



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



Led by



Centro Internacional de Agricultura Tropical
International Center for Tropical Agriculture
Consultative Group on International Agricultural Research

futureearth
research for global sustainability



From Mono- to **Transdisciplinary** Research – The Case of Climate Change and Food Security

Professor em.

Thomas Rosswall, Chair, Independent Science Panel

CGIAR-Future Earth Programme on Climate Change, Agriculture and Food Security

Changing interdisciplinarity



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- **1957-1958**: International Geophysical Year; geophysical disciplines
- **1964-1974**: International Biological Programme; biological disciplines
- **1980 -** : Global Change Research Programmes; initially physics, chemistry and biology
- **2001 -** : Earth System Science Partnership; natural and social sciences
- **2005**: Combining Global Change and Development Research; Krusenberg workshop
- **2012 - 2022**: Future Earth



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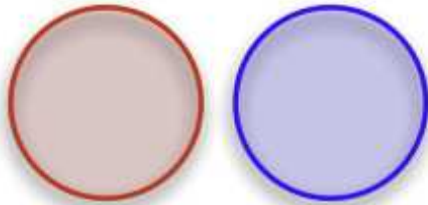


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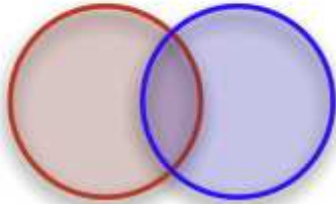
Discipline



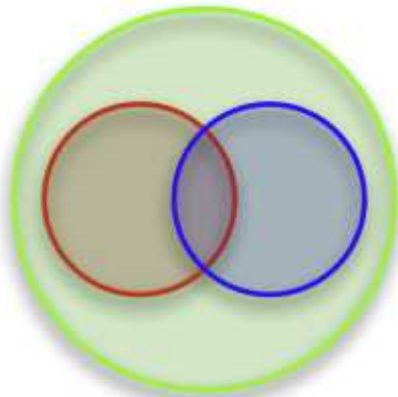
Multidisciplinary



Interdisciplinary



Transdisciplinary

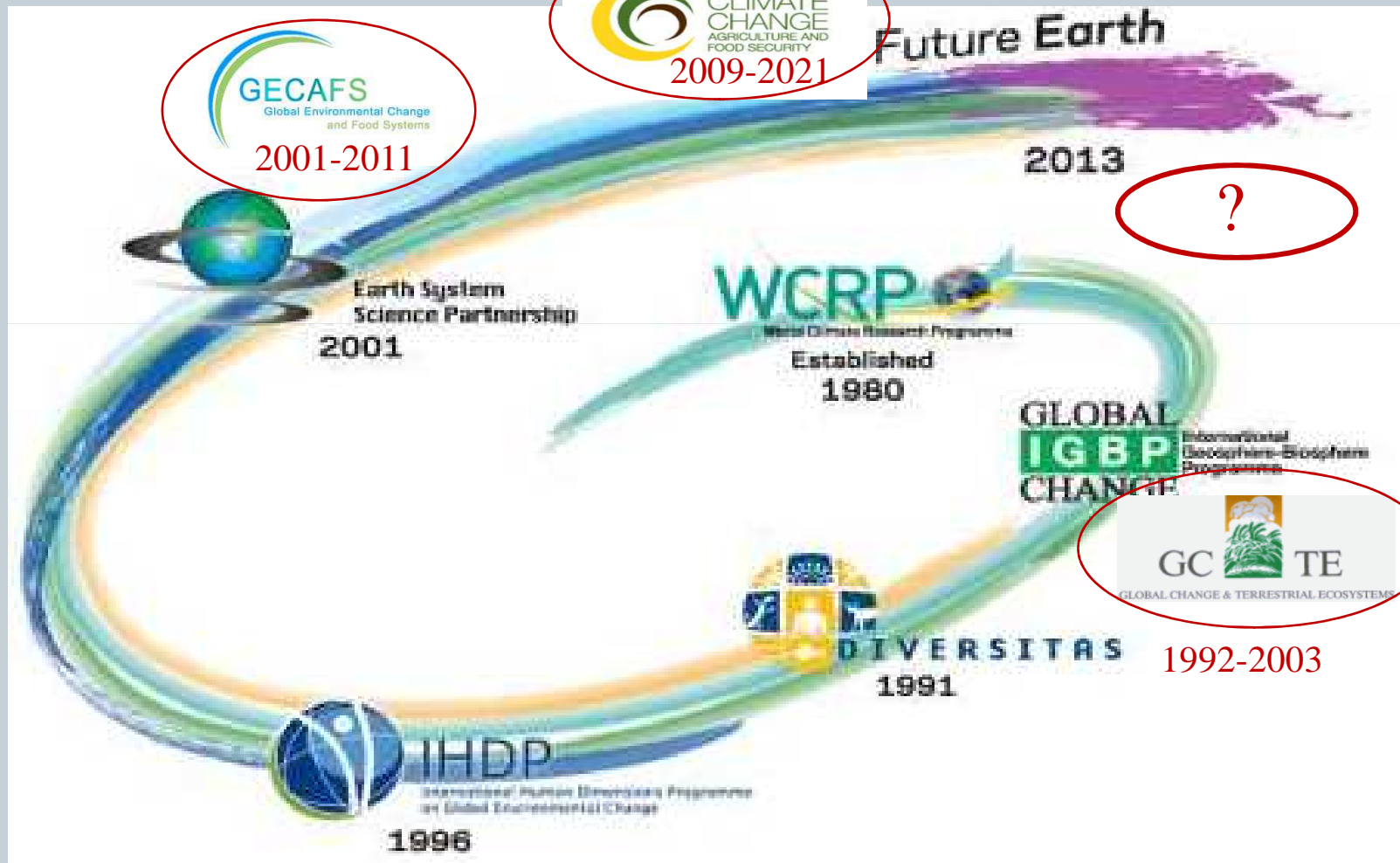


**Mono-, multi-, inter-, and
transdisciplinarity:**

**We must understand the
differences, and we need
them all**

Global change and food research

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The big disconnect



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Development

Poverty increases vulnerability
to global change.

Global Change

Global change can increase
vulnerability to poverty.

The big disconnect



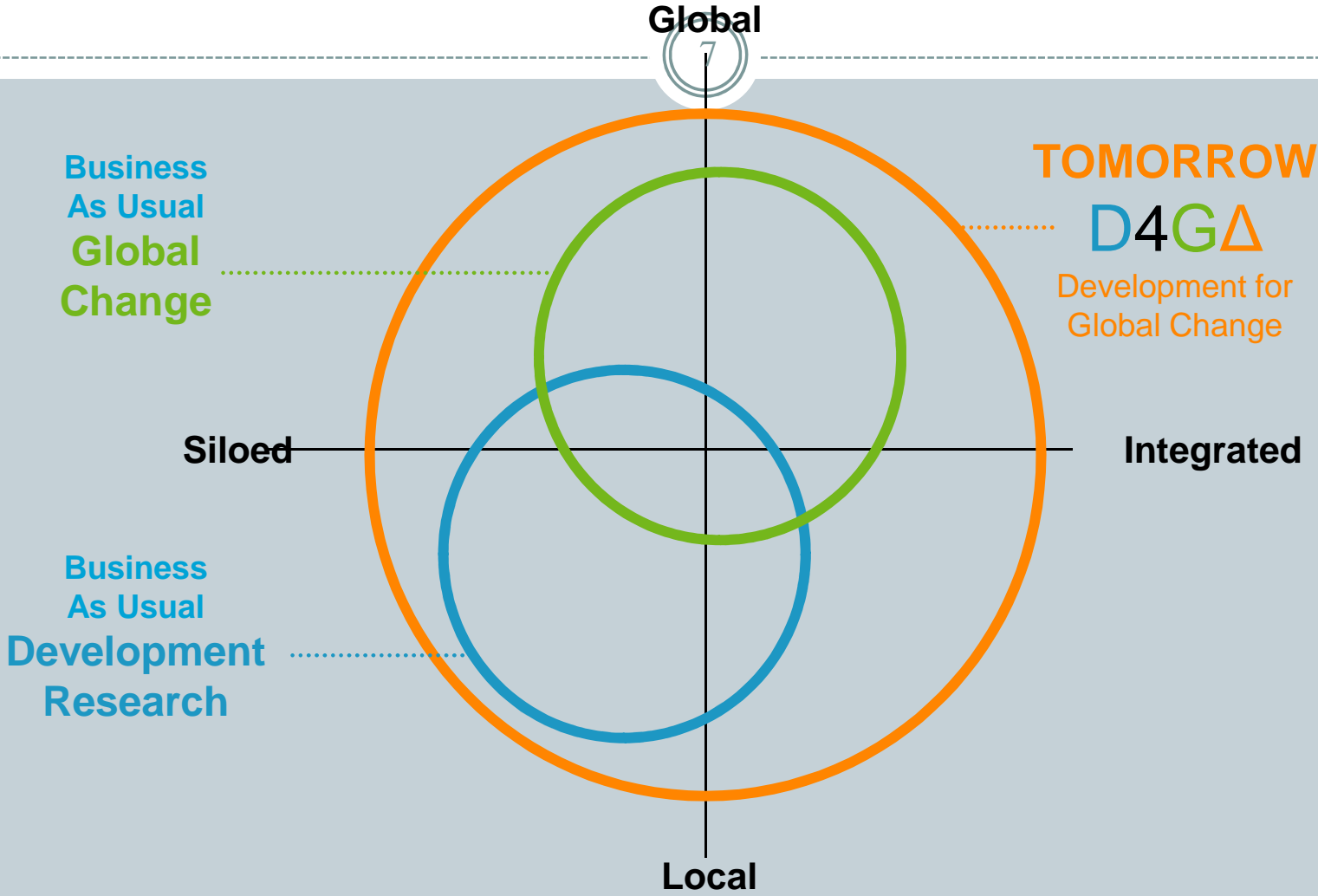
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Development and **global change**
have been addressed, researched,
and funded as **unrelated issues.**

Business as usual

Future Earth – From yesterday to tomorrow



From Sara Farley, then at
The World Bank, Krusenberg

The big challenges



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We need to respond to the challenges posed by the big disconnects by:

- Changing **what** we research; participatory
- Changing **how** we research it; interdisciplinary
- Changing **how we fund** research; link science and development funding agencies

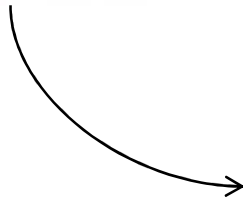
However, there is no applied science if there is no science to apply!

CCAFS – a collaborative initiative

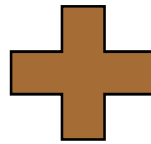


DIVERSITAS IGBP IHDP WCRP

2009



2013



CLIMATE
CHANGE
AGRICULTURE AND
FOOD SECURITY

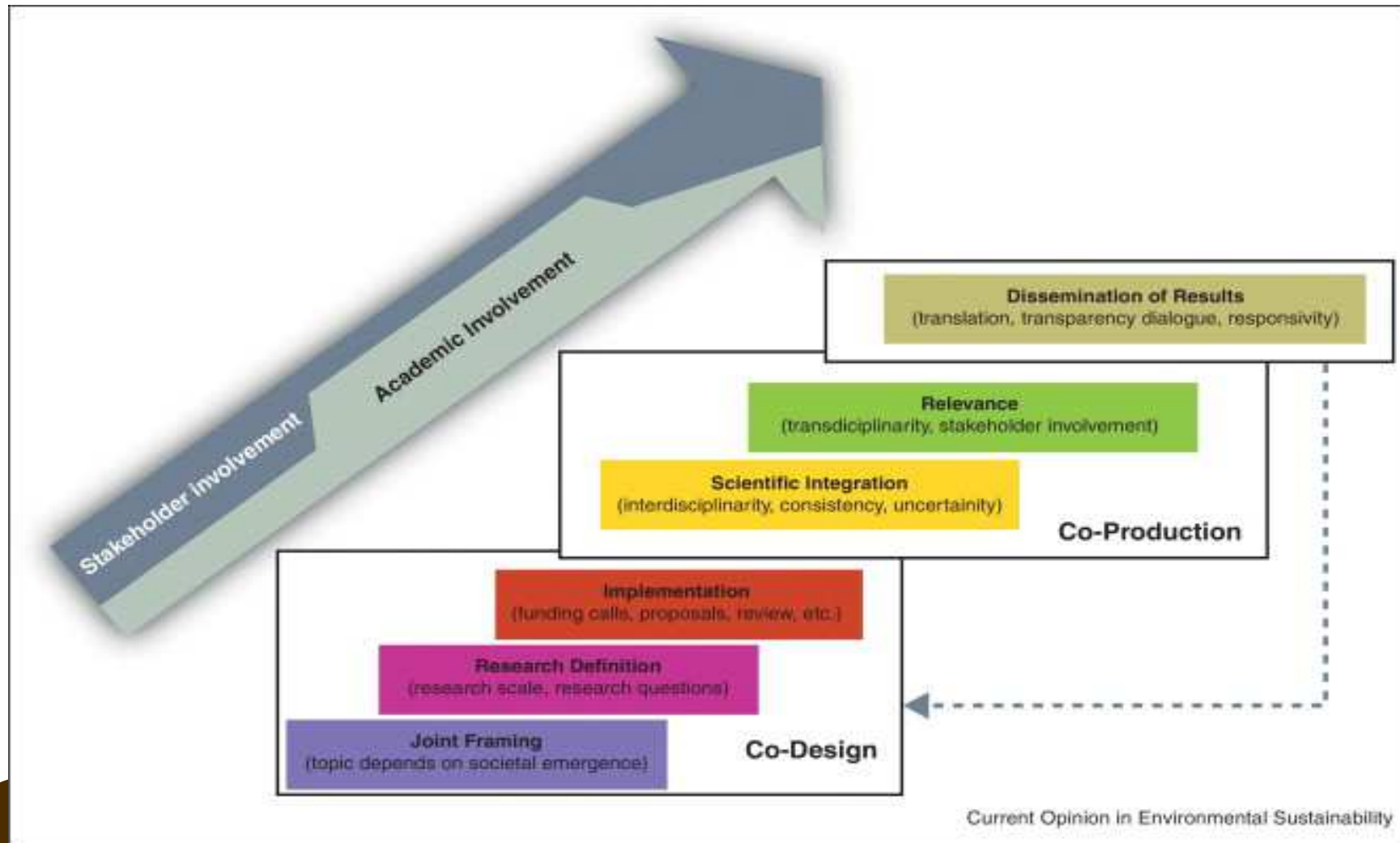
Co-design and co-production



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The CCAFS challenge

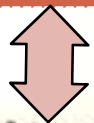
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Whole food systems

Food security

Synergies and trade-offs

Climate variability



Climate change

Adaptation

Mitigation

Incremental adaptation

World Bank

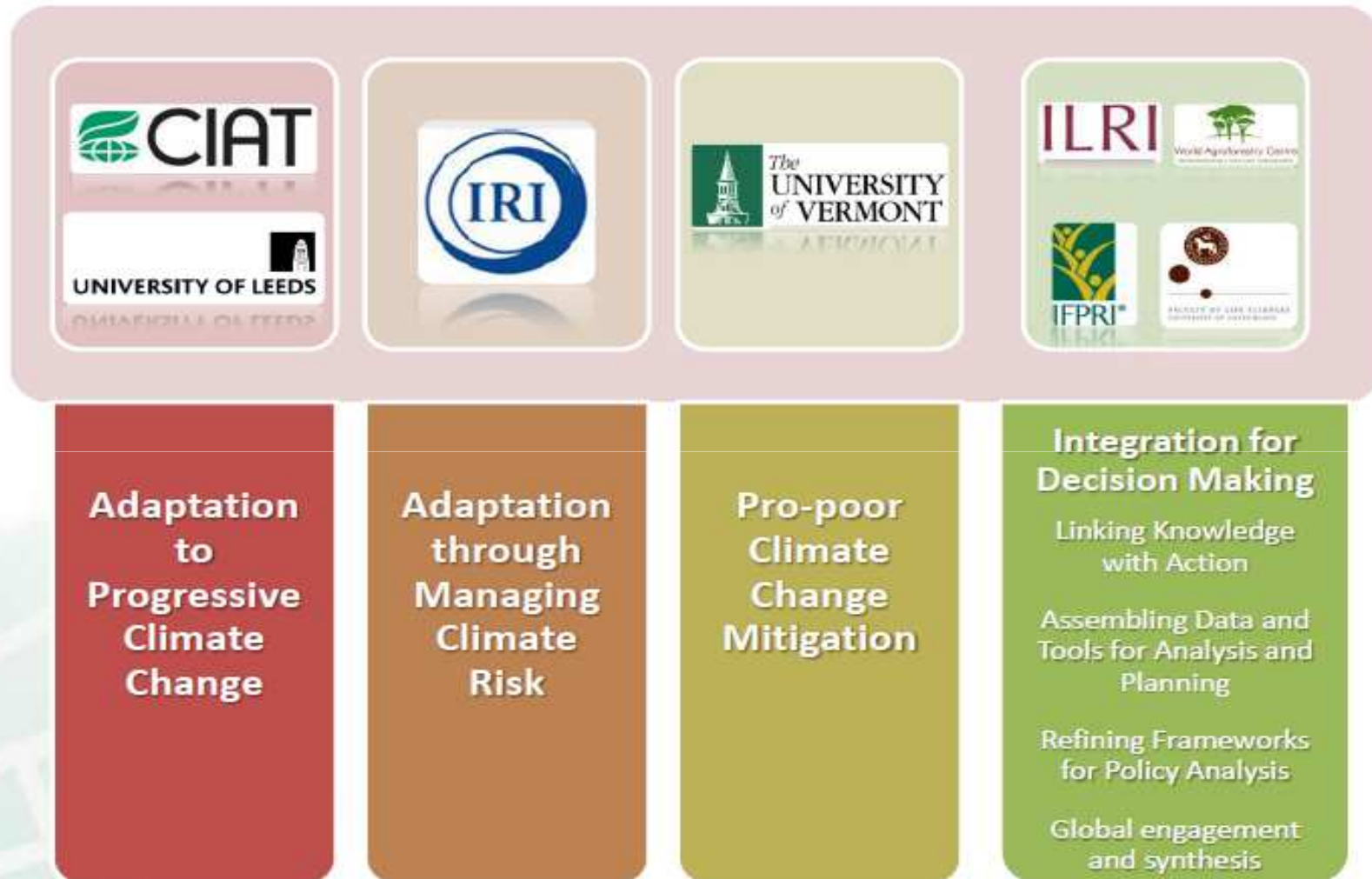


Transformational adaptation

26 November 2013

The CCAFS Themes

Technologies, practices, partnerships, and policies for:



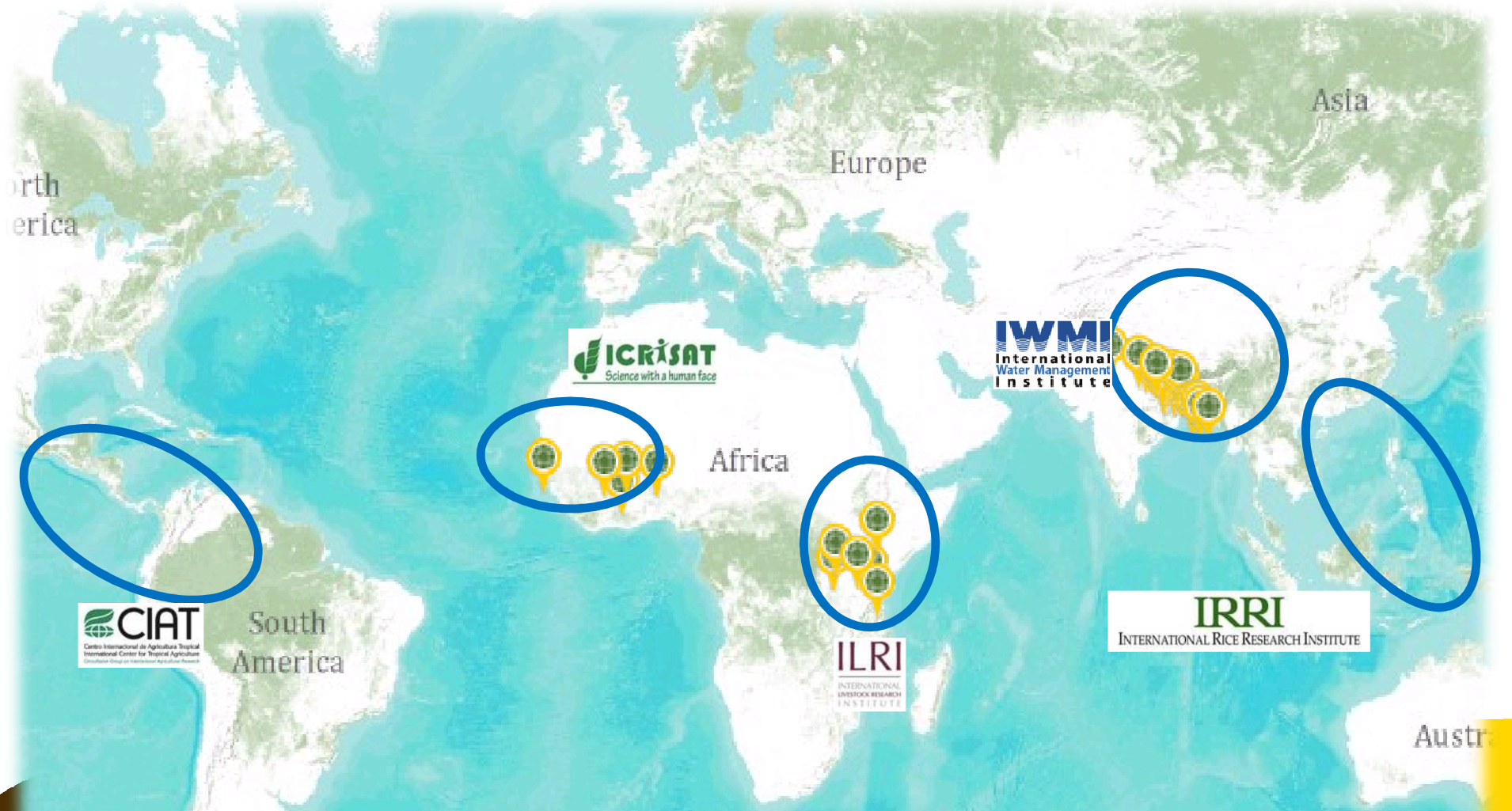
CCAFS regional focus

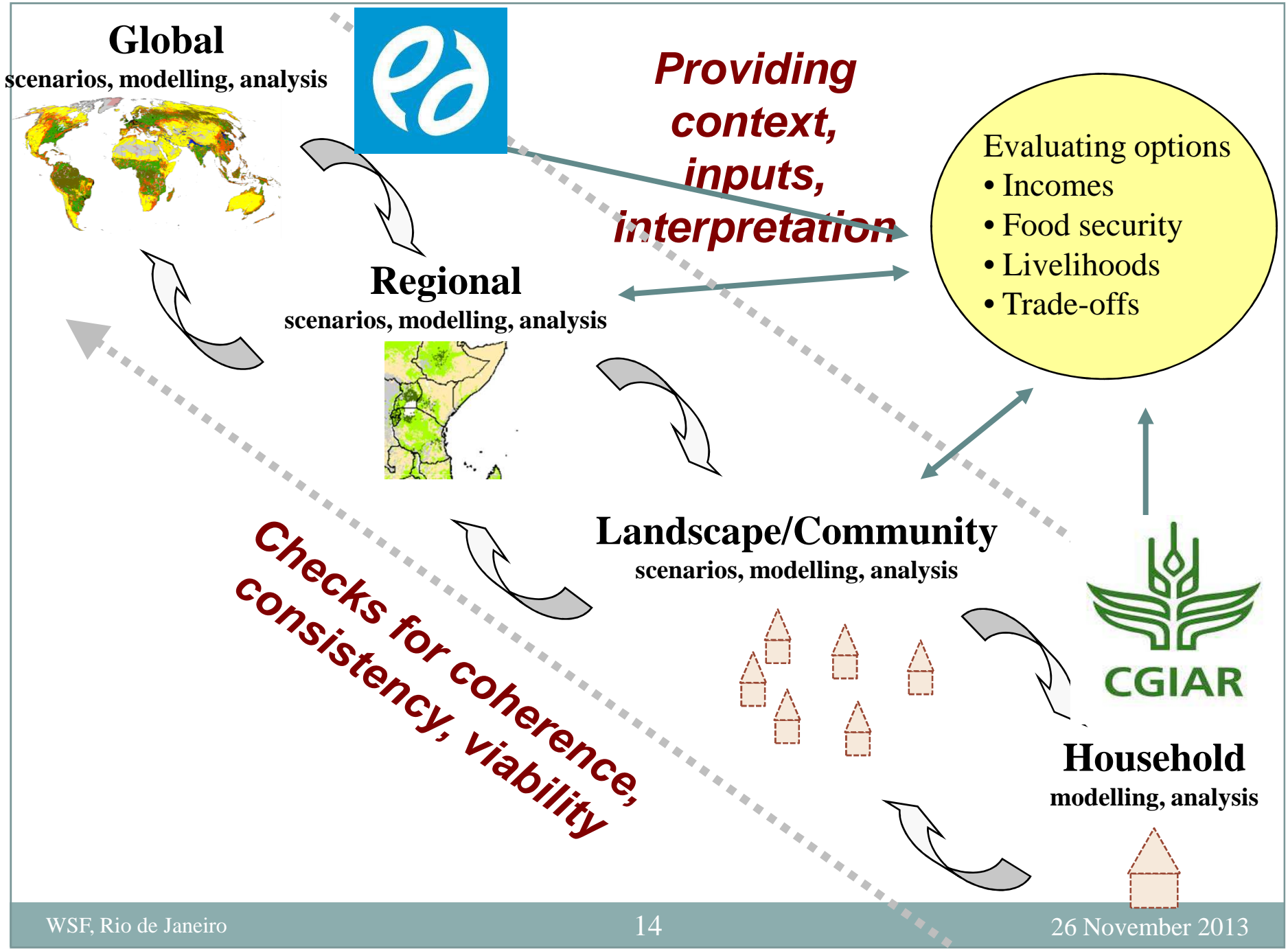


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New partnerships are essential

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In the past ...

Scientists



- Governments
- Farmers

Increasingly and in the future ...

Scientists



- Farmers
- Private sector
- Civil society
- Governments

... with participatory agenda setting.

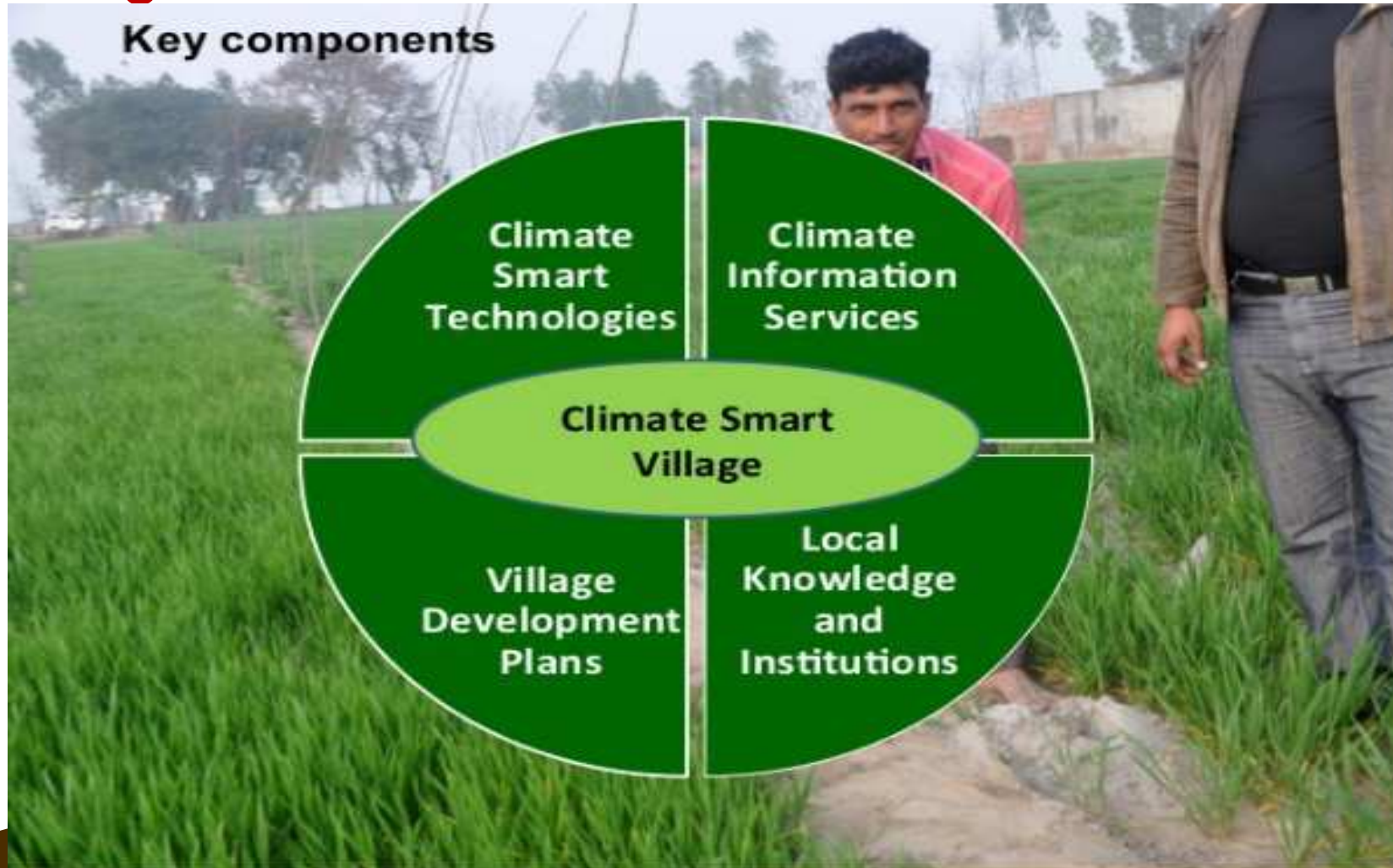
Climate smart villages



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A prioritization process for CSA



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- Key principle of the process is to make it stakeholder driven, and participatory
- Equally, link to economic tools as the quantitative basis for prioritization (cost/benefit ratios)
- Simple enough to be implemented in 3-4 months for a country
- Robust enough to allow differential levels of detail in the analysis, depending on capacity, time and resource constraints

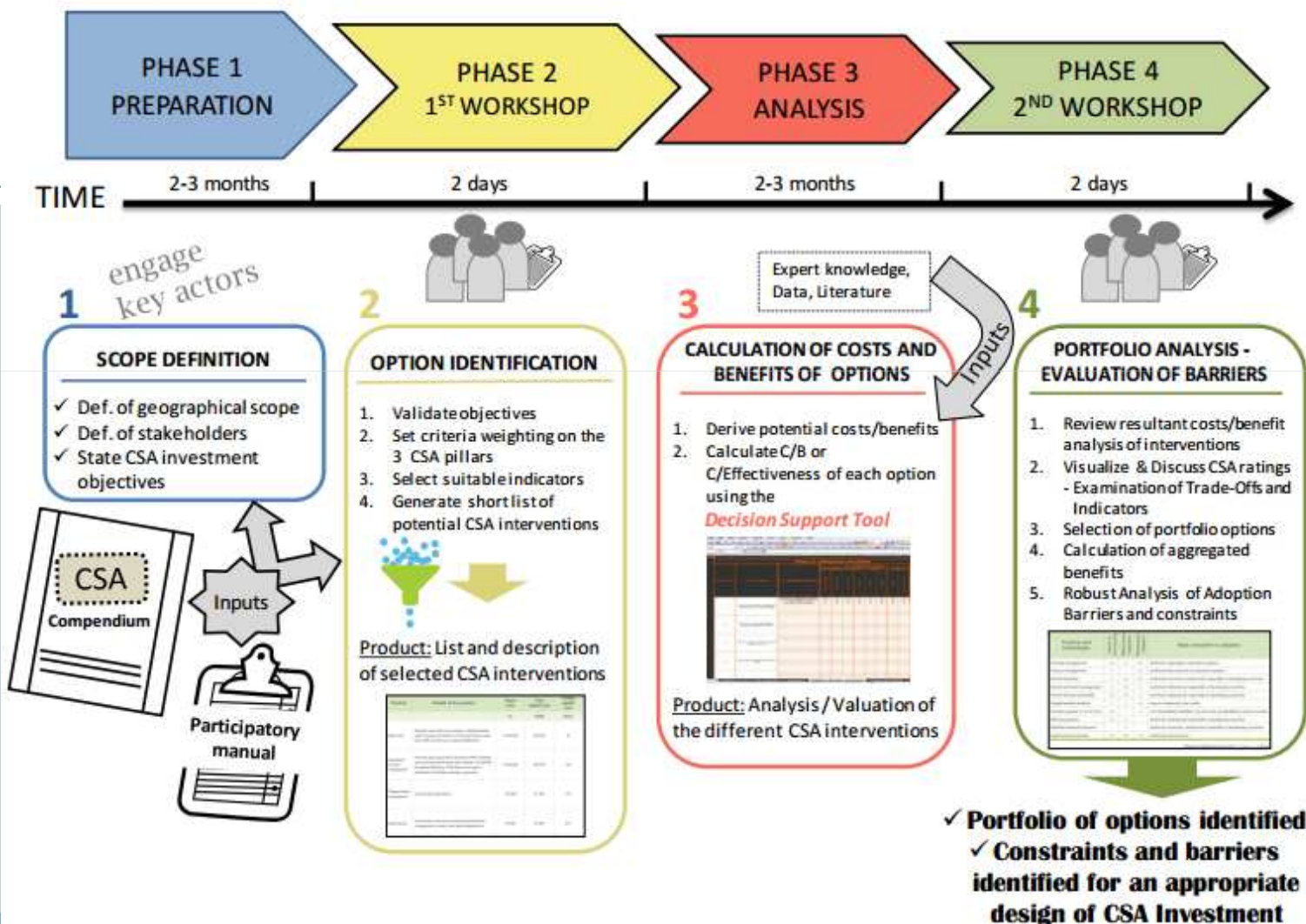
Proposed approach



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Agriculture makes it to center stage

- CCAFS has been facilitating Ag Day at the COPs from Copenhagen, with 17 partner organizations
- Also a host of other activities involving negotiators, Ministers of Agriculture etc.
- COP17 Durban Agreement was historic → agriculture for the first time is referenced for more in-depth discussion



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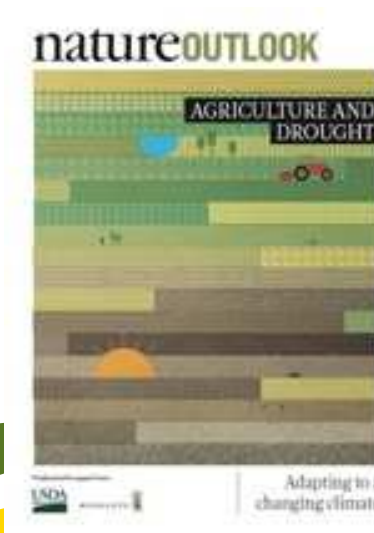
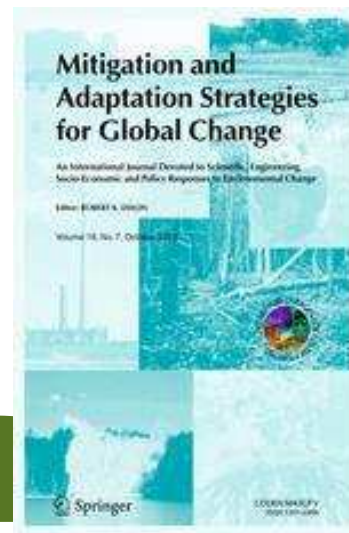
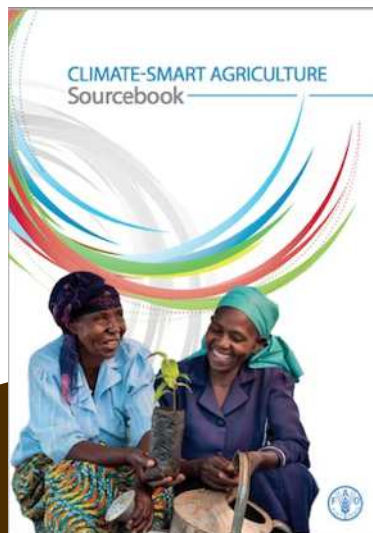
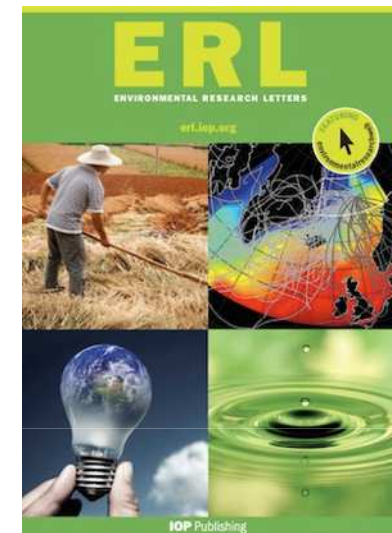
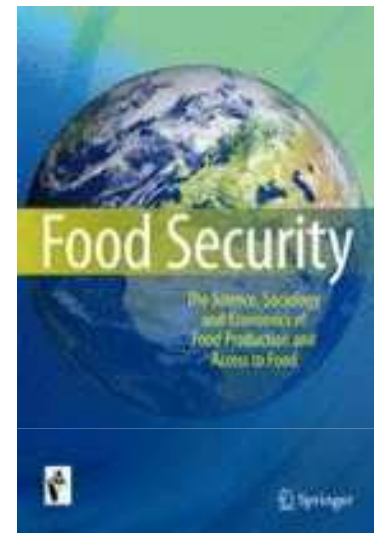
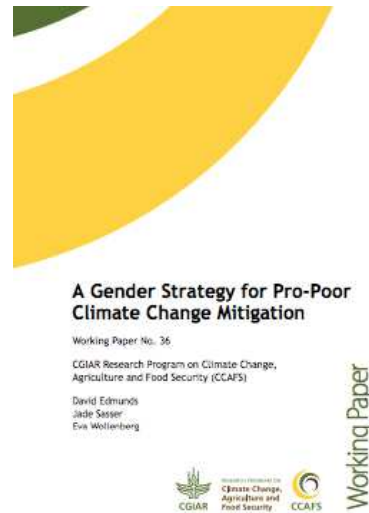
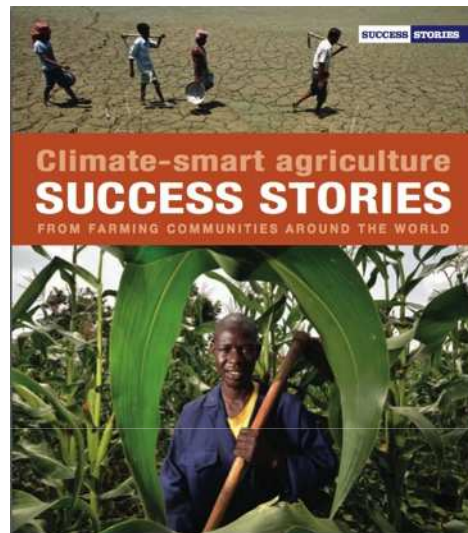
Targeted communication products



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CCAFS success factors

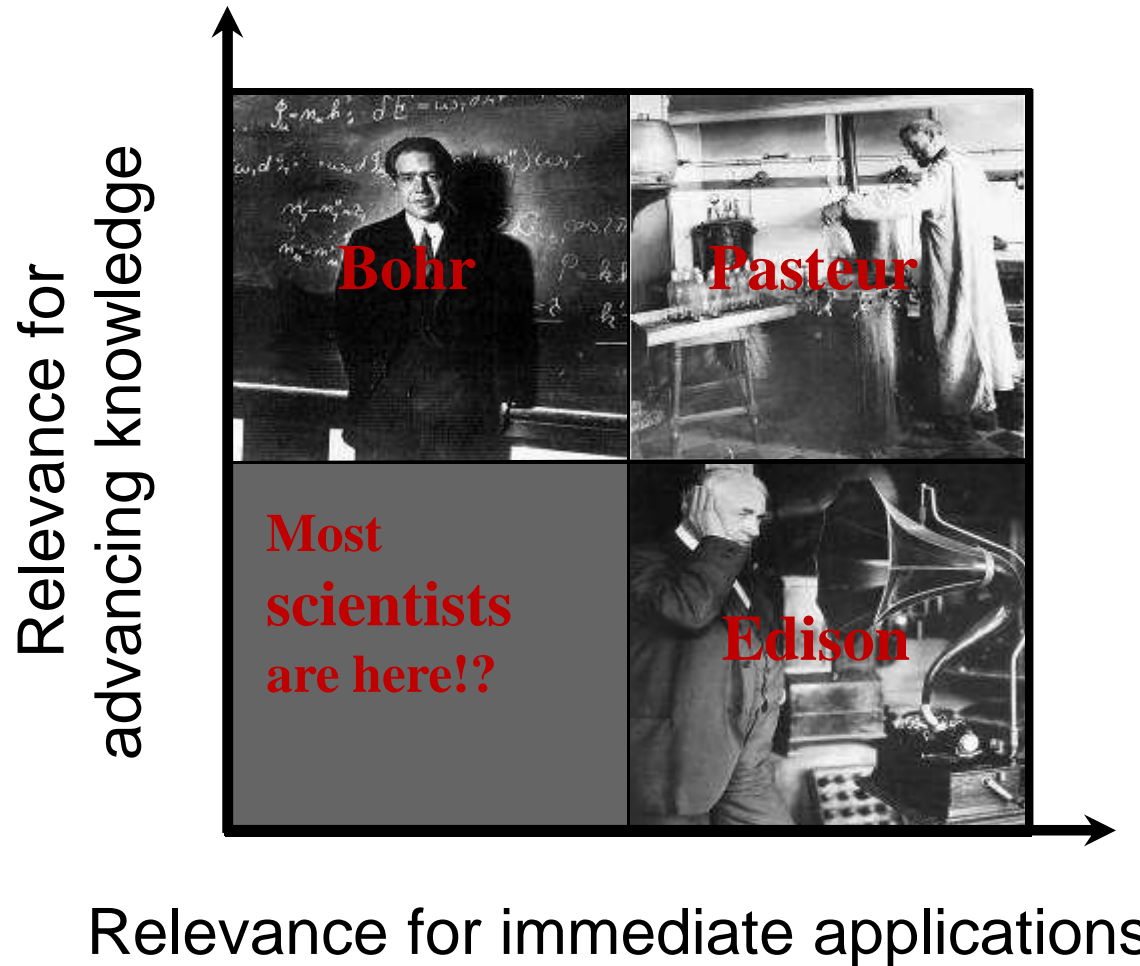


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- CGIAR – ESSP/Future Earth collaboration to link local and global scales
- ISP with both scientific leaders and stakeholders
- Clear strategy and impact pathways
- Regional focus
- Stakeholder process for prioritizing climate smart agriculture
- Engagement with donors and to some extent also Belmont Forum
- Annual reviews on programmatic and management issues
- Visible presence in key political processes
- Targeted communication efforts

Pasteur's Quadrant



Stokes, D. E. (1997). *Pasteur's Quadrant: Basic Science and Technological Innovation*.