



CLIMATE  
CHANGE  
AGRICULTURE AND  
FOOD SECURITY

# CCAFS – An Introduction

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Chair, CCAFS Independent Science Panel

# UN Millennium Development Goals

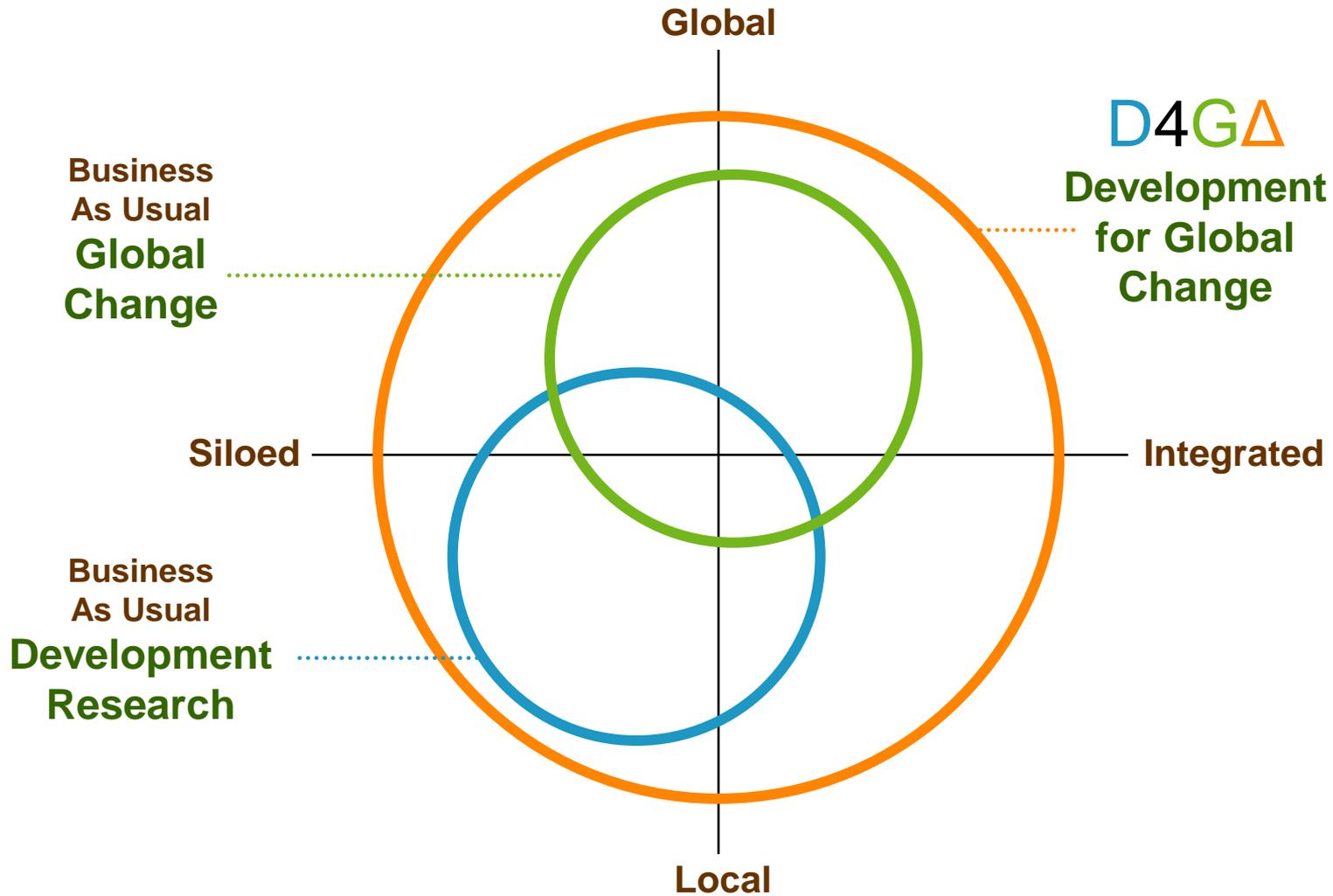


The number of undernourished people is increasing, while we are constrained by:



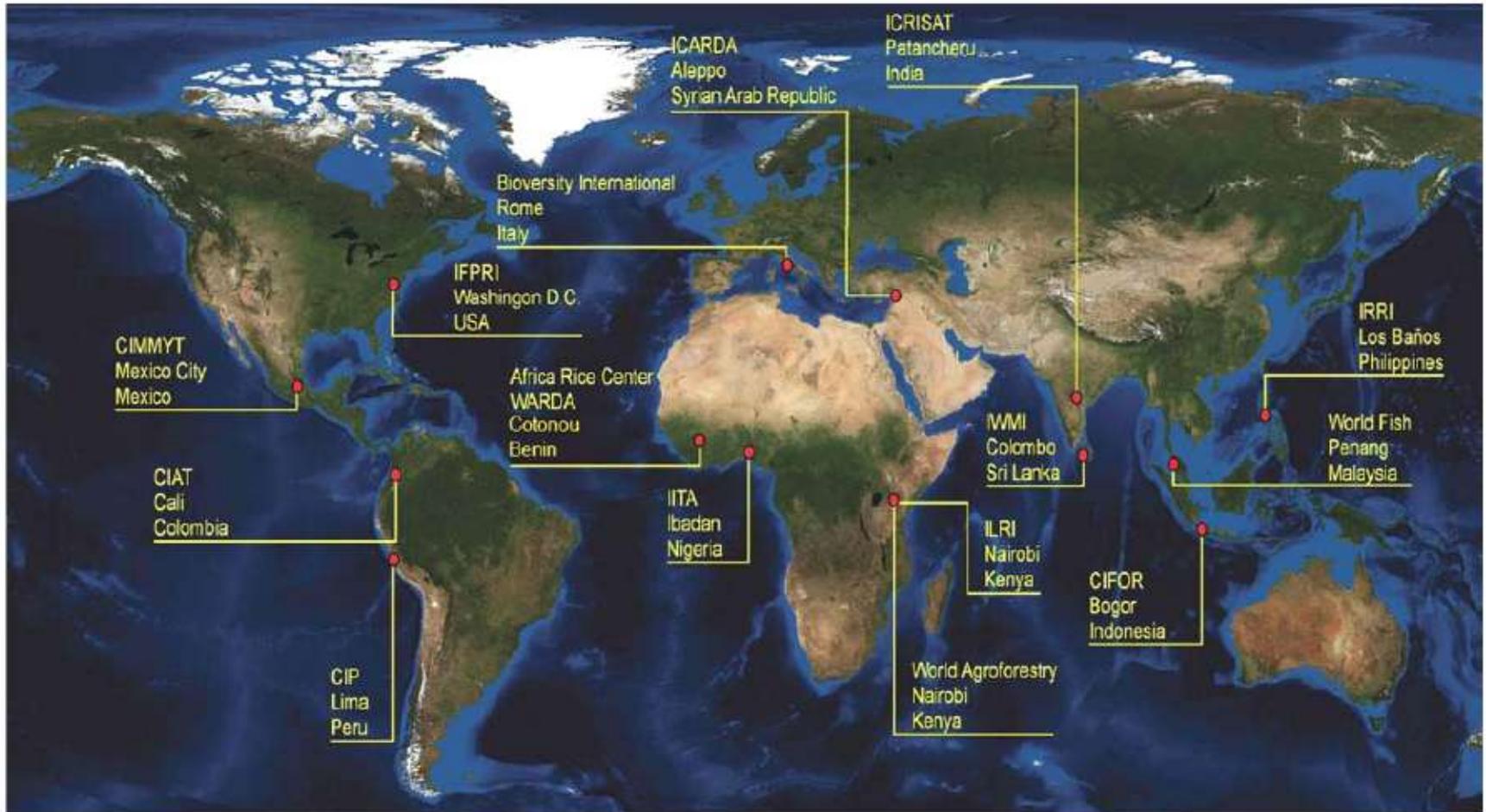
Rockström et al., Nature, 461 472-475 (2009)

# The Challenge



Adapted from Sara Farley, The World Bank

# 15 CGIAR Centres



**15 centers, 8,500 scientists and staff**

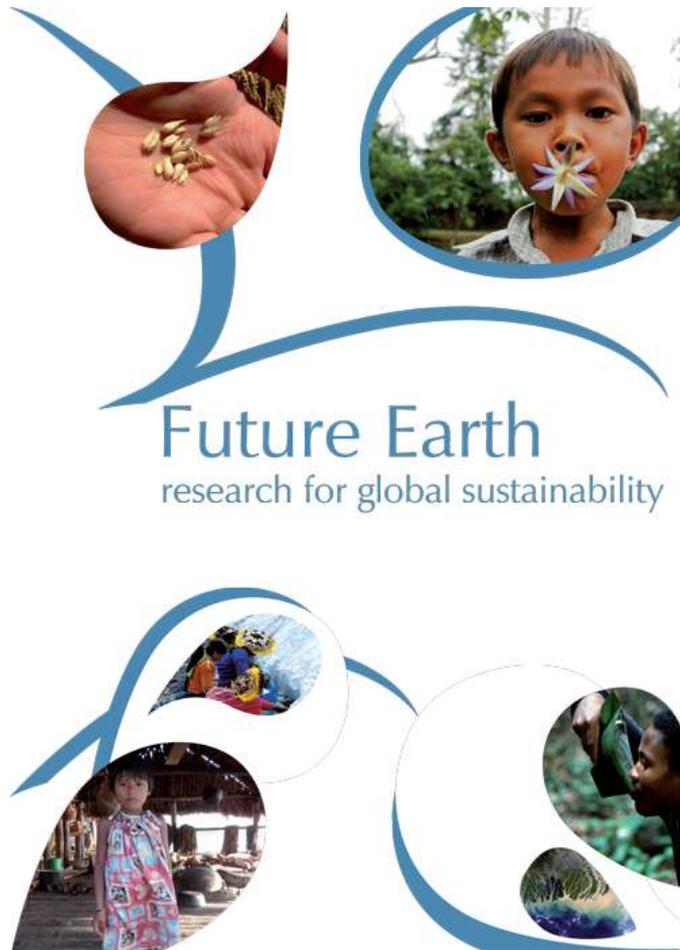
# A partnership



**CGIAR +  
Earth System Science Partnership  
(ESSP); Future Earth from 2013.**



# ICSU Future Earth



- A 10-year initiative based on current Earth System Science Programmes):
- World Climate Research Programme (WCRP)
  - International Geosphere-Biosphere Programme (IGBP)
  - International Human Dimensions Programme on Global Environmental Change (IHDP)
  - DIVERSITAS – a programme on biodiversity research
- plus
- Programme on Ecosystem Change and Society (PECS)
  - Integrated Research on Disaster Risk (IRDR)

Co-designed by a global Alliance of partners

**BELMONT**  
FORUM



**ICSU**

International Council for Science

# Future Earth - Research for global sustainability



Note: WMO is an observer

13 July 2012

FACCE JPI Dublin

# CCAFS objectives



1. Identify and develop **pro-poor adaptation, risk management and mitigation practices, technologies and policies** for agriculture and food systems.
2. Support agricultural issues in **climate change policies**, and of climate issues in **agricultural policies**, at all levels.

# Climate variability and change

*Technologies, practices, policies  
and capacity enhancement:*

- 1. Adaptation to progressive climate change**
- 2. Adaptation through managing climate risk**
- 3. Pro-poor climate change mitigation**
- 4. Integration for decision making**

Improved  
environmental  
benefits

Improved  
livelihoods

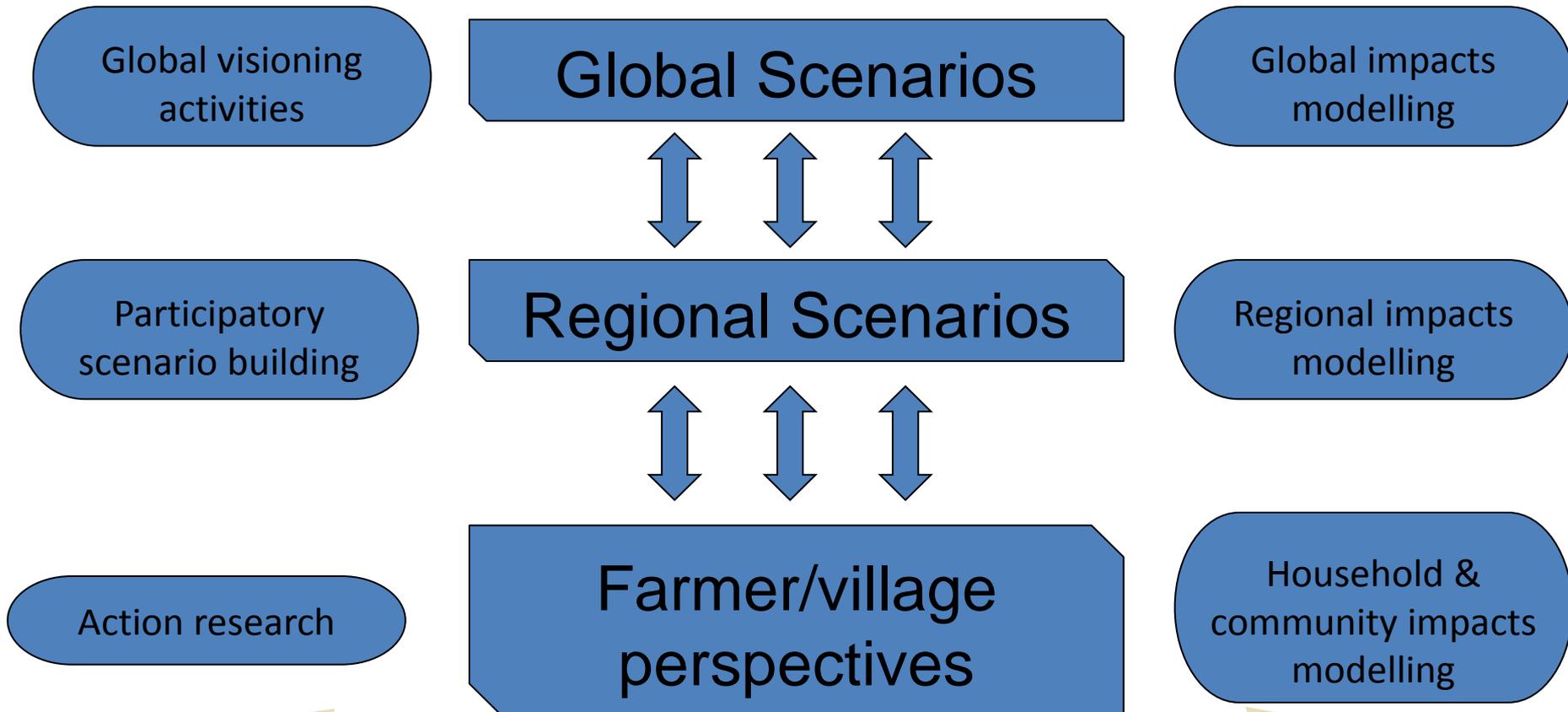
Improved  
food security

Trade-offs and synergies

Enhanced adaptive  
capacity in agricultural,  
NRM & food systems

# Linking Visioning at Different Levels

## Future Earth (ESSP)

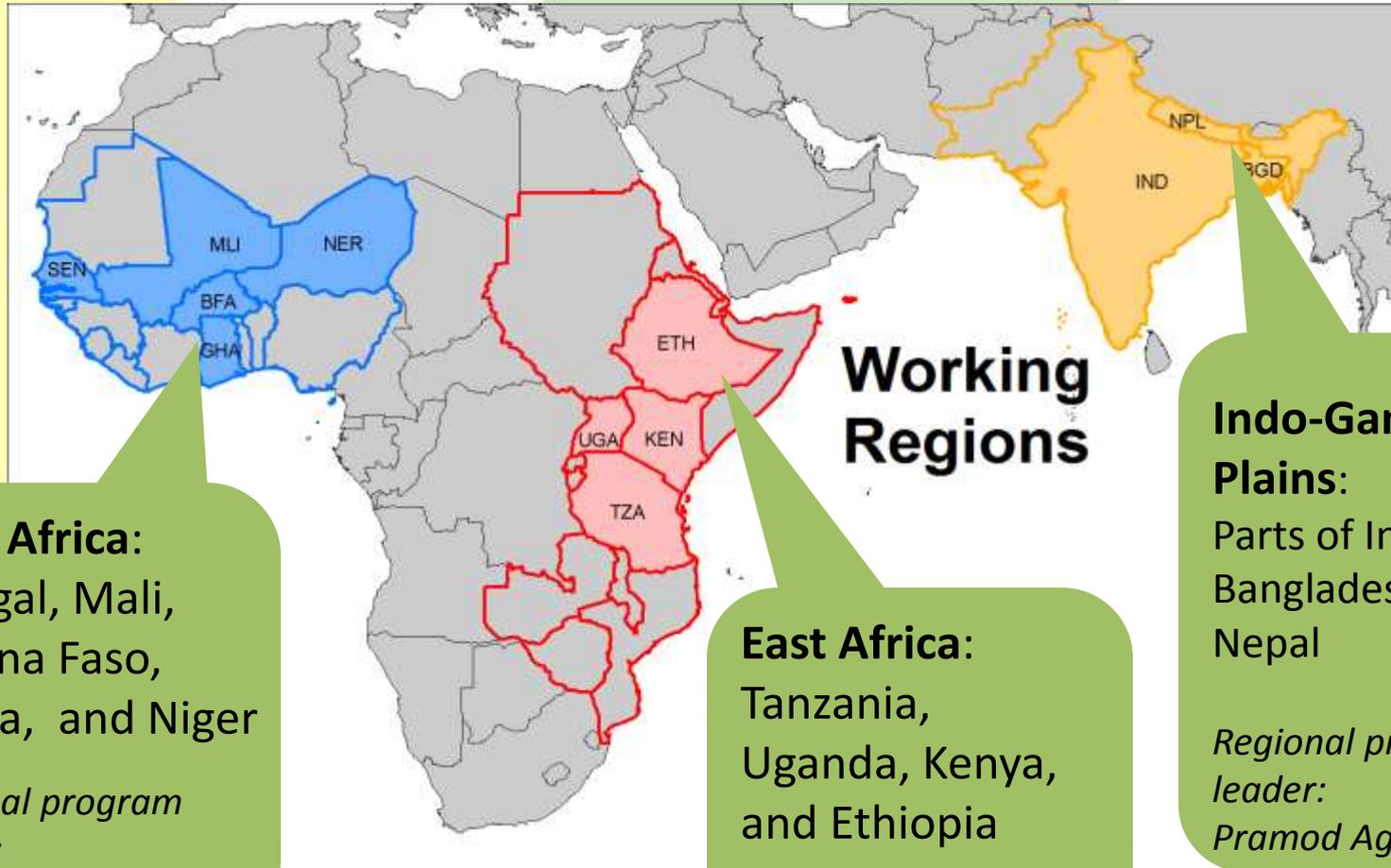


**CGIAR**

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# Place-based field and policy work



**West Africa:**  
Senegal, Mali,  
Burkina Faso,  
Ghana, and Niger

*Regional program  
leader:*

*Robert Zougmore*

**East Africa:**  
Tanzania,  
Uganda, Kenya,  
and Ethiopia

*Regional program  
leader:*

*James Kinyangi*

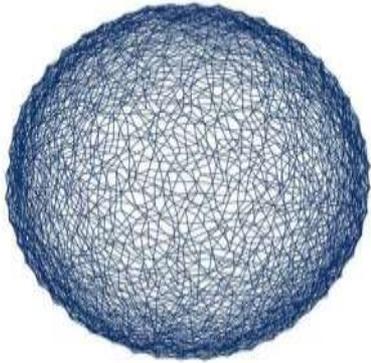
**Indo-Gangetic  
Plains:**  
Parts of India,  
Bangladesh,  
Nepal

*Regional program  
leader:*

*Pramod Aggarwal*

# CCAFS Budget 2012

COST CATEGORY	2012 Business Plan		2012 Revised		Variance
		Share		Share	
Personnel	21,279	30%	19,805	30%	-7%
Collaborators/Partnership Costs - CG Centers		0%	2,235	3%	
Collaborators/Partnership Costs - Others	22,381	31%	16,053	25%	-28%
Supplies and services	11,545	16%	11,948	18%	3%
Operational travel	2,937	4%	3,661	6%	25%
Depreciation	1,431	2%	1,050	2%	-27%
Contingency	634	1%	431	1%	-32%
<b>Subtotal</b>	<b>60,207</b>	<b>85%</b>	<b>55,184</b>	<b>85%</b>	<b>-8%</b>
Indirect costs	10,910	15%	10,079	15%	-8%
<b>TOTAL</b>	<b>71,117</b>	<b>100%</b>	<b>65,264</b>	<b>100%</b>	<b>-8%</b>
<b>Funding Sources</b>					
CGIAR Funding	55,023		45,814		-17%
Bilateral	16,094		19,449		21%
<b>TOTAL FUNDING SOURCES</b>	<b>71,117</b>		<b>65,264</b>		<b>-8%</b>



COP15  
COPENHAGEN  
UN CLIMATE CHANGE CONFERENCE 2009



**COP17/CMP7**  
**UNITED NATIONS**  
CLIMATE CHANGE CONFERENCE 2011  
**DURBAN, SOUTH AFRICA**

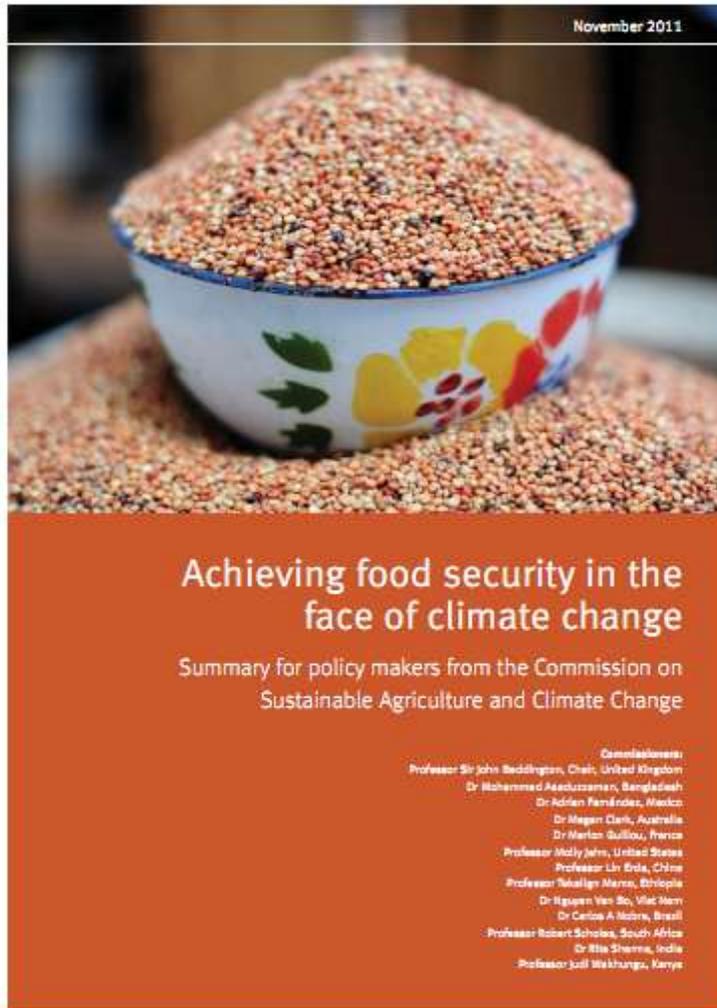


Agriculture & Rural  
Development Day

Durban, South Africa 3 December 2011

... and in Rio on 18 June 2012

# The Beddington Commission



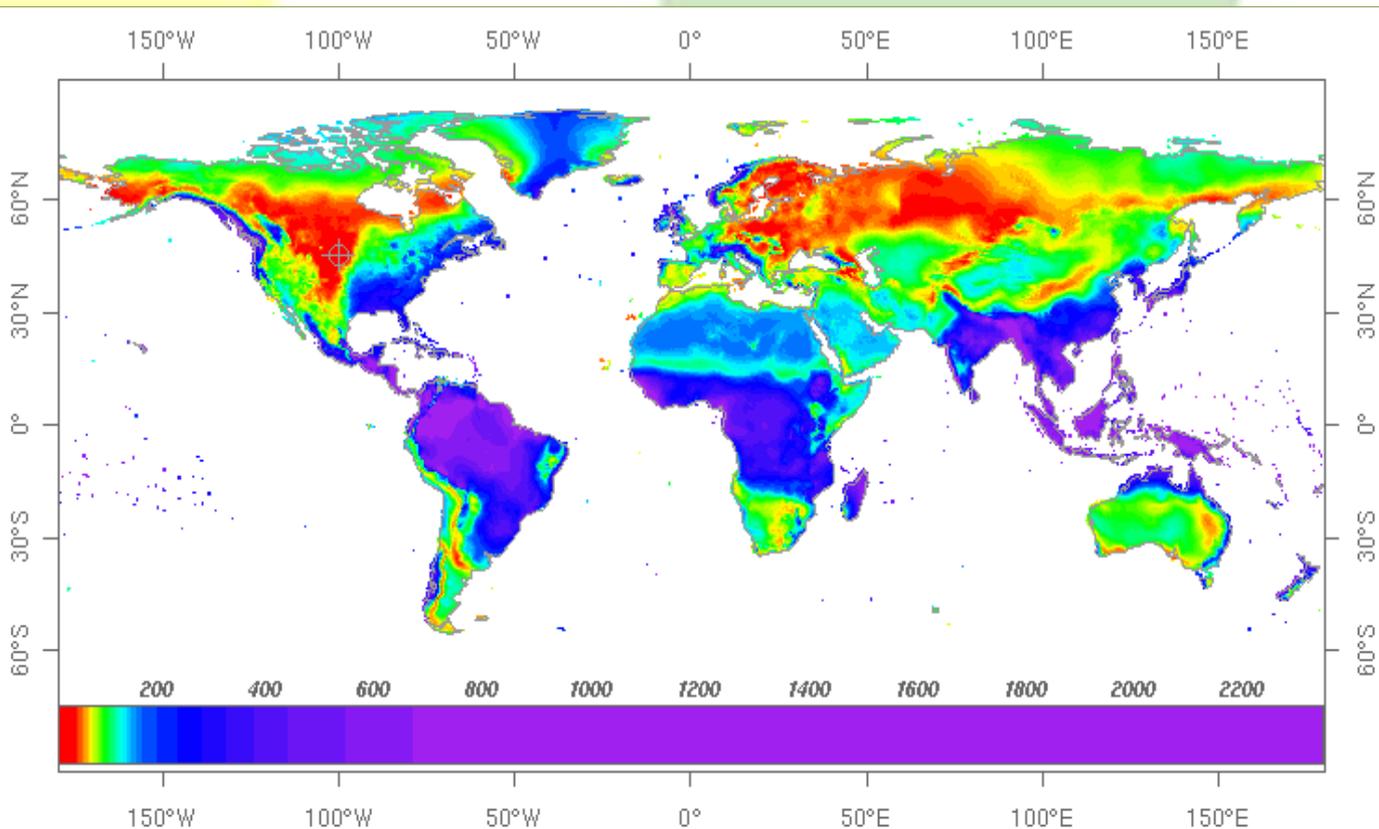
was chaired by Professor Sir John Beddington and reported its summary conclusions during COP17 in Durban, December 2011 and the full report at Planet under Pressure in London last March.

Seven recommendations to influence the Rio+20 negotiations, UN FCCC, etc.



# Some results

***Climatic analogue tool*** identifies where the climate today is a likely analogue to the future climate at another location.



CLIMATIC DISSIMILARITY BETWEEN 100.22W 45.1N in 2030 (HadCM3 A2 scenario) AND HadCRU TS3 (MONTHLY MEANS) FOR ALL GRIDCELLS  
13 July 2012 FACCE JPI Dublin

Evaluate whether successful adaptation options in one place are transferrable to a future climatic analogue site.

# Improving Delivery of Seasonal Forecasts



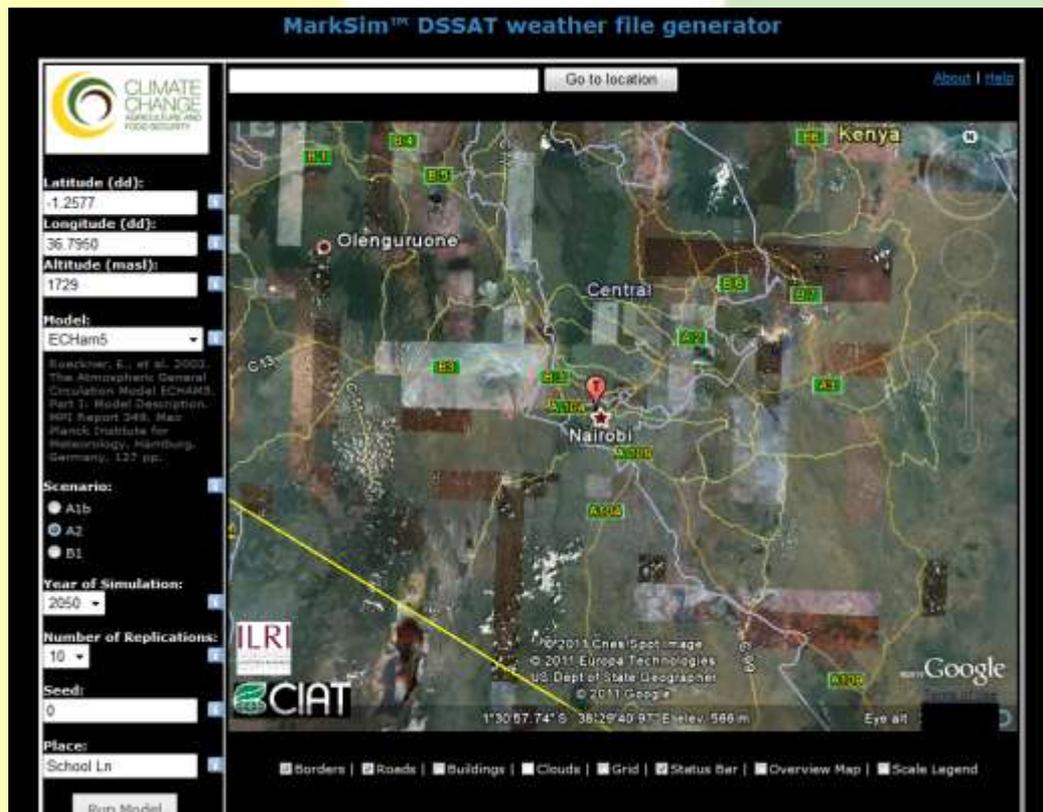
## What CCAFS outputs?

- Knowledge and tools for effective delivery of seasonal forecasts
- Increased understanding of the ways in which farmers incorporate climate information into decision making

## Why is it useful?

By teaching farmers how to interpret and use tailored probabilistic seasonal forecasts, we can build upon indigenous risk management strategies as well as the innovative capacity of farmers to respond to climate variation. We also learn more about how new technologies can add value to farmers' decision making processes.

# Integration for decision making:



## What CCAFS outputs?

A tool to generate daily data that are characteristic of future climatologies for any point on the globe

## Why is it useful?

To aid planning & drive agricultural impact models to inform resource allocation

# Possible Collaboration



- Geographical complementarities; CCAFS covers developing countries with focus on smallholder farmers, FACCE covers Europe and can provide the platform also for collaboration with other OECD countries, the Global Alliance is "global".
- Agriculture and food security is strongly interconnected at the global level and there is a need for global syntheses
- Modelling the global food system with an "IFPRI-like" approach; collaborate on global data bases for modelling and policy analyses
- Collaboration on AgMIP (Agriculture Model Intercomparison and Improvement Project)
- Methodological collaboration on risk assessment and vulnerability mapping

## Possible CCAFS – FACCE Collaboration (2)



- Methodologies to estimate GHG production (esp. with Global Research Alliance) and soil carbon sequestration verification
- Scenario development
- Collaboration in a policy context; UN FCCC and the Intergovernmental Science-Policy Panel on Biodiversity and Ecosystem Services (IPBES), G20 and other food security policy initiatives
- The International Opportunities Fund; a joint funding call between the Belmont Forum and G8 Heads of Research Councils (G8HORCs) for approximately 20M €. The countries currently involved currently are Australia, Brazil, Canada, France, Germany, India, Japan, Russia, South Africa, UK and USA: Food Security and Landuse Change topic for 2013.