FACCE MACSUR Second-year report

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Instrument: Joint Programming Initiative
Topic: Agriculture, Food Security, and Climate Change
Project: Modelling European Agriculture with Climate Change for Food Security (FACCE MACSUR)
Due date of deliverable: month 25
Submission date: 2013-06-04
Start date of project: 1 June 2012
Duration: 36 months
Theme, Work Package: Hub 3
Deliverable lead partner: Thünen Institute
Document ref number: D-H3.5, D-H3.2
Confidential till: —
MACSUR (FACCE JPI)
Questionnaire for knowledge-hub partners,
to collect data for a
monitoring report for funding agencies


(abridged version)

Project details

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<td><a href="http://www.macsur.eu/">http://www.macsur.eu/</a></td>
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1. Contact details

Overview of partners in MACSUR and their functions. Hub co-ordinators (double underline), Theme coordinators: single underline).

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<th>Partner ID</th>
<th>Country</th>
<th>Scientific coordinator</th>
<th>E-mail</th>
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<td><a href="mailto:ngs@aber.ac.uk">ngs@aber.ac.uk</a></td>
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<td><a href="mailto:Derek.Stewart@hutton.ac.uk">Derek.Stewart@hutton.ac.uk</a></td>
<td>The James Hutton Institute</td>
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<td><a href="mailto:p.haggarty@abdn.ac.uk">p.haggarty@abdn.ac.uk</a></td>
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<td>The Pirbright Institute</td>
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</table>
2. Finances
All data requested in this section are as per partner.

“Partner” is here defined as “successful applicant”. In some cases groups of scientists, who originally applied independently, were granted only under the condition that their applicants were merged in order to become one “partner”. In cases like this, we leave it up to the partners to choose the most sensible unit for reporting, depending on the type of collaboration that evolved from the merging of originally independent partners.

The overall project costs are generally divided into
a) personnel costs
b) other direct costs
c) subcontracting and
d) indirect costs (e.g. administration, office, computers).

In kind contributions, i.e. contributions financed by the partner, shall be indicated by category a - d.
Money received, contributed and spent

Funding for knowledge hub activities in MACSUR1 came from each country according to national rules. Therefore, activities of research groups and their funding varied strongly across the knowledge hub. In all FACCE countries costs for participation in meeting was eligible for funding. Ten of 17 FACCE countries would fund research activities. The same proportion would fund mobility of researchers, i.e. institutional visits, which has aspects of research, networking and capacity building. Nine countries would fund workshops and almost as many countries would contribute to capacity building. Only Denmark explicitly mentions funding for stakeholder interaction.

Table 2.1. Activities eligible for direct funding in MACSUR (sources: FACCE JPI call 2012, Annex B; and funding reported to FACCE JPI in April 2013. Hungary is not participating in FACCE JPI, the Hungarian partner is providing their own funds. (X): activity was eligible but no funding was received at time of survey. T: money for travelling. ?: no or incomplete response.

<table>
<thead>
<tr>
<th>Country</th>
<th>Direct funding, 36 mo., k€</th>
<th>actual Hub/Theme Co-ordination</th>
<th>Research</th>
<th>Networking</th>
<th>Training and capacity building</th>
<th>Stakeholder interaction</th>
<th>Other</th>
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3. Output
All data requested in this section are as per partner.
This section may contain output that does not solely origin from MACSUR funding but from a cooperation in which MACSUR played a considerable role. The major part may thus be financed from other sources. In order to be listed hereunder, however, MACSUR must have made some significant input.

a) Articles in peer reviewed international journals and submitted manuscripts (170)


Agriculture, Ecosystems and Environment 149: 64-73


Bonatti, M. ; Schindwein, S. L. ; de Vasconcelos, A. C. F. ; Sieber, S. ; D’Agostini, L. R. ; Lana, M. A. ; Fantini, A. C. ; Homem, I. H. I. ; Canci, A. (2013): Social organization and agricultural strategies to face climate variability: a case study in Guaraciaba, Southern Brazil. - Sustainable Agriculture Research,


Lehtonen, H. & Irz, X. 2013. Impacts of reducing red meat consumption on agricultural production in Finland.
Strauss F, Moltchanova E, Schmid E. 2013. Spatially Explicit Modeling of Long-Term Drought Impacts on Crop


S Shrestha, M Abdalla, T Hennessy, D Forristal and M Jones, 2014. Irish farms under climate change http://dx.doi.org/10.1038/nclimate2242


evaluation over a wide range of agro-environmental conditions. Submitted manuscript.

De Pascale S., Maggio A.A., Orsini F., Stanghellini C., Heuvelink E. Growth Response and Radiation Use Efficiency in Tomato Exposed to Short-Term and Long-Term Salinized Soils. Submitted manuscript.

Dono Gabriele, Raffaele Cortignani, Luca Giraldo, Pier Paolo Roggero (2014) Climate change and irrigated farming in the Mediterranean: lower expectation of favorable conditions to profitability rather than harshening of adverse conditions. Submitted manuscript.


Dumont, B., Basso, B., Leemans, V., Bodson, B., Destain, J.-P., Destain, M.-F. A comparison of within season yield prediction algorithms based on crop model behaviour analysis


Jabloun, M., Schelde, K., Tao, F. & Olesen, J.E. Effect of changes in temperature and precipitation in Denmark on nitrate leaching in cereal cropping systems. Global Change Biology

Kersebaum Kurt Christian; Kenneth J Boote; Jason S Jorgenson; Claas Nendel; Marco Bindi; Cathleen Frühau; Thomas Gaiser; Gerrit Hoogenboom; Chris Kollas; Jørgen E Olesen; Reimund P Röthter; Françoise Ruget; Peter Thorburn; Miroslav Trnka; Martin Wegehenkel (2014) Analysis and classification of data sets for calibration and validation of agro-ecosystem models. Submitted manuscript.


Mansouri, M., Dumont, B., Destain, M.-F. Predicting Biomass and Grain Protein Content Using Bayesian Methods.


Montesino-San Martin, M., Olesen, J.E. & Porter, J.R. Climate impact uncertainties with generic crop modelling approaches. Submitted manuscript.


Watson, J., A. J. Challinor, T. Fricker and C. Ferro. Comparing the effects of calibration and climate errors on a statistical crop model and a process-based crop model. Submitted manuscript


Dono Gabriele, Raffaele Cortignani, Luca Giraldo, Roggero Pier Paolo (under revision) Climate change and irrigated farming in the Mediterranean: Less probability from a lower probability of favorable weather conditions, not a higher frequency of adverse conditions. German Journal of Agricultural Economics, www.gjae-online.de/

Bojar W., Knopik L., Żarski J., Ślawiński C., Baranowski P., Żarski W. The impact of extreme climate changes on the focused agriculture production. Submitted manuscript Eory, V., M. MacLeod, S. Shretsha, D. Roberts, (under revision), Linking an economic and a life-cycle analysis biophysical model to support agricultural greenhouse gas mitigation policy . German Journal of Agricultural Economics, www.gjae-online.de/


b) Contribution in books (16)


c) Other publications (13)


Bojar W. Short information on progress in MACSUR in: the UTP bulletin named FORMAT UTP no. 68. 2014. p.63

d) Input to policy makers

included in section 4.2c.

e) Oral and poster presentations in scientific congresses (301)

Köch, M. - The FACCE knowledge hub ‘MACSUR’ - FACCE JPI Mapping Meeting on Core Theme 3: Assessing and reducing tradeoffs: food production, biodiversity & ecosystems services - From 11.06.2012 till 12.06.2012 - (Hub)


Twardy S. - Contamination of surface water bodies with biogenic substances, taking into account the impact of agriculture in the Western Carpathians. - Baltic Deal at Malopolska - training workshops for counselors within the Baltic Deal project. Agricultural Advisory Centre Malopolska. Kaniowice, Poland. - From
forage yield and quality in a variable and changing climate, Forssa, Finland, NJF Report Vol. 9 No. 1 2013, p 4-5. – From 30.01.2013 till 31.01.2013 - (CropM)


Ayalon, O. - Welcome Address of the Director Natural Resource and Environmental Research Center - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Baier, Z., R. R. Palatnik - Assessing the Impact of Climate Change on the Israeli Water Economy via a Linked CGE and Farm-Level Model - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Brouwer, F. - Objectives of MACSUR project and TradeM theme - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Bojar, W., Sinabell, F., Verburg, R. - Economic and Trade Models to Analyze Climate Change Risk and Food Security for European Agriculture - A Survey - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Bojar, W., Sinabell, F., Verburg, R. - Economic and Trade Models to Analyze Climate Change Risk and Food Security for European Agriculture - A Survey - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Brouwer, F. - Objectives of MACSUR project and TradeM theme - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Brouwer, F. - Objectives of MACSUR project and TradeM theme - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Cohen, S. - Climate change and Israeli Agriculture - resilience, adaptation, land use and production - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Dono Gabriele, Raffaele Cortignani, Paola Deligios, Luca Doro, Luca Giraldo, Luigi Ledda, Graziano Mazzapicchio, Massimiliano Pasqui, Pier Paolo Roggero - Economic assessment of the impact of uncertainty associated with short-run change in climate variability in Mediterranean farming systems. - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Gutierrez, L., F. Piras, P. Roggero - Short and long-run impact of climate changes on worldwide grain prices - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Havlik, P. E. Schmid, S. Fuss, D. Leclere, M. Obersteiner, A. Mosnier, H. Valin, N. Khabarov - Linking bio-physical, bottom - up and top - do wn economic models to analyze climate change impacts and adaptation on Austrian agriculture - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Hoveid, Ø.2014 - Linking models of climate, weather, crops and economic behavior by Bayesian calibration.” – MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - (TradeM)

Jorgenson, J. S. - Options for Cloud computing - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Kahn, I., M. Rapport-Rom - Assessing the Impact of Climate Change on Vegetative Agriculture in Israel - The VALUE Model - MACSUR TradeM workshop: “Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security”, The Natural Resource and Environmental
Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Lehtonen, H., R. Rötter, T. Paluso - Farm level analysis as a key to integrated regional case studies in Finland - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Schechter, M. - Welcome Address of the Founder and Distinguished Chair of Natural Resource and Environmental Research Center - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Schmitz, A. Biwald, H. Lotze-Campen - Interactions between agricultural trade liberalisation and the environment - An analysis with a global land use model - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Schönhart, M., Koland, O., Schmid, E. - Linking bio-physical, bottom-up and top-down economic models to analyze climate change impacts and adaptation on Austrian agriculture. - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

te Roller, J. - Agricultural model for the Nile Basin Decision Support System - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Wu, L., A. P. Whitmore - Using SPACSYS to analyse the interaction between plant and environment in a systems approach - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Zander, P. - Modelling regional land use and climate change adaptation strategies in Northern Germany - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Zavailoni M., Raggi M., Viaggi D. - Water markets for climate change. - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Zimmermann, A., Britz, W., Adenäuer, M., Heckelei, T. - Food Security Assessment with CAPRI - MACSUR TradeM workshop: "Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security", The Natural Resource and Environmental Research Center (NRERC), University of Haifa, Israel - From 03.03.2013 till 05.03.2013 - http://www.macsur.eu/ (TradeM)

Müller C - Climate change impacts, uncertainties and implications - First Workshop Expert Network "Management of Climate change induced Risks", Hamburg, Germany - From 20.03.2013 till 21.03.2013 - (CropM)

Banse, M. - MACSUR (Modelling European Agriculture with Climate Change for Food Security) - LIAISE Annual Meeting, Tallinn, Estonia - From 25.03.2013 to 28.03.2013 - (Hub)


Müller C - Multi-sector interaction in climate change impact analysis - Impacts World 2013, International Conference on Climate Change Effects, Potsdam, Germany - From 27.05.2013 till 30.05.2013 - (CropM)


Rocca A., Bellocci G., Giussani A., Sanna M., Perego A., Fumagalli M., Carozzi M., Chiodini M., Bregaglio S., Confalonieri R., Acutis M. - Correlation between evaluation model indicators. - XVI National congress of Agrometeorology. Firenze, Italy - From 04.06.2013 till 06.06.2013 - (CropM)


Lamorski K., Pastuszka T., Krzyszczak J., Ślawinski C., Witkowska-Walczak B. - Modelling soil water Dynamics Using the physical and soft-computing methods. - 10th International Conference on Agrophysics - From 05.06.2013 till 07.06.2013 - (CropM)

Floor Brouwer, Franz Sinabell, Waldemar Bojar, Oyvind Hoveid, Gabriele Dono, Katharina Helming - The main findings of TradeM, achieved during the first year - Workshop on Regional Pilot Studies Braunschweig, Germany - From 05.06.2013 till 07.06.2013 - (TradeM)

Acutis M., Bellocci G. - Briefing on CropM-LiveM model intercomparison protocol - JPI FACCE MACSUR CropM and LiveM cross-cutting activity Helsinki, Finland - From 06.06.2013 till 07.06.2013 - (CropM)

Ahmadi BV, Thomson S, Shrestha S and Stott AW. - Predicting the implications of CAP reform using a bio-economical modelling approach - 133rd EAAE seminar 'Developing Integrated and Reliable Modeling Tools for Agricultural and Environmental Policy Analysis', Crete, Greece - From 15.06.2013 till 16.06.2013 - (LiveM)


Ben Touhami, H., Lardy, R., Klumpp, K., Bellocchi, G. - Bayesian calibration of the Pasture Simulation model (PaSim) to simulate emissions from long-term European grassland sites: a case study at Laqueille (France) - Greenhouse Gases & Animal Agriculture 2013, Dublin, Ireland - From 23.06.2013 till 26.06.2013 - http://www.gga2013.ie/ (LiveM)

Anne Biewald - Quantifying and Qualifying the Impact of Agricultural Trade on Water Resources - Achievements and Challenges - Water Research Horizon Conference, Berlin, Germany - From 25.06.2013 till 26.06.2013 - (TradeM)


Stefaničzyk E., Sobkowiak S., Śliwka J. - Polish population of fungi belonging to Fusarium genus and associated with potato dry rot - Summer School of Bioinformatics, Poznan, Poland - From 19.08.2013 till 23.08.2013 - (CropM)

Semenov MA (2013) - Modelling predicts that heat stress, not drought, will increase vulnerability of wheat in Europe. - InterDrought IV, Perth, Western Australia - From 02.09.2013 till 06.09.2013 - (CropM)


Anne Biewald - The impact of agricultural policies and different socioeconomic developments on future agricultural production in Finland - 2nd GLP Open Science Meeting, Berlin, Germany - From 09.09.2013 till 11.09.2013 - (TradeM)


Persson T., Höglin, M. - Assessment of harvest security of Timothy under climate change condition using a set of simple criteria. - Proceedings of the 22nd International Grasslands Congress, Sydney, Australia - From 15.09.2013 till 19.09.2013 - (CropM)


Lotze-Campen, H. - Panel Discussion: "A Place at the Table" - 2013 Borlaug Dialogue: Biotechnology, Sustainability and Climate Volatility, Des Moines, Iowa /USA - From 15.10.2013 till 2013-1018


Conradt, T. - Introduction to the eco-hydrological model SWIM, recent applications and new developments - Solicited lecture at the Faculty of Agricultural Sciences of Baoding Normal University, Baoding, Hebei, P. R. China - From 20.10.2013 till 27.10.2013

Banse M. - FACCE-JPI Achievements to date: MACSUR - FACCE-JPI 3-year Anniversary Date - From 22.10.2013 till 22.10.2013 - (Hub)


Banse M., Köchy M. - Opportunities for collaboration: MACSUR - 4th Annual AgMIP Workshop, New York, USA - From 28.10.2013 till 30.10.2013 - (Hub)


Mitter, H., Sinabell, F., Schmid, E. - Integrated assessment of climate change and policy impacts of food security: a case study for protein crop supplies in Austria. - 4th Annual AgMIP Workshop, New York, USA -
From 28.10.2013 till 29.10.2013 - (TradeM)“


Müller C, Elliott J - The Global Gridded Crop Model Intercomparison - Approaches, insights and caveats of modeling climate change impacts on agriculture at the global scale - FAO expert consultation on climate change and trade, Rome, Italy - From 05.11.2013 till 06.11.2013 - (CropM)

Rötter RP et al. - Uncertainties in modelling impacts of climate change and variability on crop production - focus on Europe-led efforts in FACCE MACSUR. - FAO expert consultation on climate change and trade, Rome, Italy - From 05.11.2013 till 06.11.2013 - (CropM)

Rötter, R.P., Höhn, J. - Climate change impacts on crop production and its variability in Europe: an overview. - FAO expert consultation on climate change and trade, Rome, Italy - From 05.11.2013 till 06.11.2013


Audsley, E. - The results of applying the CLIMSAVE (TradeM+CropM+LiveM) model to the regional case studies - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - http://www.macsur.eu/ (TradeM)

Baranowski P., Sławinski C., Krzyszczak J. - Short presentation of partner's P139 involvement in CropM - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - (TradeM/CropM)

Baum, Z. - Assessing the impact of climate change on agriculture and a water economy with a diverse mix of water types - the Israeli case study - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - http://www.macsur.eu/ (TradeM)

Biewald, A. - The development of agricultural production under different socioeconomic conditions in Finland - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - http://www.macsur.eu/ (TradeM)


Brower, F., K. Helming - Workshop Introduction - MACSUR TradeM Workshop on Global Food Security Challenges
European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - http://www.macsur.eu/ (TradeM)

Dono, G. - Climate change scenarios and simulations on adaptation of Mediterranean agriculture: preliminary results of productive and economic impact - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - http://www.macsur.eu/ (TradeM)


Köchy M., Banse M. - Common assumptions about future agricultural trends across MACSUR integrated case studies - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - (Hub)


Lotze-Campen, H. - What have we Learned from Crop-Economic Model Comparison in AgMIP - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - http://www.macsur.eu/ (TradeM)


Schönhart, M., Schmid, E., Sinabell, F. - Integrated analysis of climate change adaptation and rural development in an Austrian case study region. - MACSUR TradeM Workshop on Global Food Security Challenges - European Research approaches. Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany - From 18.11.2013 till 20.11.2013 - (TradeM)"


Fox, Naomi - Climate, soil-transmitted helminths and livestock production - Workshop: Modelling interactions between climate and livestock pathogen transmission - From 22.01.2014 till 22.01.2014 -


Doltra, J., Olesen, J.E., Báez, D., Chirinda, N. - Simulating seasonal nitrous oxide emissions from maize and wheat crops grown in two different cropping systems in Atlantic Europe. - MACSUR CropM International Symposium and Workshop: Modelling climate change impacts on crop production for food security, Oslo, Norway - From 10.02.2014 till 12.02.2014 - (CropM)

Fung, Fai - Modelling livestock and grassland systems under climate change - Workshop: Modelling interactions between climate and livestock pathogen transmission - From 22.01.2014 till 22.01.2014 - http://www.research.pirbright.ac.uk/intent/macsur/workshop/ (LiveM)


McIntyre, Marie - Predicting the effects of climate change on pathogens - Workshop: Modelling interactions between climate and livestock pathogen transmission - From 22.01.2014 till 22.01.2014 - http://www.research.pirbright.ac.uk/intent/macsur/workshop/ (LiveM)

Wilson, Anthony - Introduction and purpose of meeting - Workshop: Modelling interactions between climate and livestock pathogen transmission - From 22.01.2014 till 22.01.2014 - http://www.research.pirbright.ac.uk/intent/macsur/workshop/ (LiveM)


Doltra, J., Olesen, J.E., Báez, D., Chirinda, N. - Simulating seasonal nitrous oxide emissions from maize and wheat crops grown in two different cropping systems in Atlantic Europe. - MACSUR CropM International Symposium and Workshop: Modelling climate change impacts on crop production for food security, Oslo, Norway - From 10.02.2014 till 12.02.2014 - (CropM)


Minet, Julien; Tychon, Bernard; Jacquemin, Ingrid; François, Louis - Can a global dynamic vegetation model be used for both grassland and crop modeling at the local scale? - MACSUR CropM International Symposium and Workshop: Modelling climate change impacts on crop production for food security, Oslo, Norway - From 10.02.2014 till 12.02.2014 - (CropM)


Sharif, B., Olesen, J.E. - Effects of tillage, fertilizer and residue management on crop growth dynamics in winter wheat at Foulum, Denmark. - MACSUR CropM International Symposium and Workshop: Modelling
climb climate change impacts on crop production for food security, Oslo, Norway - From 10.02.2014 till 12.02.2014 - (CropM)

Sharif, B., Olesen, J.E. - Probabilistic assessment of agroclimatic effects on winter rapeseed yield in Denmark - MACSUR CropM International Symposium and Workshop: Modelling climate change impacts on crop production for food security, Oslo, Norway - From 10.02.2014 till 12.02.2014 - (CropM)


Müller C - Impacts of Climate Change and Agricultural Modeling - Capacity Building Workshop for Regional Scientists Turn Down the Heat III: Regional Analysis (MNA/LAC/ECA), The Case for Resilience, Potsdam, Germany - From 11.03.2014 till 13.03.2014 - (CropM)

Havlík, P. - Climate change impacts on agricultural sector: A global perspective - TradeM Stakeholder Workshop Vienna - From 24.03.2014 till 24.03.2014 - (TradeM)

Schönhart, M., E. Schmid, F. Sinabell - Das Mostviertel - die Fallstudie im Projekt MACSUR TradeM (The Mostviertel Region - the Austrian Regional Pilot Study in MACSUR - TradeM) - TradeM Stakeholder Workshop Vienna - From 24.03.2014 till 24.03.2014 - (TradeM)

Sinabell, F., E. Schmid - JPI FACCE Knowledge Hub - Modelle zur europäischen Landwirtschaft (models for agriculture in Europe) - TradeM Stakeholder Workshop Vienna - From 24.03.2014 till 24.03.2014 - (TradeM)


Brouwer F., Sinabell F. - TradeM planning session of pilot studies - FACCE MACSUR Mid-Term Scientific Conference 'Achievements, Activities, Advancement', Sassari, Italy - From 01.04.2014 till 04.04.2014 -
Helming K., Podhora A., König H.

Havlik P., Leclere D., Valin H., Herrero M., Schmid E., Obersteiner M.

Haas E., Klatt S., Kiese R., Santa Barbara Ruiz I., Kraus D.

Gøtke N.

Ewert F., Rötter R.

Destain M.

Dalgaard T., Hutchings N., Noe E.

Daccache A.

Curnel Y.R.W.

Camach

MACSUR Mid

01.04.2014 till 04.04.2014

MACSUR


Lehtonen H.S., Kässi P., Korhonen P., Niskanen O., Rötter R., Palosuo T., Liu X., Purola T. - Specific problems and solutions in climate change adaptation in North Savo region - FACCE MACSUR Mid-Term Scientific


Sinabel F., Brouwer F. - TradeM synergies with AGMIP - FACCE MACSUR Mid-Term Scientific Conference 'Achievements, Activities, Advancement', Sassari, Italy - From 01.04.2014 till 04.04.2014 -


Twardy S., Kopacz M. - Sustainable and durable development of mountain areas. - Workshops in 8 secondary schools - in accordance with the Project implementation schedule. - From 09.05.2014 till 28.05.2014 - (LiveM/CropM)

Ben touhami, H., Bellocchi, G. - Bayesian calibration of the Pasture Simulation model (PaSiM) to simulate emissions from long-term grassland sites: a European perspective - Livestock, Change and Food Security, Madrid, Spain - From 19.05.2014 till 20.05.2014 - (LiveM)


Susanne Rolinski, Jens Heinke, and Isabelle Weindl - Grazing effects on grassland productivity - Linking livestock production to grass yields - Livestock, Change and Food Security, Madrid, Spain - From 19.05.2014 till 20.05.2014 - http://animalchange.files.wordpress.com/2014/05/abstracts_book_madrid.pdf (LiveM)
Kipling, R.P., Saetnan, E.R., van den Pol-van Dasselaar, A., Scollan, N.D. - SOLID project workshop and annual meeting, MTT Finland - Overview of LiveM - From 21.05.2014 till 23.05.2014 - (LiveM)

f) Organiser of major international congresses


h) Press, radio, TV, and internet

S. Twardy: Organic fertilizers management and low-cost pro-environmental pastoral economy in mountain areas. Meeting with stakeholders in Grywałd (Poland, the Krościenko community). 25.07.2012 (LiveM, CropM)
KlimAktiv: Forscher ergründen Zusammenhänge zwischen Klimawandel und Ernährung' by KlimAktiv gGmbH. 27.08.2012 (Hub)
Agra-Europe: VT1 koordiniert neues Forschungsprojekt Macsur' in Agra-Europe 35/12, p. 26. 27.08.2012 (Hub)
HR3: Interview with M. Köchy on 'Alle Wetter' HR3 German public TV. 03.09.2012 (Hub)
Regio: Klimafolgen für Lebensmittel. Regio. Das Regional-Journal für Südostniedersachsen. 05.2012, p. 52. 01.10.2012 (Hub)
NDR Info: Wie wirkt sich der Klimawandel auf die Landwirtschaft aus? Radio interview with Dr. Martin Banse on NDR Info show 'logo!'. 05.10.2012 (Hub)
Rusłana Palatnik: Call for TradeM workshop in Haifa, Israel on the website of EAERE-European Association of Environmental and Resource Economists. 01.02.2013 (TradeM)
Śliwka, J.: W Europie szerzą się nowe genotypy Phytophthora infestans, organizmu powodującego zarazę ziemniaka - a popular science article in Ziemniak Polski, in Polish. 01.06.2013 (CropM)
Sobkowiak S., Śliwka J.: Grzyby z rodzaju Fusarium powodujące suchą zgniliznę bulw ziemniaka - a popular science article in Ziemniak Polski, in Polish. 01.12.2013 (CropM)
Waldemar Bojar: Website of the UTP Description of the project MACSUR goals and progress in the tasks realization. 01.12.2013 (TradeM)
Susanne Rolinski, Anne Biewald: Studio Campus of the regional radio station (science meets journalism). 18.02.2014 (TradeM)
Julien Minet: Publication of a website about FACCE and MACSUR activities in Belgium, with a blog about conferences and events related to topics of MACSUR. (CropM, LiveM)

i) Acquisition of new external grant money, the application resulting from MACSUR activities

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, liked with MACSUR (CropM, reported by M. Köchy, 09.07.2013)
Integrated modelling of Nordic farming systems for sustainable intensification under climate change (CropM, reported by M. Köchy, 10.07.2013)
AGROSCENARI - Scenari di adattamento dell’agricoltura italiana ai cambiamenti climatici (CropM, reported by M. Köchy, 18.12.2013)
PLUMES – Pathways for linking uncertainties in model projections of climate and its effects, 1.4 M€ from Academy of Finland for MTT and two other Finnish institutes. (CropM, reported by M. Köchy, 15.05.2014)
Research project with some partners involved in MACSUR funded by the Belgian Federal Science Policy (BELSPO): Modelling and Assessing Surface Change impacts on Belgian and Western European climate (MASC) (CropM, reported by Julien Minet, 20.05.2014)
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 Martin Schönhart, 20.05.2014)
FACCE Submission to Norwegian Research council (April 2014) application involving MACSUR partners Norway, MTT.

Submission of two research projects with partners involved in MACSUR and private partners to the call.

Coordination of a joint proposal in the Joint Programming Initiative “Agriculture, Food Security and Climate Change”.

Coordination of Spanish participation in the Joint Programming Initiative “Agriculture, Food Security and Climate Change” (JPI)”. Phase II http://www.chil.org/profile/spanish.macsur/main

Submission of a research project within the Belgian partners involved in MACSUR to a Belgian national funding scheme. Unfortuna-

tely rejected. (CropM, TradeM, LiveM, reported by M Ruiz-Ramos, 09.07.2013)

Coordination of a joint proposal in the Joint Programming Initiative “Agriculture, Food Security and Climate Change (FACE-JPI)”. Phase II http://www.chil.org/profile/spanish.macsur/main (CropM, TradeM, LiveM, reported by Anne Biewald, 15.05.2014)

Submission of two research projects with partners involved in MACSUR and private partners to the call FACCE/ERANET+ Climate Smart Agriculture (LiveM, reported by Julian Minet, 20.05.2014)

Norwegian partners participating in 3 submissions with partners in MACSUR to the call FACCE/ERANET+ Climate Smart Agriculture (CropM, TradeM, reported by Lillian Øygarden, 26.05.2014)

Submission to Norwegian Research council (April 2014) application involving MACSUR partners Norway, MTT Finnland, Potsdam (CropM, TradeM, reported by Lillian Øygarden, 26.05.2014)

FACCE-ERA-NET+ on Climate Smart Agriculture: Joint application, Project Acronym: NEMANICH - 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)
Initiation of collaboration between LiveM and SOLID (Sustainable Organic and Low Input Dairying project)  
(LiveM, reported by R. Kipling, 10.05.2014)

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 Franz Sinabell, 10.09.2013)

Soy Bean Production in the River Danube Basin. Research proposal submitted to the Austrian Climate Change Research Program ACRP. (TradeM, reported by Franz Sinabell, 10.09.2013)

Coordination of a proposal to a H2020 call by EURAC involving two MACSUR partners (Hub, reported by Martin Köchy, 26.05.2014).

<table>
<thead>
<tr>
<th>m) Scientific acknowledgements (Prizes, honorary doctorates, memberships in scientific academies, major international duties, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porter, John (2014) Lead author of IPCC AR5-WG2 Chapter on food security</td>
</tr>
<tr>
<td>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).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>n) Development of new technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semenov M (during 2013-14) Incorporation of the CMIP5 climate projections in to the ELPIS dataset of local-scale climate scenarios for Europe. (CropM)</td>
</tr>
<tr>
<td>Kersebaum (during 2013-14) Integration of the HERMES crop growth sub-module into the AMBAV system of the German Weather Service (DWD). (CropM)</td>
</tr>
<tr>
<td>Klosterhalfen et al. (2014). AgroC: An agroecosystem model (CropM)</td>
</tr>
<tr>
<td>Ruiz Ramos M, Mínguez and Rodríguez, 2014. AGROCLIMA-SSP v.2.0 (Software, scientific support to policies tool, delivered to Spanish administration, in Spanish). (CropM)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>o) Data access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinbell, F., March 2014, CAPRI data set for the analysis of the baseline scenarios within TradeM (TradeM)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>p) Other activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slawinski (2013) Starting a new experiment in south-east of Poland for gathering highest quality data for calibration and validation of crop models including climate change (CropM)</td>
</tr>
<tr>
<td>Jorgenson, J. (2013) 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. (Hub)</td>
</tr>
<tr>
<td>Twardy, S. (2014) Under the Project there are 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. (CropM, LiveM)</td>
</tr>
</tbody>
</table>
4. Networking

4.1 Internal networking.

a) Theme or cross-theme meetings


Exploring new ideas for trade and agriculture model integration for assessing the impacts of climate change on food security. Haifa, Israel. From 2013-03-03 to 2013-03-05. (TradeM). 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. Organised by NRERC - Natural Resource and Environmental Research Centre, University of Haifa, Israel.

http://macsur.eu/index.php/files/MACSUR%20TradeM/TradeM%20Workshop%20Haifa%202013

b) Consortium meetings (whole MACSUR)


http://ojs.macsur.eu/index.php/Reports/issue/view/1


http://ocs.macsur.eu/index.php/Hub/Mid-term

c) Workshops


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). Poland. From 2012-10-29 to 2012-10-29. (CropM). Goal: Internal networking. Attendance: 40. Organised by Institute of Agrophysics Polish Academy of Sciences.


http://www.chil.org/profile/spanish.macsur/main


http://www.chil.org/profile/spanish.macsur/main

d) Was the coordination across themes sufficient/satisfactory/adequate

Yes

If yes, how so?

We achieved a greater understanding for the requirements existing and different approaches used in the Themes, similar organisational structures, inventories and descriptions of available models, agreement on core scenario assumptions for modelling activities, and setting of research priorities, e.g. crop rotations, uncertainty, supply of feed protein, scaling issues. This resulted in joint scientific publications, training workshops, and new collaborations, funded and unfunded, within MACSUR and with scientists outside MACSUR.

If no, why not? —
**How was it undertaken?**

- Regular meetings (physical and online) among Theme and Hub coordinators
- Distribution of Theme newsletters to all MACSUR members (Hub: six, CropM: seven, LiveM: four, TradeM: five)
- Attendance of Theme representatives at other Theme meetings
- Collaboration on joint tasks (e.g. stakeholders, uncertainty, metadata exploration, regional pilot studies) and in specialist meetings

**How can it be improved?**

- Introduction of dedicated cross-cutting tasks with co-leaders from different Themes - specifically, in areas such as stakeholder involvement, uncertainty, scaling, scenario development and the development of a community toolbox for sharing information
  This might require a matrix organisation. At the moment MACSUR is organized top-down.
  This will involve that tasks will be organized across themes.
  Task leaders will have more responsibilities and will likely need administrative resources.
- Sufficient time during proposal development for theme coordinators and partners to align interests and approaches, in order to produce an overall thematic structure that more effectively encourages collaboration and knowledge exchange between themes
- More involvement of researchers of different Themes at events of other Themes
- explicit invitation of researchers from other Themes to participate in meetings or joint publications
- Addressing cross-Theme topics in the MACSUR Hub Newsletter

<table>
<thead>
<tr>
<th>e) Was the integration of work packages sufficient/satisfactory/adequate</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, how so?</td>
<td></td>
</tr>
</tbody>
</table>

In CropM, integration of the six WPs, (WPs1-4 on scientific excellence; WP5 on capacity building and WP6 on case studies impact assessment) was excellent, with the possible exception of WP6 which only provided limited feed-back from and to other themes

As the research communities involved in LiveM are very disparate (grassland modellers, animal disease modellers, farm-scale modellers etc.) all contacts and exchanges of information through the knowledge hub represent important strides in understanding. Initial problems associated with the original structure of the theme (specifically, some disjoint between areas identified for data collation and the data requirements of modelling groups) have to some extent hindered the development of collaboration, but through workshop
and task engagement, solutions have been found to bring WPs together to a greater extent.

In TradeM a tight integration - link advancements in science, application in pilot studies and capacity building - is under way as demonstrated in the regional pilot studies. This effort does not comprehend all research groups in the same intensity. This is mainly due to variations in the resources available and cross-theme partners in different countries.

| If no, why not? | CropM: Regular CropM WP leaders meetings (online once per month and physical twice per year); frequent meetings of co-leaders CropM (at least, bi-weekly skype meetings - and physical meetings every 2nd month); WP-specific workshops (with one or more WPs involved; 3-4 per year); exchange extended minutes/documentation of meetings and workshops; PhD courses (two per year) with input from various WPs, and joint organisation and execution of CropM international symposium and workshop at Oslo, February 2014; Newsletter to all CropM and hub members (quarterly) - bilateral visits /exchange of visiting scientists within WPs and frequent (mutual) invitations of guest speakers from CropM pool to national conferences. |
| How was it undertaken? | LiveM: Through face-to-face and Skype meetings organised by theme coordination, workshops, and information exchanges between individual task groups, mediated by theme coordination. |
| How can it be improved? | • More funding resources for exchange of scientists and (PhD) students among partners/WPs. • A longer period for the initial development of WPs and tasks is required to allow a coherent structure to be developed, and it is essential that all partners are actively involved in this process to ensure they have ownership and understand the overall purpose of |
activities. This structure needs to include more interlinking tasks with specific outcomes requiring collaboration between WPs. Some partners have not had access to funding even for travel to meetings etc. which hinders their involvement and reduces their level of ‘buy-in’ to project objectives - this needs to be improved

• meetings outside the regular TradeM workshops and ad-hoc seminars of smaller groups.
• Organisation of TradeM meetings along other scientific events like congresses
• a conference initiated by TradeM with an economic focus that goes beyond the MACSUR network
• Regularly updated power-point presentation about the findings of MACSUR, relevant for farmers’ organisations and ministries.

| f) Equality of engagement of all research teams involved in the theme | Engagement varied due to, amongst others, the financial resources of the teams for carrying out research and participating in workshops and conferences (travelling and fees). |
4.2 External networking.

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Links to national projects or facilities</td>
<td>New collaborations with directorates of 8 secondary schools where workshops and trainings for 8*20=160 students of secondary schools were conducted. (CropM, LiveM, reported by S. Twardy, 22.05.2014)</td>
<td></td>
</tr>
<tr>
<td>b) Links created to other EU or international groups</td>
<td>Initiation of collaboration between LiveM and SOLID (Sustainable Organic and Low Input Dairying project) (LiveM, reported by R. Kipling, 2013) AgMIP, Memorandum of Understanding signed 2014-02-19 (Hub, reported by M. Köchy, 27.05.2014) Working with SEMAGROW to provide data hosting/publishing system using Open Journal Systems, following attendance at the SEMAGROW meeting in Wageningen June 17-18, 2013 (Hub, reported by J. Jorgenson, 20.06.2013)</td>
<td></td>
</tr>
<tr>
<td>d) Did any partner join at a later stage?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>For what reason?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walloon Agricultural Research Centre, Belgium</td>
<td>Complementary activities in CropM: impacts of extreme weather events</td>
<td></td>
</tr>
<tr>
<td>MTA Centre for Ecological Research, Hungary</td>
<td>Complementary activities in LiveM: biogeochemical modelling of permanent grasslands and contribution of data sets</td>
<td></td>
</tr>
<tr>
<td>International Institute for Applied Systems Analysis, Austria</td>
<td>Complementary activities in TradeM: global modelling of climate, vegetation, and economies and contribution to scenario development</td>
<td></td>
</tr>
<tr>
<td>EURAC Research, Italy</td>
<td>Complementary activities in TradeM: economic effects of pest-induced changes in agricultural production Contribution of integrated case studies.</td>
<td></td>
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</tbody>
</table>
5. Capacity building.

a) Training workshops


Integrated land use modelling: Training, held by M. Kirchner, H. Mitter, E. Schmid, M. Schönhar. Vienna, Austria. From 2014-04-07 to 2014-04-11. (TradeM). 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. Attendance: 11. Organised by Institute for Sustainable Economic Development at University of Natural Resources and Life Sciences, Vienna. Students within and outside MACSUR, mainly TradeM, received training in applied programming modelling including development of interfaces to LiveM and CropM themes.

Sustainability assessment of land use scenarios: what needs to be considered and how can it be done?. Haifa, Israel. From 2014-03-23 to 2014-03-26. (TradeM). Goal: Understand formalized processes of decision making as well as decision makers needs for evidence. 2. Provide training on integrated modelling/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. Attendance: 16. Organised by NRERC- Natural Resource and Environmental Research Center, University of Haifa, Israel and ZALF, Germany. The participants submitted working papers with academic literature review and scientific analysis of biosphere reserve of Ramat Menashe.


Dynamic land use optimization under global change, University of Natural Resources and Life Sciences; training by Uwe Schneider (Hamburg University). Vienna, Austria. From 2013-03-11 to 2013-03-15. (TradeM). Goal: This course taught applied mathematical programming for the assessment of land use decisions, policies, and impacts and concentrated on the formulation and interpretation of related optimization models. Attendance: 10. Organised by Institute for Sustainable Economic Development at University of Natural Resources and Life Sciences, Vienna. Students within and outside MACSUR, mainly TradeM, received training in applied programming modelling including development of interfaces to LiveM and CropM themes.


b) Specialist workshops


Discussing instrumentation and methodology of CO2 measurement in field experiments. Poznan, Poland. From 2013-01-28 to 2013-01-28. (CropM). Goal: Reflection on methodology to be used in field experiments. Attendance: 8. Organised by Poznan University of Life Sciences and Institute of Agrophysics Polish Academy of Sciences in Lublin, Poland.


CAPRI Graphical User Interface (GUI) training, Berlin, Germany. From 2013-11-18 to 2013-11-18. (TradeM). Goal: To enable participants to extract data from the CAPRI model. Attendance: 10. Organised by WIFO.
### Established scientific staff

<table>
<thead>
<tr>
<th>Inviting institution</th>
<th>Visiting institution</th>
<th>Length (days)</th>
<th>Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Institute of Agrophysics, Polish Academy of Sciences</td>
<td>University of Life Science, Lublin, Poland</td>
<td>1 day</td>
<td>15</td>
</tr>
<tr>
<td>The Institute of Agrophysics, Polish Academy of Sciences</td>
<td>Teachers of several agricultural schools in Lublin voivodship (Poland)</td>
<td>1 day</td>
<td>10</td>
</tr>
<tr>
<td>The Institute of Agrophysics, Polish Academy of Sciences</td>
<td>University of Technology and Life Sciences in Bydgoszcz</td>
<td>1 day</td>
<td>2</td>
</tr>
<tr>
<td>Leibniz-Centre for Agricultural Landscape Research ZALF e.V.</td>
<td>Instituto Nacional de Tecnologia Agropecuaria – INTA, Argentina</td>
<td>2 days</td>
<td>1</td>
</tr>
<tr>
<td>Leibniz-Centre for Agricultural Landscape Research ZALF e.V.</td>
<td>UFSC - Universidade Federal de Santa Catarina, Brazil</td>
<td>2 days</td>
<td>1</td>
</tr>
<tr>
<td>MTT Agrifood Research</td>
<td>Potsdam Institute for Climate Impact Research</td>
<td>3 months</td>
<td>1</td>
</tr>
<tr>
<td>IIASA - International Institute for Applied Systems Analysis, Laxenburg, Austria</td>
<td>University of Natural Ressources and Life Sciences, Vienna, Austria</td>
<td>3 months</td>
<td>1</td>
</tr>
<tr>
<td>Institute of Technology and Life Sciences</td>
<td>Uniwersyty of Agriculture in Krakow</td>
<td>1 day</td>
<td>3 Professors and 35 students</td>
</tr>
<tr>
<td>Institute of Technology and Life Sciences</td>
<td>Malopolska Agricultural Advisory Centre in Karslowice</td>
<td>1 day</td>
<td>1 Professor and 30 participants</td>
</tr>
<tr>
<td>University of Bonn, Institute of Crop Science and Resource Conservation</td>
<td>Bioforsk- Norwegian Institute of Agricultural and environmental research</td>
<td>3 months</td>
<td>1</td>
</tr>
<tr>
<td>Basque Centre for Climate Change</td>
<td>NILF- Norwegian Agricultural Economics Research Institute</td>
<td>6 months</td>
<td>1</td>
</tr>
<tr>
<td>Scotland Rural College</td>
<td>Norwegian University of Life Sciences</td>
<td>10 days</td>
<td>1</td>
</tr>
<tr>
<td>Århus University</td>
<td>Norwegian University of Life Sciences</td>
<td>14 days</td>
<td>1</td>
</tr>
<tr>
<td>Swedish University of Agricultural Sciences</td>
<td>Bioforsk- Norwegian Institute of Agriculture and environmental research</td>
<td>1 month (+ 11 months (after May 2014))</td>
<td>1</td>
</tr>
<tr>
<td>SRUC</td>
<td>Norwegian University of Life Sciences</td>
<td>4 days</td>
<td>1</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
<td></td>
<td></td>
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<td>------------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>d) Was the collaboration between countries sufficient/satisfactory/adequate?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| e) Was the collaboration between themes sufficient/satisfactory/adequate? | • Yes, given the constraints and the structure of the project  
• No, given the potential of further interaction (in particular TradeM and LiveM interaction would need further improvements) |
| f) 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    |

**If yes, in which way?**

CropM organized in its first two years four crop modelling courses (PhD student level) (Helsinki, 08/2012; Wagenigen, 03/2013; Aarhus, 09/2013; Muencheberg, 05/14 - each fully booked (> 30 participants); by organizing frequent WP-specific seminars and meeting and a CropM international symposium (Oslo, Feb 2014), and the various sessions at macsur mid-term conference Sassari (Apr 2014), plenty opportunities for Macsur partners/scientists to become part of international community were provided.

LiveM: Forming ties through task engagement and involvement in regional pilots. Through attendance at MACSUR meetings and workshops - face-to-face contact was considered by all partners as one of the most important aspects of community building.

TradeM: There are examples of such successful collaborations and the list of publications gives evidence of international links of researchers that go beyond the TradeM network.
<table>
<thead>
<tr>
<th>Names of research communities</th>
<th>Level of research community (national, regional, European, international)</th>
<th>Description of interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>g) Research communities in the themes</td>
<td>CropM: Modelling crop rotations</td>
<td>yes</td>
</tr>
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<td>Names of research communities</td>
<td>CropM: Scaling</td>
<td>Workshops, joint papers</td>
</tr>
<tr>
<td>Names of research communities</td>
<td>CropM: Impact response surface analysis</td>
<td>Workshops, joint papers</td>
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<td>CropM: Scaling</td>
<td>Workshops, joint papers</td>
</tr>
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<td>Names of research communities</td>
<td>LiveM: Livestock disease research and modelling</td>
<td>International</td>
</tr>
<tr>
<td>Level of research community (national, regional, European, international)</td>
<td>LiveM: Livestock disease research and modelling</td>
<td>European (with plans for linkage with GRA)</td>
</tr>
<tr>
<td>Description of interaction</td>
<td>Initial workshop in Pirbright, UK, to discuss the state-of-the-art in the field; exchanges of information and knowledge between Italian, Norwegian and Spanish modelling groups in this area. Identification and initial contact with international institutes active in this area</td>
<td></td>
</tr>
<tr>
<td>Names of research communities</td>
<td>LiveM: Permanent grassland modelling</td>
<td>International</td>
</tr>
<tr>
<td>Level of research community (national, regional, European, international)</td>
<td>LiveM: Permanent grassland modelling</td>
<td>Collaborative efforts developing protocols for model evaluation and inter-comparison (uncalibrated and calibrated runs) and completion of exercises in these areas Input (and leadership regarding methods employed) to AgMIP grassland group activities Linkage of community and joint activities with grassland modelers in CropM theme</td>
</tr>
<tr>
<td>Description of interaction</td>
<td>Knowledge exchange, inventory of models, model inter-comparison exercise, Joint workshop with TradeM and progress towards assessment of state-of-the-art in farm-scale modelling of livestock systems in Europe</td>
<td></td>
</tr>
<tr>
<td>Names of research communities</td>
<td>LiveM: Farm-scale modelers</td>
<td>International</td>
</tr>
<tr>
<td>Level of research community (national, regional, European, international)</td>
<td>LiveM: Farm-scale modelers</td>
<td>European</td>
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<td></td>
</tr>
<tr>
<td>Names of research communities</td>
<td>TradeM: AGMIP</td>
<td>International</td>
</tr>
<tr>
<td>Level of research community (national, regional, European, international)</td>
<td>TradeM: AGMIP</td>
<td>TradeM workshop announced in AGMIP</td>
</tr>
<tr>
<td>Description of interaction</td>
<td>TradeM workshop announced in AGMIP</td>
<td></td>
</tr>
<tr>
<td>Names of research communities</td>
<td>tradeM: AGMIP</td>
<td>International</td>
</tr>
<tr>
<td>Level of research community (national, regional, European, international)</td>
<td>tradeM: AGMIP</td>
<td>joint book plan</td>
</tr>
</tbody>
</table>