2016).	2016-12	2017-05
C4.8/XC3.2-M2	Bi-yearly communicating external activities and research findings within MACSUR2 (May 2017).	2017-05	2017-05
C5.1-M1	Series of online planning meetings necessary to establish the delivery of four PhD schools in the 24 months of MACSUR2. (Month 3)	2016-09	2016-11
C5.1-M2	Delivery of PhD schools at approximately six month intervals (Months 6, 12, 18 and 24)	2017-05	partially
C5.2/XC4.2-M	Outline of course reported (January 2016)	2016-09	2016-10

C6.1/XC6.3-M1	Exchange (via shared platform) of a preliminary synopsis containing main issues addressed by XC6 in the different case studies (December 2016)	2016-12	2016-11
C6.1/XC6.3-M2	Final workshop (June 2017)	2017-05	2017-05
C6.2/XC7.2-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
C6.3/XC9.1-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-03
C6.4/XC15.1-M1	Document summarizing all mitigation related activities in MACSUR. To be communicated with the MACSUR Newsletter at least bi-yearly.	2017-05	cancelled
C6.4/XC15.1-M2	Workshop on the review of studies and research activities relevant for GHG mitigation in crop, feed and livestock production in MACSUR (May 2016)	2016-12	2016-03
C6.5/XC15.3-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2017-05
C6.5/XC15.4-M	Summary document on GHG mitigation in MACSUR (Oct 2016)	2016-10	cancelled
L0.1-M1	System in place for communication (month 1)	2015-06	2015-06
L0.1-M2	Resource for partners to identify researchers with similar or complementary skills and interests developed and available (month 3)	2015-08	2015-08
L0.1-M3	Workshops for the first year developed and run (month 12)	2017-05	2015-05
L1.1-M1	Workshop (before month 7)	2015-11	2015-06
L1.1-M2	Workshop (before month 18)	2016-11	2016-05
L1.2-M1	Workshop (before month 7)	2015-11	2015-06
L1.2-M2	Workshop (before month 18)	2016-10	2016/09
L1.3-M1	Workshop (before month 7)	2015-11	2015-10
L1.3-M2	Workshop (before month 18)	2016-11	cancelled
L1.4-M1	Workshop (before month 7)	2015-11	2015-10
L1.4-M2	Workshop (before month 18)	2016-11	2016-06
L2.1-M1	Workshop (before month 7)	2015-11	2015-06
L2.1-M2	Workshop (before month 18)	2016-11	2016-11
L2.2-M1	Workshop (before month 7)	2015-11	2015-06
L2.2-M2	Workshop (before month 18)	2016-10	2016-11
L2.3-M1	Workshop (before month 7)	2015-11	2015-10
L2.3-M2	Report (before month 10)	2016-02	2017-06
L2.3-M3	Workshop (before month 18)	2016-11	2016-06
L2.4-M1	Workshop (before month 20)	2016-12	2016-06
L3.1/XC1.2-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10

L3.2/XC4.1-M	Workshop at Reading hub conference (Apr 2015) The session will bring together interested partners to decide the focus, extent and structure of the MACSUR phase 2 training strategy, building on work developed within the knowledge hub in phase 1, the review paper on communicating modelling (Kipling & Ozkan – in preparation), identified gaps in training, and the interests and capacity of partners.	2015-04	2015-04
L3.2/XC4.1-M	Workshop at Reading hub conference	2015-04	2015-04
L3.3/XC6.2-M1	Workshop to design a common framework for the comparative analysis	2017-05	2016-10
L3.3/XC6.2-M2	Exchange (via shared platform) of the outcomes of the comparative analyses based on integrated modelling assessments	2017-05	2017-05
L3.3/XC6.2-M3	Exchange (via shared platform) of the outcomes of the SWOT analyses of each case study	2017-05	2017-05
L3.4/XC7.3-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
L3.5/XC11.1-M	Workshop on the review of novel developments in livestock diets including alternative protein sources (Month 12)	2016-05	2016-05
L3.6/XC11.2-M1	Workshop on future livestock diets under conditions of climate change (Month 18)	2016-11	cancelled
L3.6/XC11.2-M2	First results on the integrated analysis on the competitiveness of feed protein production in regional level, to be cross-checked by the partners (Month 16)	2016-09	cancelled
L3.7/XC14.4-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
L3.8/XC15.2-M	Draft of document about “Evaluation of mitigation vs. adaptation strategies“ to be shared among MACSUR2 (Jan 2016)	2016-01	cancelled
T0.1-M	TradeM Workshops	2017-05	see below
T0.1-M1	TradeM workshop (October 2015)	2015-10	2015-10
T0.1-M2	TradeM workshop (April 2016)	2016-04	2016-03
T0.1-M3	TradeM workshop (October 2016)	2016-10	2016-10
T0.1-M4	TradeM final workshop (May 2017)	2017-04	2017-05
T1.2/XC16.1-M	Presentation of progress at MACSUR conference (October 2015)	2015-10	2015-10
T1.2/XC16.2-M	Presentation of progress at MACSUR conference (Oct 2015)	2015-10	2015-10
T1.2/XC16.4-M	Regionalized RAPs available (September 2016)	2016-09	cancelled
T1.3-M1	participation of TradeM partners at various conferences (on-going)	2017-05	2017-05
T1.3-M2	proposals for organized sessions at international conferences are submitted (M12)	2016-05	2016-05
T1.3-M3	proposals a joint conference with AgMIP and other networks is completed (M12)	2016-05	cancelled
T1.4-M1	Dissemination strategy is developed (M01)	2015-06	2015-10
T1.4-M2	Dissemination strategy is communicated and accepted by partners (M06)	2015-11	2015-10

T1.4-M3	Call for papers are finished (M10)	2016-03	2016-03
T1.4-M4	Agreement with publisher is found (M12)	2016-05	2016-05
T1.4-M5	Manuscripts are ready for publication (M18)	2016-11	cancelled
T2.4/XC9.2-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
T2.4/XC9.3-M1	First results from integrated models, for evaluation for the project team (Month 12).	2016-05	2016-05
T2.4/XC9.3-M2	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
T2.5-M	Presentation on the achievements (October 2016)	2016-10	2016-10
T2.6/XC14.1-M	Indicator framework for ecosystem service assessment of MACSUR scenarios (Month 18)	2016-11	2016-11
T2.6/XC14.2-M	Overview of the potential of existing MACSUR modelling for ecosystem service assessment (February 2016)	2016-02	2015-10
T2.6/XC14.3-M	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
T3.1/XC6.1-M1	Workshop to design the minimum datasets required for a case study to be eligible, including climatic datasets and to make an inventory of the models and methods of integrated assessment used for each case study (October 2015) [This milestone is intended to take into account of the chosen scale for each case study (farm-type, district or region)]	2017-05	2015-09
T3.1/XC6.1-M2	Exchange (via shared platform) of outcomes on preliminary assessment of CC impacts on crops and/or livestock/grasslands (April 2016)	2016-04	
T3.1/XC6.1-M3	Exchange (via shared platform and skype conferences) of outcomes about the preliminary assessments of CC impacts at farm/district scale using trade models (October 2016)	2016-10	
T3.1/XC6.1-M4	Final workshop on the results of the Integrated assessment by combining biophysical and economic models (October 2016)	2016-10	2017-05
T3.2/XC7.1/XC16.3-M1	Delivery of data to regional pilot studies (June 2016)	2016-06	cancelled
T3.2/XC7.1/XC16.3-M2	Progress presentation at MACSUR2 conference (October 2016)	2016-10	cancelled
T3.2/XC7.4-M1	Progress presentation at MACSUR2 conference (Oct 2016)	2016-10	2016-10
T3.2/XC7.4-M2	Protocol for data exchange with XC7.2 and XC7.3 (Dec 2015)	2015-12	cancelled
T3.2/XC7.4-M3	Integrated ensemble runs (Aug 2016)	2016-08	cancelled
T3.2/XC7.4-M4	Meta-analysis of integrated ensemble runs (Dec 2016)	2016-12	cancelled
T3.2/XC7.5-M	Progress presentation at MACSUR2 conference (October 2016)	2016-10	2016-10
T3.3-M	Presentation of the achievements (October 2016)	2016-10	cancelled
T3.6-M	Presentation of the achievements (October 2016)	2016-10	2016-10
T4.1/XC4.3-M1	Training course on policy impact assessment announced (M4)	2015-09	2016-02
T4.1/XC4.3-M2	Training courses on policy impact assessment finalised (M20)	2017-01	2017-04

T4.1/XC4.3-M3	Participants receive ECTS points for their attainments (M22)	2017-03	2017-05
T4.2/XC4.4-M1	International modelling course is announced (M6)	2015-11	2016-02
T4.2/XC4.4-M2	International workshop takes place (M18)	2016-11	2017-05

National Laboratory for Agriculture and the Environment, Ames, USA (Rob Malone) on catch crops and N losses of drained soils.

- INRA: ZALF (Germany), Luke (Finland), University of Bonn (Germany), University of Copenhagen (Denmark), James Hutton Institute (UK), University of Leeds (UK), University of Aberdeen (UK)

In addition many CropM partners have played an active role in the AgMIP collaboration on model inter-comparisons and data requirements. This had led to many new collaborations globally, and this could not have been so successful without MACSUR and the infrastructure provided by MACSUR.