

AgMIP

The Agricultural
Model Intercomparison
and Improvement Project

3RD ANNUAL GLOBAL WORKSHOP REPORT

10TH – 12TH OCTOBER, 2012

UN FAO HEADQUARTERS,
ROME, ITALY



AgMIP

The Agricultural
Model Intercomparison
and Improvement Project



Global Annual Workshop • October 10-12, 2012 • FAO Headquarters, Rome, Italy



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



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IN-KIND CONTRIBUTORS

Columbia University

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Food and Agriculture Organization of the United Nations (FAO)

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

International Life Sciences Institute (ILSI)

National Aeronautics and Space Administration (NASA)

Oregon State University

Wageningen University





3RD ANNUAL GLOBAL WORKSHOP

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AgMIP 3RD ANNUAL GLOBAL WORKSHOP



Attendees at AgMIP Global Workshop plenary session, FAO Rome.

The AgMIP 2012 Global Workshop held October 10th - 12th at FAO headquarters in Rome, Italy, brought together over 200 participants from 31 countries around the world. Research activities concerning climate scenarios, crop modeling, economics, and information technologies, as well as regional initiatives and crop-specific assessments were discussed in plenary session presentations and in breakout work-groups.

The goals of the 2012 AgMIP Global Workshop were to:

- Review progress and present results for AgMIP regional and global research programs;
- Refine AgMIP protocols for model intercomparisons to include uncertainty and scaling;
- Advance AgMIP regional and global integrated assessments of food security; and,
- Build transdisciplinary collaborations.

These goals were surpassed as attendees shared recent work and built connections for future projects. The Global Workshop was designed around working breakout sessions that will provide the foundation for AgMIP's projects in the coming year (see Agenda).

Over the last year AgMIP has made considerable strides in building a global, transdisciplinary network of scientists to evaluate the impacts of climate change on crop production and food security around the globe. AgMIP's 2012 Global Workshop provided tangible proof that this network is facilitating unique research opportunities as well as valuable results.

AGENDA

Day 1 – Wednesday, October 10th

Morning Plenary – AgMIP Progress and Initial Results

8:15am: Registration and Check-In

9:00am: Welcome and Introductions – AgMIP Leaders and FAO

9:15am: Overview and Goals of Workshop –
Cynthia Rosenzweig, Jim Jones, Jerry Hatfield

9:45am: Global Model Intercomparisons

- Overview – Dominique van der Mensbrugghe, FAO
- Global Gridded Crop Model Intercomparison – Cynthia Rosenzweig
- Global Economic Model Intercomparison – Jerry Nelson

10:15am: Morning Break and Poster Viewing

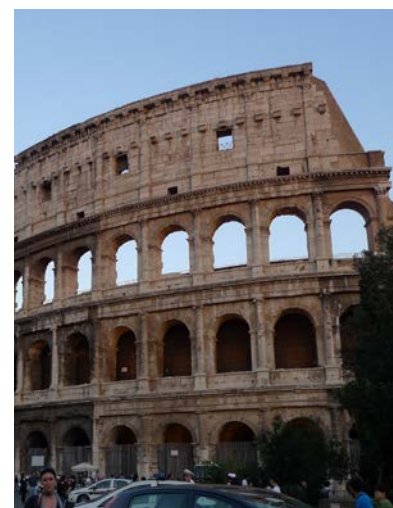
10:45am: AgMIP Regional Integrated Assessments
(Global Economics Team to Breakout)

- Overview – Jim Jones
- Sub-Saharan Africa Projects Summary – Andre Bationo and Job Kihara
- South Asian Projects Summary – Dileepkumar Guntuku
- North America – Jerry Hatfield
- South America – Eduardo Assad
- Australia and Oceania – Peter Thorburn and Mark Howden
- Europe – Frank Ewert

12:30pm: Lunch (self-organized work groups; e.g., Coordinated Climate Crop Modeling Pilot; South Asia Research Project Pls and ARPs; others)

1:30pm: Crop Model Intercomparison Pilots

- Overview – Ken Boote
- Wheat – Senthil Asseng and Frank Ewert
- Maize – Simona Bassu and Jean-Louis Durand
- Rice – Xinyou Yin and Tao Li
- Sugarcane – Peter Thorburn, Fabio Marin, and Abraham Singels





Afternoon Breakouts – AgMIP Teams and Work Groups

2:30pm: Charge to AgMIP Team and AgMIP Work Group Breakouts

2:45 pm: AgMIP Team Breakouts

- Climate – Alex Ruane
- Crop Modeling – Ken Boote and Peter Thorburn
- Economics: Regional – John Antle and Roberto Valdivia
- Economics: Global – Jerry Nelson
- Information Technologies – Cheryl Porter and Sander Janssen
- Steering Group and Donor Forum – Martin Parry and Mannava Sivakumar

3:30pm: Afternoon Break and Poster Viewing

4:00pm: AgMIP Work Group Breakouts I

- Livestock and Grasslands Pilot – Jean-Francois Soussana and Phil Thornton
- Regional Integrated Assessments – John Antle, Roberto Valdivia, and AgMIP Region Project Pls
- Gridded Crop Models and Climate Scenarios – Joshua Elliot, Delphine Deryng, and Alex Ruane
- Global Economic Model Intercomparison – Jerry Nelson and Martin van Lampe
- Crop Pilots and Crop Model Improvement – Ken Boote and Peter Thorburn
- Steering Group and Donor Forum – Martin Parry and Mannava Sivakumar
- Others

5:45pm: Plenary: End-of-Day Check-in and Report Back

6:30pm: Reception: Location TBA

Day 2 – Thursday, October 11th

Morning Plenary – AgMIP Cross-Cutting Themes and Data

8:30am: Reconvene and Day 2 Goals

8:45am: AgMIP Inputs and Outputs

- AgMIP Databases – Cheryl Porter and Sander Janssen
- AgMIP Data Policy – Ioannis Athanasiadis and Sander Janssen

9:15am: AgMIP Cross-Cutting Themes

- Overview – Martin van Ittersum
- Aggregation across Scales – Frank Ewert and Jim Jones
- Uncertainty – Daniel Wallach and Mike Rivington
- Representative Agricultural Pathways – John Antle and Jerry Nelson

10:15am: Charge to AgMIP Cross-Cutting Themes and Other Breakouts

10:30am: Morning Break and Poster Viewing

Morning Breakouts – AgMIP Cross-Cutting Themes and Others

11:00am: AgMIP Cross-Cutting Themes and Other Breakouts

- Uncertainty and Aggregation – Daniel Wallach, Frank Ewert, Mike Rivington
- Representative Agricultural Pathways (for global economics, regional economics, and crop models) – John Antle and Peter Thorburn
- AgMIP Data Management Policy – Ioannis Athanasiadis and Sander Janssen
- Global Economic Modeling – Jerry Nelson
- AgMIP Partnerships (Steering and Donor Groups plus invited guests) – Jim Jones, Cynthia Rosenzweig, and Jerry Hatfield

12:30pm: Lunch (self-organized work groups; e.g., Coordinated Climate Crop Modeling Pilot)

Afternoon Breakouts – AgMIP Work Groups

1:45pm: Work Group Breakouts II

- Uncertainty and Aggregation Pilot – Daniel Wallach, Frank Ewert, Mike Rivington
- Global Economic Model Intercomparison – Jerry Nelson and Martin von Lampe
- Gridded Crop Models and Climate Scenarios – Alex Ruane, Joshua Elliot, and Delphine Deryng
- Data Harmonization and Visualization – Cheryl Porter and Sander Janssen





- Regional Integrated Assessments – John Antle, Roberto Valdivia, and AgMIP Region Project PIs
- Steering Group and Donor Forum – Martin Parry and Mannava Sivakumar
- Others

Afternoon Break and Poster Viewing (self-timed)

5:30pm: End-of-Day Plenary Check-in and Report Back

6:15pm: Adjourn



Friday, October 12th

Morning Plenary

8:30am: Reconvene and Goals for Day 3

8:45am: UN FAO Global Agro-Ecological Zone Approach and Analyses – Renato Cumani

9:00am: Coordinated Climate-Crop Model Pilot – Cynthia Rosenzweig and Sonali McDermid

9:15am: Toward an AgMIP Global Research Alliance – Cynthia Rosenzweig, Jim Jones, and Jerry Hatfield

Morning Breakouts – Crafting a Way Forward for AgMIP

9:45am: Charge to Breakouts on Future Research Plans

- Uncertainty and Aggregation - Mike Rivington, Daniel Wallach, and Frank Ewert
- Representative Agricultural Pathways – John Antle
- Data Harmonization and Visualization – Cheryl Porter and Sander Janssen
- Crop Model Improvement – Ken Boote and Peter Thorburn
- Livestock and Grasslands Pilot – Jean-Francois Soussana and Philip Thornton
- Gridded Crop Models and Climate Scenarios – Alex Ruane, Joshua Elliot, and Delphine Deryng

- Global Economic Model Intercomparison – Jerry Nelson and Martin von Lampe
- Steering Group and Donor Forum - Martin Parry and Mannava Sivakumar
- Others

10:30am: Mid-Morning Break and Poster and Viewing

11:00am: Breakouts on Future Research Plans (continued)

12:30pm: Lunch (self-organized work groups; e.g., Coordinated Climate Crop Modeling Pilot)

Afternoon Plenary – Reports and Way Forward for AgMIP

1:45pm: Present Plans for Next Steps

- Uncertainty and Aggregation
- Representative Agricultural Pathways
- Data Harmonization and Visualization
- Crop Model Pilots and Improvements
- Livestock and Grasslands Pilot
- Gridded Crop Models and Climate Scenarios
- Global Economic Model Intercomparison
- Steering Group and Donor Forum
- Others

4:15pm: Feedback from Steering Group and Donor Forum – Martin Parry, Mannava Sivakumar, and Alessandro Moscuza

4:30pm: Wrap-up

5:00pm: Adjourn





POSTERS

AgMIP Region Projects – South Asia: AgMIP South Asia regional teams

AgMIP Region Projects – Sub Saharan Africa: AgMIP Sub-Saharan Africa regional teams

TOA-MD: A Novel Approach to Multi-Dimensional Impact Assessment: John Antle and Roberto Valdivia

TOA-MD: A New Approach to Assess Climate Change Impacts and Adaptation for Poor Agricultural Households: John M. Antle and Roberto O. Valdivia

AgMIP Maize: analysis of the protocol with Sarra-H: Christian Baron and Myriam Adam



Impacts of a projected climate change scenario on the production and prices of staple and nutritionally important crops in the Southern Africa: project overview: Y.Beletse, M.Jones, O.Crespo, S.Walker , D.Cammarano, W.Durand, C.Nhemachena, M.Teweldemedhin, M.Gamedze, W.Tesfahuney, P.Gwimbi, T. Mpusaing

A method for evaluating climate change adaptation strategies for small-scale farmers using survey, experimental and modeled data: Lieven Claessens, John Antle, Jetse Stoorvogel, Roberto Valdivia, Phillip Thornton, and Mario Herrero

Integrating multi-disciplinary models to evaluate the impact of climate change on agriculture: the example of MOSAICC: Francois Delobel, Oscar Rojas, and Hideki Kanamaru

Sensitivity analysis to climatic factors for wheat, maize and rice simulated with STICS under the AgMIP pilot projects: De Sanctis Giacomo, Ripoche Dominique, Ruget Françoise, Buis Samuel, Launay Marie, Bertuzzi Patrick

CIWARA: AgMIP in West Africa:

M.Diancoumba, D.S. MacCarthy, S. G. K. Adiku, P. C. S. Traore, I. Hathie, J.B. Naab, S. B. Traore, M. Adam, A. Alhassane, J. Amikusuno, D. Z. Diarra, F. Doubedji, O. Ndiaye, M. Sanon, B. Sarr

Robustness of large-scale crop yield estimates to small-scale climate projection uncertainties: Michael Glotter

Exploring Uncertainties Associated with Scaling Crop Systems Modeling Results from Point to Region in Sub-Saharan Africa: Job Kihara, Jawoo Koo, Jonathan

Hickman, Dilys MacCarthy, Charles Vanya, Julius Mangisoni, Edward Yeboah, Carlo Azzarri

Crop livestock intensification in the face of climate change; exploring opportunities to reduce risk and increase resilience in southern Africa using an integrated multi-modeling approach: Patricia Masikati-Hlanguyo, Sabine Homann, Katrien Deschemaeker, Elizabeth Bandason, Olivier Crespo, Lieven Claessens, Andre van Rooyen, Sebastiao Famba, Chris Lennard, and Arthur Gama

The Coordinated Climate-Crop Modeling Pilot (C3MP): Sonali McDermid, Alex Ruane, and Cynthia Rosenzweig

Assessing impacts of climate variability and change on agricultural systems in Eastern Africa: KPC Rao and the AgMIP East Africa Team

Simulating Low-input Agricultural Systems: KPC Rao and the AgMIP East Africa Team

The economic impacts of climate change on sugarcane: KPC Rao and the AgMIP East Africa Team

The effect of uncertainty associated with downscaled climate projections on maize yield: KPC Rao and the AgMIP East Africa Team



SIDE SESSION AGENDAS

Agenda for AgMIP Maize Team Meeting

FAO Headquarters, Rome, Italy – Cuba Room
Tuesday, October 9th, 2012

8:30 am – Introductions (Simona, Jean-Louis, Ken, Jon)

Detailed Report on Results (Simona, Jean-Louis)

- Powerpoint Presentation of results – (we will stop often for questions)
- Discussion

Plans for Publication

- Approach to take (uncertainty of response to factors? Number of models to reduce CV?)
- Tables and Figures to Select
- Potential Journals



11:30-1:00pm – Break for lunch

1:00pm – Continue Discussion of Publication Plans

Next Steps: Testing Maize Models with Data on Response to CO₂, Temperature, and Water (Ideas suggested in Ames, Iowa. Please suggest additional ideas and data sources.)

- Test maize models with FACE data from Illinois, USA, and Germany
- Test maize models with ET data from Illinois, Bushland, Texas and other sites
- Test maize models with temperature response data (if such can be identified)
- Other

6:00 - 7:00pm – Drinks (place TBA)

8:00pm – Dinner (place TBA)

Note: Maize Model Improvement Activities to be discussed 4pm
Wednesday (Tollenaar)



Agenda for AgMIP Wheat Team Meeting

FAO Headquarters, Rome, Italy – David Lubin Memorial Library
Tuesday, October 9th, 2012

Meeting Goals:

1. Report progress on Wheat Pilot activities.
2. Discuss additional opportunities to analyze pilot data.
3. Discuss and decide the next phase of AgMIP Wheat (next 12 months).

1:00 - 2:30pm – Introduction

- Sentholt/Frank (5 min)

Report on results

- Grain yield/uncertainty – Sentholt/Frank (10 min)
- Ensemble (+ experimental data) – Pierre/Daniel (10 min)
- NUE/grain protein – Pierre/Claas (10 min)
- ET/WUE – Davide (10 min)
- Discussion on other potential analysis

2:30 - 5:30pm (with ½ hour break)

Next Phase of AgMIP Wheat – model improvements on high T impact

- Proposed plan for next 12 month – Senthold/Frank (5 min)
- Introduction of Hot Serial Cereal, Arizona – Bruce Kimball/Jeff White/
Mike Ottman/Gary Wall (10 min)
- Introduction of International CIMMYT experiments – Phil Alderman/
Matthew Reynolds (5 min)
- Agreeing on plan for next 12 months (discussion & decision)
- Other future opportunities (discussion)

5:30 - 6:00pm – Other

- Finalize publications/data policy (discussion & decision)
- Disclosure of individual models in next phase (decision)
- New project name – “AgMIP Wheat” (decision)
- Funding opportunities - Wheat Initiative – Pierre (5 min) (information & discussion & decision)

6:00 - 7:00pm – Drinks (place TBA)

8:00pm – Dinner (place TBA)

Agenda for AgMIP Data Management Team Meeting

FAO Headquarters, Rome, Italy – Gabon Room

Tuesday, October 9th, 2012

Moderators: Ioannis N. Athanasiadis and Sander Janssen

12:30 - 13:00

FAO badge issue for participants

(due to host security policy - est. 15 participants)

13:00 - 14:30

AgMIP Data management issues (setting the landscape)

Themes to consider:

- Collecting data
 - Data and Metadata
 - Content and standards
- Managing data
 - Content quality assurance
 - Naming issues





- Data provenance, accountability and replication of results
- Compatibility of data classifications
- Sharing/reusing data
 - Intellectual property rights
 - Licensing
 - Distribution restrictions
- Long-term preservation
 - Archival and machine interpretation
 - Exposing AgMIP data to other networks
 - Data publishing and citation

14:30 - 16:00 – Exploring future data needs for AgMIP (open discussion)

- Reflections from participants' experiences
- Towards a data sharing vision for AgMIP network
- Future use cases and priorities for development

16:00 - 16:30 – Tea break

16:30 - 17:30 – The AgMIP Data Management Plan (v1.0)

- Groupwork to review and improve the current version of the AgMIP Data Management Plan document

Agenda for CIMSANS Round Table on Opportunities for New Public-Private Collaborations on the Science of Integrated Modeling

FAO Headquarters, Rome, Italy – Queen Juliana Room

Tuesday, October 9th, 2012

The Center for Integrated Modeling of Sustainable Agriculture and Nutrition Security (CIMSANS) was recently established by the ILSI Research Foundation to foster broad public/private collaboration in the development and application of sound science to the integrated modeling of agricultural production systems. This round table discussion will include perspectives from both the public and private sectors on the potential benefits of broader collaboration; an update on a current project involving maize modeling/data; and near-term opportunities for work on other crop models and higher quality data.

9:00am – Morven McLean (ILSI Research Foundation)

- Welcome and Introductions
- Overview of CIMSANS

9:45am – Jerry Nelson (IFPRI), Paul Hendley (Syngenta), Cynthia Rosenzweig (NASA)

- Benefits of public/private collaboration on integrated modeling
 - Public sector viewpoint
 - Private sector viewpoint
 - AgMIP as an example

11:00am – Break

11:30am – Jim Jones (U. Florida), Dave Gustafson (ILSI RF)

- Example collaboration: U. Florida – Monsanto maize yield, trial data-base and development of a new public maize model
 - Comparison and evaluation of other maize models
 - Strategies for use of the new public maize model
 - Opportunities for collaboration on other crop models

12:30pm Lunch

1:00pm Tom Hertel (Purdue University), Jetse Storvoogel (Wageningen), Jerry Nelson (IFPRI), Jerry Hatfield (USDA ARS NLA)

- New opportunities for global, spatially explicit, open access databases in support of integrated modeling (collection, management, dissemination):
 - Digital soils map
 - Land use/land cover
 - Ag practices (irrigation, tillage, etc.)
 - Weather/climate data
 - Local economic status (incl. poverty, hunger)
 - Ecosystem services

2:30 PM Break

3:00pm Roundtable

- Private Sector Perspectives

4:00pm – Jerry Nelson (IFPRI)

- Planning for the launch meeting of the Strategic Foresight Platform

4:45pm – Dave Gustafson (ILSI RF)

- Summation and next steps





PRESENTATIONS

Several presentations were given throughout this workshop and most are available online at www.agmip.org/3rd-annual-global-workshop. The following is a comprehensive list of these presentations:

Day 1 (Oct. 10)

1. AgMIP Overview - Rosenzweig, C. (NASA GISS), J. Jones (UFL), J. Hatfield (USDA-ARS).
2. Global Gridded Crop Model Intercomparison - Rosenzweig, C. (NASA GISS), J. Elliott (U. Chicago), D. Deryng (UEA), C. Mueller (PIK), H. Yang (EAWAG), C. Folberth (EAWAG), E. Schmidt (BOKU), D. Ojima (CSU), K. Neumann (PBL), K. Fielor (PIK), F. Piontek (PIK), A. Ruane (NASA GISS), J. Jones (UFL), K. Boote (UFL)
3. Global Economic Model Intercomparison - Nelson, G. (IFPRI)
4. Integrated Regional Assessments in Sub-Saharan Africa - Bationo, A. (AGRA), J. Kihara (CIAT), et al.
5. South Asia Project Summary - Guntuku, D. (ICRISAT).
6. North American Regional Workshop - Hatfield, J. (USDA-ARS).
7. Climate Impact and Adaptation in Australia and New Zealand - Thorburn, P. (CSIRO), M. Howden (CSIRO).
8. European Activities Related to AgMIP - Ewert, F. (INRES).
9. Crop Modeling Activities - Boote, K. (UFL), P. Thorburn (CSIRO).
10. Crop Model Teams
11. AgMIP Data Products - Porter, C. (UFL), S. Janssen (WUR), C. Villalobos (UFL).
12. General IT Breakout
13. AgMIP: from Project to Global Program



Day 2 (Oct. 11)

1. AgMIP Cross-Cutting Themes – Ewert, F. (INRES), L. van Bussel (INRES), D. Wallach (INRA), J. Jones (UFL), M. van Ittersum (WUR).
2. Uncertainty - Wallach, D. (INRA), M. Rivington (JHRI).
3. Representative Agriculture Pathways - Antle, J. (OSU), G. Nelson (IFPRI).
4. RAPs Breakout Session
5. AgMIP Regional Impact Assessment - Antle, J. (OSU).
6. RIAs Breakout

Day 3 (Oct. 12)

1. FAO Global Agro-Ecological Zones - Cumani, R. (UN FAO).
2. The Coordinated Climate-Crop Modeling Pilot (C3MP) - Rosenzweig, C. (NASA GISS), A. Ruane (NASA GISS), S. McDermid (NASA GISS).
3. Aggregation & Uncertainty - Rivington, M. (JHRI), D. Wallach (INRA), F. Ewert (INRES).
4. RAPs: Results and the Way Forward - Antle, J. (OSU), R. Valdivia (OSU).
5. Data Harmonization and Visualization - Porter, C. (UFL), S. Janssen (WUR).
6. Gridded Crop Models and Climate Scenarios - Ruane, A. (NASA GISS), J. Elliott (U. Chicago), Deryng, D. (UEA).
7. Phase 2 Scenario Results: Overview - von Lampe, M (OECD).
8. SemaGrow



PARTICIPANTS

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Abu	John	National Centre for Agricultural Mechanization
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Jones	Jim	University of Florida
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Kersebaum	Christian	ZALF, Germany
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Mayer	Claus	Biomathematics & Statistics Scotland/Jmaes Hutton Institute
M'barek	Robert	European commission
McDermid	Sonali	NASA GISS
McLean	Morven	ILSI
Mearns	Linda	NCAR
Morgan	Kelly	University of Florida
Moscuzza	Alessandro	UK DFID
Mueller	Christoph	PIK
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AgMIP's mission is to improve substantially the characterization of world food security as affected by climate variability and change, and to enhance adaptation capacity in both developing and developed countries.

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