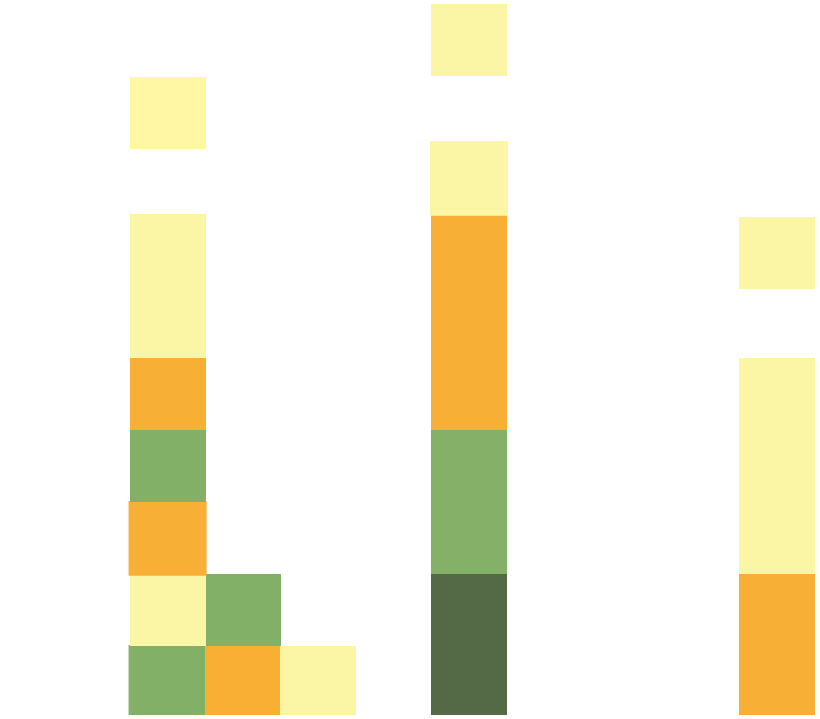


AgMIP8

Food Systems, Shocks, and Actions

AgMIP8 Virtual Webshop Report

October 13 - 15, 2020

Team Sessions, October 12 & 16, 2020

https://agmip.org/agmip8-virtual-webshop/

Table of Contents

Acknowledgements

The 8th Global Workshop of the Agricultural Model Intercomparison and Improvement Project (AgMIP), held virtually for the first time, was hosted and co-sponsored by the Columbia University Earth Institute. We also appreciate support provided by NASA, the International Development Research Centre, University of Florida, the Florida Climate Institute, and In Silico Plants. We thank members of the AgMIP8 Steering Committee (A. Chattha, J. Arnott, G. Asrar, M. Bwalya, P. Craufurd, J. Fanzo, M. Jahn, J. Jones, M. McLean, A. Moscuzza, S. Naresh Kumar, T. Nipp, M. Rosegrant, M. Sánchez Cantillo, M. van Ittersum, W. Xiong, Y. Zhu), Science Committee (J. Antle, S. Asseng, K. Boote, M. Corbeels, L. Emberson, T. Hasegawa, I. Hathie, S. Homann-Kee Tui, H. Lotze-Campen, D. MacCarthy, S. McDermid, C. Müller, C. Porter, C. Rosenzweig, A. Ruane, P. Scheelbeek, R. Valdivia, G. Vellingiri, A. Whitbread, K. Witkowski, L. Ziska), Local Committee (W. Anderson, W. Beathgen, R. Chen, R. Deckelbaum, R. DeFries, G. Denning, M. Hayek, J. Jägermeyr, E. Nebie, M. Madajewicz, S. McDermid, A. Robock, A. Rose, A. de Sherbinin, J. Woo Baidal, L. Ziska) and Organizing Committee (M. Dombrov, E. Mencos Contreras, C. Mutter, M. Winicov). The development of this workshop report was led by E. Mencos Contreras, C. Mutter, M. Dombrov, and M. Winicov.

Introduction

The Agricultural Model Intercomparison and Improvement Project (AgMIP), a well-established, global community of agricultural modelers, hosted its eighth workshop entirely online.

The free, virtual event had over 1,000 registrants and encouraged involvement amongst those new to food systems, as well as experts within the agriculture and nutrition fields. Keynote speakers included Martin Bwalya, Jessica Fanzo, Mark Howden, Jennifer Woo Baidal, Mario Herrero, and Sally Rockey.

The AgMIP8 Virtual Webshop took place from October 12 – 16th and showcased three themes central to AgMIP's research and development – food systems, shocks, and actions. Additional interdisciplinary topics included health and nutrition, modeling, environmental stresses, and resilience.

The AgMIP8 Virtual Webshops' three themes – food systems, shocks, and actions
https://agmip.org/

Cynthia Rosenzweig, AgMIP Co-Founder and Executive Committee member stated, "The AgMIP8 Webshop followed a 'double helix' approach to the three themes, bringing together food system modelers and stakeholders to advance resilience to the global systemic shocks posed by COVID-19 and climate change. This intertwined pathway of science and action is needed now to scale up and speed up responses."

The five-day-long AgMIP8 program was organized by the AgMIP Coordination Unit, which is based within Columbia University's Earth Institute Center for Climate Systems Research. AgMIP8 had significant inputs from four committees – the Local, Steering, Science, and Organizing Committees.

AgMIP8 featured multiple panels with informative presentations, collaborative small-group discussions, single-day workshops, and team sessions on all aspects of food system modeling for human and planetary health.

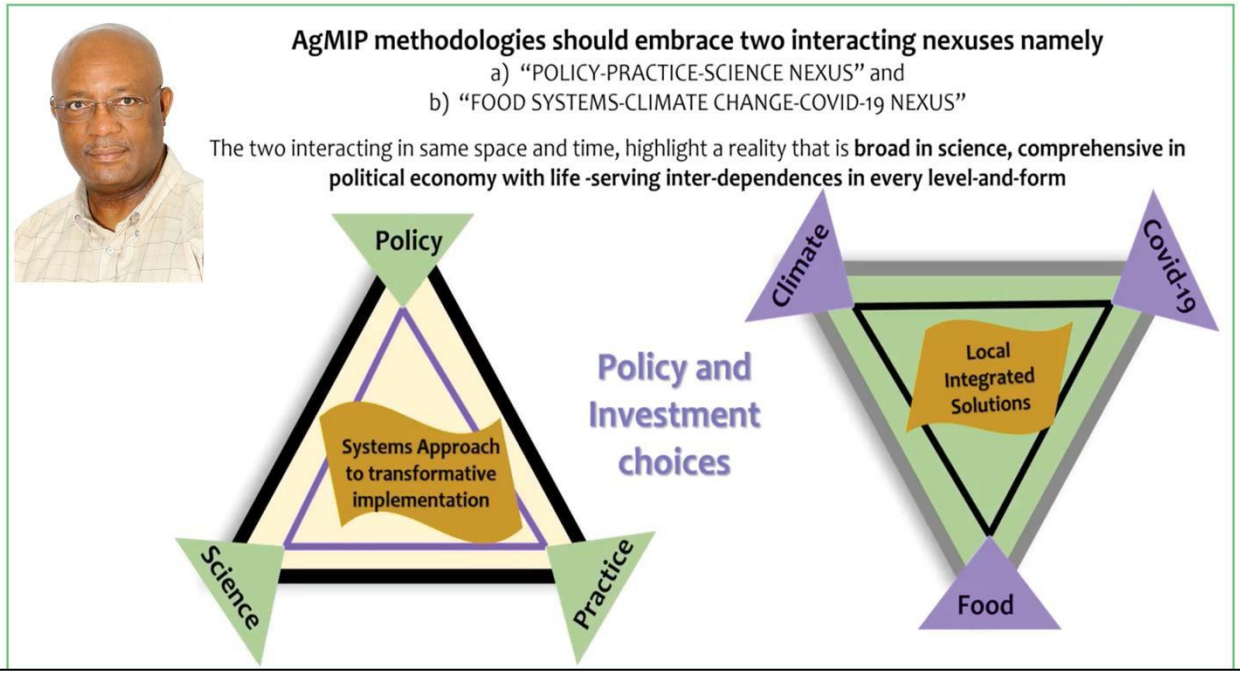
Food Systems

Food systems are highly vulnerable to weather shocks and climate change. AgMIP supports activities that build global and regional capacity for integrated food system assessments of these shocks. These assessments provide testbeds for rapidly scaled-up food, nutrition, and health strategies in the face of climate change.

When reflecting on AgMIP8's standout moments, Carolyn Mutter, AgMIP International Program Manager shared, "We were able to hear from many of the longer-term AgMIP scientists leading or contributing to research innovations covered in sessions, but also to hear from additional experts regarding key opportunities and challenges.

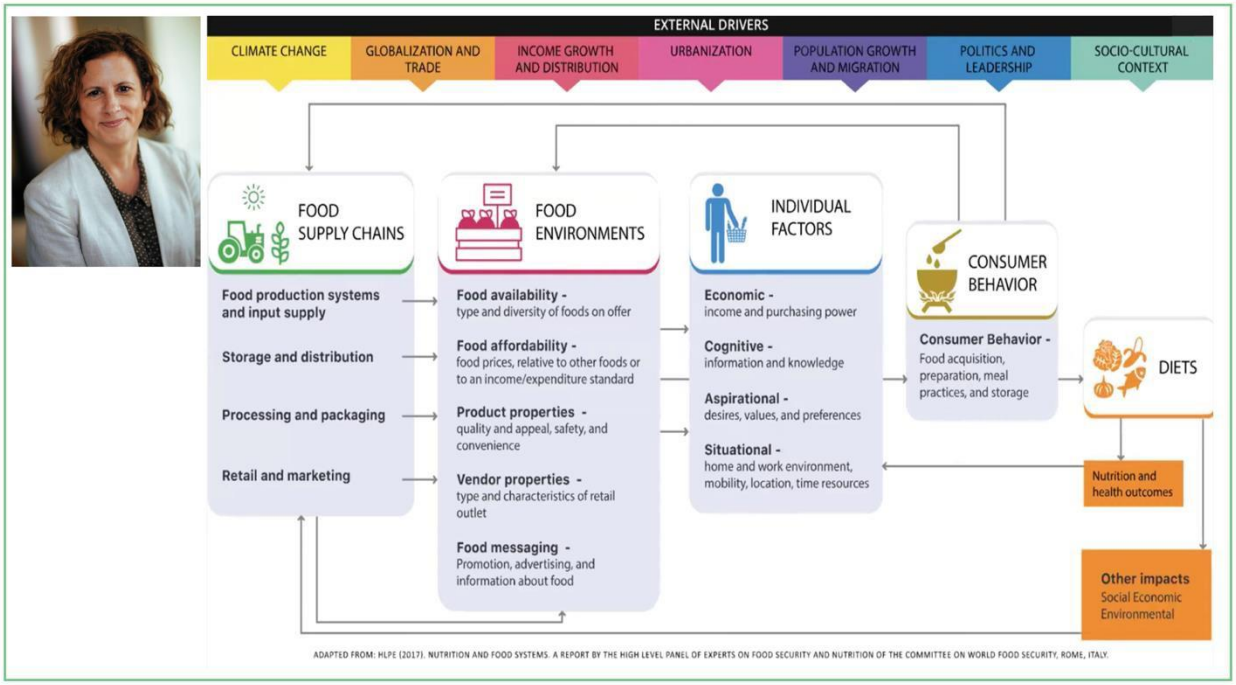
I really liked hearing the term 'precision conservation', as a way for farmers to diversify and receive credit for not only what they grow, but also what they choose to nurture in terms of ecosystems, soil health, and/or other processes that contribute to a broader set of possible goals, as growers."

Engaging with stakeholders and creating intercomparisons are two important ways that AgMIP advances researchers' understanding of the food system. During Martin Bwalya's Keynote on COVID-19 and the food system, he shared the importance of viewing policy, science, and practice through a systems approach lens.



Martin Bwalya, head of the Africa Union Development Agency Centres of Excellence, spoke about the interconnectedness between the food system, climate change, and COVID-19. He also shared the importance of viewing policy, science, and practice through a systems approach lens.

Following Martin Bwalya's presentation, Jessica Fanzo gave an engaging Keynote lecture about climate change as a disrupter, food system triggers, nutrition, and human well-being.



Jess Fanzo, Bloomberg Distinguished Professor and director of Johns Hopkins' Global Food Policy and Ethics Program, gave an engaging lecture about the external drivers of the food system and how they influence nutrition and health outcomes.

Shocks

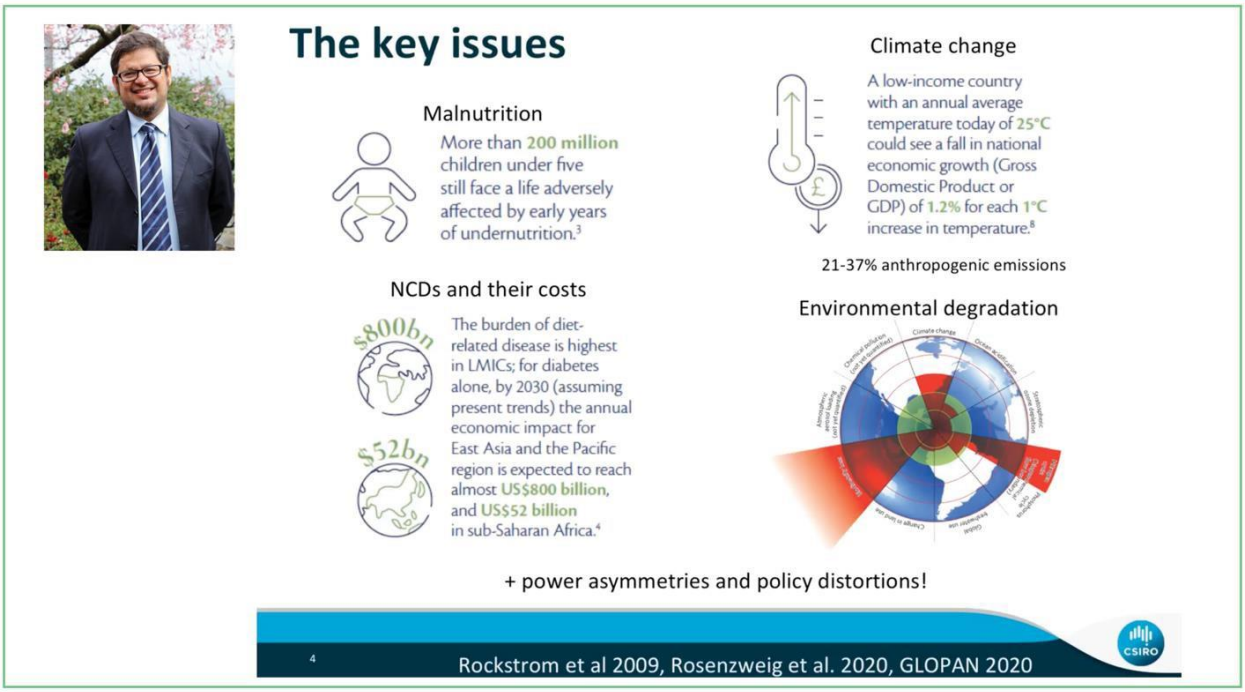
Shocks undermine the societal stability leading to income, market, and health disruptions. Understanding stressors, tipping points, and interventions builds societal resilience to current and future shocks. AgMIP develops probabilistic projections of climate shocks for integrated, multi-disciplinary, and action-oriented research products.

Alex Ruane, AgMIP Science Coordinator explained, "Many AgMIP participants have been collaborating since AgMIP's first global workshop in 2010, and this webshop showed the tremendous progress already made and vast potential for continuing research and applications in the years ahead."

He also noted that emerging challenges underscore the need for research and applications. "COVID-19, droughts, pest outbreaks, floods, and severe storms have each hammered regional and global food systems in recent years, and the AgMIP community is identifying modeling capabilities and assessing storyline scenarios to provide early warning and forewarning of food shocks and their cascading implications on vulnerable populations around the world."

At the start of the Webshop, Sir Alex Halliday, Director of the Earth Institute, welcomed all the participants and shared the exciting plans for the new Climate School that Columbia University is establishing. Sir Halliday emphasized the importance of healthy and sustainable food for all as

a major focus of the new School and the urgency of tackling climate change. During a session highlighting the Climate School's focus on food issues, Mario Herrero presented on the major challenges that humans face and how we must improve and transform the food system.



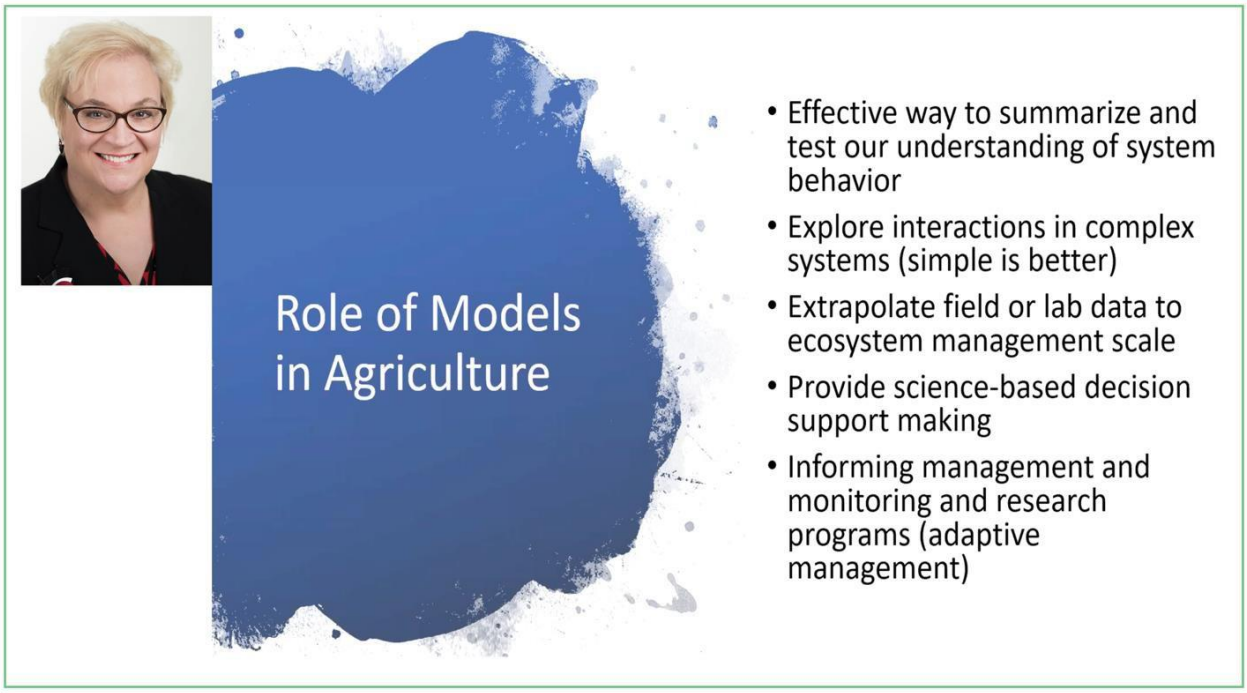
Mario Herrero, chief research scientist of agriculture and food at CSIRO, discussed the major challenges that humans face and what the AgMIP community can do to overcome them.

Actions

Actions are enabled due to collaborative innovation among a community of climate, agriculture, health, trade, security and foreign aid experts creating methods to enable adaptive transformation of the food system. New tools translate and harmonize operations, linking research and decision frameworks to address food security and other societal needs in a world that is increasingly characterized by large and, at times, tumultuous changes. A food system that was already straining to deliver affordable and nutritious food to world populations is profoundly impacted by Covid-19 dynamics and responses.

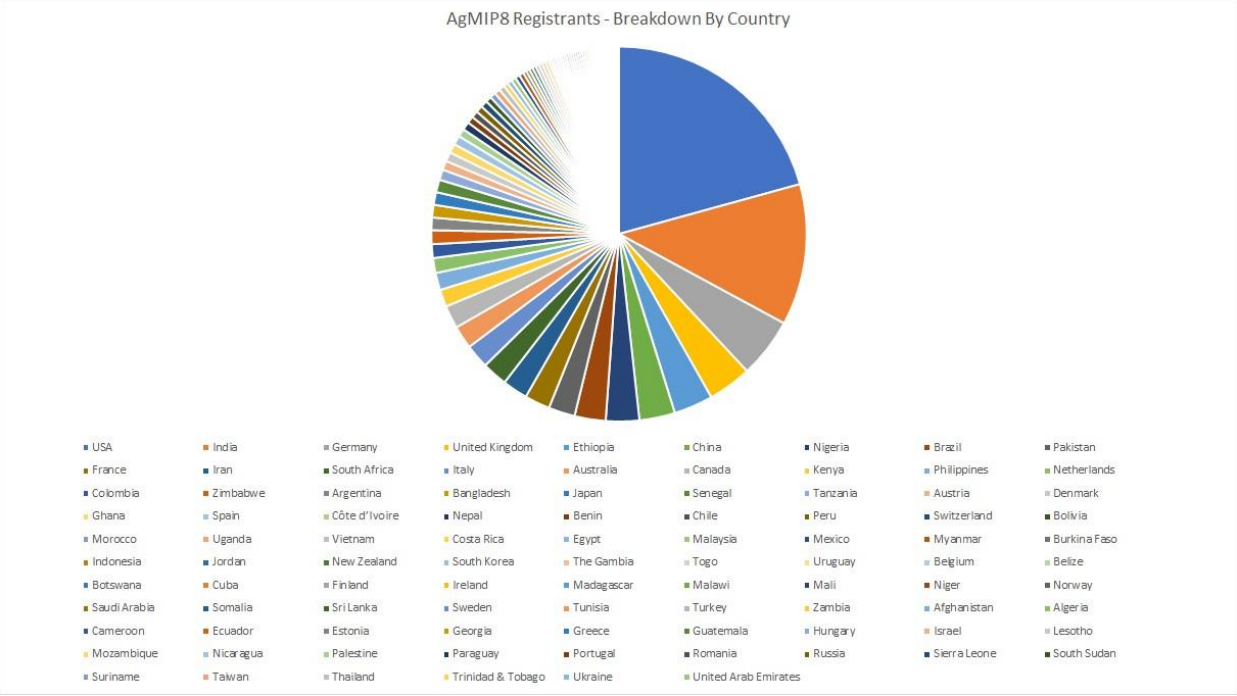
Shifting baselines are altering risk profiles in ways yet to be fully understood, elevating the potential for shocks from climate and other factors, with acute, wide-ranging, and cascading impacts. The AgMIP community is advancing approaches to understand, project, and address these challenges.

During Sally Rockey's Keynote, she shared strategies for translating agricultural research and modeling into tangible actions.



Sally Rockey, executive director of the Foundation for Food and Agriculture Research, presented on how agricultural modelers can be at the forefront of effective implementation.

We thank the over 1,000 people from 96 countries who registered for the AgMIP8 Virtual Webshop.



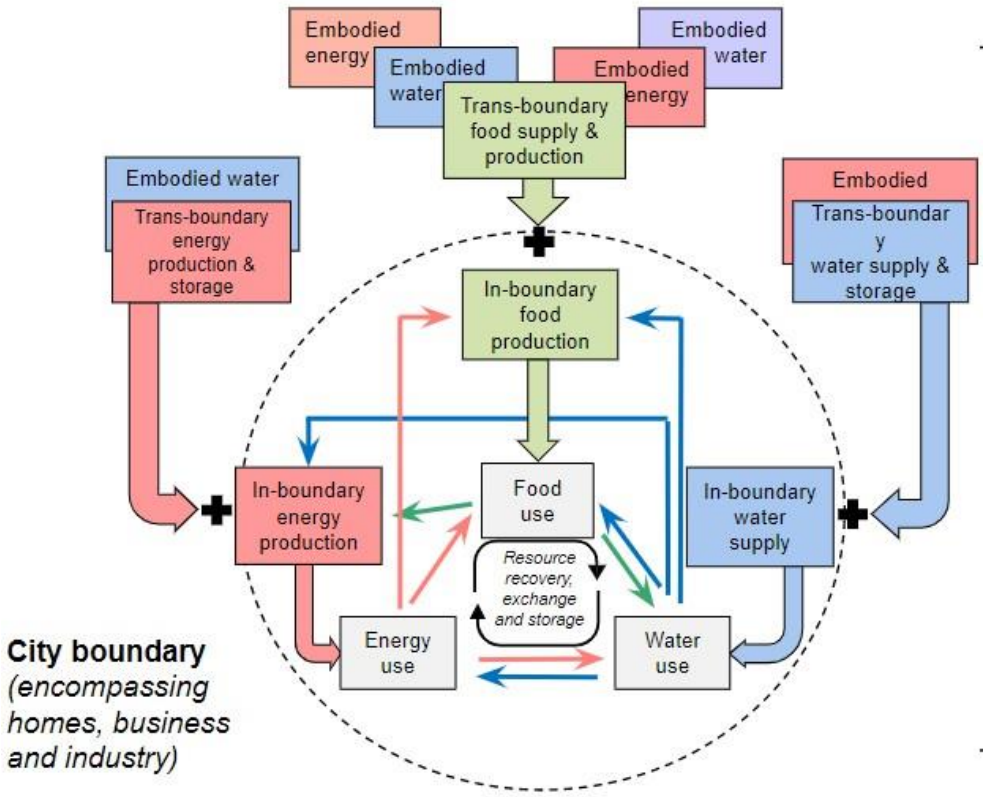
Special Sessions

Circularity in Food Systems

On the first morning of the Agricultural Modeling Intercomparison and Improvement Project's virtual, global webshop (AgMIP8) in October 2020, James W. Jones and Martin van Ittersum hosted an open session for the Circularity in Food Systems Workgroup. The purpose of the session was to introduce the topic of this new workgroup to the broader "AgMIP Land," as Jones refers to it. The session included an introduction from Jones, a keynote address from Anu Ramiswami, panelist presentations by van Ittersum, Bruno Basso, and John Antle, and concluded with audience engagement in a final Q&A period that generated enthusiasm from both sides.

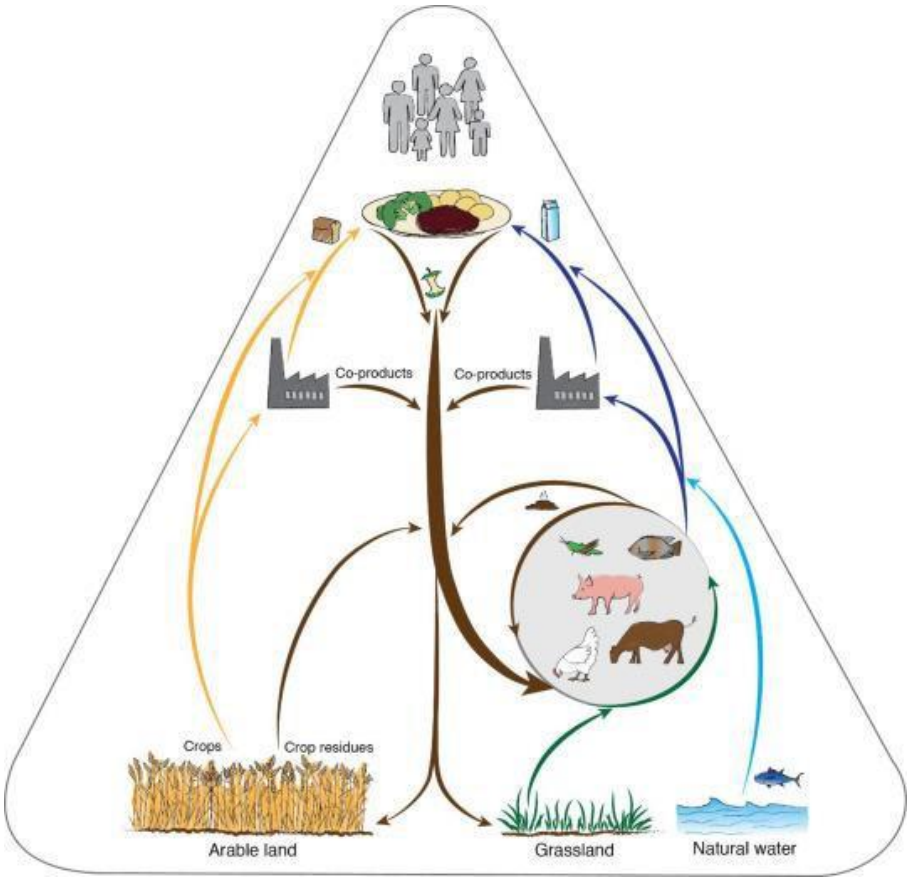
James Jones kicked off the session by offering several definitions of the Circular Economy, referencing one from the Ellen MacArthur foundation in particular, which states, "A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems." All of these principles, Jones emphasized, apply to agriculture and food systems. Jones also noted the importance of explicitly contextualizing circularity by its intended economic, environmental and social benefits when describing it, especially in the case of the United States.

Anu Ramiswami's keynote focused on urban food systems and opportunities for resource circularity. In her presentation, she first established the necessary role of urban food systems within sustainable urban systems as a whole, and that greater interest in this relationship has led to the formation of food action plans in cities around the world. She then spoke to her work in transboundary foot-printing to measure urban resource flows and characterizing and spatializing urban food systems as means of informing the design of these food action plans. From a baseline analysis conducted in Delhi, India, Ramiswami identified the existence of opportunities for resource circularity both within the food system and across the food-energy-water nexus, demonstrating the capabilities of tradeoff analyses. She stressed the importance of transboundary accounting of embodied carbon, nutrients, water, and land, and the need for more data. Turning to the U.S., Ramiswami reported that substantial agriculture in and around urban centers indicates great opportunity for resource circularity, and that the limitation to local food supply and self-reliance for cities lies not in production, but rather in the way supply chains are currently aligned. Overall, Anu Ramiswami called attention to the multi-scalar nature of resource circularity, demonstrating opportunities within and between the agriculture sector, the food system, and the food-energy-water nexus in urban areas.



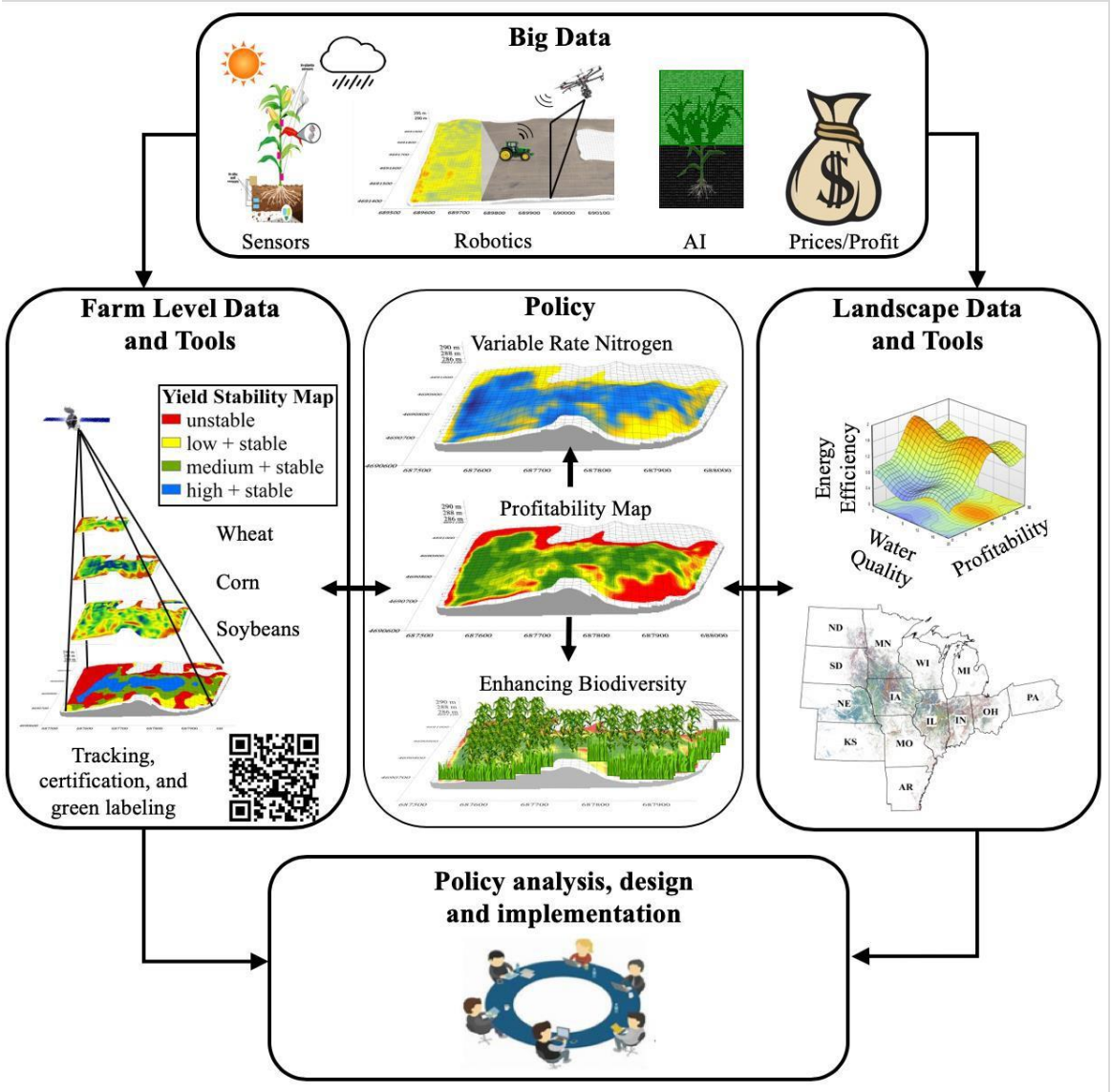
Transboundary Footprinting: Community-wide Water, Energy & GHG footprints of Food-Energy-Water (FEW) Supply to Cities. Source: Ramaswami et al. 2017, Environmental Research Letters

Opening up the panel portion of the session, Martin van Ittersum brought forth a discussion of the opportunities and challenges of understanding and implementing circularity. He spoke primarily about the main driver of the conversation on circularity in Europe: the environmental consequences of agriculture and food systems. In trying to answer the question of how to produce food while respecting the planet, van Ittersum indicated a need to address feed-food competition and interlinkages in the food system which current linear foot-printing approaches cannot adequately cover. He provided guiding principles for circular food systems which are based on improving prioritizations in use of agricultural land, food system by-products, and livestock for biomass conversion. Finally, van Ittersum identified a big challenge in how to derive proper scales of circularity and determined that any future solution must combine ecological principles with smart technology.



The biophysical concept of circularity. Source: Van Zanten et al. 2019. Global Food Security.

Following up on this idea of a combinatory approach, Bruno Basso presented his work on designing a vision of circularity for corn and soybean systems in the U.S. Midwest. Basso utilizes new, smart technologies in studies across the Corn Belt, from which he demonstrated the climate benefits of digital agriculture, such as 'precision conservation'. In conjunction with integration of technology, Basso emphasized the need for economic incentives to drive agricultural sustainability and beneficial land use changes and proposed a shift from the current U.S. agricultural insurance system. He also shared a plan for system-wide transformation, outlining three phases which begin with utilizing existing solutions for current system optimization in the short-term, developing solutions for replacing inefficiency in the medium-term, and completely redesigning inefficiency in the long-term.



Digital Agriculture in agricultural systems. Source: Basso, B., Antle, J., 2020, Digital agriculture to design sustainable agricultural systems.

John Antle steered the session into a realm of ambiguity by beginning with the overarching question, “What’s the role of circularity in the sustainable development paradigm?” Acknowledging the lack of clear answer, he offered a framework for thinking about the question in terms of the three dimensions of sustainable development: economic, environmental, and social. After commenting on the strides that have been made in quantifying and modeling the economic and environmental factors, Antle highlighted the social factor as that which requires the most attention and development going forward. He noted two key measures for balancing the three objectives. First, he stated from experience that if certain objectives are not ‘designed-in’ from the beginning they will not be seen in the results. Second,

he cautioned against the excuse of not being able to quantify something as a reason for not including it, suggesting instead that more people with different skills and expertise be invited to the table.

The session ended with a few rounds of active Q&A between various audience members and the panelists. A major theme of that discussion was that context is key to any solution, and in the case of circularity, where systems must be defined and complex interactions are inherent, this is especially relevant. In concluding the session, van Ittersum stated, “circularity is not an aim in itself, it’s just another lens, another means through which we can contribute to sustainable development.” He followed with a charge for the workgroup to explore what the role of AgMIP modelers can be in contributing to the understanding of what circularity can bring for the sustainable development of food systems and agriculture.

Food System Emissions: Better Data, Policies, and Outreach

The current food system (agricultural production, transport, processing and preparation, packaging, storage, retail, consumption, loss and waste) feeds the world population and supports the livelihoods of billions. Agriculture alone provides employment to a large majority of the roughly three billion people who live in rural areas and represents 4% of world GDP, reaching greater than 50% in some developing nations. At the same time, expected population growth increases the competition for resources like land, water, and nutrients needed for food production and food and nutrition security.

The rapid growth in agricultural productivity since the 1960s has underpinned the development of the current global food system that is both a major driver of climate change and increasingly vulnerable to it. Full accounting of food systems processes is needed in order to inform appropriate national climate response strategies and to understand resource competition under future scenarios.

There is currently no global database providing complete food system level information, at the national scale, benchmarked over time. Better data will serve to inform future projections of food systems' connection to the environment, as well as shape and implement optimal response strategies aimed at lessening the global climate impact of food in the years ahead. Since 2010, the AgMIP community of experts has been advancing data and methods for improving predictions on the future performance of agricultural and food systems. AgMIP has advanced widely used data, tools, and protocols for harmonized analyses of agricultural systems using the best available models. It has also advanced new methods to integrate needed data into global and regional assessments of current and future agriculture and food systems outlooks given changing climate and other stresses. Stakeholders and researchers regularly use the AgMIP data, tools, methods, and projections to advance their work.

Workshop

Food systems contribute 21-37% of global greenhouse gas emissions (Table 1), according to the best recent estimate. AgMIP, Columbia University, FAO, and New York University are collaborating on a project that aims to (i) close the current knowledge gaps with respect to food system greenhouse gas (GHG) emissions by characterizing and quantifying those emissions by country and region, building on available statistics from FAO and AgMIP, (ii) develop policy recommendations based on newly-available data and consultations with key stakeholders, and (iii) raise the profile of the food-climate connection and engage key stakeholders with public events, videos, and innovative social media tools.

The purpose of this workshop was to share initial results from this activity with the broader AgMIP community and receive feedback on how the project can enhance national and global

accounting of total food system emissions, create greater awareness among policymakers and the public, and develop actionable policy recommendations.

Outcomes

At the Food System Emissions workshop participants:

- Learned about the progress achieved in the project so far
- Provided feedback on methods and approaches used

Information sharing and dialogue were organized through a series of plenary presentations followed by focused breakout discussions and recapping. Francesco Tubiello kicked off the plenaries by providing more substantive background to the current body of knowledge regarding agricultural emissions and the existing FAOSTAT emissions database. Recalling that one of the main aims of the workgroup's collaboration is to bring information to the scale of country and region, Tubiello shared the exciting news that full food systems data by country can be expected by spring of 2021. Next, Philippe Benoit explored the energy-use profile of the food system, calling attention to the greatest proportion - that which lies outside the farm gate - and connecting consumption to economic development considerations, which exhibit a close relationship.

Sally Qiu presented her work creating a dataset that tracks emissions from energy use within the farm gate and expressed her intent to expand the project to capture indirect energy use and more components of the food system. Looking at another one of these components, Julio de Barros shared results from an input-output analysis based on the proportion of world energy use for transport that falls within the food system. In the following presentation, Kevin Karl covered the combined food system waste emissions from four streams - solid waste, domestic wastewater, industrial wastewater, and incineration - from which he was able to extract continental food systems emission profiles and countries' per capita emissions.

Linking the plethora of new research findings and information to their real-world applications, David Sandalow then shifted the session perspective to policy. His plenary discussed the primary manifestation of global food system emissions in policy, Nationally Determined Contributions (NDCs), and broke down policy options within them, demonstrating a new resource for researchers and policy-makers called the Food System Policy Map. The first breakout group, looking at dietary demand and competition for land, identified a data gap in grassland and land use conversion related to dietary change, and stressed the importance of context-specific dietary needs and a just transition for farmers when bringing in policy. They also noted the value that collaboration with the private sector could add. Another breakout, Science into Policy Action, spoke to the disconnect between policy recommendations and actual practice, offering potential solutions centered on improving collaboration, information sharing, and the extent to which policy incorporates individual country and location considerations. The third breakout, on energy, agriculture, and food chains, dug into the issue

of data and expertise silos and how they motivate a framing based on an integrated food system as a means to better map, prioritize, and draw attention to key systemic issues. Altogether, the breakout groups served to ground the food systems emissions and policy discussion in more concrete terms and examples, and generated a wealth of evidence and support for the systems approach of the workgroup as a whole.

Table 1 | Comparison of 2007–2016 mean values and standard deviations of emissions from AFOLU[6] and global food system[5] emissions by component, including food loss and waste

	AFOLU		Food system	
Components	**Emissions ($GtCO_2e\ yr^{-1}$)[a]**	**Percentage of anthropogenic GHG emissions (%)[b]**	**Emissions ($GtCO_2e\ yr^{-1}$)[a]**	**Percentage of anthropogenic GHG emissions (%)[b]**
Agriculture	6.2 ± 1.4	9–14	6.2 ± 1.4	9–14
FOLU[c]	5.8 ± 2.6	6–16	4.9 ± 2.5	5–14
Pre- to post-production	–	–	2.6–5.2	5–10[d]
Total	12.0 ± 2.9	18–29	10.8–19.1	21–37

[a]Mean and 95% confidence interval, using global warming potential (GWP) values of the IPCC AR5 with no climate feedback (GWP-CH_4 = 28; GWP-N_2O = 265). [b]Computed using a total emissions value for the period 2007–2016 of 52 $GtCO_2e$ per year[6]. [c]Food-related FOLU for food system columns[18,19]. [d]Rounded to nearest fifth percentile due to assessed uncertainty in estimates.

(Rosenzweig et al., 2020, Nature Food)

AgMIP/GRA Modeling Mitigation and Adaptation Co-Benefits (MAC-B)

The Global Research Alliance on Agricultural Greenhouse Gases (GRA) brings governments, research institutions, and other organizations together to find ways to grow more food (and more climate-resilient food systems) without increasing greenhouse gas emissions. It has more than 60 member countries from all regions of the world, and maintains partnerships with international and regional organizations such as The World Bank, the UN's Food and Agriculture Organization, CGIAR, Climate and Clean Air Coalition, World Farmers Organization, and the Intergovernmental Panel on Climate Change.

At its 2018 Council meeting, held in Berlin, Germany, the GRA members affirmed their strong interest to increase the participation of agricultural research organizations and in 2019, the GRA invited AgMIP to become a formal partner of the alliance.

Since 2010, the AgMIP community of experts has been advancing methods for improving predictions on the future performance of agricultural and food systems. AgMIP has advanced widely used tools and protocols for harmonized analyses of agricultural systems using the best available models. It has also advanced new methods to integrate stakeholder-informed scenarios into global and regional assessments of current and future agriculture and food system outlooks given changing climate and other stresses. Stakeholders and Researchers regularly use the AgMIP tools, methods, and projections to advance their work.

Areas of synergy and collaboration between AgMIP and GRA include:

1. Using the modeling power in AgMIP to test and demonstrate the benefits of improved agricultural practices and realistic/prospective mitigation options for agricultural productivity, profitability, and greenhouse gas emissions and global mitigation costs.
2. Integrating GRA knowledge and inventories into AgMIP Regional Integrated Assessment (RIA) methodology, including the Representative Agricultural Pathways (RAPs) to advise national-scale decision-making (NDCs, Science Plans, NIPs investments).
3. Exploring trade-offs related to competition for land between bioenergy/mitigation strategies and food security.

Workshop

AgMIP, in collaboration with the Integrative Research Group of the Global Research Alliance, is conducting a series of activities to develop a modeling framework and protocols for determining co-benefits of mitigation and adaptation (Fig. 1). The purpose of this workshop is to identify and evaluate options for assessing combined climate mitigation and adaptation co-benefits (MAC-B) in a range of agricultural systems that are country specific, while also being scalable and facilitating country-to-country transfers of knowledge for regional and global benefit.

Specifically, the workshop held on October 16, 2020 engaged in developing multi-model protocols for integrated biophysical and socio-economic assessments that combine both mitigation and adaptation for climate change. Additionally, we uncovered and better understood key sources of positive outcomes as well as uncertainties and constraints on MAC-Bs across these integrated processes in order to enable the development of effective state, regional, and global pathways to achieve these co-benefits.

Outcomes

At the MAC-B workshop participants:

- Initiated AgMIP/GRA modeling framework for mitigation and adaptation co-benefits
- Planned for a peer-reviewed journal article, to be included in a planned Special Collection to be hosted in the AGU journal *Earth's Future,* on rationale and protocols for the mitigation and adaptation framework
- Developed a set of pilot projects to test the MAC-B framework and protocols comprising selected regions with contrasting agroecosystems and challenges.

These outcomes were achieved through a series of expert panels, a plenary presentation, and a breakout session. The first panel, addressing the Regional Contexts approach to the MAC-B workshop, described and defined the MAC-B foci and the relevant challenges of the four major geographical regions of the world under its purview - South Asia, Southeast Asia, Africa, and Latin America and the Caribbean (LAC). The Regional Contexts panelists offered insight into potential points of overlap and connection across regions, informing strategic pathways forward for the group. Following this, focus shifted to the more technical side of MAC-B work with the Models, Tools, and Data Panel. This part of the session introduced some of the different models used across the MAC-B workgroup and their various applications. In practice, it was shown that these range from primarily scientific, research-level development to stakeholder-facing, broad points of entry. Jean-François Soussana's plenary encouraged workshop participants to take advantage of the following interactive breakout sessions by highlighting the expanding set of funding sources and partnership opportunities for projects on MAC-Bs, especially those that build up from the local and regional scales. Key directives for the AgMIP/GRA partnership were also offered, including co-prioritization of model improvements and the suggestion to approach agencies together in order to more effectively advance projects.

Each breakout group was centered on one of the four global regions. Discussion in the Southeast Asia breakout illuminated a particular interest in issues of water use efficiency in relation to methane emissions for rice production, and the group proposed a pilot project involving a trade-off analysis model in the An Giang province of Vietnam which could build off existing work there. The LAC group identified project areas in water management - with an interest in rice systems as well, which sparked an idea for collaboration with the SE Asia group - as well as a national greenhouse gas inventory for agriculture in the Caribbean, and noted

partner candidates in IICA and the UK Met Office. In the Africa breakout, the group saw potential to build on existing projects in Zimbabwe that are currently being conducted by CIRAD and the University of Zimbabwe. The consensus from the South Asia group was that a pilot project should be smallholder-focused and therefore start at the farm level and work up, but also utilize a 'simultaneous approach' in which work progressed with both farmers and stakeholders at the same time; ICAR, CERES, and GCF were mentioned as potential partnerships. In all, the breakouts served to identify the hurdles associated with harmonizing across scales in order to accomplish both adaptation and mitigation, and advanced the MAC-B framework by determining that elements of the existing RIAs are adaptable for the scope of MAC-B.

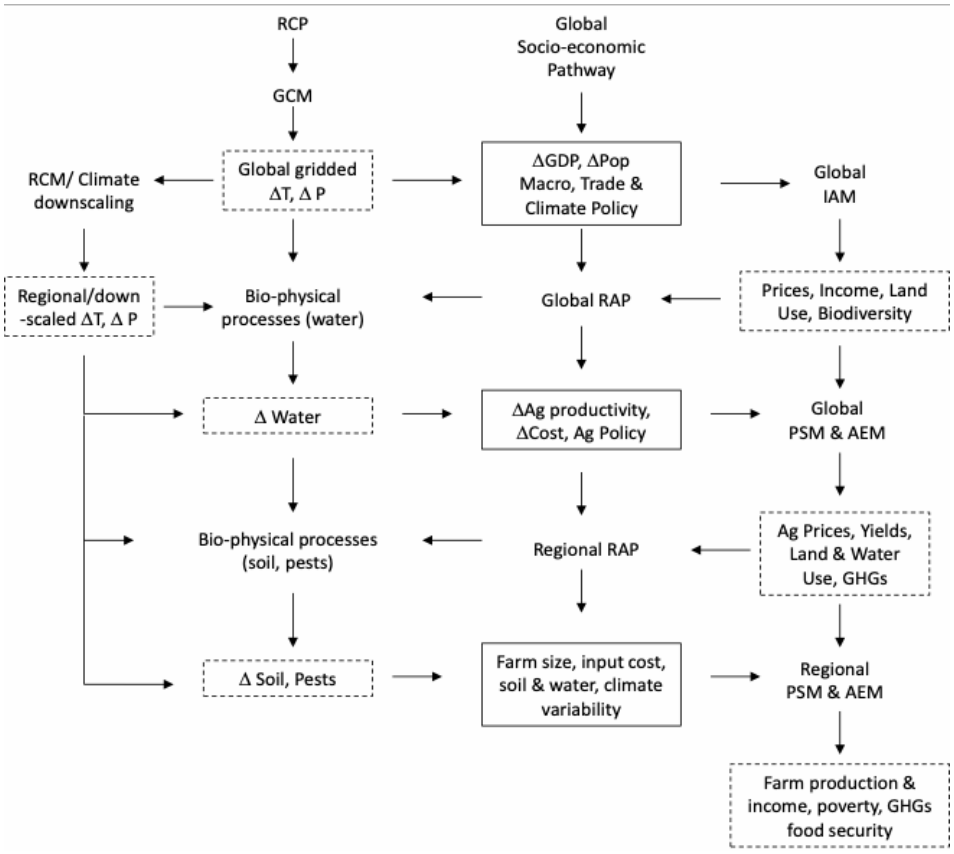


Fig. 1. Mitigation and adaptation co-benefits conceptual framework.

Appendix 1: Webshop Program

TIME (EDT)	NAME	DESCRIPTION	CONTACT
0700-0900 CLOSED SESSION	AgMIP Rice Annual Meeting	- Summary of the 2019 activities - Discussion on the new results including progress on multi-site simulation using CMIP6 results - Discussion on the next steps and meetings	Host - Toshi Hasegawa thase@affrc.go.jp
0800-0930 OPEN SESSION	Maize model ET simulation inter-comparison	This session reports progress in the inter-comparison among maize models in their ability to simulate evapotranspiration (ET). A short review of the results of an initial Round 1 using Ames, Iowa data will be presented. Then a more detailed report covering progress in Round 2 using data from Mead, Nebraska and Bushland, Texas will be covered. Round 2 has completed two "Phases" and is in Phase 3 of 4.	Host - Bruce A. Kimball bruce.kimball@usda.gov AgMIP Coord: Maria m.dombrov@columbia.edu
08:00-09:30 OPEN SESSION	New AgMIP-Vietnam	**Moderator:** Dr. Tanh Nguyen (AgMIP-Vietnam Lead, An Giang University) **Contents and Speakers:** - *Introduction of AgMIP-Vietnam* - Dr. Tanh Nguyen, An Giang University, Vietnam National University-Ho Chi Minh City - *Saline intrusion and adaptation* - Dr. Gummadi Sridhar, International Rice Research Institute - *Nature-based solutions: Floating rice modeling* - Dr. Tanh Nguyen, An Giang University, Vietnam National University-Ho Chi Minh City - *Climate variability* - Dr. Tan Phan, University of Science, Vietnam National University-Hanoi - *Streamflow prediction in "geopolitically ungauged" basins using satellite observations and regionalization at subcontinental scale - methodology and web portal* - Dr. Duong Bui, Ministry of Natural Resources and Environment **Q&A and Discussion**	Host - Tanh Nguyen ntntanh@agu.edu.vn AgMIP Coord: Carolyn Mutter czm2001@columbia.edu

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

TIME (EDT)	NAME	DESCRIPTION	CONTACT
09:00-11:00 CLOSED SESSION	AgMIP-Wheat & IWYP Satellite Meeting	- Report progress on AgMIP Wheat and IWYP activities. - Present and discuss publication plan. - Discuss and decide on next 12 months activities for AgMIP-Wheat and IWYP. - Preparation of future workshops.	Host: Senthold Asseng sasseng@ufl.edu
09:00-11:00 CLOSED SESSION	Global Gridded Crop Model Intercomparison	Presentations of recent papers and internal developments, focus on AR6 submission deadline	Hosts: Christoph Müller cmueller@pik-potsdam.de Jonas Jägermeyr jj3153@columbia.edu
11:10-13:00 OPEN SESSION	Global Gridded Crop Model Intercomparison	11-11:10am - Break 11:10am - 1 pm - OPEN SESSION - Discussions of GGCMI future directions and Phase 3 protocol topics (ISIMIP adaptation strategies, model evaluation, protocol issues, etc.)	
09:30-11:00 OPEN SESSION	NEW – Circularity in Food Systems Workgroup	Session objectives include: - Raise awareness for this topic - Lay the foundation for a conceptual understanding - Learn from underway work in NW Europe - Explore linkages with AgMIP methods - Consider principles for intensification, adaptation, and development in global South Link to Program & Recommended Readings	Hosts: Martin van Ittersum martin.vanIttersum@wur.nl James W. Jones jimj@ufl.edu AgMIP Coord: Carolyn czm2001@columbia.edu
09:30-11:30 CLOSED	Low-input Farming Systems	- New activity on simulation of long-term soil C dynamics: presentation of datasets (Kenya, Zimbabwe) and outline of model intercomparison - Preliminary results of follow-up study of Phase 1: reducing uncertainty in simulated response to N fertilizer. - Discussion on the science agenda of the group.	Host: Gatien Falconnier gatien.falconnier@cirad.fr

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

TIME (EDT)	NAME	DESCRIPTION	CONTACT
11:00-12:30 OPEN SESSION	AgMIP Soybean multi-model studies	This session reports progress from the AgMIP Soybean team activities. This will include two main goals: - Brief review of results from the last calibration step (N optimization) and overall progress summary from the first multi-model study already completed (Phase 1: CTWN sensitivity analysis), and - Present preliminary results from the first calibration step in the evapotranspiration (ET) multi-model study with data fromNebraska and Canada. Currently the Soybean team is undergoing calibration step 2/3 from the ET multi-model study.	Montse Salmeron msalmeron@uky.edu AgMIP Coord: Erik erik.mencos@columbia.edu
11:15-13:15 CLOSED SESSION	Calibration	- Brief reminder of what has been done. (Finished two multi-model simulation studies, and submitted two papers on evaluation and a paper on calibration methods). - Main topic - Discussion of "*Guidelines for crop phenology model calibration*" document sent to participants. Participants will be requested to implement the guidelines with their model, using the same French and Australian datasets already studied. This session is our opportunity to discuss the principles, details and implementation of the guidelines, and to bring up any problems. - Discussion of future steps.	Host: Sabine Seidel sabine.seidel@uni-bonn.de

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Monday, October 12, 2020
Afternoon – Workshop: Food Systems Emissions

	AgMIP, Columbia University, FAO, and New York University are collaborating on a project that aims to close the current knowledge gaps with respect to food system GHG emissions. The purpose of this work session is to share initial results from this activity with the broader AgMIP community and receive feedback on how the project can enhance national and global accounting of total food system emissions, create greater awareness among policymakers and the public, and develop actionable policy recommendations		
Time (EDT)	Session	Speaker(s) / Moderator(s)	AgMIP Coordinator
13:00-13:10	**Welcome and Goals of Workshop**	Cynthia Rosenzweig, *NASA GISS*	AgMIP Coord: Erik erik.mencos@columbia.edu
13:10-14:00	**Introduction to Food System Emissions Project**	Francesco Tubiello, *FAO* Philippe Benoit, *Columbia University*	
14:00-15:00	**Food System Emissions by Activity**	Hörn Heiðarsdóttir (moderator), *Earth 2.0* Sally Qiu, *Columbia University* Julio Barros,*Columbia University* Kevin Karl, *Columbia University/FAO*	
15:00-15:10	**Introduction to Policy**	David Sandalow, *Columbia University*	
15:10-15:40	**Science and Policy Breakouts** 1. What is the current status of analysis? 2. What are the key data and modeling gaps and how can they be filled? 3. What are innovative ways to move forward?		
	Dietary Demand and Competition for Land	Matthew Hayek, *NYU* Hörn Heiðarsdóttir (rapporteur), *Earth 2.0*	AgMIP Coord: Carolyn czm2001@columbia.edu
	Science into Policy Action: International and Domestic Strategies (NDCs)	David Sandalow, *Columbia University* Sally Qiu (rapporteur), *Columbia University*	AgMIP Coord: Cynthia

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Monday, October 12, 2020 **Afternoon – Workshop: Food Systems Emissions, cont.**			
	Science and Policy Breakouts, cont. 1. What is the current status of analysis? 2. What are the key data and modeling gaps and how can they be filled? 3. What are innovative ways to move forward?		
Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
15:10-15:40, cont.	**Energy, Agriculture, and Food Chains**	Francesco Tubiello, *FAO* Kevin Karl, *FAO* Meryl Winicov (rapporteur), *Columbia University*	AgMIP Coord: Maria m.dombrov@columbia.edu
15:40-16:00	**Breakouts Report Back**	Matthew Hayek, *NYU*	AgMIP Coord: Erik erik.mencos@columbia.edu
	Ways Forward	Cynthia Rosenzweig, *NASA GISS* Francesco Tubiello, *FAO* David Sandalow, *Columbia University* Matthew Hayek, *NYU*	

Tuesday, October 13, 2020
Morning - Food Systems, Shocks, and Security

Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
9:00-9:05	**Opening Remarks**	Cynthia Rosenzweig, *NASA GISS* Ghassem Asrar, *USRA*	AgMIP Coord: Erik erik.mencos@columbia.edu
9:05-9:15	**Welcome**	Sir Alex Halliday, *The Earth Institute*	
9:15-9:45	**Keynote: COVID19 and the Food System** Significance of COVID 19 pandemic and disruption of food systems worldwide; links to climate change and sustainable development	Martin Bwalya, *CAADP-NEPAD*	
9:45-10:15	**Keynote: Food Security, Health, and Nutrition** Linkages among food security, diets and nutrition, and health; how to bring the agriculture and nutrition communities together	Jess Fanzo, *Johns Hopkins University*	
10:15-11:00	Panel: NextGen Modeling for Food Systems, Shocks, and Security The panel will examine the cross-disciplinary and cross-scale challenges associated with understanding food shocks and the propagation and cascade of impacts throughout the food system, including nutrition and food security. Of particular focus will be critical model response capabilities and frameworks that connect models in order to capture feedback loops and unintended consequences of responsive and proactive actions.	Alex Ruane (moderator), *NASA GISS* Panel: Molly Jahn, *Jahn Research Group* Chris Funk, *UC Santa Barbara* Naomi Fukagawa, *USDA ARS* Tom Hertel, *Purdue University*	
11:00-11:30	**Moderated Discussion and Session Wrap-up**	Alex Ruane, *NASA GISS*	

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Tuesday, October 13, 2020, continued
Afternoon - AgMIP Advances, Part 1: Modeling

Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
12:00-12:15	**Introduction to Panel Breakout Sessions**	Alex Ruane, *NASA GISS* Sonali McDermid, *NYU*	AgMIP Coord: Erik erik.mencos@columbia.edu
12:15-14:00	**Advances in Global to Regional Modeling** Regional Integrated Assessments……... Global Economics……... Global Agricultural Modeling……. RAPs and Scenarios……..	John Antle (moderator), *Oregon State University* Lieven Claessens, *IITA* Hermann Lotze-Campen, *Potsdam Institute for Climate Impact Research* Christoph Müller, *Potsdam Institute for Climate Impact Research* Roberto Valdivia, *Oregon State University*	AgMIP Coord: Carolyn czm2001@columbia.edu *Rapporteur: TBD*
	Advances in Crop System Modeling Modeling the 'Big Four'..... Ensemble Modeling Applied to New Crops…… Low-input Systems…….. Modeling Fruits and Vegetables……... Nutrition, Diets, and Food Security…….. Advances in Data Interoperability for Crop Modeling...	Senthold Asseng (moderator), *Univ of Florida* Montse Salmeron, *University of Kentucky* Marc Corbeels, *CIRAD-CIMMYT* Dave Gustafson, *Agriculture & Food Systems Institute* Lew Ziska, *Columbia University* Cheryl Porter, *University of Florida*	AgMIP Coord: Maria m.dombrov@columbia.edu *Rapporteur: TBD*
	Advances in Environmental Stresses Modeling Ozone……..……..……..……..……... Pests and Diseases…… Heat and Drought Responses in Current Global Crop Models……..…….. Evapotranspiration……...	Lisa Emberson (moderator), *University of York* Simone Bregaglio, CREA-Italy; Laetitia Willocquet, INRAE; Serge Savary, INRAE Jonas Jägermeyr, *Columbia University* Bruce Kimball, *USDA ARS*	AgMIP Coord: Cynthia *Rapporteur: TBD*

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Tuesday, October 13, 2020, continued
Afternoon - AgMIP Advances, Part 1: Modeling

Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
14:00-14:30	**Breakouts Report Back and Session Wrap-up**	Alex Ruane, *NASA GISS* Sonali McDermid, *NYU*	AgMIP Coord: Erik erik.mencos@columbia.edu

(END OF TUESDAY SESSIONS)

Wednesday, October 14, 2020
Morning - Resilience to Food Shocks and Stresses

Time (EDT)	Session	Speaker(s) / Moderator(s) / Rapporteur(s)	AgMIP Coordinator
9:00-9:10	**Introduction**	Hermann Lotze-Campen, *Potsdam Institute for Climate Impact Research*	AgMIP Coord: Erik erik.mencos@columbia.edu
9:10-9:30	**Keynote: Understanding Resilience** The speaker will address the benefits of resilient agricultural systems and the biophysical, socioeconomic, technological, and geopolitical forces that will shape the development (or lack of development) for climate resilience.	Mark Howden, *Australian National University*	
9:30-11:00	**Shocks and Resilience Breakouts** 1. Which shocks and interventions can currently be modeled in this food system component? 2. What are novel approaches to improve modeling for resilience decisions? 3. What data are most critical for advancement?		
	Farm Systems This breakout will examine current and novel approaches to model farm systems, including crops, livestock, water resources, and household economics. Topics include the biophysical simulation of hazards within different cropping systems as well as important elements or hazards that are not currently captured.	Roberto Valdivia, *Oregon State University* Heidi Webber, *ZALF* *Meryl Winicov (rapporteur), Columbia Univeristy*	AgMIP Coord: Carolyn czm2001@columbia.edu

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Wednesday, October 14, 2020, cont.
Morning - Resilience to Food Shocks and Stresses

9:30-11:00	**Shocks and Resilience Breakouts, cont.** 1. Which shocks and interventions can currently be modeled in this food system component? 2. What are novel approaches to improve modeling for resilience decisions? 3. What data are most critical for advancement?		
Time (EDT)	Session	Speaker(s) / Moderator(s) / Rapporteur(s)	AgMIP Coordinator
9:30-11:00	**Value Chains, Markets, and Trade** This breakout will examine data and models that help us understand food systems beyond the farm gate. Potential topics include improved representation of storage, transportation, processing, advertising, global-to-local price translation, trade flows, and geopolitical influences (e.g., incentives and tariffs).	Sabine Homann Kee-Tui, *ICRISAT* David Laborde, *IFPRI* *Carolyn Mutter (rapporteur), Columbia University*	AgMIP Coord: Cynthia
	Diets, Food Security, and Nutrition This breakout will examine how diets and nutrition shape (and are shaped by) food systems, and how these forces lead to food insecurity that may be sporadic, seasonal, and acute for vulnerable populations. Discussion will aim to identify options (across a variety of implementation timelines) supported by model applications to build healthier food systems.	Pauline Scheelbeek, *LSHTM* Marco Springmann, *University of Oxford* *Maria Dombrov (rapporteur), Columbia University*	AgMIP Coord: Maria m.dombrov@columbia.edu
11:00-11:30	**Breakouts Report Back and Session Wrap-up**	Hermann Lotze-Campen (moderator), *Potsdam Institute for Climate Impact Research*	AgMIP Coord: Erik erik.mencos@columbia.edu

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Wednesday, October 14, 2020, continued
Afternoon – Reimagining the Food System: Nutrition, Diets and Security

Time (EDT)	Session	Speaker(s) / Moderator(s) / Rapporteur(s)	AgMIP Coordinator
12:00-12:10	**Introduction to the Columbia Climate School** **Introduction to the Session**	Ruth DeFries, *Columbia University* Cynthia Rosenzweig, *NASA GISS*	AgMIP Coord: Erik erik.mencos@columbia.edu
12:10-12:30	**Keynote: Transforming the Global Food System: A Multi-faceted Perspective**	Mario Herrero, *CSIRO*	
12:30-12:50	**Keynote: Local Linkages for Food Security, Nutrition, and Health**	Jennifer Woo Baidal, *Columbia University*	
12:50-13:20	**Panel: Roadmaps and Reality Checks**	Glenn Denning (moderator), *Columbia University* Ruth DeFries, *Columbia University* Elisabeth Ilboudo-Nebie, *IRI* Michael Puma, *NASA GISS* Ana Maria Loboguerrero, *CIAT-CGIAR*	
13:20-14:00	**Nuts and Bolts Breakouts** 1. What are the barriers to effective change and what actions should be taken to overcome them? 2. What interdisciplinary research and practice is needed to advance food system changes in your area? 3. What actions should comprise the first steps?		
	Agriculture, Water, and Land	Weston Anderson, *IRI* Jonas Jägermeyr, *Columbia University* *Elisabeth Ilboudo-Nebie (rapporteur), IRI* *Sarah Garland (rapporteur), Columbia Univ*	AgMIP Coord: Jonas jj3153@columbia.edu
	Shocks, Stresses and Building Resilience	Alex Ruane, *NASA GISS* Wolfram Schlenker, *Columbia University* *Kai Kornhuber (rapporteur), Columbia Univ*	AgMIP Coord: Carolyn czm2001@columbia.edu

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Wednesday, October 14, 2020, continued **Afternoon – Reimagining the Food System: Nutrition, Diets and Security**			
Time (EDT)	Session	Speaker(s) / Moderator(s) / Rapporteur(s)	AgMIP Coordinator
13:20-14:00, cont.	**Nuts and Bolts Breakouts, cont.** 1. What are the barriers to effective change and what actions should be taken to overcome them? 2. What interdisciplinary research and practice is needed to advance food system changes in your area? 3. What actions should comprise the first steps?		
	Nutrition and Health Equity	Richard Deckelbaum, *Columbia University* Lew Ziska, *Columbia University* Shauna Downs, *Rutgers* *Corey Lesk (rapporteur), Columbia University* *Kathrin Schilling (rapporteur), LDEO, CU*	AgMIP Coord: Maria m.dombrov@columbia.edu
	Enablers of Transformation	Pam Koch, *Columbia University* Malgosia Madajewicz, *Columbia University* *Nicolas Hernandez-Aquilera (rapporteur), Columbia University*	AgMIP Coord: Malgosia mm1174@columbia.edu
14:00-14:20	**Breakouts Report Back**	Alison Rose (moderator), *IRI/CCAFS*	AgMIP Coord: Erik erik.mencos@columbia.edu
14:20-14:30	**Session Wrap-up**	Walter Baethgen, *IRI*	

Thursday, October 15, 2020
Morning – From Assessment to Action

Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
9:00-9:10	**Introduction**	Cynthia Rosenzweig, *NASA GISS*	AgMIP Coord: Erik erik.mencos@columbia.edu
9:10-9:30	**Keynote: How Do We Get There?** The speaker will provide perspectives on what is needed from models and modelers to help enable a transition towards improved agriculture and food systems. What are the key bottlenecks and limiting factors? How might models and modelers respond to affect greater interest among decision makers?	Sally Rockey, *FFAR*	
9:30-10:30	**Panel: Stakeholder Perspectives** Panelists will share perspectives on stakeholder contexts for science-informed action related to crop, livestock, and broader food systems, exploring the potential for model-based intervention, forecast, and foresight services.	Bill Hohenstein (moderator), *USDA* Youssef Nassef, *UNFCCC* Ernie Shea, Solutions from the Land/*GACSA* Bruce Currie-Alder, *IDRC* Josette Lewis, *Almond Board of California* Oscar Castañeda, *Heifer International*	
10:30-11:20	**Panel: The Role of Modelers** The panel will discuss the types of questions that models are strongly suited to address and how these motivate cutting-edge model development and applications ranging from plant-level biophysical processes to global trade and development scenario assessment. Panelists will also highlight success stories where models are incorporated effectively into decision making processes.	Cynthia Rosenzweig (moderator), *NASA GISS* Ibrahima Hathie, *IPAR Senegal* Almut Arneth, *Karlsruhe Institute of Technology* Michael Barton, *Arizona State University* Joshua Elliott, *DARPA*	
11:20-11:30	**Session Wrap-up**	Cynthia Rosenzweig, *NASA GISS*	

Thursday, October 15, 2020, continued
Afternoon – AgMIP Advances, Part 2: Regions

Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
12:00-12:10	**Introduction and Moderators** This session highlights AgMIP work in the regions. Presentations will feature work being advanced by numerous institutions world-wide utilizing - or creating - protocols developed by AgMIP collaborators with outputs intended to help stakeholders with decisions.	Anthony Whitbread, *ICRISAT* Carolyn Mutter, *Columbia University*	AgMIP Coord: Erik erik.mencos@columbia.edu
12:10-13:00	**Greater Asia and Australasia Panel** Regional Integrated Assessment in South Asia for developing adaptation policies: A journey with AgMIP….. Cross-nation evaluation of adaptation options in East Asia: Opportunities and Challenges……..... Advances in Australia: What's different and what's the same…..……..... **Discussion**	Vellingiri Geethalakshmi, *Tamil Nadu Agricultural University* Toshi Hasegawa, *National Agriculture and Food Research Organization* Rebecca Darbyshire and Peter Thorburn, *CSIRO*	
13:00-13:40	**Africa and Europe Panel** AgMIP research in Sub-Saharan Africa: Integrated Regional Assessments, Low-input Systems, CLARE, WASCAL and beyond…….... Improved modelling for resilient cropping systems in Europe (and beyond).....…….. **Discussion**	Dilys MacCarthy, *University of Ghana* Frank Ewert, *Leibniz Centre for Agricultural Landscape Research*	

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Thursday, October 15, 2020, continued Afternoon – AgMIP Advances, Part 2: Regions			
Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
13:40-14:20	**The Americas Panel** Latin America and the Caribbean: Slowly but Surely… …. Approaches to Precision and Regenerative Agriculture in North America…….... **Discussion**	Kelly Witkowski, *Inter-American Institute for Cooperation on Agriculture* Bruno Basso, *Michigan State University*	AgMIP Coord: Erik erik.mencos@columbia.edu
14:20-14:30	**Session Wrap-up**	Anthony Whitbread, *ICRISAT* Carolyn Mutter, *Columbia University*	
AgMIP8 Closing Session			
14:30-15:00	**AgMIP8 Closing Remarks**	Jean-François Soussana, *INRAE* Cynthia Rosenzweig, *NASA GISS* John Antle, *Oregon State University* Anthony Whitbread, *ICRISAT* Senthold Asseng, *University of Florida* Hermann Lotze-Campen, *PIK*	AgMIP Coord: Erik erik.mencos@columbia.edu

Friday, October 16, 2020
Workshop - Modeling Mitigation and Adaptation Co-Benefits

AgMIP, in collaboration with the Integrative Research Group of the Global Research Alliance on Agricultural Greenhouse Gases (GRA), is conducting a series of activities to develop a modeling framework and protocols for determining co-benefits of mitigation and adaptation. The purpose of this workshop is to identify and evaluate options for assessing combined climate mitigation and adaptation co-benefits (MAC-B) in a range of agricultural systems that are country specific, while also being scalable and facilitating country-to-country transfers of knowledge for regional and global benefit.

Time (EDT)	Session	Speaker(s)	AgMIP Coordinator
9:00-9:10	**Welcome and Goals of Workshop**	Cynthia Rosenzweig, *NASA GISS* Sonali McDermid, *NYU* Roberto Valdivia, *Oregon State Univ*	AgMIP Coord: Erik erik.mencos@columbia.edu
9:10-9:50	**Introduction to MAC-B and Regional Contexts**	Sonali McDermid (moderator), *NYU* V. Geethalakshmi, *Tamil Nadu Agricultural University* Mai Van Trinh, *Institute for Agricultural Environment* Francisco Meza, *Pontificia Universidad Católica de Chile* Sabine Homann-Kee Tui, *ICRISAT*	
9:50-10:30	**Models, Tools, and Data Panel**	Petr Havlik (moderator), *IIASA* Keith Paustian, *Colorado State University* Tao Li, *DNDC Applications, Research &Training* Bruno Basso, *Michigan State University* Christoph Müller, *PIK* Pete Smith, *University of Aberdeen*	
10:30-10:45	**Global Context**	Jean-François Soussana, *INRAE*	
10:45-10:55	**Charge to Breakouts**	Jean-François Soussana, *INRAE* Sonali McDermid, *NYU*	

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

	Pilot Project Breakouts		
Time (EDT)	Session	Speaker(s) / Moderator(s) / Rapporteur(s)	AgMIP Coordinator
10:55-11:35	**South Asia**	V. Geethalakshmi, *Tamil Nadu Agricultural University* Anthony Whitbread, *ICRISAT* *Maria Dombrov (rapporteur), Columbia University*	AgMIP Coord: Maria m.dombrov@columbia.edu
	Southeast Asia	Mai Van Trinh, *Institute for Agricultural Environment* Alex Ruane, *NASA GISS* *TBD, rapporteur*	AgMIP Coord: Malgosia mm1174@columbia.edu
	Latin America and the Caribbean	Francisco Meza, *Pontificia Universidad Católica de Chile* Kelly Witkowski, *IICA* *Carolyn Mutter (rapporteur), Columbia University*	AgMIP Coord: Carolyn czm2001@columbia.edu
	Africa	Sabine Homann-Kee Tui, *ICRISAT* Ibrahima Hathie, *IPAR* *TBD, Rapporteur*	AgMIP Coord: Cynthia
11:35-11:50	**Breakout Report Backs**	Jean-François Soussana, *INRAE* Sonali McDermid, *NYU*	AgMIP Coord: Erik erik.mencos@columbia.edu
11:50-12:00	**Cross-Cutting Dimensions, Final Thoughts, and Way Forward**	Cynthia Rosenzweig, *NASA GISS* Jean-François Soussana, *INRAE* Sonali McDermid, *NYU* Roberto Valdivia, *Oregon State University*	

If you plan to join by phone, find your local number here:
https://columbiauniversity.zoom.us/u/ab7UIGjLMN

Appendix 2: Session Recordings

October 12th – Open Team Sessions

Maize Model Evapotranspiration (ET) Simulation	https://youtu.be/D5ULO5jIgqY
AgMIP Vietnam	https://youtu.be/nfwTR6lIVPQ
Global Gridded Crop Modeling Intercomparison (GGCMI)	https://youtu.be/S51BIFGrDBg
Circularity in Food Systems Workgroup	https://youtu.be/CvRg1Sg8n9k

October 12th – Food System Emissions (FSE) Workshop

FSE Workshop – Opening Plenary	https://youtu.be/eqEPImpC5mQ
Breakout - Dietary Demand and Competition for Land	https://youtu.be/nAf-fDvdFAc
Breakout - Science into Policy Action: NDCs	https://youtu.be/ndUwQZj27m0
Breakout - Energy, Agriculture, and Food Chains	https://youtu.be/2JytPsS5dCw
FSE Breakout Reports and Closing Comments	https://youtu.be/l6Xlx4C5WIw

October 13th – AgMIP8 Day 1 – Food Systems, Shocks, and Security

AgMIP 8 Opening and Food Systems, Shocks, and Security – Plenary	https://youtu.be/uuW1abjt4Bo
AgMIP Advances: Modeling, Part 1 - Plenary	https://youtu.be/nZusxCc2u0o
Breakout - Advances in Global to Regional Modeling	https://youtu.be/adafY780HAg
Breakout - Advances in Crop System Modeling	https://youtu.be/WlUJGW0Exxw
Breakout - Advances in Environmental Stresses Modeling	https://youtu.be/MtlJa3PYd3Q
AgMIP Advances: Modeling – Breakout Reports and Closing Comments	https://youtu.be/MhT5XrNg3ng

October 14th – AgMIP8 Day 2, Morning – Resilience to Food Shocks and Stresses

Resilience to Food Shocks and Stresses – Plenary	https://youtu.be/3Fsmii1NgEA
Breakout - Farm Systems	https://youtu.be/l0iNHw6Ml5Q
Breakout - Value Chains, Markets, and Trade	https://youtu.be/6EUZuguM3eY
Breakout - Diets, Food Security, and Nutrition	https://youtu.be/xuAF8v2IyHc
Resilience to Food Shocks and Stresses – Breakout Reports and Closing Comments	https://youtu.be/YXFa7irtWa0

October 14th – AgMIP8 Day 2, Afternoon – Reimaging the Food System

Reimagining the Food System – Opening Plenary	https://youtu.be/tpapLn9ca1Y
Breakout - Agriculture, Water, and Land	https://youtu.be/2-kGvPpxphA
Breakout - Shocks, Stresses, and Building Resilience	https://youtu.be/6MbSgKVXkF4
Breakout - Nutrition and Health Equity	https://youtu.be/Q4jAkK6z2CA
Breakout - Enablers of Transformation	https://youtu.be/8wXgsw7R_OI
Reimagining the Food System – Breakout Reports and Closing Comments	https://youtu.be/LByoFcoekpA

October 15th – AgMIP8 Day 3
Morning – From Assessment to Action
Afternoon – AgMIP Advances, Part 2: Regions; and, AgMIP8 Closing

From Assessment to Action – Plenary	https://youtu.be/k3yFjI_Vaws
AgMIP Advances, Part 2: Regions (Plenary); and, AgMIP8 Closing Comments	https://youtu.be/AiUILZawr20

October 16th – Modeling Mitigation and Adaptation Co-Benefits (MAC-B)

MAC-B – Opening Plenary	https://youtu.be/qQqO4vDVYXY
Breakout - South Asia	https://youtu.be/d5OOZxWsQzk
Breakout - Southeast Asia	https://youtu.be/7VW6-mjn4-c
Breakout - Latin American and the Caribbean	https://youtu.be/O7XYfUx-Ulg
Breakout - Africa	https://youtu.be/TJt_pzFGnWY
MAC-B – Breakout Reports and Closing Comments	https://youtu.be/38IN2NFlLnU

Appendix 3: Registration List

First Name	Last Name	Country
Emal	Wali	Afghanistan
Bencheikh	Abdelaali	Algeria
Marcelo	Beltrán	Argentina
Gabriela	Posse	Argentina
Sebastian	Leavy	Argentina
Pablo	Casas	Argentina
Tomas	Petersen	Argentina
María	Rybak	Argentina
Sofia	Racca	Argentina
Gabriela	Abeledo	Argentina
Marta	Vinocur	Argentina
Adriana	Confalone	Argentina
Federico Agustin	Ogando	Argentina
Naoya	Takeda	Australia
Matthew	Harrison	Australia
Philip	Smethurst	Australia
Mark	Howden	Australia
Max	De Antoni	Australia
Ando Mariot	Radanielson	Australia
Lee	Nelson	Australia
Ruby	Annand-Jones	Australia
Daniel	Mason-Dcroz	Australia
Harry	Campbell-Ross	Australia
Qiang	Jiang	Australia
Margaret	Miller	Australia
Elizabeth	Meier	Australia
Humaira	Sultana	Australia
Asad	Amin	Australia
Maxwell	Bloomfield	Australia
Albert	Muleke	Australia
Afshin	Ghahramani	Australia
Ismail	Garba	Australia
Jessica	Scott	Australia
Valeria	Javalera	Austria
Amanda	Palazzo	Austria
Esther	Boere	Austria
Christian	Folberth	Austria
Yvonne	Stickler	Austria
Lee	Heng	Austria
Neus	Escobar	Austria

Hugo	Valin	Austria
Mohammad Saiful	Bhuiyan	Bangladesh
Md Hafijur	Rahman	Bangladesh
Abdullah Al	Mahmud	Bangladesh
Md. Zahidul	Haque	Bangladesh
Md.	Maniruzzaman	Bangladesh
Jatish Chandra	Biswas	Bangladesh
Md Sahadat	Hossain	Bangladesh
Bonny	Amin	Bangladesh
Md Moshiur	Rahman	Bangladesh
Sheikh	Ishtiaque	Bangladesh
Abu Noman Faruq	Ahmmed	Bangladesh
Anne	Gobin	Belgium
Oscar	Navarrete	Belgium
Carlos	Fuller	Belize
Ulric	Trotz	Belize
Adetona	Luc	Benin
Oloni	Olaogou Nestor	Benin
Dombouri Yaya	Hassimiou	Benin
Marsanne Gloriose	Allakonon	Benin
Marie-Joël	Hode	Benin
Marsanne Gloriose	Allakonon	Benin
Bruno	Condori	Bolivia
Luis	Acosta	Bolivia
Carlos	Quezada	Bolivia
Luis	Blanco	Bolivia
Milenka	Iturralde	Bolivia
Guy	Yuyi	Botswana
Nicholas	Mbangiwa	Botswana
Paulo	Sentelhas	Brazil
Gean Leonardo	Richter	Brazil
Jean	Lira	Brazil
Monique	Oliveira	Brazil
Evandro	Silva	Brazil
Isabella Theresa	De Almeida Martins	Brazil
Jose Nauricio	Fernandes	Brazil
Fabiani	Bender	Brazil
Eduardo	Gelcer	Brazil
Suli	Nogueira	Brazil
Gislaine	Pereira	Brazil
João	Willmersdorf	Brazil
Miller	Ruiz	Brazil
Henrique	Dias	Brazil

Genei Antonio	Dalmago	Brazil
Rafael	Battisti	Brazil
Luis Gustavo	Barioni	Brazil
Samuel	Zottis Dal Magro	Brazil
Yane	Freitas Silva	Brazil
Rodrigo	Tsukahara	Brazil
Juliana	Rodrigues	Brazil
Aryeverton	Fortes De Oliveira	Brazil
Alexandrre	Candido Xavier	Brazil
Santiago	Cuadra	Brazil
Thiago	Berton Ferreira	Brazil
Daianna	Costa	Brazil
Cleverson Henrique	De Freitas	Brazil
Harouna	Ouedraogo	Burkina Faso
Khalil	Sangare	Burkina Faso
Issa	Kassogue	Burkina Faso
Etme Kossi	Georges Marius	Cameroon
Elizabeth	Pattey	Canada
Qi	Jing	Canada
Brian	Davies	Canada
Jun	Zhao	Canada
Budong	Qian	Canada
Aston	Chipanshi	Canada
Ward	Smith	Canada
Brian	Grant	Canada
Roland	Kroebel	Canada
Bruce	Currie-Alder	Canada
Tao	Li	Canada
Julien	Malard	Canada
Zhenhua	Li	Canada
Taifeng	Dong	Canada
Summer	Xia	Canada
Haben	Asgedom Tedla	Canada
Amaka	Odenigbo	Canada
Daniel	Lopez De Romana	Canada
Sarah	Simon	Canada
Pamela	Joosse	Canada
Victor	Garcia-Gutierrez	Chile
Francisco	Meza	Chile
Daniel	Calderini	Chile
Iván	Calvache	Chile
Patricio	Sandaña	Chile
Cristobal	Campos	Chile

Fulu	Tao	China
Jinfeng	Chang	China
Weihang	Liu	China
Yuyao	Zhu	China
Ming	Ren	China
Bing	Liu	China
Xuhui	Wang	China
Mingixa	Huang	China
Zi	Ye	China
Xiaoxi	Wang	China
Leilei	Liu	China
Wei	Xiong	China
Shicheng	Yan	China
Jie	Zhang	China
Tongle	Hu	China
Tianyi	Zhang	China
Ning	Luo	China
Hao	Ye	China
Hanqing	Xu	China
Guoqiang	Li	China
Shengli	Liu	China
Liang	Tang	China
Shah Jahan	Leghari	China
Huimin	Meng	China
Erjing	Guo	China
Hongliang	Zhang	China
Xiaochen	Zhu	China
Meili	Huan	China
Yan	Zhu	China
Shang	Chen	China
Huimin	Meng	China
Camila	Bonilla	Colombia
Nestor	Riano	Colombia
Miguel	Ayarza	Colombia
Ernesto	Giron	Colombia
Alfredo	Sanchez Cabrera	Colombia
Miguel Angel	Valenzuela	Colombia
Jaime Humberto	Bernal Riobo	Colombia
Andrés J	Peña Q	Colombia
C.Fabian	Cote	Colombia
Jeferson	Rodríguez	Colombia
Douglas Andrés	Gómez Latorre	Colombia
Andrea	Rodriguez	Colombia

Kelly	Witkowski	Costa Rica
David	Sande	Costa Rica
Johnny	Montenegro	Costa Rica
Gustavo	Castro	Costa Rica
Kone	Ismail	Côte D'ivoire
Fatoumata	Diomande	Côte D'ivoire
Yao Jean-Clovis	Kouadio	Côte D'ivoire
Toure	Fatoumata	Côte D'ivoire
Konan Jean Yves	N'guessan	Côte D'ivoire
Natoueu Jean Claude	Koya	Côte D'ivoire
Kouassi	Amani	Côte D'ivoire
Osmel	Rodriguez	Cuba
Armando	De La Colina Rodriguez	Cuba
Diego	Abalos	Denmark
Diego	Grados Bedoya	Denmark
Jørgen E.	Olesen	Denmark
Johannes (Jeroen)	Pullens	Denmark
Jin	Zhao	Denmark
Farnaz	Ershadfath	Denmark
John	Porter	Denmark
Finn	Plauborg	Denmark
Ramon	Jaimez	Ecuador
Ahmed	Kheir	Egypt
Gamil	Gamal	Egypt
Ajit	Govind	Egypt
Samar	Attaher	Egypt
Mohammed Abduelhamed Abboh	Adam	Estonia
Anbes	Tenaye	Ethiopia
Dia	Sanou	Ethiopia
Tewodros	Girma	Ethiopia
Alembirhan Woldegerima	Gebretsadik	Ethiopia
Godana	Arero	Ethiopia
Yasin Mohammed	Hasen	Ethiopia
Fantahun	Dugassa	Ethiopia
Kefyalew	Akassa	Ethiopia
Badasa	J.	Ethiopia
Ermiyas	Kebede	Ethiopia
Tewodros Mesfin	Abebe	Ethiopia
Biadge	Kefale	Ethiopia
Esayas Lemma	Hayi	Ethiopia
Addis Tadesse	Tekle	Ethiopia
Melkamu	Mekonnen	Ethiopia
Abadi	Berhane	Ethiopia

Amenu	Hirko	Ethiopia
Getamesay Behailu	Dagne	Ethiopia
Temesgen	Mekuriaw	Ethiopia
Takele W	Gebrewahid	Ethiopia
Ephrem	Weledekidane	Ethiopia
Mezegebu Getnet	Debas	Ethiopia
Yenenesh	Goshu	Ethiopia
Abera	Habte	Ethiopia
Mekonnen Gebru	Tekle	Ethiopia
Sewnet	Getahun	Ethiopia
Andinet Abera	Hailu	Ethiopia
Aregawi	Weldegebreal	Ethiopia
Midekesa	Chala	Ethiopia
Samuel	Tesfay	Ethiopia
Belay	Ejigu	Ethiopia
Getnet	Asfawesen	Ethiopia
Misgana	Milkias	Ethiopia
Abebe	Misganaw	Ethiopia
Taru	Palosuo	Finland
Isabella	Jantti	Finland
Daniel	Wallach	France
Sibylle	Dueri	France
Myriam	Adam	France
Jean-Louis	Durand	France
Helene	Raynal	France
Gatien	Falconnier	France
Fety	Andrianasolo	France
Felipe	Vargas-Rojas	France
Rebolledo	Maria Camila	France
Shouyang	Liu	France
Francois	Affholder	France
Laetitia	Willocquet	France
Edward	Gérardeaux	France
Rémi	Cardinael	France
Serge	Savary	France
Florence	Egal	France
Babacar	Faye	France
Enzo	Castro	France
Lacube	Sébastien	France
Julie	Constantin	France
Seny	Faye	France
Sarah	Conradt	France
Zakari	Ali	The Gambia

Kakha	Nadiradze	Georgia
Gennady	Bracho Mujica	Germany
Clemens	Scheer	Germany
Claas	Nendel	Germany
Kurt-Christian	Kersebaum	Germany
Amsalu Woldie	Yalew	Germany
Sam	Rabin	Germany
Ehsan	Eyshi Rezaei	Germany
Kai	Kornhuber	Germany
Christoph	Müller	Germany
Patryk	Kubiczek	Germany
Sara	Minoli	Germany
Amit Kumar	Srivastava	Germany
Andrew	Smerald	Germany
Gennady	Bracho Mujica	Germany
Heidi	Webber	Germany
Maria	De Vries	Germany
Hermann	Lotze-Campen	Germany
Almut	Arneth	Germany
Tommaso	Stella	Germany
Opeyemi	Adelesi	Germany
Stefanie	Heinicke	Germany
Florian	Zabel	Germany
Julia	Schneider	Germany
Marie	Hemmen	Germany
John K.	Nyameasem	Germany
Ashifur Rahman	Shawon	Germany
Juliane	Friedrich	Germany
Christoph	Schult	Germany
Christoph	Schult	Germany
David Meng-Chuen	Chen	Germany
Natalia	Strigin	Germany
Marcos	Jimenez-Martinez	Germany
Powell	Mponela	Germany
Ehsan	Modiri	Germany
Zeinab	Namazi	Germany
Simon	Gruber	Germany
Kai	Bergmüller	Germany
Frank	Ewert	Germany
Hsiao-Hui	Chen	Germany
David	Gualotuna	Germany
Asmae	Meziane	Germany
Habib-Ur-Rahman	Muhammad	Germany

Andrea Catalina	Fajardo	Germany
Livia	Rasche	Germany
Rettie	Fasil Mequanint	Germany
Tobias Kd	Weber	Germany
Sofia	Hadir	Germany
Sebastian	Gayler	Germany
Diana	Seserman	Germany
Nathalie	Knittel	Germany
Thuy	Nguyen	Germany
Reimund	Roetter	Germany
Leonard	Rusinamhodzi	Ghana
Gerald	Yiran	Ghana
Naomi	Kumi	Ghana
Michael Nyame	Acquah	Ghana
Askia	Mohammed	Ghana
Joseph	Richardson	Ghana
Samuel	Adiku	Ghana
Jonathan	Anaglo	Ghana
Gianna	Kitsara	Greece
Elmer	Orrego	Guatemala
Nándor	Fodor	Hungary
Nataraja	Subash	India
Harbir	Singh	India
Aravind	J	India
Abburi	Subbarao	India
Nishant	Sinha	India
Manivasagam	V S	India
Geetika	Sonkar	India
Parthasarathy	S	India
Jidhu Vaishnavi	Sivaprakasam	India
Sathyapriya	E	India
Soundharajan	Bankaru Swamy	India
Geethalakshmi	Vellingiri	India
Soora	Naresh Kumar	India
Chandan	Jha	India
Swamikannu	Nedumaran	India
Pema Yangden	Lepcha	India
Jyoti	Singh	India
Radheshyam	Yadav	India
Debashis	Dutta	India
Raghavendra	K J	India
M S	Meena	India
Dakshina Murthy	Kadiyala	India

Dr. Suresh	Motwani	India
Aakashraj	Bhople	India
Sai Bhargav Reddy	Vootkuru	India
Sambita	Ghosh	India
Syed Rouhullah	Ali	India
Surendran	Udayar Pillai	India
Prathima	Ponuku	India
Jairam	Choudhary	India
Shweta	Pokhariyal	India
Shruti V	Singh	India
Mohammed	Ahamed	India
Sushree	Satapathy	India
Sridhar	Gutam	India
Sarath	Chandran	India
Venkadesh	Samykannu	India
Sabah	Parvaze	India
Saqib Parvaze	Allaie	India
Navin	Twarakavi	India
Sunil	Kumar	India
Rajesh	Ranjan	India
Dr. Rajan	Chaudhari	India
Urmimala	Ghosh	India
Dr. Anil Kumar	Mishra	India
Sehajpreet	Kaur	India
Kuldeep Singh	Jadon	India
A K	Prusty	India
Jayanarayanan	Kuttippurath	India
Leelambar	Singh	India
Adarsh	Raghuram	India
Pramod	Aggarwal	India
Usha	Mina	India
Anshuman	Gunawat	India
Tarun	Khatana	India
Ajithkumar	B	India
Pradip Kumar	Sarkar	India
Rashmita	Sharma	India
Vinayak	Pandey	India
Suchit	Rai	India
Soumyajeet	Sahu	India
Venkata Satish	Jasti	India
Prashant	Kokane	India
Raji	Pushpalatha	India
Ugalechumi	Kathiresan	India

Kanjiya	Hardik Nileshbhai	India
Poonam	Kashyap	India
Shweta	Pandey	India
Sagar	Vibhute	India
Khushboo	Jain	India
Dhimantkumar Rasiklal	Vaghasiya	India
Venkatesh	Pithani	India
Bharat	Vashisht	India
Ajay	Chaudhary	India
Manisha	Tamta	India
Meenakshi	Jakhar	India
Nand Lal	Kushwaha	India
Rohit Kumar	Jaiswal	India
Arti	Kumari	India
Deepshree	Singh	India
Gade	Sreenivas	India
Atul	Nandeshwar	India
Archita	Sharma	India
Priyanka	S	India
Gowtham	R	India
Mohammad	Shahid	India
Sudhakar	Ranapangu	India
Srujan	Goud	India
Vijayakumar	S	India
Sarabjit	Singh	India
Rahul	Babele	India
Vasundhra	Singh	India
Amit	Prakash	India
Kuntamukkala	Ramakrishna	India
Arham	Tater	India
Andrew	Smith	India
Isaac	L	India
Bavish	Shanmugavel	India
Subramanyam	Gangaraju	India
Sekar	Iyyapa	India
Anandhan	J	India
Dr Veena	Sharma	India
Dr Ashish	Singh	India
Vyas	Pandey	India
Kipa	Linku	India
Mohammed Irshad	Ahmed	India
Pragyi	Baghel	India
Ramaraj	Ap	India

Shalander	Kumar	India
Swarnima	Mudgal	India
Barasha	Baruah	India
Thomas	Falk	India
Rabi N	Sahoo	India
Ranu	Pathania	India
Suneeta	Chandorkar	India
Sunil Kumar	Medida	India
Priyanka	Soni	India
Lekh	Chand	India
Gade	Sreenivas	India
Sameer	Safaya	India
Ajay	Bogati	India
Firasath	Nabi	India
Kumar	Abbhishek	India
Miranti	Ariani	Indonesia
Raffaela	Kozar	Indonesia
Kaimuddin	Kaimuddin	Indonesia
Ali	Khodagholi	Iran
Sanaz	Mohammadi	Iran
Amir	Izadfard	Iran
Hedayatollah	Karimzadeh Soureshjani	Iran
Mohammad	Rahimi	Iran
Omid	Alasti	Iran
Ahmad	Mahdavi	Iran
Amirhosein	Noori	Iran
Muhammad	Kamangar	Iran
Alireza	Taab	Iran
Fereshteh	Batoukhteh	Iran
Hamidreza	Kamali	Iran
Alireza	Ahrar	Iran
Alireza	Ahrar	Iran
Shahrokh	Zand-Parsa	Iran
Seyedhamidreza	Ziaolhagh	Iran
Ghazal	Dehghanisanij	Iran
Fahime	Mohamadzade	Iran
Shabnam	Pourshirazi	Iran
Fojan	Badii	Iran
Benjamin	Torabi	Iran
Roxana	Seyed Raoufi	Iran
Galina	Brychkova	Ireland
Henrique	Pires	Ireland
Duo	Jiang	Israel

Andrea	Toreti	Italy
Luisa	Giglio	Italy
Domenico	Ventrella	Italy
Dominik	Wisser	Italy
Simone	Bregaglio	Italy
Stefano	Galmarini	Italy
Pasquale	Garofalo	Italy
Antonio	Trabucco	Italy
Donatella	Spano	Italy
Carolina	Fabbri	Italy
Frank	Dentener	Italy
Valentina	Mereu	Italy
Roberto	Ferrise	Italy
Snow	Pan	Italy
Enrico	Balugani	Italy
Alessia	Sortino	Italy
Marta	Tuninetti	Italy
Matteo	Zampieri	Italy
Matteo	Rolle	Italy
Roberta	Pulcher	Italy
Sarah	Piccini	Italy
Toshichika	Iizumi	Japan
Toshi	Hasegawa	Japan
Yuji	Masutomi	Japan
Wenchao	Wu	Japan
Ayaka	Kishimoto	Japan
Takaya	Endo	Japan
Fekremariam	Mihretie	Japan
Mohan	Geetha	Japan
Motoko	Inatomi	Japan
Camilo	Barrios Pérez	Japan
Leonard	Chirenje	Japan
Rafat	Khashan	Jordan
Luma	Hamdi	Jordan
Ahmed	Hourani	Jordan
Alex	Nabiswa	Kenya
Jessica	Mukiri	Kenya
Marc	Corbeels	Kenya
Murugi	Ndirangu	Kenya
Abdulrashid M.	Omar	Kenya
Paulino	Omay	Kenya
Josea	Kiplangat	Kenya
Joseph	Komu	Kenya

Moses	Kimani	Kenya
Caleb	Mbayaki	Kenya
Felix	Kiilu	Kenya
Annet	Mulema	Kenya
Ronald	Juma	Kenya
Joab	Wamari	Kenya
Rashid	Boru	Kenya
Retsepile	Neko	Lesotho
Rasoamaharo	Lova Andriantoa	Madagascar
Bertrand	Muller	Madagascar
John	Omondi	Malawi
Caroline	Hambloch	Malawi
Jean-Marc	Roda	Malaysia
Nurfarhana	Raffar	Malaysia
Henry	Ooi	Malaysia
Abdullahi	Mohammed Baba	Malaysia
Madina	Diancoumba	Mali
Djibril	Bagayoko	Mali
Netor Jonatan	Tapia Hernández	Mexico
Dr Alejandro N.	Martinez-Garcia	Mexico
Nadiezhda	Cabral	Mexico
Diego	Pequeno	Mexico
Fatima	Driouech	Morocco
Driss	Dhiba	Morocco
Abdelkrim	Bouasria	Morocco
Mina	Devkota	Morocco
Krishna	Devkota	Morocco
Berguete	Mariquele	Mozambique
Han	Swe	Myanmar
Khin	Zarkyaw	Myanmar
Myint	Thidar	Myanmar
Aung Kyaw	Thu	Myanmar
Gokul P.	Paudel	Nepal
Faisal	Qamer	Nepal
Dr. Rajendra	Darai	Nepal
Peter	Craufurd	Nepal
Devid	Dhakal	Nepal
Anton	Urfels	Nepal
Ramesh	Acharya	Nepal
Oleksandr	Mialyk	Netherlands
Iwan	Supit	Netherlands
Jonathan	Doelman	Netherlands
Allard	De Wit	Netherlands

Siatwiinda Mabele	Siatwiinda	Netherlands
Sehouevi Mawuton David	Agoungbome	Netherlands
Julia	Franchi Scarselli	Netherlands
Martin	Van Ittersum	Netherlands
Katrien	Descheemaeker	Netherlands
Sara	Masia	Netherlands
Obbe	Tuinenburg	Netherlands
Raed	Hamed	Netherlands
Elke	Stehfest	Netherlands
Val	Snow	New Zealand
Daniel	Dela Torre	New Zealand
Paul	Eme	New Zealand
Pablo	Siles	Nicaragua
Elh Moudi Moustapha	Abdourahaman	Niger
Moussa	Waongo	Niger
Murtala Muhammad	Badamasi	Nigeria
James	Adamu	Nigeria
Elizabeth	Alonge	Nigeria
Ijioma	Okorie	Nigeria
Oluwatosin	Leshi	Nigeria
Chiaka Charles	Nkwoala	Nigeria
Emmanuel Egbodo Boheje	Odum	Nigeria
Ayotunde	Ogundipe	Nigeria
Maxwell	Adeyemi	Nigeria
Timothy	Akpenpuun	Nigeria
Babatope	Alabadan	Nigeria
Iheanyichuku	Ogoke	Nigeria
Omotayo	Akinrotimi	Nigeria
Umar	Bello Ahmad	Nigeria
Jibrin Mohammed	Jibrin	Nigeria
Folasayo	Fayose	Nigeria
Awu	John Ibe	Nigeria
Innocent	Azih	Nigeria
Oluwafemi	Oyedele	Nigeria
Aliyu	Abdulkadir	Nigeria
Dr. Uzodinma	Adirieje	Nigeria
Jenneh Fatima	Bebeley	Nigeria
Bashir	Barau	Nigeria
Akeem	Makinde	Nigeria
Arit	Efretuei	Nigeria
Bimpe	Oladitan	Nigeria
Ngozi	Otuonye	Nigeria
Haruna	Zakari	Nigeria

Buduzhi Gift	Oguzor	Nigeria
Anton	Orlov	Norway
Jana	Sillmann	Norway
Iqra	Ghafoor	Pakistan
Mahwisj	Jabeen	Pakistan
Iqra	Ghafoor	Pakistan
Sana	Ur Rehman	Pakistan
Muhammad	Khaliq	Pakistan
Adeel	Ahmad	Pakistan
Asmat	Ullah	Pakistan
Jamshed	Haider	Pakistan
Ahmed	Mukhtar	Pakistan
Asma	Hassan	Pakistan
Wajid	Nasim	Pakistan
Ishfaq	Ahmad	Pakistan
Muhammad Zeeshan	Mehmood	Pakistan
Muhammad	Muqarab	Pakistan
Mahmood-Ur-Rahman	Ansari	Pakistan
Shakeel	Ahmad	Pakistan
Hafiz Muhammad Hamza Saleem	Saleem Raza	Pakistan
Muhammad Mobeen	Ahmad	Pakistan
Warda	Mustafa	Pakistan
Syed Jahanzaib	Rasool	Pakistan
Rizwan	Rafique	Pakistan
Alia	Mushtaq	Pakistan
Tauqeer	Qadir	Pakistan
Imadeddin	Albaba	Palestine
Aldo Rafael	Noguera Candia	Paraguay
Gesabel	Villar	Peru
Raymundo	Gutierrez-Rosales	Peru
Claudia	Arndt	Peru
Rossana	Porras Jorge	Peru
Lia	Ramos	Peru
Irene	Trebejo	Peru
Cecilia	Acuin	Philippines
Iris Rowena	Bernardo	Philippines
Giovanna Fae	Oguis	Philippines
Elmer	Alosnos	Philippines
Rowena	Rosales-Cangas	Philippines
Romeo Jr.	Hilis	Philippines
Jobert	Kleine Koerkamp	Philippines
Alwin Joseph	Maceres	Philippines
Nathaniel	Alibuyog	Philippines

Neil Marc	Sordilla	Philippines
Donna	Lagdameo	Philippines
Danny	Abrina	Philippines
Lanie	Alejo	Philippines
Greta	Gabinete	Philippines
Arvie John	Cuizon	Philippines
Helder	Fraga	Portugal
Catalin	Lazar	Romania
Elena	Samokhvalova	Russia
Matteo	Ziliani	Saudi Arabia
Debra	Turner	Saudi Arabia
Abdoulaye	Sarr	Senegal
Louise	Leroux	Senegal
Lamine	Samake	Senegal
Ndeye Ngone	Fall	Senegal
Ibrahima	Hathie	Senegal
Ahmadou	Ly	Senegal
Michele	Leone	Senegal
Ali	Ibrahim	Senegal
Ly	Mouhamed	Senegal
Mor	Ndiaye	Senegal
Habibatou	Thiam	Senegal
Dr Denis M. K.	Amara	Sierra Leone
Ahmed Mohamed	Abdi	Somalia
Pramila	Ghimire	Somalia
Nafiisa	Sobratee	South Africa
Wiltrud	Durand	South Africa
Phil	Sithole	South Africa
Maria	Makwela	South Africa
Mendy	Ndlovu	South Africa
Mmotong	Phahlane	South Africa
Sue	Walker	South Africa
Wiltrud	Durand	South Africa
Weldemichael	Tesfuhuney	South Africa
Michel	Kouadio	South Africa
Romaric Christel	Odoulami	South Africa
Temitope Samuel	Egbebiyi	South Africa
Mohamed A. M.	Abd Elbasit	South Africa
Caroline Fadeke	Ajilogba	South Africa
Ezinwanne	Ezeh	South Africa
Robert	Mangani	South Africa
William	Musazura	South Africa
Evidence	Mazhawu	South Africa

Gabriel	Lekalakala	South Africa
Edward	Nesamvuni	South Africa
Vimbayi	Chimonyo	South Africa
Arthur	Chibwana Gama	South Africa
Bashir	Adelodun	South Korea
Seung Min	Kim	South Korea
Eunjeong	Lee	South Korea
Fred	Bully	South Sudan
Maria	Blanco	Spain
Ignacio	Perez Dominguez	Spain
Victoria	Bermejo Bermejo	Spain
Garoé	Núñez Trujillo	Spain
Alfredo	Rodriguez	Spain
Fatemeh	Mohamadkhani	Spain
Mari Carmen	Piñero Zapata	Spain
Josep Lluís	Torres	Spain
Ruwanga	Amarasingha	Sri Lanka
Punya	Delpitiya	Sri Lanka
Sukarni	Mitro	Suriname
Mukhtar	Ahmed	Sweden
Marcos	Lana	Sweden
Anja	Heidenreich	Switzerland
Malve	Heinz	Switzerland
Annelie	Holzkaemper	Switzerland
Paola	Bongiovani	Switzerland
Dr Mannava	Sivakumar	Switzerland
Nicholas	Draeger	Switzerland
Huey-Lin	Lee	Taiwan
Omari	Mzirai	Tanzania
Lieven	Claessens	Tanzania
Anthony	Whitbread	Tanzania
Arnold	Makama	Tanzania
Sarah	Mcclung	Tanzania
Jacob	Joseph	Tanzania
Barnabas	Msongaleli	Tanzania
Aidan	Nzumi	Tanzania
Mohamed	Salumu	Tanzania
Mitesh	Sawant	Thailand
Demba N. A.	Trawally	The Gambia
Dr Momodou	Darboe	The Gambia
Kokou Richard	Sewonou	Togo
Kitegi	Simon Pierre	Togo
Pilabina	Somiyabalo	Togo

Chaney	St. Martin	Trinidad & Tobago
Amir	Souissi	Tunisia
Radhoua	Naddari	Tunisia
Hudaverdi	Gurkan	Turkey
Ömer	Vanli	Turkey
Juliet	Alieto	Uganda
Michael	Iwadra	Uganda
Yamungu	Alongo Boniface	Uganda
Daniel	Nadhomi	Uganda
Carolyn	Chemutai Chelimo	Uganda
Oleh	Kovalenko	Ukraine
Eihab	Fathelrahman	United Arab Emirates
Andy	Challinor	United Kingdom
Joe	Gallear	United Kingdom
Emmanuel	Zuza	United Kingdom
Anna	Kotenko	United Kingdom
Murilo	Vianna	United Kingdom
Huiyi	Yang	United Kingdom
Nimai	Senapati	United Kingdom
Francesca	Harris	United Kingdom
Ann-Kristin	Koehler	United Kingdom
Chetan	Deva	United Kingdom
Mikhail	Semenov	United Kingdom
Ravinder	Kumar	United Kingdom
Martin	Parry	United Kingdom
Ishwar	Pun	United Kingdom
Mariana	Rufino	United Kingdom
Matthew	Smith	United Kingdom
Karina	Williams	United Kingdom
James	Hammond	United Kingdom
Heike	Rolker	United Kingdom
Alessandro	Moscuzza	United Kingdom
Pauline	Scheelbeek	United Kingdom
Carole	Dalin	United Kingdom
Stewart	Jennings	United Kingdom
Rachel	Dobson	United Kingdom
Mohammad Mamunr	Sarker	United Kingdom
Kanhu Charan	Pattnayak	United Kingdom
Tadesse	Asrat	United Kingdom
Maria	Suarez	United Kingdom
Carlos Alfredo	Robles-Zazueta	United Kingdom
Islam	Abdel-Aziz	United Kingdom

Niranjan	Panigrahi	United Kingdom
Hector	Camargo	United Kingdom
Ali	Benmustapha	United Kingdom
Alex	Slater	United Kingdom
Marcelo	Galdos	United Kingdom
Aiming	Qi	United Kingdom
Baktybek	Duisebek	United Kingdom
Emily	Hockenhull	United Kingdom
Andres	Berger	Uruguay
Hayden	Montgomery	Uruguay
Virginia	Pravia	Uruguay
Sanai	Li	Usa
Cheryl	Porter	Usa
Corey	Lesk	Usa
Ernie	Shea	Usa
James	Franke	Usa
Claire	Cvitanovich	Usa
Chittaranjan	Ray	Usa
Yongfa	You	Usa
Pingping	Jiang	Usa
Alessandra	Giannini	Usa
Gyami	Shrestha	Usa
Kaela	Lucke	Usa
Senthold	Asseng	Usa
Uriel	Cholula Rivera	Usa
Kenneth	Boote	Usa
James W. (Jim)	Jones	Usa
Michael	Maddox	Usa
Bruce	Kimball	Usa
Sam	Lin	Usa
Winston	Dawes	Usa
Yujing	Gao	Usa
Jean	Thomas	Usa
Sonali	Mcdermid	Usa
Amanda	Wang	Usa
Steve	Evett	Usa
Naomi	Fukagawa	Usa
Riyana	Razalee	Usa
Haynes	Stephens	Usa
Debendra	Shrestha	Usa
Keith	Wiebe	Usa
Meridel	Phillips	Usa
Bin	Peng	Usa

Fransha	Dace	Usa
Weston	Anderson	Usa
Sanketa	Kadam	Usa
Kevin	Karl	Usa
Amanda	Grossi	Usa
Oscar	Castillo	Usa
Luc	Olivier	Usa
Patricia	Moreno	Usa
Chuang	Zhao	Usa
Rogerio	De Souza Noia Junior	Usa
Yubin	Yang	Usa
David	Major	Usa
Susan	Saar	Usa
Katherine	Mcdonald Polakiewicz	Usa
Seojin	Cho	Usa
Jennifer	Woo Baidal	Usa
Jonathan	Winter	Usa
Elizabeth	Klovenski	Usa
Nathalie	Lambrecht	Usa
Vijayagopal	Kakani	Usa
Sichao	Wang	Usa
Kritika	Kothari	Usa
Ripendra	Awal	Usa
Haiye	Wang	Usa
Qiong	Su	Usa
Lawrence	Janicki	Usa
Montse	Salmeron	Usa
Sotirios	Archontoulis	Usa
Vakhtang	Shelia	Usa
Michael	Dabbene	Usa
Daniel	Da Cunha	Usa
Rabin	Bhattarai	Usa
Sherman	Robinson	Usa
Samuel	Porter	Usa
Arun	Kc	Usa
Reggie	Blake	Usa
Dr.Louis	Carter	Usa
Haimanote	Bayabil	Usa
Jeff	Mullen	Usa
Sangu	Angadi	Usa
Margo	Moss	Usa
Charlotte	Wagner	Usa
Umair	Gull	Usa

Kevin	Njabo	Usa
Diego	Pons	Usa
Michael	Schuppenhauer	Usa
Robert	Fofrich	Usa
Yawen	Huang	Usa
William	Baule	Usa
Dann	Williams	Usa
Dominique	Van Der Mensbrugghe	Usa
Rachel	Shekar	Usa
Elizabeth	Bobo	Usa
Ifekristi	Ogunwobi	Usa
Mark	Rosegrant	Usa
Tatiana	Gumucio	Usa
Lais	Miachon	Usa
Jorge	Izar	Usa
Sandra	Guzman	Usa
Susanne	Wiesner	Usa
Phillip	Alderman	Usa
Prateek	Sharma	Usa
Eeswaran	Rasu	Usa
Maksym	Chepeliev	Usa
Eunjin	Han	Usa
Alex	Ruane	Usa
Kyoung	Choi	Usa
Tom	Hertel	Usa
Roberto	Valdivia	Usa
Kelly	Thorp	Usa
Kate	Schneider	Usa
Maria	Dombrov	Usa
Alison	Rose	Usa
Santosh	Palmate	Usa
Jade	Charity	Usa
Curt	Reynolds	Usa
Mukesh	Mehata	Usa
Sadiya	Tijjani	Usa
Koffi	Djaman	Usa
Simon	Black	Usa
Nilam	Kayastha	Usa
Nava	Tabak	Usa
Erik	Mencos Contreras	Usa
Charlene	Wang	Usa
Timothy	Sulser	Usa
Keren	Mezuman	Usa

Kyungdahm	Yun	Usa
Sarah	Garland	Usa
Luis	Tedeschi	Usa
Uvirkaa	Akumaga	Usa
Mohammad	Bannayan	Usa
Dave	Fleisher	Usa
Lili	Xia	Usa
Ying	Zhang	Usa
Wenguang	Sun	Usa
Ann	Stapleton	Usa
Sylvie	Binder	Usa
Jose	Guarin	Usa
Davide	Cammarano	Usa
Vera	Kong	Usa
Philippe	Benoit	Usa
Robert	Beach	Usa
Sally	Qiu	Usa
Abigail	Snyder	Usa
Bruno	Basso	Usa
Morven	Mclean	Usa
David	Gustafson	Usa
John	Antle	Usa
Carolynne	Hultquist	Usa
Ruth	Defries	Usa
Jess	Fanzo	Usa
Kathrin	Schilling	Usa
Soo-Hyung	Kim	Usa
Ron	Sands	Usa
Elisabeth	Nebie	Usa
J. Nicolas	Hernandez-Aguilera	Usa
Jonas	Jaegermeyr	Usa
Malgosia	Madajewicz	Usa
K	L	Usa
Wang	Zhou	Usa
Ziqi	Qin	Usa
Jeffrey	Potent	Usa
Vijaya	Joshi	Usa
Sean	Mccartney	Usa
Shauna	Downs	Usa
Terry	Nipp	Usa
Jamie	Ponmattam	Usa
Srabashi	Ray	Usa
Claudia	Ringler	Usa

Rafael	Bruno	Usa
Pinki	Mondal	Usa
Annette	Nielsen	Usa
Cynthia	Rosenzweig	Usa
Steve	Buccola	Usa
Tim	Williams	Usa
Robert	Newton	Usa
Gerald	Nelson	Usa
Amor Valeriano	Ines	Usa
Greg	Thoma	Usa
Elvis	Elli	Usa
Marni	Mendelsohn	Usa
Ousseyni	Kalilou	Usa
Ali	Rashid Niaghi	Usa
Jawoo	Koo	Usa
Vaisha	Sharda	Usa
Mingliang	Liu	Usa
Alwin	Hopf	Usa
Carolyn	Mutter	Usa
Willingthon	Pavan	Usa
Atul	Jain	Usa
Stephen	Zebiak	Usa
Page	Kyle	Usa
Molly	Jahn	Usa
Jimmy	Adegoke	Usa
Jim	Hansen	Usa
Susan	Cantella	Usa
Brenda	Smith	Usa
Anne Alexis	Alexander	Usa
Edgar	Bautista	Usa
Lynda	Campbell	Usa
Adelia	Bovell-Benjamin	Usa
Mason	Blinson	Usa
Dara	Mendeloff	Usa
Kawa	Shinbun	Usa
Stephen	Walsh	Usa
Wei	Ren	Usa
Ruth	Young	Usa
Paul	Koch	Usa
Pamela	Koch	Usa
Naema	Hirad	Usa
Stefania	Almazan	Usa
Zachary	Gersten	Usa

Katherine	Riebe	Usa
Juliette	Paemelaere	Usa
Walter	Baethgen	Usa
Megan	Orourke	Usa
Ghassem	Asrar	Usa
Trinh	Mai Van	Vietnam
Tanh	Nguyen	Vietnam
Sridhar	Gummadi	Vietnam
Thi My Duyen	Trang	Vietnam
Xuan Khanh	Bui	Vietnam
Tendai	Gunda	Zambia
Patricia	Masikati	Zambia
Sabine	Homann	Zimbabwe
Respect	Musiyiwa	Zimbabwe
João	Silva	Zimbabwe
Tendai	Chibarabada	Zimbabwe
Givious	Sisito	Zimbabwe
Dorah	Mwenye	Zimbabwe
Esther Nyaradzo	Masvaya	Zimbabwe
Nomuhle	Nyoni	Zimbabwe
Bubuyagwahe	Majahana	Zimbabwe
Grown	Chirongwe	Zimbabwe
Obey	Daga	Zimbabwe