

# AgMIP6

Seeking Sustainable Agricultural Solutions

GLOBAL WORKSHOP

JUNE 28-30, 2016 • LE CORUM • MONTPELLIER, FRANCE



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## WORKSHOP GOALS AND ACTIVITIES

1. Convene the agricultural systems modeling community and share latest findings, activities, and focus areas.
2. Advance three major focus areas –  
Next Generation Knowledge, Data and Tools; Coordinated Global and Regional Assessments; and  
Modeling for Sustainable Farming Systems.
3. Plan AgMIP activities and outputs for the years ahead.

## WORKSHOP PROGRAM

Tuesday June 28				
8:00 – 9:00	Check in and packet pick up			
9:00 – 9:30	<b>Introduction from AgMIP Steering Council Co-Chair</b> – Jean-Francois Soussana <b>Welcome from Montpellier Partners</b> – B. Hubert (Agropolis International), A. Vidal (CGIAR), P. Caron (CIRAD), F. Houllier (INRA) <i>Pasteur Auditorium</i>			
9:30 – 10:00	<b>Introduction from AgMIP Steering Council Co-Chair</b> – Ghassem Asrar <b>Plenary: AgMIP Overview</b> – AgMIP Pls Cynthia Rosenzweig, James Jones, John Antle <i>Pasteur Auditorium</i>			
10:00 – 10:30	Coffee Break			
10:30 – 12:00	<b>Morning Plenary: Coordinated Global and Regional Assessments (CGRA)</b> Assessment protocols; future scenarios; implementation plan; cross-scale and cross-discipline linkages; connections between food security and nutrition metrics <b>Keynote</b> – Mark Rosegrant <b>Panel</b> – Jessica Fanzo, Mario Herrero, Hermann Lotze-Campen, Senthold Asseng <b>Facilitator</b> – Cynthia Rosenzweig <i>Pasteur Auditorium</i>			
12:15 – 12:30	<b>Group Workshop Photo</b>			
12:30 – 2:00	<i>Buffet Lunch - self organized groups</i>			
2:00 – 3:30	<b>Parallel Session 1:</b> Four concurrent sessions of 15 min oral presentations.			
	<b>1.1 Seasonal Forecasts and Climate Extremes</b> <b>Chair: Alex Ruane</b> <i>Sully 1</i>	<b>1.2 Crop Model Improvement</b> <b>Chair: Frank Ewert</b> <i>Pasteur Auditorium</i>	<b>1.3 Developing Adaptation Strategies</b> <b>Chair: Roberto Valdivia</b> <i>Sully 2</i>	<b>1.4 Climate Change Assessments</b> <b>Chair: Delphine Deryng</b> <i>Sully 3</i>
2:00	Past and future weather-induced risk in crop production – Joshua Elliott	Inter-comparison of crop models for simulating canola growth and yield – Enli Wang	Developing adaptation packages for West African agriculture while ensuring congruence with climate and RAPs – Ibrahima Hathie	Regional disparities in the beneficial effects of rising CO2 concentrations on crop water productivity – Delphine Deryng

	<b>1.1 Seasonal Forecasts and Climate Extremes</b> Chair: Alex Ruane <i>Sully 1</i>	<b>1.2 Crop Model Improvement</b> Chair: Frank Ewert <i>Pasteur Auditorium</i>	<b>1.3 Developing Adaptation Strategies</b> Chair: Roberto Valdivia <i>Sully 2</i>	<b>1.4 Climate Change Assessments</b> Chair: Delphine Derying <i>Sully 3</i>
2:15	Dynamic seasonal climate forecast driven probabilistic maize yield prediction over East Africa – Ronald Hutjes	Lessons learned from evaluating APSIM and DSSAT maize model responses to carbon dioxide, temperature, water, and nitrogen – Kenneth Boote	Designing and assessing adaptation strategies to face challenges of climate change: Insights from Indo-Gangetic Plains of India – Harbir Singh	Impacts of soil data uncertainty on crop yield estimates in a global gridded crop model – Christian Folberth
2:30	Interdisciplinary and cross-scales agroclimatic assessment across The U.S. corn belt: what have we learnt? – Xing Liu	Who has the 'best' crop model? – Senthold Asseng	Exploring adaptations to variable and changing climates for smallholder mixed crop livestock systems in semi-arid Zimbabwe – Sabine Homann-Kee Tui	An integrated assessment of climate change impacts and adaptation in smallholder crop-livestock systems in Kenya – Lieven Claessens
2:45	Forecasting effects of weather extremes: El Nino's influence maize yields in Mexico – Gideon Kruseman	Global gridded crop model evaluation: benchmarking, skills, deficiencies and implications – Christoph Müller	Integrated assessments in irrigated agriculture linking crop and hydrological models: the case of central Chile – Francisco Meza	Towards a 21st Century Climate Service for small-holder farmers in Zimbabwe: Definition of the climate problem – Elisha N Moyo
3:00	Integrated assessment of drought and adaptation scenario impacts on crop production in Austria – Hermine Mitter	The uncertainty cross-cutting theme – Daniel Wallach	Developing and assessing adaptation strategies against climate vulnerability in cotton wheat cropping system of Punjab, Pakistan – Muhammad Ashfaq	Economic analysis of climate impact and adaptation for the dryland wheat system in the US Pacific Northwest – Hongliang Zhang
3:15	Multiple crop model ensembles for improving broad-scale yield prediction with bayesian model averaging – Xiao Huang	Parameterization induced uncertainty of the epic model to estimate climate change impact on global maize yield – Yong He	Incremental crop management adaptations to climate change: an integrated assessment for European agriculture – Heidi Webber	Management outweighs climate change on affecting length of rice growing period for early rice and single rice in China during 1991-2012 – Xuhui Wang
3:30 – 4:00	<i>Coffee Break</i>			
4:00 – 5:00	<b>Parallel Session 1 Continued:</b> Four concurrent sessions of 15 min oral presentations.			
	<b>1.5 Stakeholders and Decision Support</b> Chair: Amy Sullivan <i>Sully 1</i>	<b>1.6 Remote Sensing, Land-use, and Scaling</b> Chair: Wiltrude Durand <i>Sully 2</i>	<b>1.7 Wheat Model Intercomparison</b> Chair: Pierre Martre <i>Pasteur Auditorium</i>	<b>1.8 Livestock and Grasslands</b> Chair: Katrien Descheemaeker <i>Sully 3</i>
4:00	EUROCLIMA Biophysical Modelling, for policy support on agriculture and climate change in Latin America and the Caribbean – Maurits van den Ber	Soil data aggregation effects in regional yield simulations – Holger Hoffmann	Improved modelling of wheat processes through inter-comparison of multiple models – Enli Wang	Large scale impacts of grazing management under climate change – Susanne Rolinski
4:15	Impact of climate change on West Africa's agriculture: a mid-century assessment of the major economic outcomes for smallholder farmers – Ibrahima Hathie	The AgMIP Coordinated Climate Crop Modeling Project (C3MP) – differences in climate response across 1100+ crop modeling sets – Alex Ruane	Prediction of the rate of development and anthesis date using QTL-based parameters of an ecophysiological model for durum wheat – Pierre Martre	Impact of climate change on the livestock component of mixed farming systems: modelling evidence from regional integrated assessments across sub-Saharan Africa and South Asia – Katrien Descheemaeker
4:30	Nation-wide interdisciplinary assessments of climate change impacts on agriculture and food security – Hideki Kanamaru	Integrated crop model uses remote sensing data to simulate crop growth and carbon flux data – Jonghan Ko	Designing wheat ideotypes for a changing climate – Mikhail Semenov	Modelling nitrogen dynamics including leaching in intensive crop rotations on productive organic-sandy soils after the break-up of grassland – Munir Hoffmann
4:45	Co-production of knowledge for agricultural adaptation: using climate information and crop model outputs in the wine industry and the maipo adaptation plan – Francisco Meza	Using Earth observation and ancillary data sources as alternative to household surveys for regional integrated assessments for maize production in the Free state of South Africa – Wiltrud Durand	Model improvements reduce the uncertainty of wheat crop model ensembles under heat stress – Andrea Maiorano	Assessing simulation models for field scale projections of pasture GHG emissions and yields – Jean-François Soussana
5:00 – 6:00	<b>Afternoon Plenary: Co-Developed Research with Stakeholders</b> stakeholder engagement, participatory stakeholder research methods, climate change scenarios and adaptations, and facilitating research results uptake. <i>Pasteur Auditorium</i> <b>Keynote</b> – Amy Sullivan <b>Panel</b> – Wei Xiong, Boubacar Barry, Francisco Meza <b>Facilitator</b> – John Antle			
6:00 – 8:00	Poster Session and Reception Dinner			

Wed. June 29				
8:30 – 9:30	<b>Morning Plenary 1: Modeling for Sustainable Farming Systems</b> methodological package to evaluate agricultural systems and sustainable solutions in conjunction with national adaptation planning. <i>Pasteur Auditorium</i> <b>Keynote</b> – Patricia Masikati <b>Panel</b> – Marc Corbeels, Rob Vos, Marco Springmann, Myriam Adam <b>Facilitator</b> – Peter Craufurd			
9:30 – 10:30	<b>Morning Plenary 2: Next-generation Tools and Open Data</b> open, discoverable, and harmonized data; model improvement; online tools to improve awareness and access to research results. <i>Pasteur Auditorium</i> <b>Keynote</b> – Molly Jahn <b>Panel</b> – Susan Capalbo, Joshua Elliott, Medha Devare, Sibiry Traore, Bruno Basso <b>Facilitator</b> – Stan Wood			
10:30 – 11:00	Coffee Break			
11:00 – 12:30	Parallel Session 2: Four concurrent sessions of 15 min oral presentations.			
	<b>Session 2.1 - Scenarios and RAPs</b> Chair: John Antle <i>Pasteur Auditorium</i>	<b>Session 2.2 - Nutrition and Food Security</b> Chair: Jessica Fanzo <i>Sully 1</i>	<b>Session 2.3 - Biophysical Impacts of Climate Change</b> Chair: Sonali McDermid <i>Sully 2</i>	<b>Session 2.4 - Soils and Crop Damage</b> Chair: Bruno Basso <i>Sully 3</i>
11:00	Developing National Representative Agricultural Pathways (RAPs) – Reflections, lessons and outcomes from high level stakeholder consultations in India – Nataraja Subash	Developing a value chain analysis framework to examine the health and environmental trade-offs of dietary patterns: A case study of the Mediterranean diet – Shauna Downs	What would happen to wheat production in cotton-wheat cropping zone of Punjab under mid century scenario? – Ashfaq Ahmad Chatta	Accounting for the legacy of soil and crop management when assessing climate change impact on crop production – Bruno Basso
11:15	Development of a Climate –Sensitive Representative Agricultural Pathways (RAPs) for West Africa: Stakeholder Interactions – Ibrahimia Hathie	Global and regional health impacts of future food production under climate change: a modelling study – Marco Springmann	Climate change impacts on crop yield in Koutiala, Mali – Myriam Adam	Soil/land quality and health modeling within RASLEV framework in conditions of Russia agroecosystems – Ivan Vasenev
11:30	Developing Representative Agricultural Pathways: Experiences and Learning across four sites in India – Harbir Singh	Food System Metrics for Quantifying Nutrition and Sustainability Outcomes – Jessica Fanzo	Sensitivity of current spring barley production system to climate change – Davide Cammarano	Pathways to Nitrogen’s Planetary Boundary – David Kanter
11:45	Representative Agricultural Pathways for Europe – Anne Biewald	Interactions between environmental change, agriculture, nutrition and health: an evidence-based framework – Hanna Tuomisto	Wheat yield potential in Europe under climate change explored by adaptation response surfaces – Roberto Ferrise	Impacts of crop rotation, extreme weather events, crop growth and residue management on soil organic carbon content – Anne Gobin
12:00	New methods for exploring future farms with stakeholders: the experience of AGMIP’s crop livestock intensification project in semi-arid Zimbabwe – Sabine Homann-Kee Tui	An Income-Based Food Security Indicator for Agricultural Technology Impact Assessment – Roshan Adhikari	Towards Coordinating Assessments of Environmental Sustainability in Agricultural Systems for SDG2 – Sonali McDermid	Modeling intercropping with cereals in smallholder agrosystems. From lessons learned in central Brazil to their application in the Peanut Basin in Senegal – Alpha Bocar Baldé
12:15	Process for the development of representative agricultural pathways for cotton wheat cropping system in Punjab, Pakistan – Muhammad Ashfaq	Discussion	Making climate data useful for decision makers at the local scale: the case of Nkayi district, Zimbabwe – Olivier Crespo	Soil organic matter and sensitivity to climate change. Can we disentangle correlation and causation? – Jean-François Soussana
12:30– 2:00	<i>Buffet Lunch - self organized groups</i>			
2:00 – 3:30	<b>Parallel Session 2 Continued:</b> Four concurrent sessions of 15 min oral presentations.			
	<b>Session 2.5 - Crop Model Improvement and Genetics Applications</b> Chair: Enli Wang <i>Pasteur Auditorium</i>	<b>Session 2.6 - Global Economics and Integrated Assessments</b> Chair: Hermann Lotze-Campen <i>Sully 1</i>	<b>Session 2.7 - Regional Integrated Assessments</b> Chair: Muhammed Ashfaq <i>Sully 2</i>	<b>Session 2.8 Information Technologies and Data</b> Chair: Cheryl Porter <i>Sully 3</i>
2:00	Toward Next Generation Gene-based Crop Models: Implications on Experiments, Data, Modeling, and Modularity – James W Jones	From SSPs to global RAPs – a conceptual framework – Hermann Lotze-Campen	Climate Change Impact on the productivity of crops in smallholder systems in West Africa: The case of Navrongo, Ghana and Nioro, Senegal – Dilys MacCarthy	An integrated interdisciplinary modelling system of climate change impacts on agriculture in support of adaptation planning: MOSAICC – Hideki Kanamaru
2:15	High-throughput phenotyping platform reveals genetic variability and quantitative trait loci of light-related parameters in maize models – Tsu-Wei Chen	Climate change stabilization and the global agricultural sector under alternative future development scenarios – Petr Havlik	Reducing vulnerability to climate change in semi-arid Zimbabwe: a multi-model approach for redesigning smallholder farming futures – Sabine Homann-Kee Tui	The Akkerweb platform: models and data to support precision farming – Frits van Evert
2:30	A basic approach to predicting yields and optimizing inputs using artificial neural networks – Paul Koch	Dynamic economic model of arable crop rotation – Ian McFarlane	Impact of climate change on irrigated maize in Tamil Nadu, Southern India – Geethalakshmi Vellingiri	Enhancing Discoverability and Re-use of CGIAR’s Agricultural Data: Challenges and Progress – Medha Devare



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2:45	Importance of crop management for simulating crop phenology in large scale impact assessments – Ehsan Eyshi Rezaei	Intensification and production reallocation: Attributing land-use changes to their underlying drivers – Thierry Brunelle	Assessment of Climate sensitivity to present production system and evaluation of use of adaptation strategies to improve the livelihood security of small and marginal farmers of Indo-Gangetic Plains of India – A multi-crop-climate-economic modeling approach – Nataraja Subash	DataMill: a new application to interface researchers' database with crop models – Myriam Adam
3:00	Assessing agricultural practices in highly variable environments: SARRA-H spatialized crop model for West Africa – Christian Baron	Alternative Futures for Global Food and Agriculture – Martin von Lampe	Evaluating Crop Models for Use with Economic Models in Integrated Assessment – John Antle	Interlinked data and models using a semantic approach: an example of the RECORD platform in the context of the ANAEE-France project – Helene Raynal
3:15	Improved functions for simulating crop water use are necessary to simulate the impact of [CO <sub>2</sub> ] on maize yields – Jean-Louis Durand	A simple recursive dynamic long-term agricultural sector model – Marcel Adenauer	Future Climate Change and Its Effect on Maize Yields in Selected Semi-arid Areas of Southern Africa – Weldemichael Tesfahuney	Application of AgMIP data interoperability standards to the US National Agricultural Research Data Network for Harmonized Data (NARDN-HD) – Cheryl Porter
3:30 – 4:00	<i>Coffee Break</i>			
4:00 – 5:00	<b>Afternoon Plenary: Toward multi-national collaborative frameworks to enable coordinated global and regional assessments</b> New institutional arrangements and capabilities to enable a community of coordinated global and regional researchers in assessments of future agricultural systems and the alleviation of hunger. <i>Pasteur Auditorium</i> <b>Panel</b> – Claire Weill, Alain Vidal, Terry Nipp, Heather Mckhann, Harry Clark (remote participation) <b>Facilitator</b> – Jean-Francois Soussana			
5:00 – 6:30	<i>Poster viewing with beverage refreshment</i>			

<b>Thurs. June 30</b>	
9:00 – 10:30	<b>Morning Plenary: Observations and Recommendations in Planning</b> <i>Pasteur Auditorium</i> <b>Keynote</b> – perspectives from AgMIP Steering Council Co-Chairs Jean-Francois Soussana and Ghassem Asrar <b>Panel Discussion</b> – panel discussion and responses from AgMIP PI's Cynthia Rosenzweig, James Jones, and John Antle
10:30 – 11:00	<i>Coffee Break</i>
11:00 – 12:30	<b>Session 3: Regional Breakout Groups</b> – regional and national assessments in context of global impacts, shocks, and trends
<b>3.1 South Asia</b> Leader: Nataraja Subash	<b>3.5 East Asia/Oceania</b> Leader: Enli Wang
<b>3.2 Sub-Saharan Africa</b> Leader: Dilys MacCarthy	<b>3.6 Europe</b> Leader: Frank Ewert
<b>3.3 Latin America and Caribbean</b> Leader: Roberto Valdivia	<b>3.7 Global Agriculture</b> Leaders: Christoph Mueller and Joshua Elliott
<b>3.4 North America</b> Leader: Jim Jones	<b>3.8 Global Economics</b> Leaders: K. Wiebe, D. van der Mensbrugge, and H. Lotze-Campen
12:30 – 2:00	<i>Buffet Lunch - self organized groups</i>
2:00 – 4:00	<b>Session 4: Work Group Breakouts</b>
<b>4.1 Global Economics</b> Leaders: K. Wiebe, D. van der Mensbrugge, H. Lotze-Campen	<b>4.6 Data, Decision Support Systems and IT</b> Leaders: Sander Janssen and Cheryl Porter
<b>4.2 AgGRID</b> Leaders: Joshua Elliott and Christoph Mueller	<b>4.7 Crop Modeling of Low-Input Smallholder Systems</b> Leaders: Marc Corbeels
<b>4.3 Seasonal Estimates, Data Assimilation, and Climate Shocks</b> Leaders: Alex Ruane and Sonali McDermid	<b>4.8 Sustainable Nutrition Security</b> Leaders: Jessica Fanzo, Adam Drenowski, and Dave Gustafson
<b>4.4 Regional Integrated Assessments</b> Leader: John Antle	<b>4.9 Crop-Water-ET</b> Leaders: Jean-Louis Durand and Ken Boote
<b>4.5 Crop Model Intercomparison and Improvement</b> Leaders: Peter Thorburn, Senthold Asseng, and Pierre Martre	<b>4.10 Livestock-Grasslands</b> Leader: Jean-Francois Soussana
4:00 – 4:30	<i>Coffee Break</i>
4:30 – 5:00	<b>Afternoon Plenary: Highlights from Regional and Working Team Breakouts</b>
5:00 – 6:00	<b>Synthesis and Wrap-up</b>