



GLOBAL EVENT

JOHANNESBURG SOUTH AFRICA

FORESIGHT MODELING TO INFORM DECISION MAKING FOR AGRICULTURAL DEVELOPMENT AND FOOD SECURITY

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Johannesburg, 6 April 2016



Long-term challenges arising from changes in...

- Population
- Income
- Urbanization
- Diets
- Resources
- Climate



<http://www.government.nl/disc?c=getobject&s=obj&objectid=101492>

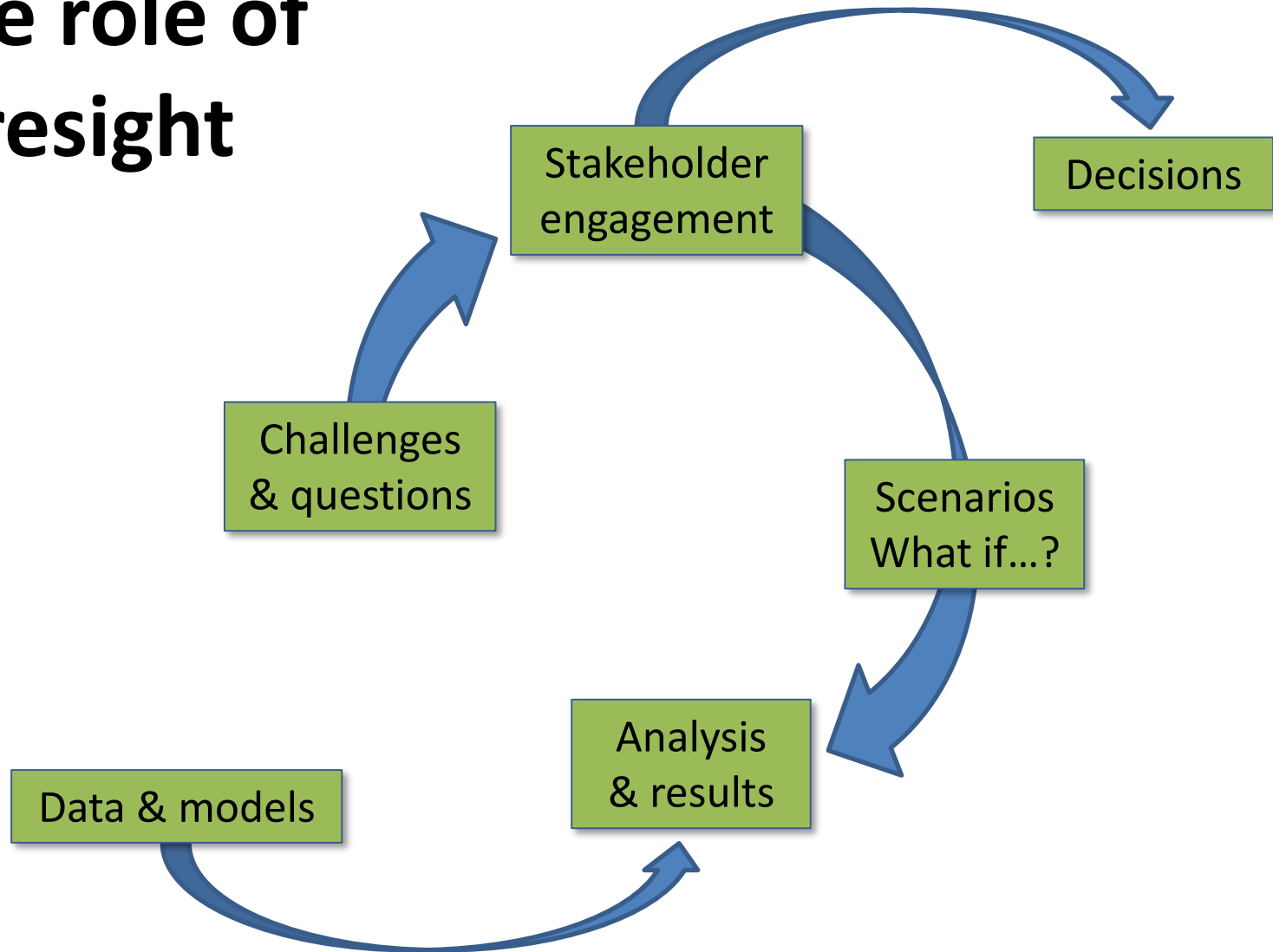


[http://en.wikipedia.org/wiki/File:Fast_food_\(282678968\).jpg](http://en.wikipedia.org/wiki/File:Fast_food_(282678968).jpg)



<http://media.npr.org/assets/img/2012/07/18/drought188b9a6db718dda8191968da9731619c0a2daa3655-s40-c85.jpg>

The role of foresight



Global Futures & Strategic Foresight

1. Improved tools



2. Stronger community of practice



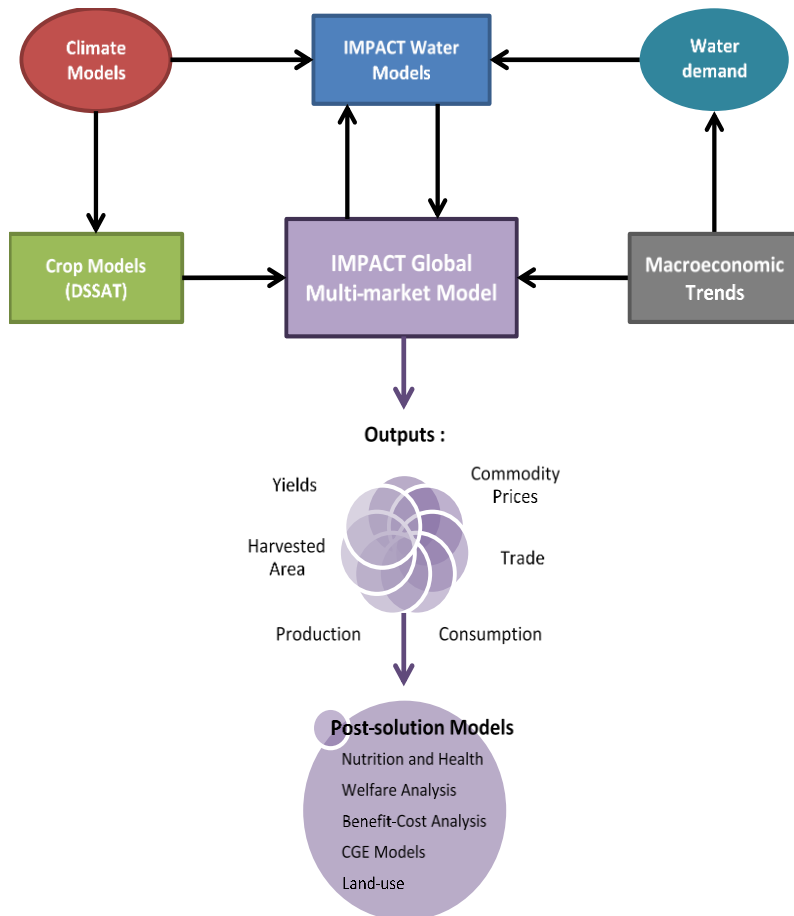
3. Exploring alternative futures



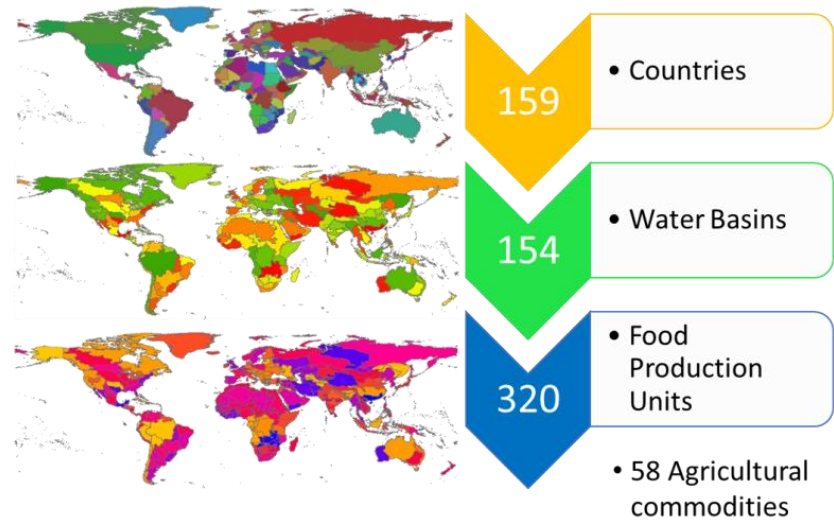
4. Informing decisions



1. Improved modeling tools

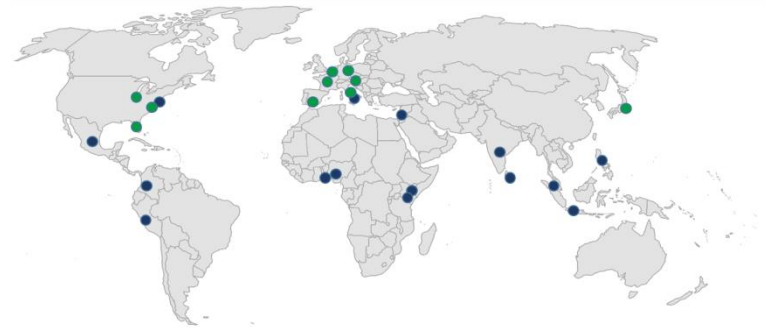


- Climate models
- Water models
- Crop models
- IMPACT economic model



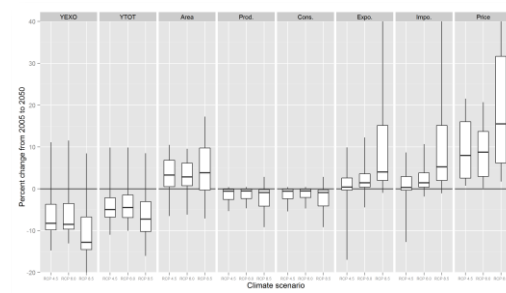
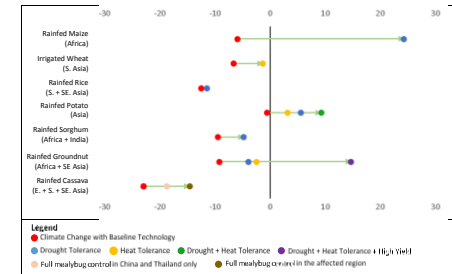
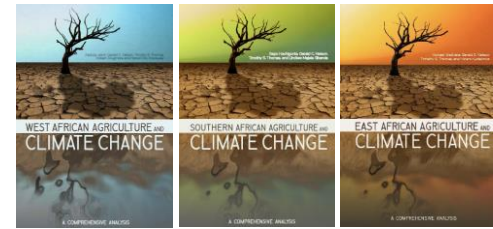
2. Stronger community of practice

- All 15 CGIAR centers now participate in GFSF
 - AfricaRice, Bioversity, CIAT, CIFOR, CIMMYT, CIP, ICARDA, ICRAF, ICRISAT, IFPRI, IITA, ILRI, IRRI, IWMI, WorldFish
- Collaboration with other global economic modeling groups through AgMIP
 - PIK, GTAP, Wageningen, IIASA, UFL, FAO, OECD, EC/JRC, USDA/ERS, ...

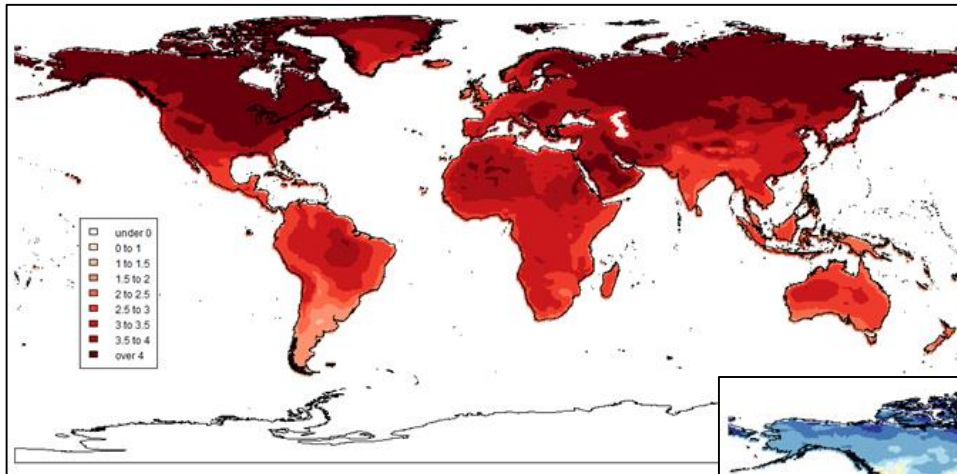


3. Exploring alternative futures

- Role of agricultural technologies
- Regional studies
- Analyses by CGIAR centers
- AgMIP global economic assessments
- Private sector

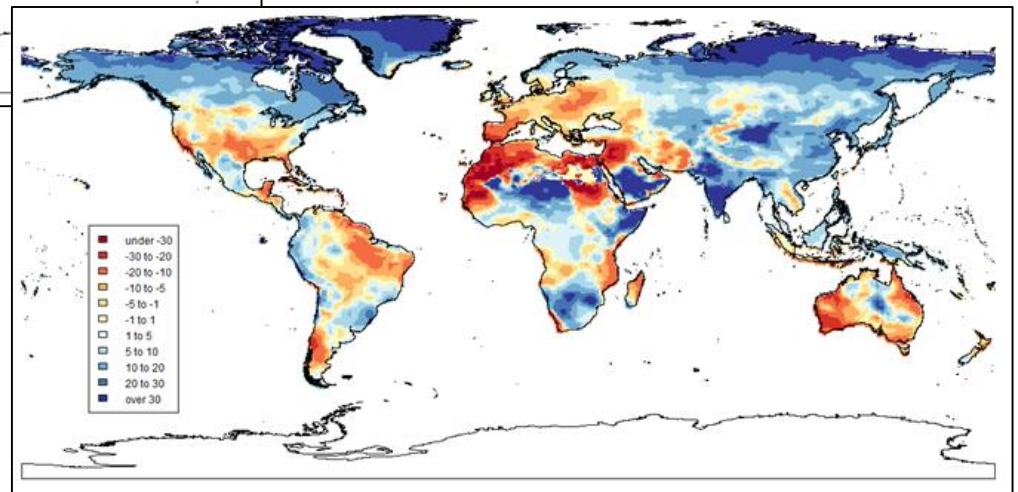


Changes in temperature and precipitation in 2050 compared to 2000 (HadGEM2, RCP 8.5)

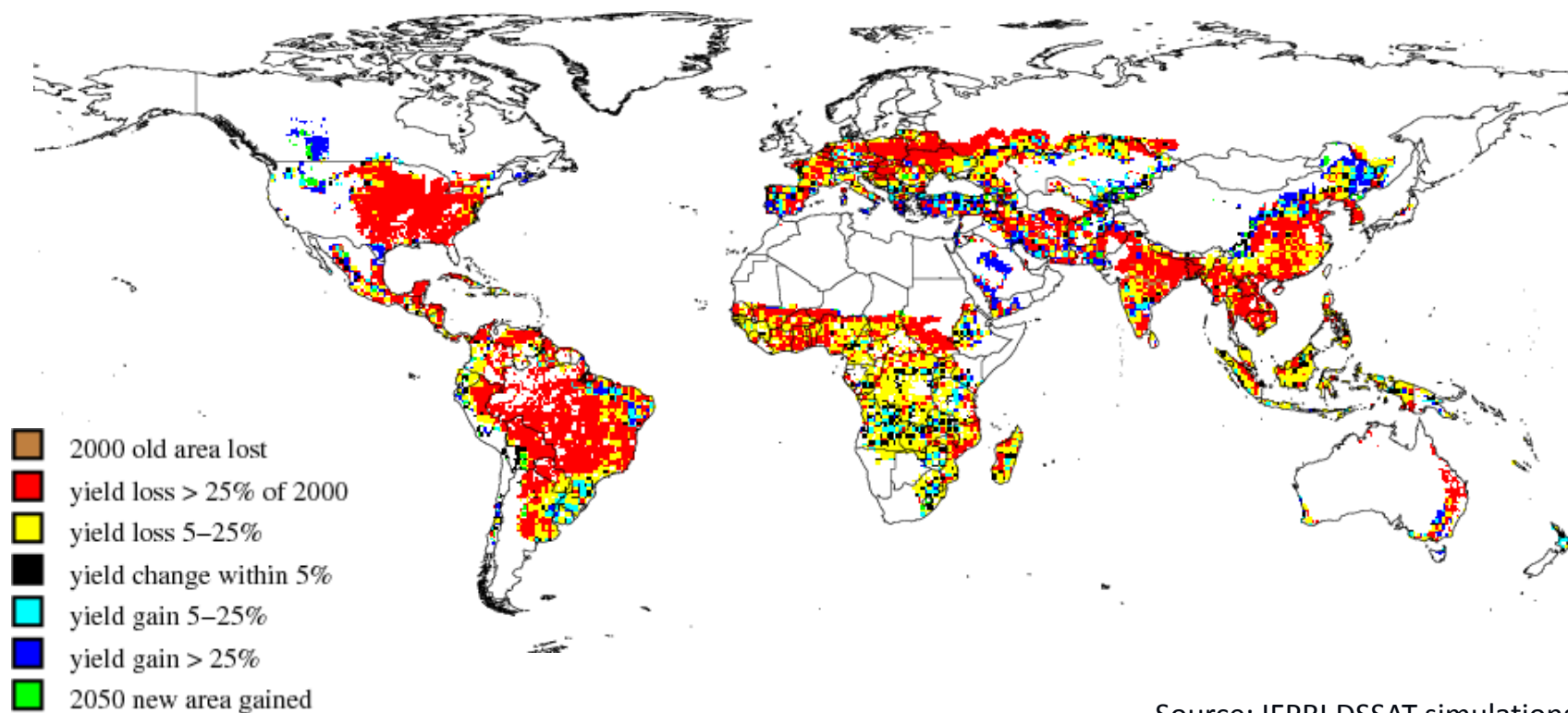


Maximum temperature (°C)

Annual precipitation (mm)

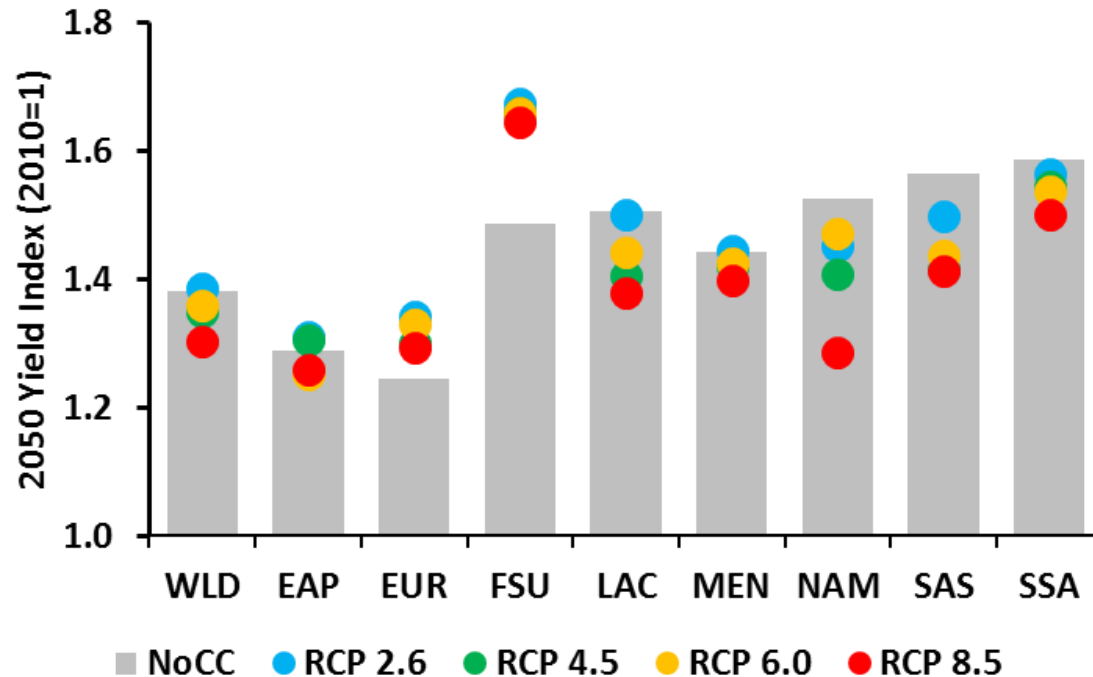


Climate change and rainfed maize yields in 2050, before economic responses (HadGEM2, RCP 8.5)



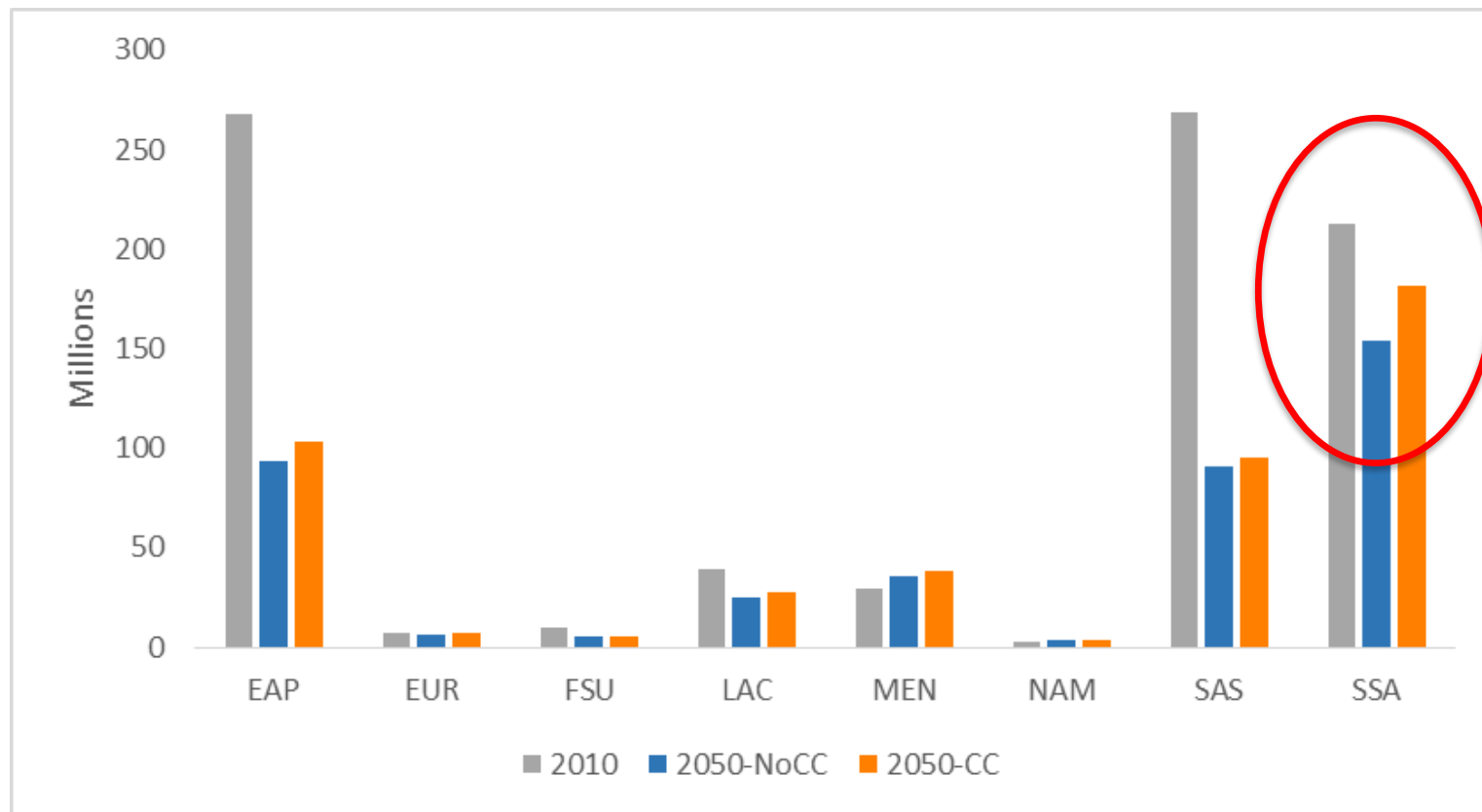
Source: IFPRI DSSAT simulations

Climate change impacts on cereal yields in 2050, by region (SSP2)



WLD = World; EAP = East Asia and Pacific; EUR = Europe; FSU = Former Soviet Union; LAC = Latin America and Caribbean; MEN = Middle East and North Africa; NAM = North America; SAS = South Asia; SSA = Sub-Saharan Africa

Population at risk of hunger (SSP2, RCP8.5)

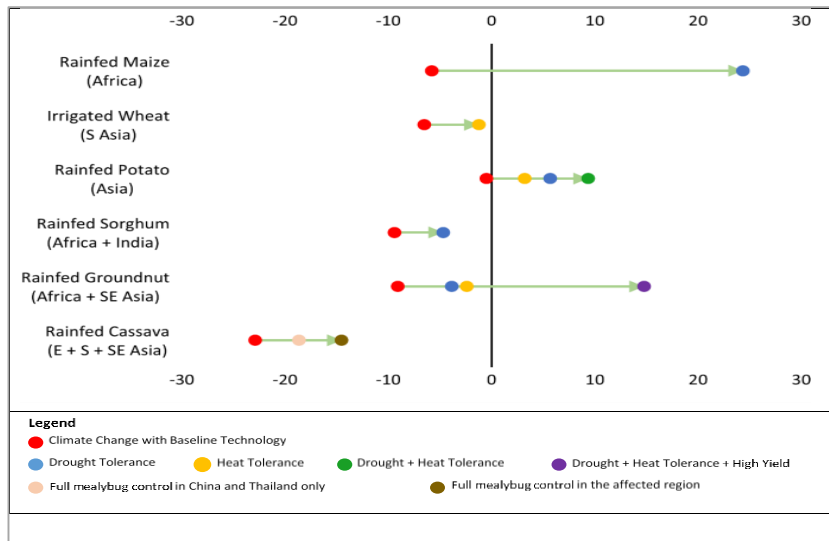


EAP = East Asia and Pacific; EUR = Europe; FSU = Former Soviet Union; LAC = Latin America and Caribbean; MEN = Middle East and North Africa; NAM = North America; SAS = South Asia; SSA = Sub-Saharan Africa

Exploring the impacts of improved technologies and practices on...

Crop yields

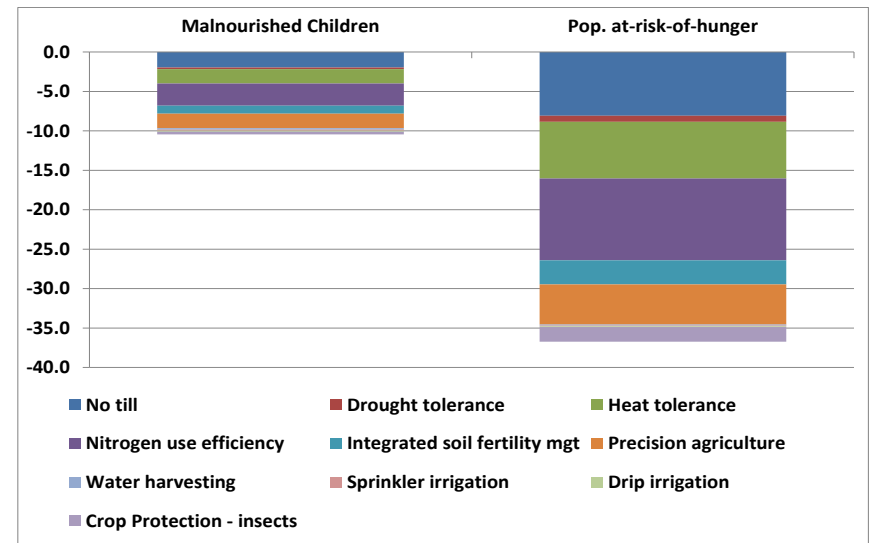
(Percent difference from 2050 CC baseline)



Source: Islam et al. (draft)

Food Security

(Percent difference from 2050 CC baseline)



Source: Rosegrant et al. (2014)

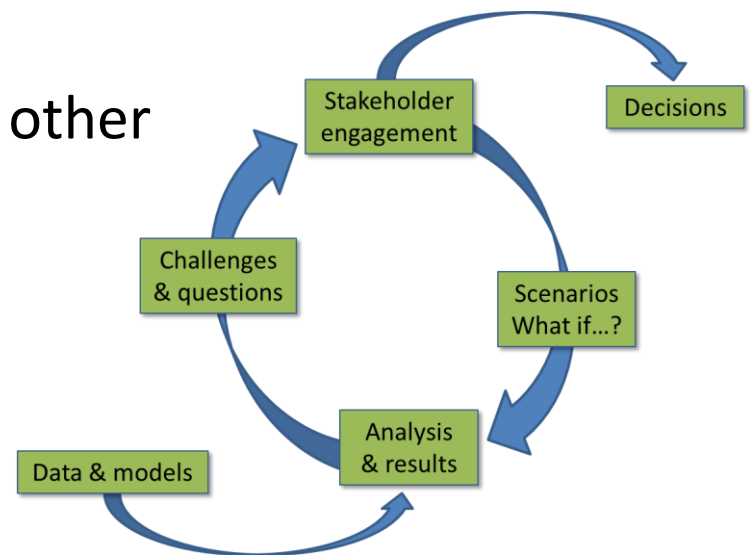
4. Informing decisions

- CGIAR
- National partners
- Regional organizations
- International organizations and donors



Concluding thoughts

- Not one future but many possible futures
- Which of the many is realized depends on our choices
- Understanding those choices requires many tools and approaches
- We look forward to engaging with other GCARD partners





agriculture,
forestry & fisheries

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Thank you

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