Current work and modeling approach

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The CGIAR Research Agenda

**Reduced Poverty**
- Increased resilience of the poor to climate change and other shocks
- Enhanced smallholder market access
- Increased incomes and employment
- Increased productivity

**Improved food and nutrition security for health**
- Improved diets for poor and vulnerable people
- Improved food safety

**Improved natural resource systems and ecosystem services**
- Improved human and animal health through better agricultural practices
- Natural capital enhanced and protected, especially from climate change
- Enhanced benefit from ecosystem goods and services
- More sustainably managed agro-ecosystems

System Level Outcomes (SLOs) and Intermediate Development Objectives (IDOs)
1. Improved modeling tools

- Complete recoding of IMPACT version 3
- Disaggregation geographically and by commodity
- Improved water & crop models
- New data management system
- Modular framework
- Training
2. Stronger community of practice

• 12 CGIAR centers now participating in GFSF
  • IFPRI, CIAT, CIMMYT, CIP, ICARDA, ICRAF, ICRISAT, IITA, ILRI, IRRI, IWMI, WorldFish

• Collaboration with other leading global economic modeling groups through AgMIP
3. Improved assessments

- Role of agricultural technologies
- Africa regional reports
- Analyses by CGIAR centers
- CCAFS regional studies
- AgMIP global economic assessments
The Agricultural Model Intercomparison and Improvement Project (AgMIP)

Climate
- General circulation models (GCMs)
  - ΔTemp., ΔPrec., ...

Biophysical
- Global gridded crop models (GGCMs)
  - ΔYield (Biophysical)

Economic
- Global economic models
  - ΔArea, ΔYield, ΔCons., ΔTrade

Source: Nelson et al., PNAS (2014)
Climate change effects on agriculture:
Economic responses to biophysical shocks

Source: Nelson et al., PNAS (2014)
4. Informing decision making

- CGIAR centers
- CGIAR Research Programs
  - RTB, Dryland Cereals, Grain Legumes; Maize, Wheat, Dryland Systems, Livestock & Fish...
- National partners
  - MENA, S & SE Asia, Latin America, Sub-Saharan Africa, Central Asia
- Regional organizations
  - ASARECA, COMESA, CORAF/WECARD, FANRPAN, FARA, FLAR
- International organizations and donors
  - OECD, FAO, ADB, IDB, IFAD, WB, BMGF, DFID, USDA
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