AgMIP

The Agricultural
Model Intercomparison
and Improvement Project

SUB-SAHARAN AFRICA
WORKSHOP REPORT

REGIONAL INTEGRATED
ASSESSMENTS

SEPTEMBER 10-14, 2012
ACCRA, GHANA

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from the British people

CIAT 45
Centro Internacional de Agricultura Tropical
International Center for Tropical Agriculture

Report of the first AgMIP sub-Saharan Africa workshop on integrated regional assessments
10-14th September 2012
Accra, Ghana

This report was prepared for ICRISAT by KEMIC, the sub-Saharan Africa AgMIP coordination project implemented through CIAT.

25/September/2012

Table of Contents

Goals and Objectives

This workshop was organized to help coordinate AgMIP Research Teams within sub-Saharan Africa (SSA) and to help facilitate compatible integrated regional assessments of climate change impacts and adaptation in selected agricultural systems. The workshop, organized by the SSA Regional Coordination Team (RCT) and by the AgMIP Leadership Team aimed to:

1. Build cohesiveness within and among regional AgMIP teams to achieve success across each region;
2. Consider stakeholders' concerns and needs;
3. Review and refine protocols for AgMIP regional integrated climate change assessments;
4. Conduct training on AgMIP integrated assessment methods and tools;
5. Develop specific plans for carrying out AgMIP integrated assessments during the project; and,
6. Develop target publication outputs, including a book, developing a timetable for incrementally writing material such that the assessments are ready for publication by the end of the project.

Pre-workshop Activities

Prior to the workshop, each of the RRTs had organized inception workshops in their regions. The SSA coordination team received the reports of these inception workshops one week prior to this SSA-wide meeting. The inception workshops had been organized jointly for the two Southern Africa RRTs, hence one report was received from them. The inception workshops were intended to get the RRTs organized and to:

- Prepare for this first region-wide workshop and confirm the team members who will contribute to each of the AgMIP areas (climate, crop model, economics, and IT);
- Initiate activities to accomplish what is needed for the SSA-wide workshop;
- Develop an inventory of available data that are needed for regional AgMIP assessments (weather, site experiment, soil, regional crop management practices, and socio-economic data) including documentation on sources of data, quality, priority for use, access requirements/limitations, etc.;
- Select regions and study sites (including prospective sentinel sites) that are to be targeted, and prepare a summary of each to discuss in the first workshop; and,
- Prepare a summary of the crop and economic model analyses that have been done or are in progress in the region.

A two-page synthesis highlighting key aspects including training needs and areas for collaboration/synergy across teams is appended (Appendix I).

An e-training for the economics group was conducted in advance of the training.

The workshops and other pre-workshop activities thus ensured teams were well prepared to participate in the SSA-wide meeting. For instance, one week prior to the workshop, the RRTs submitted workshop reports including data checklist to the AgMIP leadership, through the SSA coordination team. These outlined the data needed for the modeling purposes, identified sources for those data, and assigned responsibilities for their acquisition. The key data constraints were also

largely pointed out including accessibility to climate and to some extent socio-economic datasets, data quality issues and data gaps and how those could be filled.

The agenda for this workshop is contained in Appendix II and the list of participants in Appendix III. There were 72 participants including 13 from AgMIP Eastern Africa, 14 from CIWARA (AgMIP Western Africa), and 19 from Southern Africa (9 in CLIP and 10 in SAAMIIP). Five participants are in the coordination team. The different AgMIP research themes were also well represented and excluding AgMIP leadership and stakeholders, there were about 46% participants representing crop modeling, 24% economics, 19% climate and 10% IT. See Appendix III for details of individuals and their areas of expertise.

Opening Remarks and Expectations

Prof. Samuel Adiku from University of Ghana, PI for the Western Africa regional research team (CIWARA) hosted the event and welcomed the participants. AgMIP leaders introduced themselves followed by introductions by individual modelers/participants. The following are expectations as outlined by the participants during the introduction session:

- Understand climate data needs for modeling.
- Learn more about crop modeling.
- Understand biophysical sciences.
- Understand climate change in relation to livestock.
- Learn more about cropping systems modeling.
- Understand AgMIP and get to know new people.
- Understand how to move from point to landscape/regional up-scaling in modeling, including economic aspects.
- Better knowledge on how to calibrate crop models in a world of changing climate and varieties.
- Build rapport and consensus on meaningful assessment of climate change modeling.
- Understand what information is available for modeling in the region.
- Understand more on application of models in climate change impact assessment.

The guest of Honor, Dr. Ernest Aryeetey (Vice Chancellor, University of Ghana) gave the opening speech for the workshop. The speech emphasized the reality of climate change, including the noticeable increase in unpredictable seasonal weather such as the onset of rainy seasons. Just a few decades ago, it was well-understood and farmers knew when the season would start. Another key challenge is that arable land is increasingly becoming scarce, leading to shortened fallow periods and thus appropriate technologies are needed to address lowering soil quality. He reiterated the importance of bringing together the different disciplines in modeling like AgMIP has done

Day 1: Overview of Regional Project Plans

Each of the regional research teams and the SSA coordination team presented an overview of their work plan including sites selected, data needed for the modeling work, and training needs for effective delivery of AgMIP outputs. This was a good opportunity for cross-team understanding and sharing of ideas and identifying areas of collaboration. One area for synergy across teams is the sharing of tools developed to automate tasks. Also, teams learnt that they could benefit from IT tools

developed by the wider IT group (e.g. AgMIP IT staff based in the USA). There were also discussions on the need to build regional scenarios that are consistent with global scenarios based on "shared social economic pathways" (SSPs). This arose from a stimulating presentation on integrated assessments made by Dr. John Antle that cut across the methods, outputs, and framework for integrating across climate, crop, economic, and IT teams as well as scaling up aspects.

Day 2: Morning Plenary and Round-robin Discussions

Jim Jones and John Antle introduced the agenda of the day. The participants, guided by the AgMIP leadership team, discussed on the best strategy to deliver outputs through a proof of concept based on one or two selected sites rather than multiple sites in the region. Thus, the teams agreed to re-define their region of interest (where work will be focused on), and the sub-region (where they would start and do tests). Long-term climate data and one future climate scenario will be used (simplest possible cases), running this for a number of sites to capture variability within the selected sub-region. This first set of runs is to evaluate impact of climate change on productivity and poverty levels, and results should include for example % gainers and losers. The idea is that participants go through the whole sequence of the integrated regional assessment using one sub-region/site. This should include also developing RAPs and looking at adaptation. The timelines set for the proof of concept activities is reported under timelines.

Round-robin discussions were scheduled ensuring that each of the RRTs spent time with AgMIP leadership to discuss collaboration, management, and outputs with IT, economics, and crop modeling experts to discuss relevant issues for the teams. The key aspects in each of this sessions is highlighted:

Round-Robin on Collaboration, Management and Outputs

The purpose of these sessions was to build an understanding within teams on the expected timelines and reporting and training within teams and within the SSA region. The following are the key issues discussed:

1. Student support: there is need to re-think student support since the lack of it is hampering capacity building in the Southern Africa region for example. Long-lasting capacity building (students) should be made one of the fruits of AgMIP's work.

2. Synergies between different teams can be achieved through additional SSA-wide training workshops addressing specific needs. Participation to these workshops should be restricted to only those persons that needed the specific capacity. Funds to participate can be sourced from other initiatives.

3. AgMIP website is being fine-tuned and includes public facing pages (where people can learn more about AgMIP activities and where publications can be posted) and research pages that are accessible to research team members through login. It was noted also that through the developed IT tools, modelers will be able to download datasets directly into the format they need, be it DSSAT or ApSIM.

4. The functioning of data node was explained to each of the research teams. Teams will think through whether to host data node in their region, but interest has already been expressed for hosting in Kenya and Southern Africa. Data will be tagged depending on whether it is freely accessible or restricted. Different license types will be used as applicable. Also,

standard formats for data arrangements are prepared for uploading climate, crop, and economic datasets into the database.

5. Since not all IT tools for data conversions are ready (climate tools, crop model data translation tools, web and desktop interfaces for modeling tools), teams can develop their own tools and they should share with others any exciting IT tools developed. Similarly, teams are encouraged to share training protocols and other methodologies that they develop.

6. Flexibility in timelines was reported due to the delayed program funding. Important reporting periods were determined (including March 2013 and February 2014). These will be enforced even if there is a project extension. The reporting will be more of methodologies, protocols, and abstracts; and teams are discouraged from diary-type of reporting (which fits well in their individual websites).

7. For connections within projects (Climate-IT-Crop-Economics), tools are being developed for reporting in a standardized way. This is to ensure that data from each discipline are easily understood and usable by the other disciplines.

8. Plans for upcoming workshops were noted: a mid-term workshop will be held in South Africa around June 2013, while a write-up workshop will be held possibly in February 2014 (assuming there will be an extension by a few months to allow finalization of manuscripts).

9. Connections with the coordination team and AgMIP resource persons were explained in terms of communication and training workshops. For communication, each RRT will maintain communication within its members while the coordination team will ensure communication across teams. A number of listserves will be maintained for communicating with different groups. The coordination team plans to send out updates every two weeks to the teams.

10. Teams were reminded/informed of the Rome meeting in October and to prepare posters explaining the integrated regional assessment modeling going on in the region.

Round-robin on Economic Data, Modeling and RAPs

The rationale was to demonstrate the process of developing scenarios, get an understanding of the economics modeling and their data needs, and of how to develop representative agricultural pathways (RAPs). The reason for developing RAPs was explained as the need to look at socio-economic variables that influence climate change. Emphasis was made on two extreme RAPs: RAP 1 (high investment) and RAP 2 (low investment). These RAPs are determined by policy drivers (short-term priorities and long-term priorities) on the one side, and dominant forces (state actors and non-state actors) on the other. In developing RAPs, stakeholders need to be involved. RAPs were defined as having qualitative story lines while scenarios have quantitative story lines. Participants expressed the need to distinguish between scenario analysis and RAPs, and also spend a lot more time on the TOA-Model.

Round-robin on Crop Data and Modeling

The kind of data needed was explained; this included planting date, planting density, and fertilizer application. A detailed account of data requirements for modeling is contained in a DSSAT book that was provided to crop modelers (through RRT PIs) during the workshop.

The Southern Africa crop modeling team expressed the need for modeling two strata—commercial (free state) and smallholder farmers. The need for further/follow-up discussions on this with John Antle was highlighted. A concern was expressed that in extensive cases socioeconomic data does not

match with yield data for each household (i.e. one household has yield while another has socio-economic). For unmatched data, a <u>bias adjustment</u> for the production can be introduced, but how this is done is uncertain. Data needed by economists from the crop modeling group was explained (they need, for every combination of factors for every year, yield, biomass, etc.). It is unclear the degree to which socioeconomic data is available/obtainable in the SA region. The SA team may need to work with national agricultural household surveys to find the necessary socioeconomic data.

Fast Track calibrations for selected regions/subregions suggested using 2-3 varieties, days to anthesis and days to maturity as the most important. Absolute yield comes out in the <u>bias correction</u> (further studies required). Varieties differ from local to OPV to hybrids and variety trial datasets are important for the calibrations. For coarse calibrations, weather and soil may have more influence than the variety.

The role of local experts (e.g. agronomists) in helping to make good assumptions on fertilizer use, irrigation, etc. was expressed. All assumptions should be clearly and rigorously documented—both to identify weaknesses in exercise, and so that if additional data are obtained, they can be used to replace the assumptions and improve the exercise.

For each region, a clear data checklist (inventory of data) across the different groups (crop modelers, economic modelers, climate modelers) is needed. This should indicate, for example, data that is at hand vs. data that is required or strong regions vs. regions with gaps. When data needs to be obtained, it needs to be very clear/specific about the data required, the source, and how it will be obtained. Recognizing the effort and challenges inherent in obtaining data for specific areas is important to guide commitments to regions where data is indeed easy to access, especially for fast track analysis.

Many of the crop modelers required an understanding of what RAPs really are and whether they need to work with economists to produce crop-modeling output for the RAPs. RAPs influence whether water/irrigation is available or fertilizer is affordable among other agronomic aspects. It was pointed out that currently RAPs could not be easily translated into tasks for crop modelers.

The Eastern Africa team—crop modeling group pledged to do proof of concept for one region in each of the 4 countries (rather than just one or two sub-regions) — has the capacity in each country to do this for the Fast Track. This team plans to do extensive variety and management model calibrations. For this, the calibration activity should focus only on life cycle (i.e. not necessarily linked to socioeconomics.)

Like in the case of Southern Africa, socioeconomic data for crop modeling for the Eastern Africa team has gaps and lacks sowing date, fertilizer rates, and other important information. There is no systematic approach for filling gaps such as fertilizer rates beyond expert opinion. There is a sense that the quality of these guesses may not always be particularly high. For fast track, there is need to identify minimum data requirements in advance of the November workshop (organized by the Eastern African team). Climate data needs are well-understood but most RRTs did not understand crop simulations' data needs from the socio-economic datasets; these were explained to the teams and included sowing date, cultivar, N inputs, plant population, yield, soils (texture, OC, pH, initial

conditions), weather and other socioeconomic data. Due to the challenges of survey data at household level, the Eastern Africa RRT seems to be leaning towards using district level yields, but requires lots of assumptions to run the economic. The aggregation of results based on household survey data to higher spatial scale was explained emphasizing that weather and soil should be representative enough. For the aggregation, for instance, the study area could be stratified into the main soil types. Then within each stratum, identify the various planting date, cultivars, and fertilizer applied. A weighting factor is then developed to aggregate yield from all stratums.

Round-Robin on Climate Data, Modeling and Scenarios
Teams expressed the challenge in acquisition of climatic data from AgroMeteorological Stations in host countries. The climate team within AgMIP (led by Alex Ruane) can generate weather data if longitudes and latitudes data are provided for specific sites, but usually, this data is not as good as that obtained from the stations directly. Other aspects discussed in this round-robin session are highlighted below:

- Coordinates of locations selected for simulation and for which no reliable climate data is available should be sent to Alex Ruane in order to obtain a climate dataset in the AgMIP format.
- Baseline (historical data) weather information is needed for each of the sentinel sites for the period of 1980–2010 (i.e., for each region, identification of historical time series is needed).
- Missing data for observation stations can rely on background daily weather time series.
- The quality of data (including that from station observations) needs to be checked for biases. Procedures to follow are well elaborated in the draft Guide for Regional Integrated Assessments[1]. Different approaches to data quality control and how to fill in missing data were discussed. This includes adjusting and correcting for:
    - Number of rainy days.
    - Rainfall distribution.
    - Rainfall and temperature means to match the observed data records.
- Use of other data sources like satellites and climate models to supplement for the missing data.
- Conversion of the climate data into DSSAT and APSIM compatible formats.
- Highlight of production of future scenarios for each crop modeling.

Day 3: AgMIP Tools and Integrated Assessments
Reflections for day 2 were made with teams suggesting areas that need more attention. The teams were grateful for the round-robins as these provided a lot of insight and provided answers to issues within and across the teams. Areas needing further attention/elaboration were suggested and include:
- Scenarios and their development since this is a new topic. Materials/supportive documents on this topic are needed.
- Need for practical sessions on the use of R.

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[1] This refers to the guide being developed by the AgMIP leadership team. A print copy was provided to each of the participants to this meeting in Accra.

- Linkages between CLIP RRT and coordination team since both have sites in Malawi and CLIP particularly lacks agronomic trial datasets.
- Clarity on some concepts including the many acronyms employed such as SSPs and their association with RCPs and RAPs.
- Examples with climate and crop modeling applications.

Climate and IT Team Activities

Alex Ruane presented AgMIP climate team activities for regional integrated assessments. The team described their tasks in support of AgMIP RRT which include characterization of the climate in the region (to identify the unique characteristics or climate zones), and baseline climate series for each crop-modeling location. The IT team provided an overview of their tools for importing and translating crop model data including finished products and those in the works. This included information of how to access the tools and data sets online. Steps to data preparation and translation were demonstrated as well as different ways to input/upload and download data into the database. Participants were also provided with a newly developed user interface for use as desktop application for data conversions.

In line with the need for more information on the newer aspects, participants were taken through steps to scale up crop model simulations to districts for use in integrated assessments. Also, a follow-up was made on what participants can do with TOA-MD 5.0 model software and the kind of data needed to implement it. This provided a very practical application of TOA-MD and a much needed overview. An example of how to do the proof of concept was also presented linking crop modeling output to TOA-MD.

Day 4 and 5 Planning Work within Project Teams and Workshop Reflections and Timelines

Each of the project teams had enough time to sit together and plan their work especially for fast track activities. The activities were planned with the agreed timelines in mind. The research plans for each of the teams are already uploaded in the AgMIP website.

Timelines

The agreed timelines towards the delivery of the proof of concept and other SSA-wide activities is shown below. It was cautioned that Fast Track should not be a reason to slow down on other aspects of the outputs by the RRTs.

October 10th-12th: Principal investigators for the 5 AgMIP projects in SSA report back on milestones

October 15th: Data described and regions/sub-regions selected.

December 15th: Crop modeling finished and yield data delivered to economists.

January 31st: Economists prepare and run scenarios.

June 2013: Results on adaptation and RAPs.

July 2013: Results of fast track presented in SSA-wide mid-term workshop to be held in Southern Africa region.

Early 2014: Write-up workshop in Kenya.

Linkage with Other Projects

WASCAL, a climate change related initiative in Western Africa was represented throughout the workshop. Prof. Paul Vlek, director of WASCAL made a presentation on the activities of the project. This lays the platform for collaborative work between AgMIP and WASCAL.

Appendix I: AgMIP-SSA: Identified Issues Relevant Across the Different Project Teams

AgMIP project teams provide unique opportunities for:
1. Holistic assessment of climate change impacts by integrating best available tools and information in the areas of climate, crops, and economics.
2. Adding value to available data and information. No field experimentation, no farmer surveys for data collection, etc. are envisaged.
3. Better understanding of model uncertainties and improving model skill.
4. A platform to interact and work in close collaboration with global experts.
5. Opportunity to bring visibility to the work in the region through sharing of experiences nationally, regionally, and globally.
6. Enhancing regional capacity through improved skills in use of tools.
7. Developing a strong regional working group with skills in climate, crop, and economic modeling.

Common Challenges
1. Availability and access to data, especially climate data (temperature and radiation), and datasets needed for economic models
2. Interactions among groups: thematic teams must work in close collaboration. Inter-country interactions are needed (it is not clear how to achieve this, apart from the planned SSA-wide workshops and one or two within team meetings). This could point to a need for development of clear intra-project communication strategies.
3. Need for clear information dissemination strategy. Several teams have made suggestions and some even established Google Drive account (e.g., CIWARA). This is mainly for communication within teams and data sharing.
4. Reliance on existing datasets. Cannot conduct new experiments to acquire data as required for calibration and validation. Need for caution on datasets used and also should have good documentation. Key data sources include existing ICRISAT projects (CPWF and SLP) and CCAFS.

Capacity Building Needed
5. Eastern Africa team suggests capacity building on application of global and regional climate models for the generation of location-specific downscaled climate scenarios. Need for capacity for generation of variables that are not commonly measured, such as radiation. Southern Africa team suggested Alex Ruane to generate climate data for them but local capacity should also be developed if technically feasible.
6. Eastern Africa team needs refresher on most of the models. Much of this will be done in-team. Similar training can be implied from CIWARA's inception workshop report. Specifically, training is needed on the use of AquaCrop, IMPACT and DREAM. TOA-MD skills also needed.
7. Training in R suggested by Eastern Africa Team.

Opportunity for Developing Collaboration

8. The Eastern Africa and Southern Africa teams suggest developing tools for data conversions for use in different models. These are robust tools that are not team-specific and therefore need to be coordinated.
9. For generation of climate datasets including filling in missing data, it may be best to use similar/consistent approaches across teams. Presently, the Eastern Africa team has put forward a number of techniques, CIWARA have proposed an upscaling procedure, while the Southern Africa teams seem open.
10. Southern Africa teams suggest development of training manuals on biophysical and economic models. All teams would benefit from these manuals, hence the need to develop them in collaboration or share between teams.
11. CIWARA, SAAMIP and CLIP are engaging students in their research. What level of modeling skills do these students have and how do we build their capacity? A suggestion was made to look for additional funds to support students. How can AgMIP help?
12. Initial ideas for publications have been identified as reports (by Eastern African team) and as student research topics (by CIWARA). This can form a basis for thinking about across-team topics.

Target Crops

Focus crops. The Eastern African and Southern Africa teams have prioritized crops that will be focused on in different sites.

Eastern Africa	Southern African teams (SAAMIIP & CLIP)
Maize	Maize
Sorghum	Sorghum
Beans	Sweet potato
Wheat	Wheat
Sugarcane	Sugarcane
-	Forages and legumes (Groundnuts, cowpeas, mucuna, rhodes grass)

For CIWARA, priority crops are not given in inception reports

Suggested Models

Most teams mention DSSAT, APSIM, AquaCrop and TOA-MD. Southern Africa teams introduce livestock modeling tools such as AUSFARM, APSfarm and LIFE-SIM.

	Eastern Africa	Southern Africa (SAAMIIP & CLIP)	CIWARA
IT/Climate	PRECIS and MAGICC/SCENGEN	GCMs?	GCMs?
Crop	DSSAT, APSIM and Aquacrop	DSSAT, APSIM and Aquacrop	DSSAT, APSIM, and SARRAH. Aquacrop??
Livestock	X	AUSFARM, APSfarm and LIFE-SIM.	x
Economics	ToA, IMPACT and DREAM	ToA-MD,	ToA-MD

For a complete list and access to workshop presentations and other materials, visit
http://research.agmip.org/display/ssa/SSA+Workshop+-+September+2012

AgMIP Sub Saharan Regional Workshop
September 10-14, 2012
Accra, Ghana

03 September 2012 version

Overview

This is the first of three planned AgMIP Sub Saharan Africa (SSA) Regional Workshops organized to help coordinate AgMIP Research Teams and to help facilitate compatible integrated regional assessments of climate change impacts and adaptation in selected agricultural systems. The workshop is being organized by the SSA Regional Coordination Team (RCT) and by the AgMIP Leadership Team. The goals of this workshop are to:

1. Build cohesiveness within and among regional AgMIP teams to achieve success across each region;
2. Consider stakeholders concerns and needs;
3. Review and refine protocols for AgMIP regional integrated climate change assessments;
4. Conduct training on AgMIP integrated assessment methods and tools;
5. Develop specific plans for carrying out AgMIP integrated assessments during the project; and,
6. Develop target publication outputs, including a book, developing a timetable for incrementally writing material such that the assessments are ready for publication by the end of the project.

Each SSA Research Team is expected to organize itself prior to this workshop and assemble data and other information needed at the workshop in order to have effective training on different components of integrated assessment that will contribute to accumulating data, methods, and tools to do the work over the time duration of the project. The workshop will include training on individual components, with an emphasis on the integration of climate, crop, economic, and IT methods to achieve integrated assessments at each Research Team's region and that will culminate in publications.

AgMIP is committed to research with outcomes that help relate policy and decisions to climate change and adaptation. This is why the workshop organizers have prioritized a forum to include stakeholders during the opening morning session of the workshop, with opportunities for open discussion at a Luncheon with principal investigators and leaders.

Workshop Agenda

September 10 – Day 1 Plenary all day

8:00 – 8:30 am Registration
8:30 – 9:30 am Welcome; Goals; Introductions
- o Brief Welcomes from AgMIP PIs and Leaders, Workshop Organizers, Host Country Project Leader
- o Welcome from Professor Ernest Aryeetey, Vice-Chancellor, University of Ghana
- o Overview of Workshop Goals (Job Kihara and Jim Jones)
- o Brief Introductions of Stakeholders
- o Brief Introductions of Participants
- o Welcome to representatives from Media

9:30 – 10:30 am Overview of Regional Project Plans (20 min, 10 min discussion)
- o AgMIP Regional Project Plan #1
- o AgMIP Regional Project Plan #2

10:30 – 11:00 am Break

11:00 – 12:30 pm Continue Overview of Regional Project Plans
- o AgMIP Regional Project Plan #3
- o AgMIP Regional Project Plan #4
- o AgMIP Regional Coordination Plan

12:30 – 1:00 pm Facilitated Discussion: Stakeholder inputs (Facilitator: J Jones)

1:00 – 2:30 pm Workshop Photo, Lunch with Stakeholders and Media (Stakeholder seating with leadership reserved; media seating with researchers to be interviewed)

2:30 – 3:15 pm Presentation: Integrated Assessments
- o Methods, outputs, framework for integrating across climate, crop, economic, and IT teams, scaling up, etc. – J. Antle

3:15 – 3:30 pm Discussion (Facilitated by J. Jones)

3:30 – 4:00 pm Break

4:00 - 5:15 pm SSA PI Panel: Perspectives from Day 1 (15 min each)

- o Responding to Stakeholder inputs
- o Anticipating Challenges
- o Areas of Concentration and/or Additional Training

5:15 – 5:45 Final Discussion (Facilitated by P. Craufurd)

5:45 - 6:00 pm Wrap-up Day 1; Anticipate Day 2

September 11 – Day 2

8:30 – 9:00 am Plenary Session
- o Goals for Day 2
- o Intent of Breakout Sessions (Kihara, Jones)

9:00 – 10:30 am Parallel Breakout 'Round Robin' Sessions
- o Crop data and modeling (K. Boote & J. Hargreaves) – Project 4
- o Climate data, modeling and scenarios (A. Ruane) – Project 1
- o Economic data, modeling and RAPS (J. Antle and R. Valdivia) – Project 2
- o Collaboration, management and outputs (J. Kihara, C. Rosenzweig, J. Jones, C. Porter, C. Mutter) – Project 3

10:30 – 11:00 am Break

11:00 – 12:30 pm Parallel Breakout Sessions (Continued)
- o Crop data and modeling – Project 1
- o Climate data and scenarios – Project 2
- o Economic data and modeling – Project 3
- o Collaboration, management and outputs – Project 4

1:00 – 2:00 Lunch

2:00 – 3:30 pm Parallel Breakout Sessions (Continued)
- o Crop data and modeling – Project 2
- o Climate data and scenarios – Project 3
- o Economic data and modeling – Project 4
- o Collaboration, management and outputs – Project 1

3:30 – 4:00 pm Break

4:00 – 5:30 pm Parallel Breakout Sessions (Continued)
- o Crop data and modeling – Project 3
- o Climate data, modeling and scenarios – Project 4
- o Economic data, modeling and RAPS – Project 1
- o Collaboration, management and outputs – Project 2

5:30 – 6:00 pm Plenary
- o Discussion, Wrap-up Day 2, Anticipate Day 3

September 12 – Day 3

8:30 – 10:30 am Plenary Session
- o Highlights of Day 2 breakout sessions (10 min each)
  - ✓ Project 1
  - ✓ Project 2
  - ✓ Project 3
  - ✓ Project 4
  - ✓ Regional Collaboration
- o Scaling up Crop Model simulations to districts for use in Integrated Assessments: Case Study of Anantapur District in India – K. Boote
- o Methods for developing RAPs for regions (30 min, J. Antle)

10:30 – 11:00 Break

11:00 – 1:00 Breakout Sessions (climate, crop modeling, economic modeling, and IT)
- o Crop productivity (combined crops, climate, IT teams)
  - o Crop modeling (K. Boote, J. Hargreaves)
  - o Climate (A. Ruane)
  - o IT (C. Porter)
- o Economic (J. Antle, R. Valdivia)

1:00 – 2:00 Lunch

2:00 – 3:30 pm Continue each breakout group

3:30 pm Plenary
- o Preliminary feedback Wrap-up Day 3, Anticipate Day 4

4:00 pm Adjourn structured workshop sessions for self-organized activities among teams

September 13 – Day 4

8:30 – 9:45 am Plenary Session
- o Handling the Complexities of Production Systems in Integrated Assessments – J. Antle and J. Jones (45 min)
- o Facilitated Discussion: Consideration of Productions System Modeling across Scales – P. Craufurd (30 min)

9:45 – 10:45 Parallel Breakout Sessions (Integrated Assessment Emphasis)
- o Crop productivity (Crop modeling, Climate and IT teams)
- o Economic

10:45 – 11:15 Break

11:15 – 1:00 pm Parallel Breakout Sessions Continue

1:00 – 2:00 Lunch

2:00 – 2:30 pm Plenary: WASCAL activities (P. Vlek)

2:30 – 3:40 pm Breakout Sessions separately by team
- o Crop modeling (K. Boote, J. Hargreaves)
- o Climate (A. Ruane)
- o Economic (J. Antle, R. Valdivia)
- o IT (C. Porter)

3:40 – 4:00 pm Break

4:00 – 5:30 pm Breakouts by AgMIP Regional Project Teams
- o Assessment of progress
- o Adjustment of research plans to address requirements of integrated assessments, etc.
- o Summary of outstanding team needs for RCT synthesis among all teams
- o Preparation of research presentation for Day 5 morning Plenary

5:30 – 6:00 pm Plenary Session
- o Discussion, Wrap-up Day 4, Anticipate Day 5

September 14 – Day 5

8:30 – 10:30 am Synthesis Plenary Part I – Research Team Presentations (20 min each, 10 min Q&A)
- o Report from Project 1
- o Report from Project 2
- o Report from Project 3
- o Report from Project 4

10:30 – 11:00 am Break

11:00 – 11:30 Regional Coordination Feedback (Kihara)
- o Synthesis of team needs
- o Provisional outline and timeline for SSA special publication or book
- o Discussion

11:30 – 1:00 AgMIP Regional Team Breakouts – Publications and outreach: responsibilities of PIs, lead authors, and team members
- o Publications

- o   Outreach to stakeholders
- o   Outreach to research teams in region

1:00 – 2:00 Lunch

2:00 – 3:30 pm Synthesis Plenary Part II – Team publication and outreach plans (10 min each, 5 min Q&A)
- o   Project 1
- o   Project 2
- o   Project 3
- o   Project 4
- o   Regional Collaboration

3:30 pm – 4:30 pm Concluding Session
- o   General discussion
- o   Next steps
- o   Wrap- up

Adjourn at 4:30 pm on Friday, September 14

Appendix III. Participants for the AgMIP SSA-wide Integrated Regional Assessment Workshop in Accra, Ghana, 10th-14th September, 2012

No	Last Name	First Name	Email	Institution	Discipline/Role	Project
1	Berhe	Araya Alemie	arayaalemie@yahoo.com	Mekelle University	Crop Modeling	AEA
2	Bonabana Wabbi	Jacqueline	jbexim@gmail.com; jbonabana@agric.mak.ac.ug	Mekerere University	Economics	AEA
3	Kilavi	Mary	mkilavi@meteo.go.ke; marykilavi@yahoo.com	KMD	Climate	AEA
4	Komutunga	Everline	ziraaga@yahoo.com	Uganda Met. Department	Climate	AEA
5	Mamo	Girma	mamogirma@ymail.com	EIAR	Crop Modeling	AEA
6	Mlonganile	Peter Nicky	pmlonganile@meteo.go.tz; pmlonganile@yahoo.co.uk	TMA	Climate	AEA
7	Mulwa	Richard M.	richard.mulwa@yahoo.com	University of Nairobi	Economics	AEA
8	Mziari	Omari	imzirai@yahoo.com, imzirai@gmail.com, omzirai@irdp.ac.tz	Institute of Rural Development Planning	Crop Modeling	AEA
9	Nadozi	Carol	lynsharoti@yahoo.com	Makerere Univesrsity	IT	AEA
10	Rao	KPC	k.p.rao@cgiar.org	ICRISAT	Crop Modeling	AEA
11	Tenywa	Moses	tenywam@agric.mak.ac.ug	MAURIK	Crop Modeling	AEA
12	Wafula	Benson	bensonwafula@gmail.com	KARI	Crop Modeling	AEA
13	Welderufael	Yosef	ywk2103@columbia.edu, woyosef@yahoo.com	Ethiopia Met . Agency	Climate	AEA
14	Athanasiadis	Ioannis N.	ioannis@athanasiadis.info	Democritus University of Thrace	IT	AEA/AgMIP
15	Boote	Kenneth	kjboote@ufl.edu	University of Florida	Crop Modeling	AgMIP
16	Jones	Jim	jimj@ufl.edu	University of Florida	AgMIP PI	AgMIP
17	Antle	John	John.Antle@oregonstate.edu	Oregon state university	Economics	AgMIP
18	Craufurd	Peter	P.Craufurd@cgiar.org	ICRISAT, Patancheru, India	AgMIP PI	AgMIP
19	Hargreaves	John	John.Hargreaves@csiro.au	CSIRO Ecosystem Sciences	Crop Modeling	AgMIP
20	Mutter	Carolyn	czm2001@columbia.edu	Columbia University	Coordinator	AgMIP
21	Porter	Cheryl	cporter@ufl.edu	University of Florida	IT	AgMIP
22	Ruane	Alex	alexander.c.ruane@nasa.gov	NASA GISS	Climate	AgMIP
23	Valvidia	Roberto	Roberto.Valdivia@oregonstate.edu	Oregon state university	Economics	AgMIP
24	Villalobos	Christopher	cvillalobos@ufl.edu	University of Florida	IT	AgMIP
25	Adam	Myriam	myriam.adam@cirad.fr	Centre de Coop. Intl. en Recherche Agronomique pour le Developpement	Crop Modeling	CIWARA
26	Adiku	Samuel	s_adiku@hotmail.com	University of Ghana	Crop Modeling	CIWARA
27	Alhassane	Agali	a.alhassane@agrhymet.ne	Agrhymet	Crop Modeling	CIWARA

28	Amikuzuno	Joseph	amikj26@yahoo.com	University for Development Studies	Economics	CIWARA
29	Diancoumba	Madina	madina.diancoumba@yahoo.fr	SARI	Crop Modeling	CIWARA
30	Diarra	Daouda Zan	ddiarra165@gmail.com	Agence Nationale de la Meteorologie du Mali	Climate	CIWARA
31	Dougbedji	Fatondji	d.fatondji@cgiar.org	ICRISAT	Crop Modeling	CIWARA
32	Hathie	Ibrahima	ihathie@yahoo.com	IPAR - Senegal	Economics	CIWARA
33	Naab	Jesse B.	jbnaab@africaonline.com.gh	SARI	Crop Modeling	CIWARA
34	Ndiaye	Ousmane	ousmane@iri.columbia.edu	Agence Nationale de l'Aviation Civile et de la Meteorologie	Climate	CIWARA
35	Sanon	Moussa	moussanon@hotmail.com	Institut de l'Environnement et de Recherches Agricoles	Climate	CIWARA
36	Traore	Pierre C. Sibiry	p.s.traore@cgiar.org	ICRISAT	IT	CIWARA
37	Traore	Seydou B.	s.traore@agrhymet.ne	Agrhymet	Climate	CIWARA
38	Lizaso	Jon	jon.lizaso@upm.es	Technical University of Madrid	Crop Modeling	CIWARA/AgMIP
39	Arthur	Gama	arthurchibwana@gmail.com	University of Malawi	Economics	CLIP
40	Bandason	Elizabeth	elizabandason@gmail.com	University of Malawi	Crop Modeling	CLIP
41	Claessens	Lieven	l.claessens@cgiar.org	ICRISAT	Economics	CLIP
42	Famba	Sebastao	Sifamba@uem.mz, sebastiaofamba@gmail.com	Universidad Eduardo Mondlane	Crop Modeling	CLIP
43	Homann	Sabine	s.homann@cgiar.org	ICRISAT	Economics	CLIP
44	Lennard	Chris	lennard@csag.uct.ac.za	University of Cape Town	Climate	CLIP
45	Masikati	Patricia	p.masikate@cgiar.org	ICRISAT	Crop Modeling	CLIP
46	Walker	Sue	walkers@ufs.ac.za	University of Free State	Crop Modeling	CLIP/SAAMIIP
47	Descheemaeker	Katrien	katrien.descheemaeker@wur.nl	Alterra Wageningen UR	Crop/ livestock Modeling	CLIP/AgMIP
48	Charles	Vanya	charles.vanya@yahoo.com	Department of Climate Change and Meteorological Services	Climate	KEMIC
49	Hickman	Jonathan	jeh2179@columbia.edu	Earth Institute at Columbia University	Crop Modeling	KEMIC
50	Kihara	Job	j.kihara@cgiar.org	CIAT	Crop Modeling	KEMIC
51	Koo	Jawoo	j.koo@cgiar.org	IFPRI	IT	KEMIC
52	MacCarthy	Dilys Sefakor	kpongor@yahoo.com	University of Ghana	Crop Modeling	KEMIC/CIWARA
53	Vervoort	Joost	joost.vervoort@eci.ox.ac.uk	Oxford University Centre for the Environment		CCAFS
54	Abebe	Yitayal K.	sinkeyitayal@gmail.com	Ethiopian Institute of Agricultural Research	Economics	IDRC
55	Ibrahim	Abdelhamed Mohammed Magboul	magboulabdelhamed@yahoo.com	Agricultural Research Corporation, Sudan	Economics	IDRC

56	Matere	Stella J.	stellamatere@gmail.com	Kenya Agricultural Research Institute	Economics	IDRC
57	Munishi	Stephen P.	stevepm_4@yahoo.com	Sokoine University of Agriculture	Economics	IDRC
58	Faye	Amy	amy.faye1@gmail.com	Senegalese Institute for Agricultural Research (ISRA)	Economics	IFPRI
59	Yeboah	Edward	eyeboah5@hotmail.com	Soil Research Institute in Kumasi, Ghana	Crop Modeling	IFPRI
60	Vlek	Paul	p.vlek@uni-bonn.de	University of Bonn	WASCAL Director/ stakeholder	WASCAL
61	Webber	Heidi	heidi.webber@mail.mcgill.ca	University of Bonn	Crop Modeling/Stakeholder	WASCAL
62	Beletse	Yacob	beletsey@arc.agric.za	ARC - Pretoria	Crop Modeling	SAAMIIP
63	Crespo	Olivier	olivier.crespo@csag.uct.ac.za	University of Cape Town	Climate/IT	CLIP/SAAMIIP
64	Durand	Wiltrud	DurandW@arc.agric.za	ARC - Potchefstroom	Crop Modeling	SAAMIIP
65	Gamedze	Mduduzi Sunshine	gamedze@gmail.com	Meteorological Services Swaziland	Climate	SAAMIIP
66	Jones	Matthew	Matthew.Jones@sugar.org.za	SASRI	Crop Modeling	SAAMIIP
67	Nhemachena	Charles	CNhemachena@hsrc.ac.za	Human Sciences Resource Council	Economics	SAAMIIP
68	Patrick	Gwimbi	pgwimbi@yahoo.com	National University of Lesotho	Crop Modelling	SAAMIIP
69	Tesfuhuney	Weldemichael	weldit78@yahoo.com	University of Free State	Crop/ water Modeling	SAAMIIP
70	Teweldemedhin	Mogos	tmogos@polytechnic.edu.na	Polytechnic of Namibia	Economics	SAAMIIP
71	Cammarano	Davide	davide.cammarano@ufl.edu	University of Florida	Crop Modeling	SAAMIIP/AgMIP