



**Progress in theme TradeM
Sassari, 1- 3 April**

**Floor Brouwer, Franz Sinabell, WP
leaders and participants in TradeM
workshops**





Features of TradeM

- TradeM offers many different models at various scales – from farm models to regional and (even) global models
- This constellation provides unique opportunities to generate an added value not available in other projects
- We adopt a pragmatic approach: run different models with a homogeneous set of exogeneous assumptions
- In order to achieve this, it will be necessary to design the set-up of regional models in a flexible manner



Features of TradeM

- Partners involved in MACSUR are mainly experts on supply side modelling
- We know too little about the demand side (e.g. changing food consumption patterns) and nutrition.
- Traditionally, trade modellers have specified consumption (e.g. is meat going to be the main source of proteins in 2050?). We need to clarify aspects of European dimension to global food security. This missing expertise might have to be developed in TradeM



MACSUR-TradeM

ambitious goals - how to accomplish

- Model comparison, linkage and improvement
- Step by step
 - look what is around
 - improve what is there





MACSUR-TradeM

WP1	Existing tools, data, and models	Waldemar Bojar (PL)
WP2	Improved tools, data, and models	Øyvind Hoveid (NO)
WP3	Cross-cutting issues in regional pilot studies	Gabriele Dono (IT)
WP4	Capacity building	Katharina Helming (DE)





WP1 - Existing tools, data and models

- Consistency of European scenarios for (regional) model comparison
- TradeM offers a baseline scenario of agriculture with production (operating costs, yields, resource endowments), consumption and key macro-economic indicators (including prices), for input into the regional pilot studies (CAPRI)
- Consistent with the AgMIP global model comparison analysis



MACSUR-TradeM baseline

- How to accomplish?
 - top down: NUTS2-data on 2010, 2030, 2050
 - compare existing data with CAPRI data
 - set up and implement scenarios on local/hot spot models „consistent“ with CAPRI scenarios
 - compare results and draw conclusions
- What to compare?
 - factors / input parameters / supply tables



WP2 - Improved tools, data and models

- Promote integrated assessments and model linkages (e.g. link MagPIE with agricultural production and economic modelling in Finland)
- Targeted topics (e.g. uncertainty and risks, integrated assessments)



Contribution of WP2 in TradeM – uncertainty and risk

- *Risk* of food shortage (risk variance of preferred outcome) versus *uncertainty* of its predictions (uncertainty: variance of an outcome)



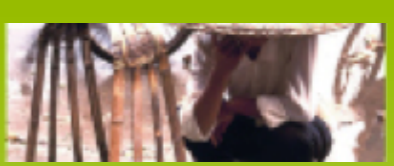
SimplACE - CAPRI pilot study

- Build upon/improve work in AgriAdapt and LIAISE (linking SimplACE and CAPRI) – Bonn University
- TradeM part: statistically estimate technology shifter (management adaptation, also depending on macro scenarios)
→ Yield gap analysis
- CropM part: Improvement of SimplACE referring to N-limitation, water-limitation, extended set of crops



WP3 – cross-cutting issues in regional pilot studies

- Northern climate zone (Finland)
- Central European climate zones (Austria)
- Mediterranean climate zone in Oristano (Sardinia) (Italy)
- Livestock – mitigation case is pending
- Case for Sub-Sahara Africa for next phase



Advance in regional pilot studies

- Make the baseline in the regional pilot studies consistent with the CAPRI baseline
- Develop the European Representative Pathways and regional RAPs with the global RAPs
- Formulate climate change scenarios and assess impacts for crop production (with CropM)
- Agree on emission reduction pathways for 2020-2030-2050, (20-50% reductions is decided)



with CropM and LiveM TradeM will

- What are the expected yields and qualities of crops and animals in a certain region in the coming years with climate change (2010, 2030, 2050)
- Which management advice (adaptation and mitigation) should be given to the farmer?
- Which prices?



How to fill knowledge gaps

still open questions: most important issues

- Over the long time horizon that is under consideration: many adaptation and mitigation measures are not yet practically applied
- The combination of crop / livestock / farm models will give the opportunity to identify new measures
- These results can be used in a bottom-up approach to enhance global models



Contribution of WP4 Capacity Building

Task 1: Capacity building on policy impact assessment

We offer training on policy assessment back to back with meetings/trainings in CropM, LiveM, TradeM and/or at summer schools etc. (recent training: Haifa University – ZALF)

Task 2: GAMS for agricultural production and environmental modelling (BOKU) (next training: spring 2014)

TradeM - AgMIP

THE AGRICULTURAL MODEL INTERCOMPARISON
AND IMPROVEMENT PROJECT

- Several TradeM partner organisations are part of AgMIP network: IIASA, PIK, Wageningen UR, Uni-Bonn
- efforts within AgMIP relevant for TradeM
 - global model intercomparison (Globiom, MagPie, CAPRI, Magnet)
- consistency of TradeM scenarios with AgMIP (e.g. CAPRI baseline)

TradeM - AgMIP

further steps of interaction

- Contribute to develop Representative Agricultural Pathways (RAPs) for Europe
- Planned interaction
 - workshop with partners of AgMIP in Sept: 2014
 - model intercomparisons: global ↔ local



MACSUR-TradeM

outputs to come

- data sets
 - e.g. CAPRI results – update by April 2014
- course and learning workshops (Haifa, BOKU)
- models
 - inventory of models: integrate new ones
 - improvements compared to state in 2011
- scientific publications
 - 2 more special issues (EMPIRICA, Bio-based and Applied Economics)
- book on integrated modeling
 - Edward Elgar to be published in mid 2015



MACSUR-TradeM

timeline of knowledge building

2014-April
Sardinia

2014-August
Ljubljana

2014-Sept
Vienna

2014-Nov
Norway

2015-April



smarter
modelers
plus first results

Europe
and global
food
security

improved
models
plus revised
results

new scenarios
outputs for
book

project goals
reached

RAPS
global < = > local

