

AgMIP

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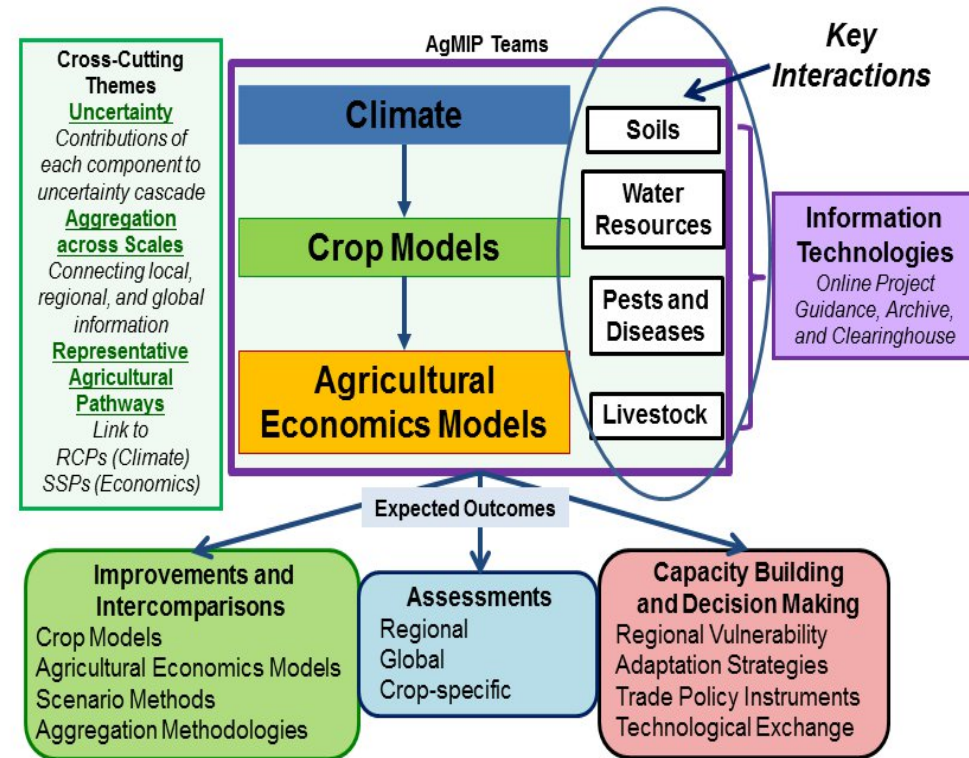
**Technische Universität München
Digital Agriculture
Hans Eisenmann-Forum for Agricultural Sciences**

**NASA Goddard Institute for Space Studies
& Columbia University**

Agricultural Model Intercomparison and Improvement Project

AgMIP is a distributed program:

- model intercomparison and future climate change impacts
- multiple climate, crop & agricultural economics modeling groups around the world
- started in 2010
- > 1000 members
- > 40 teams



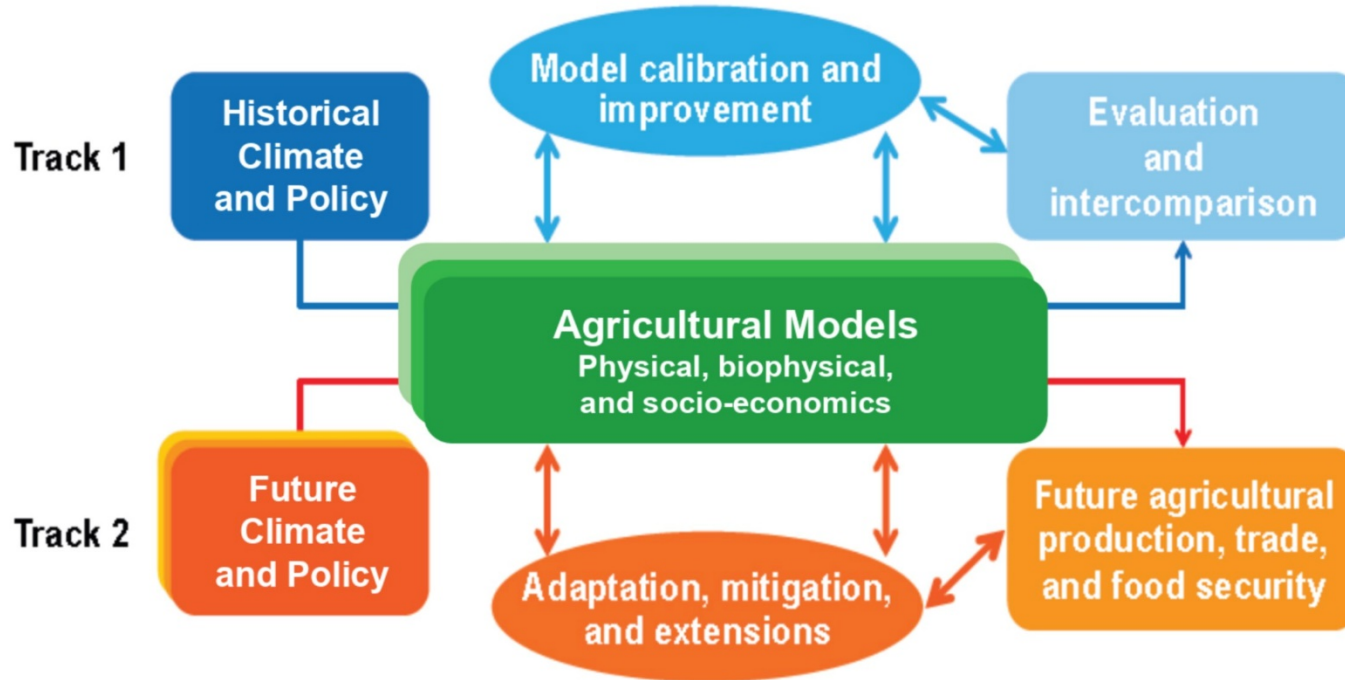
Mission

...to significantly improve agricultural models ... for assessing the sustainability of agricultural systems, including impacts of climate change ... the goal is to create a next-generation knowledge platform for agricultural modeling worldwide.

Rosenzweig et al., 2013 AFM

www.agmip.org

Agricultural Model Intercomparison and Improvement Project

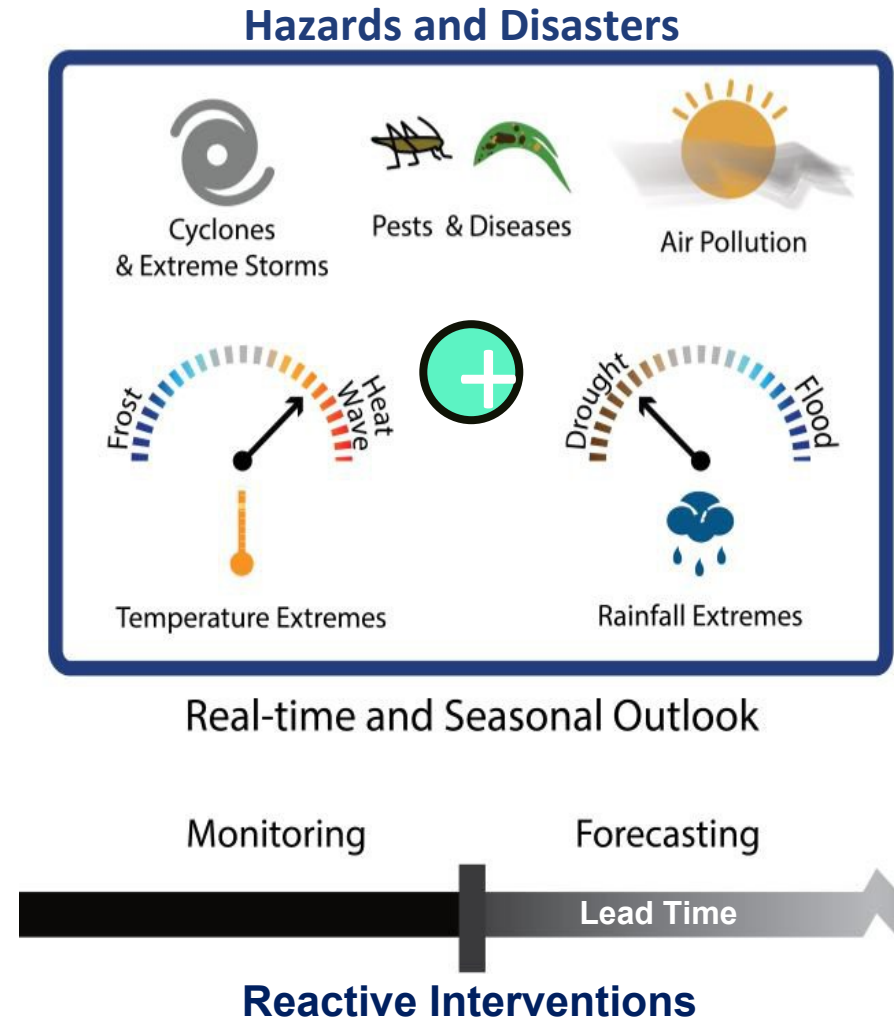


Modified after Rosenzweig et al., 2013 AFM

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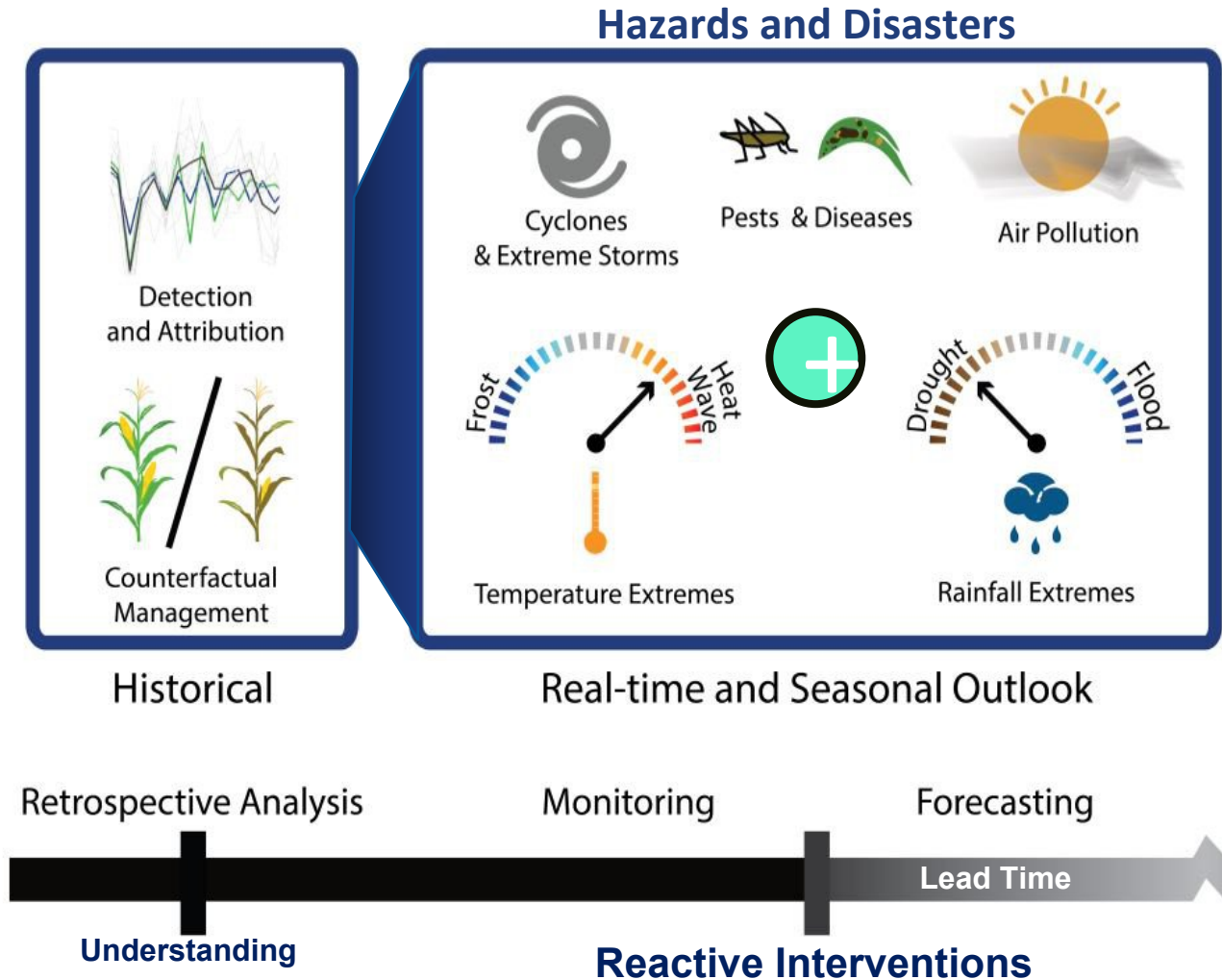
AgMIP Applications across Time Horizons

Understanding, projecting, and preparing for shocks



Ruane et al., in prep

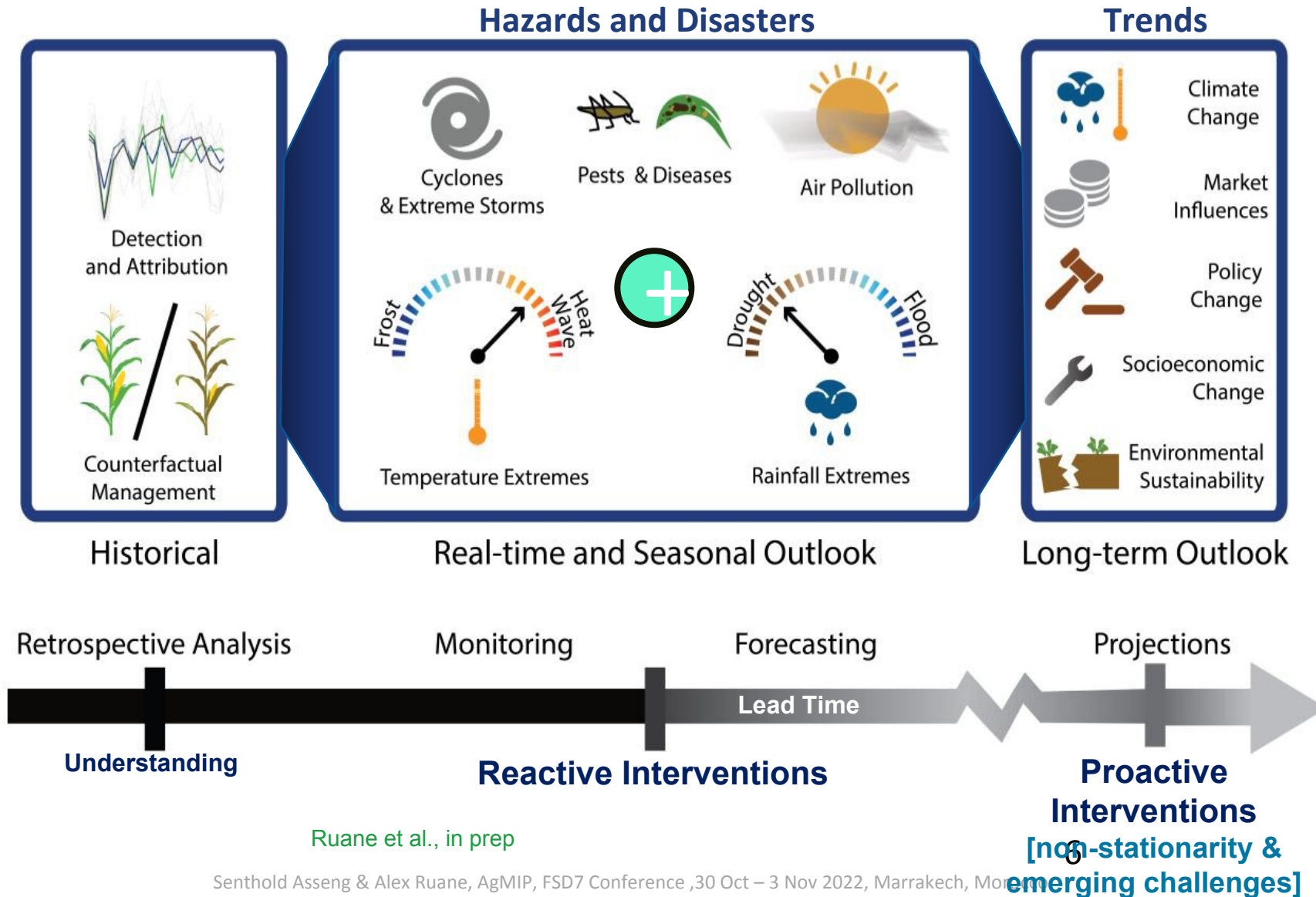
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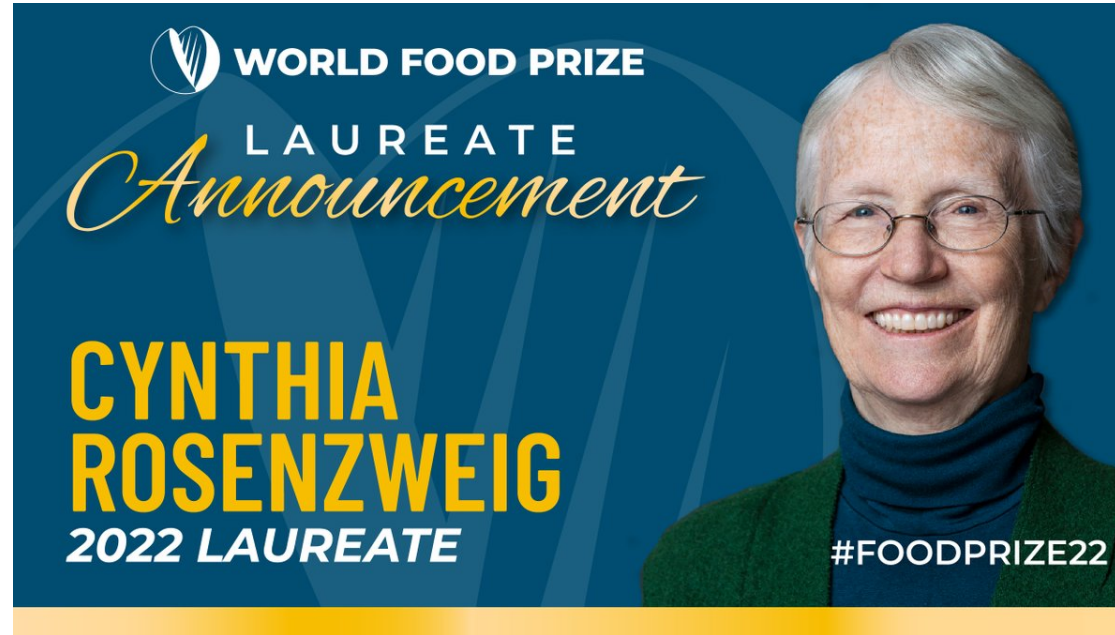
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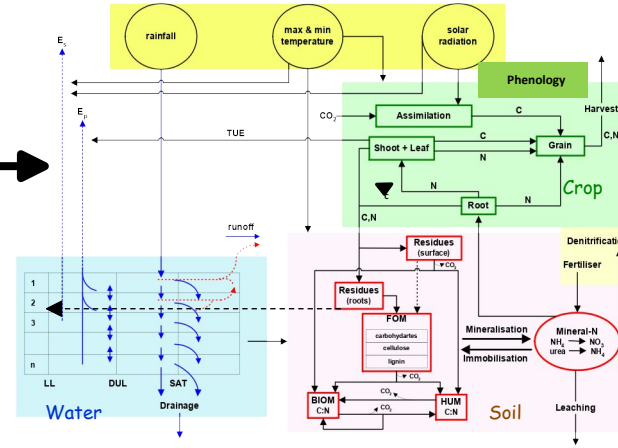


NASA Scientist Dr. Cynthia Rosenzweig, founder of AgMIP

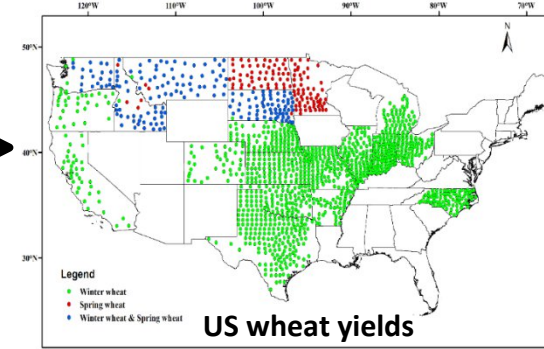
Experiments



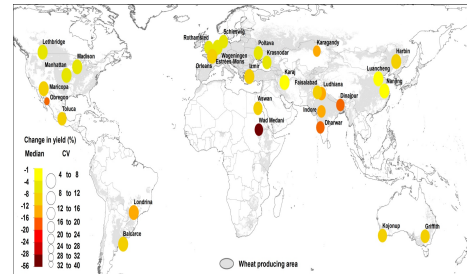
Crop models



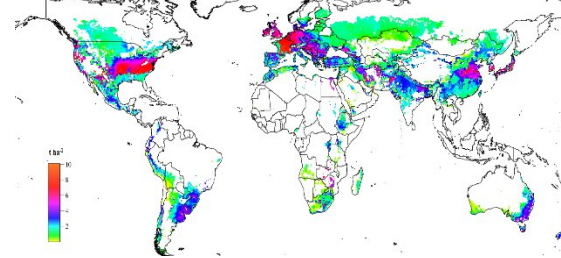
Statistical models



Multi-model points



Global-gridded



Impact

Multi-model ensembles

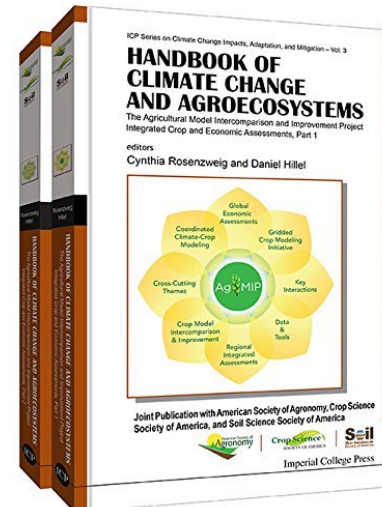
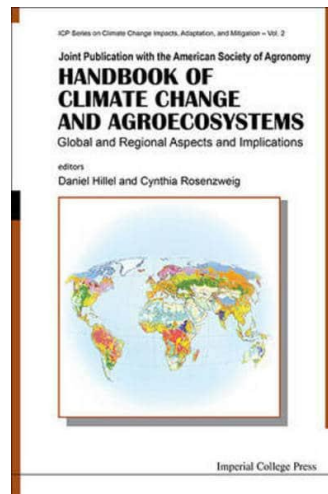
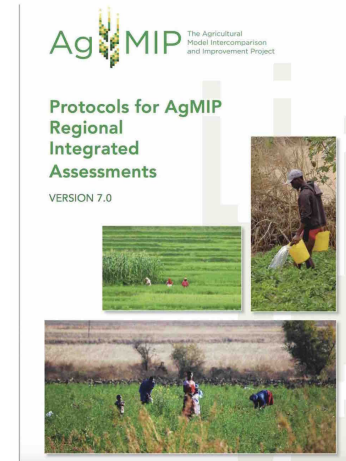
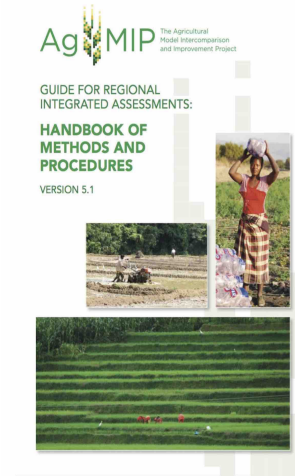
- **Multi-model ensemble median is a better predictor than any single model !**
- **Wheat yields --- *Asseng et al. 2013 Nature CC***
- **Wheat yields (heat stress) --- *Asseng et al. 2015 Nature CC***
- **Wheat variables --- *Martre et al. 2014 GCB***
- **Maize yields --- *Bassu et al. 2014 GCB***
- **Rice yields --- *Li et al. 2014 GCB***
- **Potato yields --- *Fleisher et al. 2016 GCB***
- **Stats explanation --- *Wallach et al. 2018 GCB***

Building an AgMIP - Team

- 1. Scientific focus**
- 2. Protocol**
- 3. Trust**
- 4. Goal**

1. Scientific focus
2. Protocol
3. Trust
4. Goal

<https://agmip.org/>



Alex Ruane – AgMIP MENA:

1. Alex presented the **AgMIP adaptation team approach** to the Climate Change Information Centre (CCIC) in Cairo, which engaged stakeholders from the research, ministerial and development aid communities.
2. This also helped catalyze an award from the US State Department which will **fund** a team of **Egyptian agricultural modelers** to travel to the USA to learn AgMIP's protocol-based approaches from AgMIP leaders in New York, Florida, and Oregon. It would be great if we could expand that team and include more participants from the MENA region, but we would need additional funds and coordination to make that happen.
3. We are also hoping to connect to the **AIM4Climate partnership** led by the USA and UAE to bring climate-smart approaches to agriculture around the world.
4. We continue to look for **opportunities to work with** our colleagues at the Mohammad VI Polytechnic University in Morocco, who are also keen on building up AgMIP activities in the region.

Protocol-based activities to build modeling capabilities

- **AgMIP activities to address specific biophysical, methodological, and policy questions**

Regional to National Integrated Assessment

- **Building transdisciplinary teams to provide scientific information for development, adaptation, and mitigation planning**

Possibilities for AgMIP-MENA

- **Learning from organization and ambition of other AgMIP country teams to build a program tailored for MENA**