



Understanding the potential effects of climate change on world food production and identifying adaptation strategies to ensure global food security is a complex challenge. To address these concerns, scientists from the USDA-ARS, Columbia University and University of Florida are leading the Agricultural Model Intercomparison and Improvement Project (AgMIP), with participation from scientists representing 40 countries and their crops, cropping systems, regional climates, and economics. The goals of AgMIP are to advance characterization of the potential effects of climate change on world food security, and to enhance agricultural climate change adaptation capacity for all countries. The approach compares and improves crop yield simulation models using shared historical data from participating countries. An ensemble composed of different crop models linked with economic models will be created to produce simulations of the impacts of future climate scenarios on yields and economics. Partnerships have been developed with Oregon State University, Wageningen University, IFPRI, and CSIRO to expand AgMIP collaborations.

Regional workshops have been conducted in South America, Sub Saharan Africa, India, Europe, and North America. During the workshops an approach for integrating crop, climate, and economic data through an innovative information technology structure was developed for identification of adaptation strategies for world cropping systems. Inter comparison and improvement of wheat and corn models is currently underway, with planned expansions to rice, sugarcane, millet, peanut, soybean, and sorghum models. As part of the improvement effort, attention has been focused on the interacting effects of carbon dioxide, water, and temperature on crop growth and yield how these effects can be incorporated into crop models. Funding received from DFID in the United Kingdom was used to begin the training and inter comparison of crop models for developing countries in Africa and South Asia via five funded projects per region. Workshops are being conducted to define and review the goals of these projects. Projects for Sub Saharan Africa were organized during September 2012 in Ghana and the South Asian projects will be organized during November 2012.

Partnerships with other groups having similar goals as AgMIP including CCAFS, Global Futures, SERVIR, MACSUR, IPCC, and ISI-MIP have been developed. Discussions have identified the need for an alliance with ongoing projects around the world to foster more effective information exchange and collaboration towards future food security. These groups met as part of the 3rd Global AgMIP Meeting in Rome during October 2012.

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