

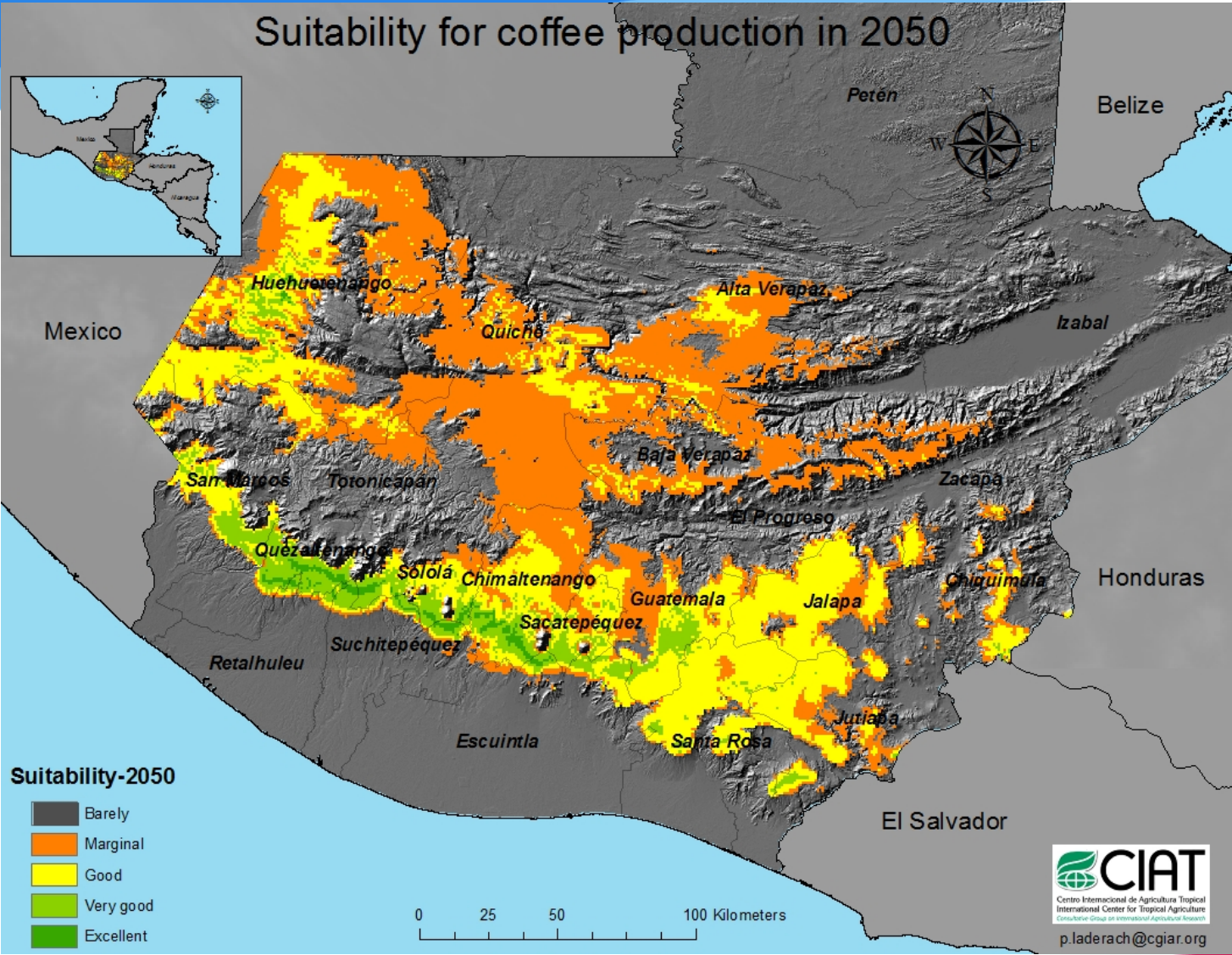
coffee & climate
enabling effective response



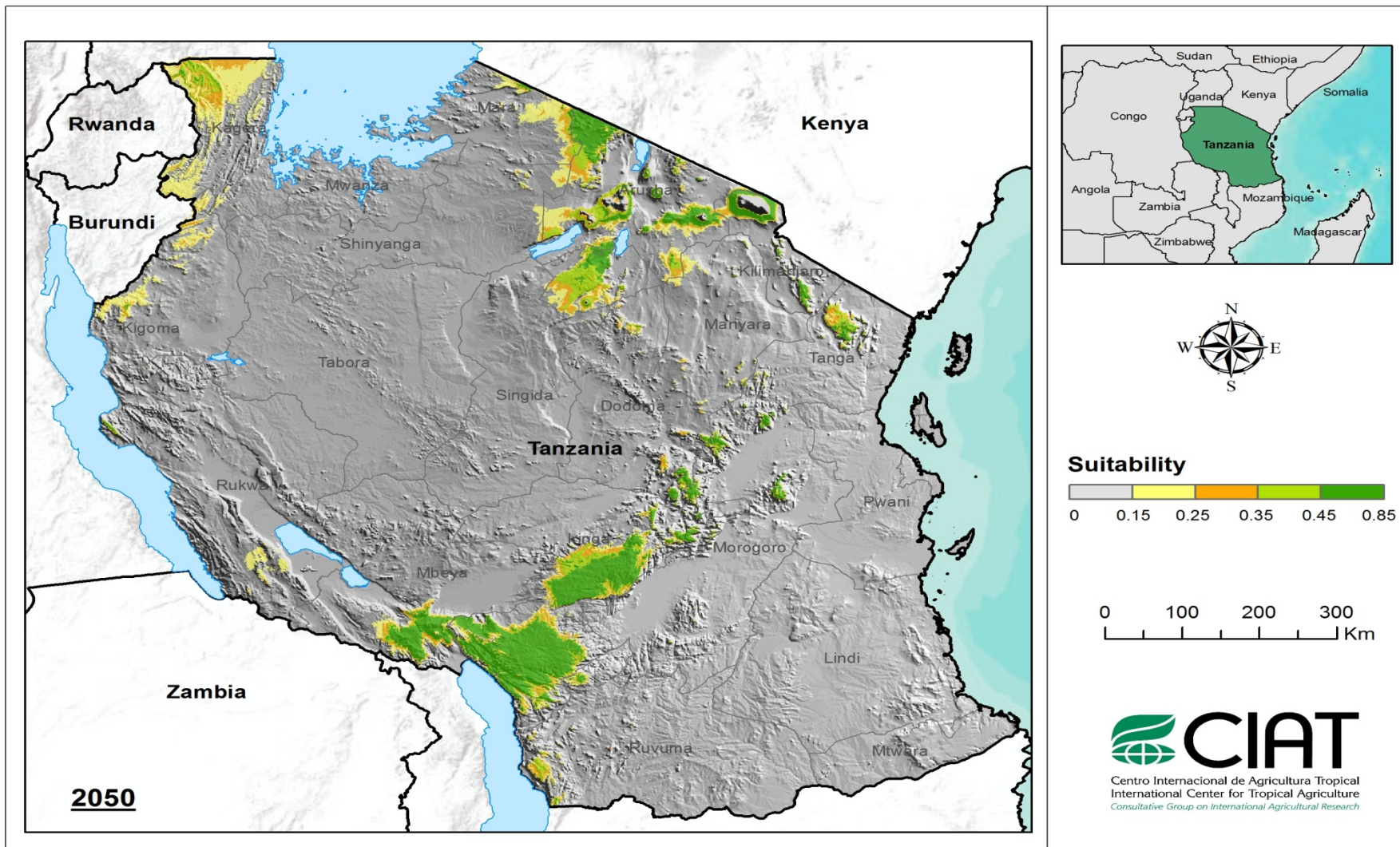
Coffee & Climate

Session #5 at Sintercafe 2012

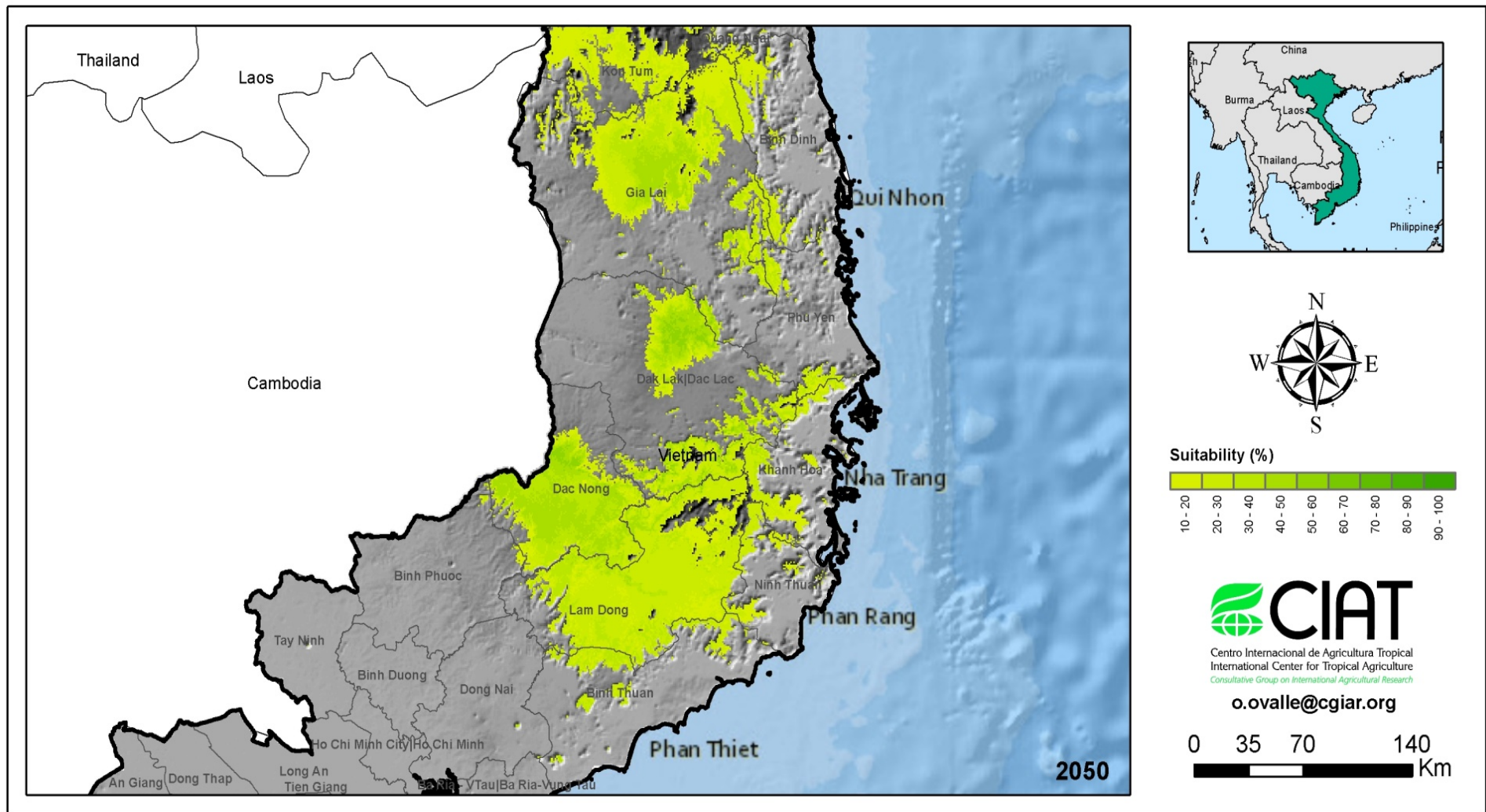
Suitability for Coffee – Guatemala



Suitability for Coffee – Tanzania



Suitability for Coffee – Vietnam

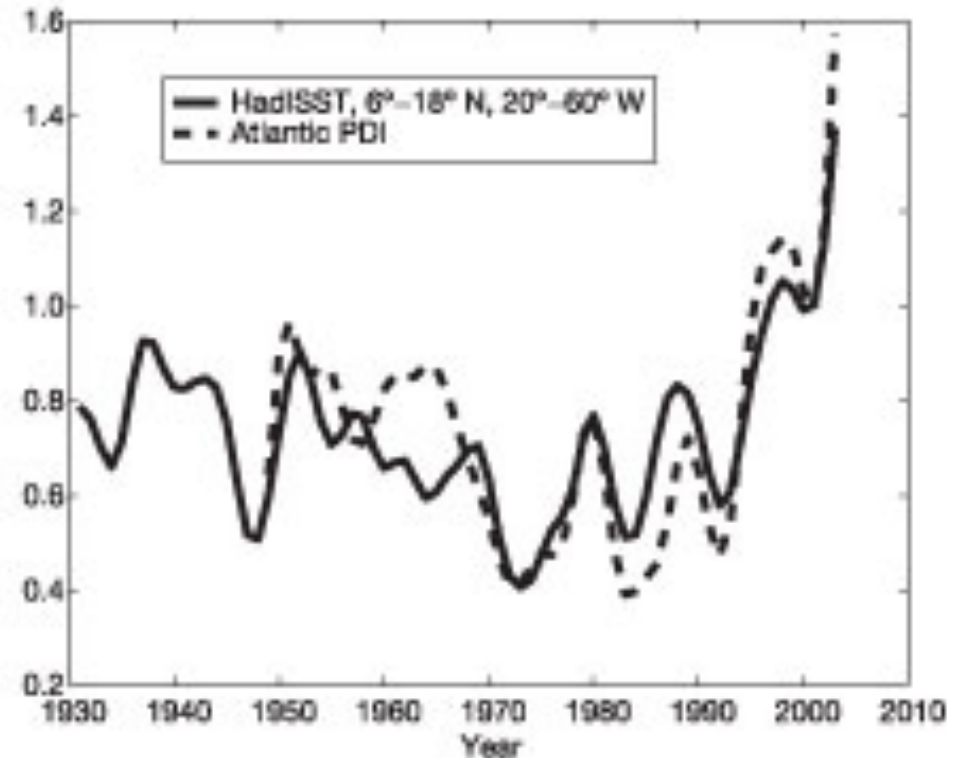
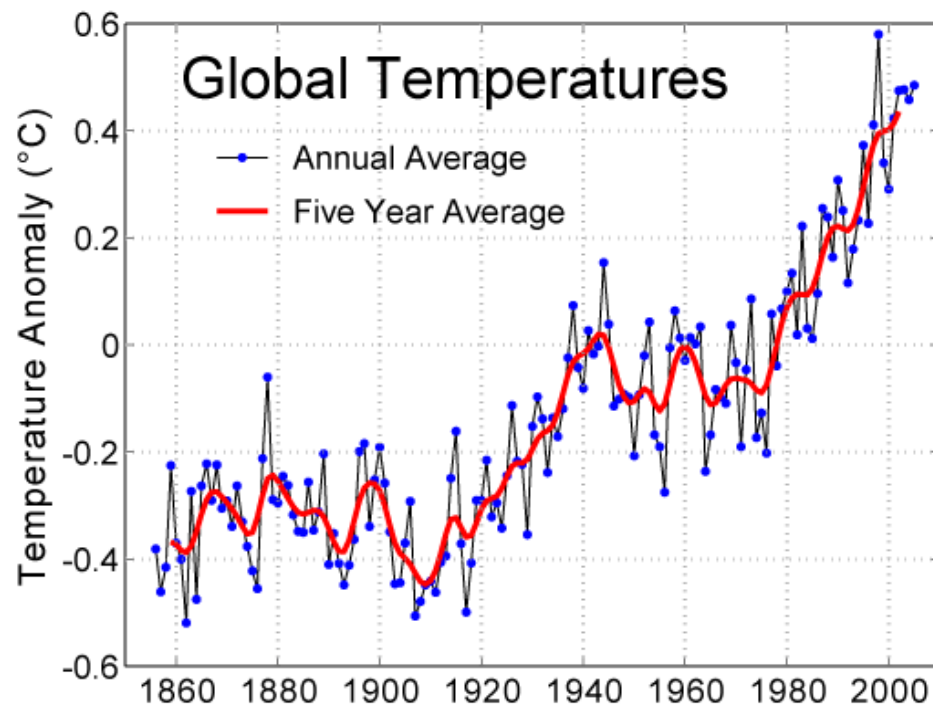


Climate Change does happen?



Measured Evidence

Strength of Hurricanes in North Atlantic

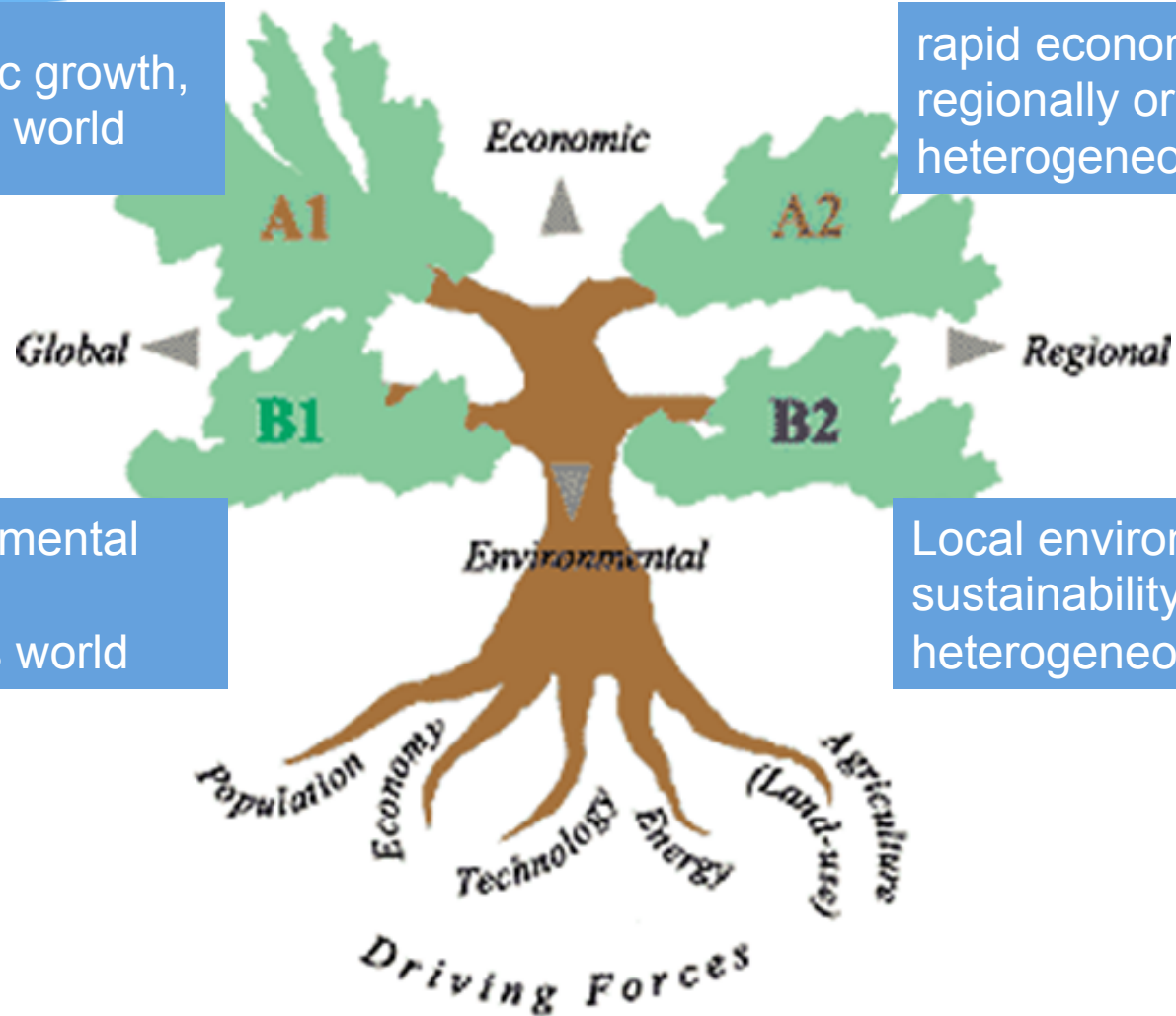


Total power dissipation in the North Atlantic

IPCC Scenarios

rapid economic growth,
homogeneous world

rapid economic growth,
regionally oriented,
heterogeneous world



global environmental
sustainability,
homogeneous world

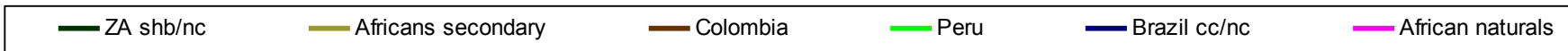
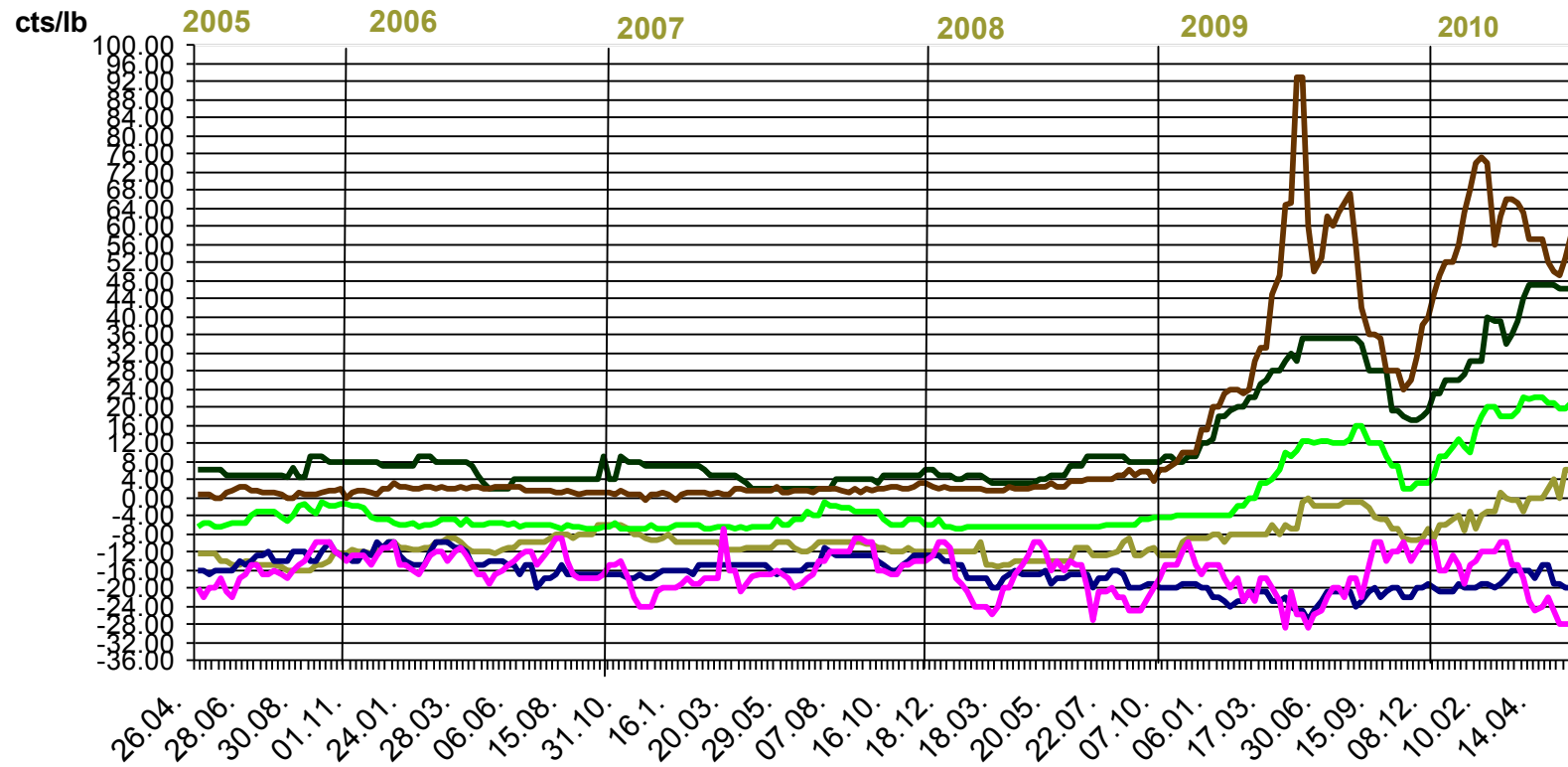
Local environmental
sustainability,
heterogeneous world

Climate Change Scenarios and Coffee

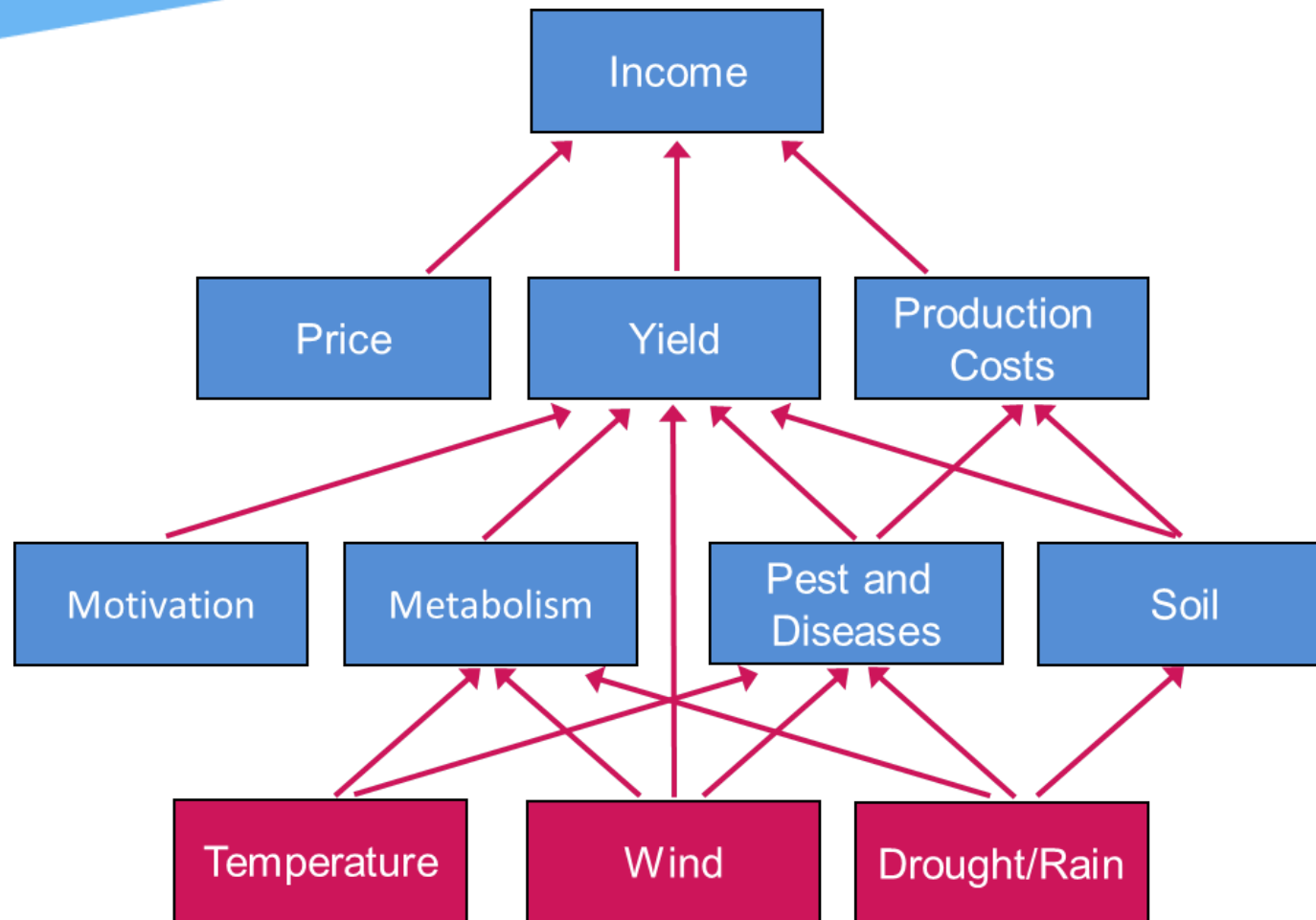
General IPCC Scenario Description	A1 Scenario	A2 Scenario	B1 Scenario	B2 Scenario
Projection for Coffee Production and Price Development	<ul style="list-style-type: none"> ▪ Coffee production decreases globally, particularly in Africa (about 20%) ▪ Large price increase 	<ul style="list-style-type: none"> ▪ Coffee production decreases by about 10% ▪ Prices increase 	<ul style="list-style-type: none"> ▪ Coffee production decreases, but less than in the A scenarios ▪ Coffee prices increase gradually but remain rather low 	<ul style="list-style-type: none"> ▪ Global decrease in yield, especially in Africa and South America ▪ Increase of production in high latitudes and Asia ▪ Less extreme increase of prices

(Source: Climate change and coffee, ICO 2009)

Differentials



Vulnerability of Coffee Production



Climate Change hits Coffee Industry

Heat Damages Colombia Coffee, Raising Prices

March 9, 2011

Climate change could drive spread of major coffee pest

October 13, 2011

Climate Change Seen Eradicating Wild Arabica Coffee by Kew

November 7, 2012



Climate change brews up trouble for coffee growers

April 18, 2011

Coffee prices soar as climate warms, New York Times says

March 10, 2011

Vision & Mission

our vision

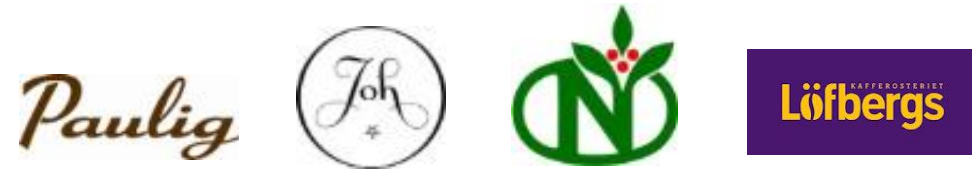
- enable coffee farmers to effectively **respond to climate change**

our mission

- combine **state of the art climate change science** and proven **farming methods**
- offer **practical, hands-on and applicable tools**
- form a **network** of all relevant stakeholders in the field
- apply a **360° precompetitive** approach including the entire value chain

Initiative for Coffee & Climate

founding members



new partners



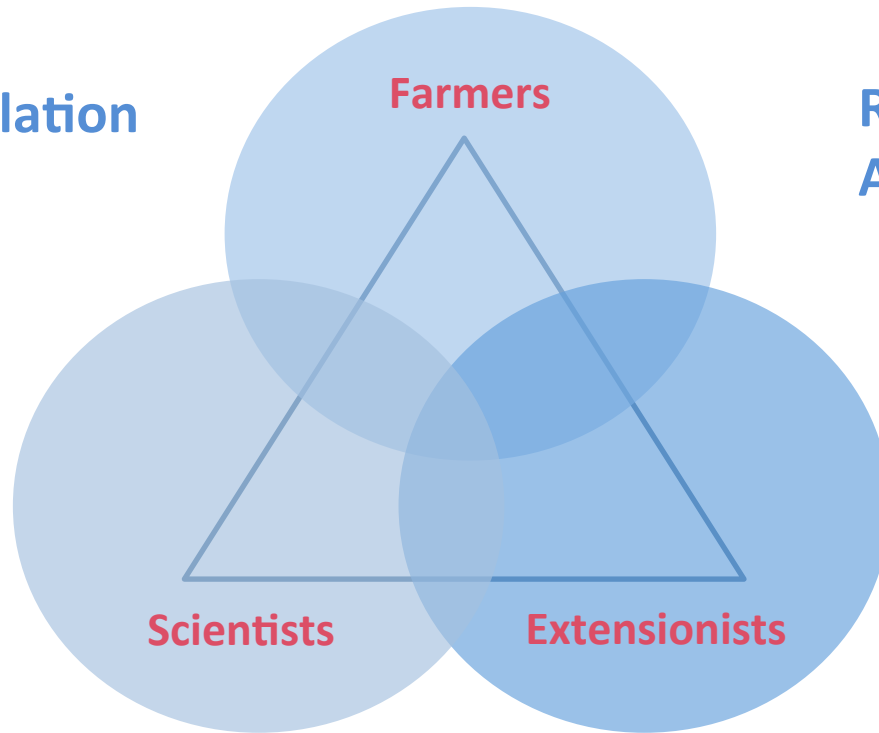
implementing agents
duration
structure

Hanns R. Neumann Stiftung, CABI, GIZ
3 years (Sept 2010 – Aug 2013)
public-private partnership



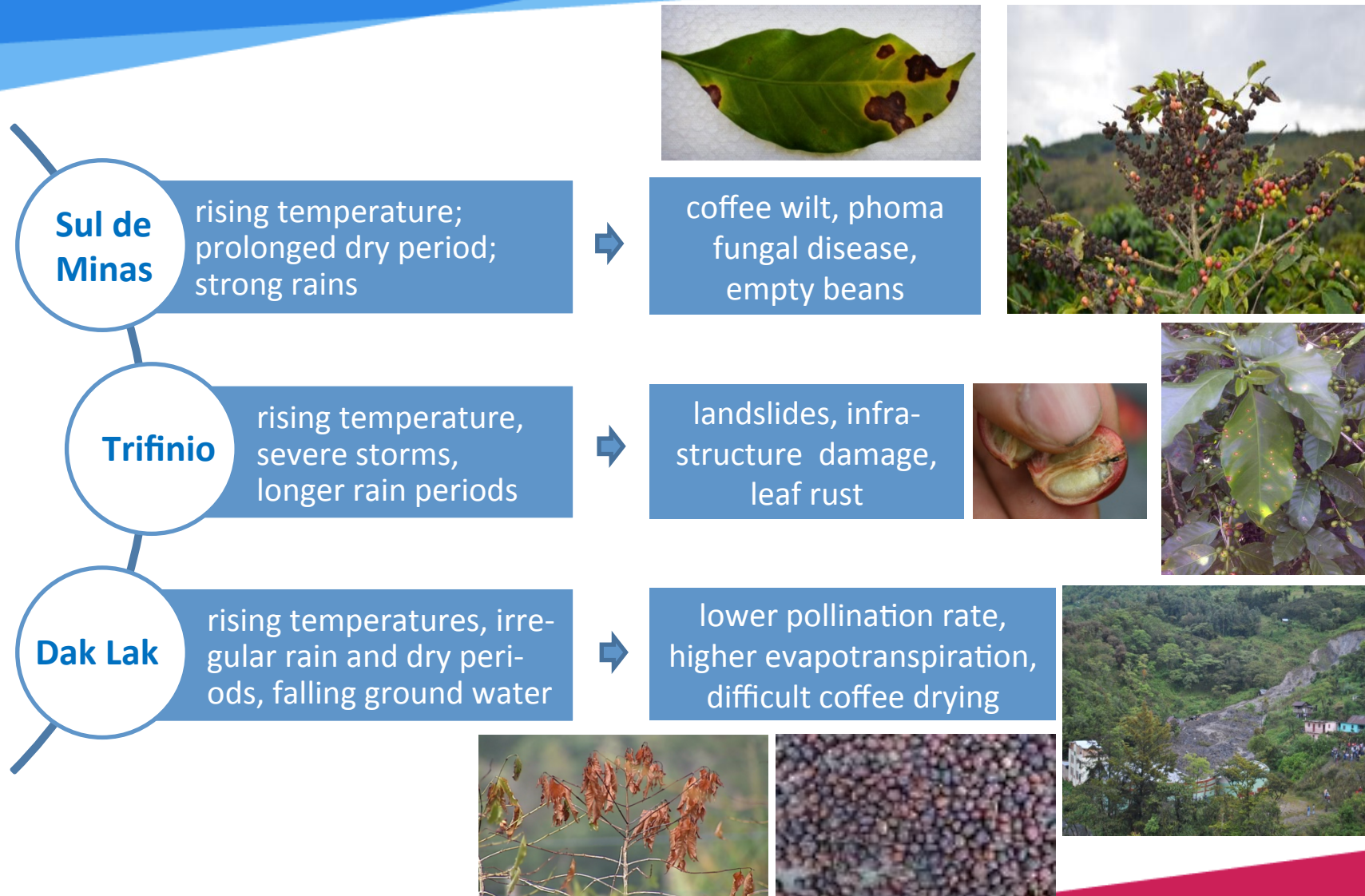
Risk Assessment

Triangulation



Risk and Opportunity Assessment

Triangulation Results



Adaptation Priorities Identified

Sul de Minas

(no regret) measures:

- ground cover; water harvesting; erosion control; vigorous plantlets; windbreaks

innovations:

- gypsum

experiments with:

- mulch



Trifinio

(no regret) measures:

- rust control, rust resistant varieties, cover crops, zoning

emergency response:

- risk analysis, early warning system, protocols

experiment with:

- Gypsum (for drier regions)



Dak Lak

(no regret) measures:

- ground cover; more efficient irrigation

experiment with:

- centralized drying
- drip irrigation

collect data:

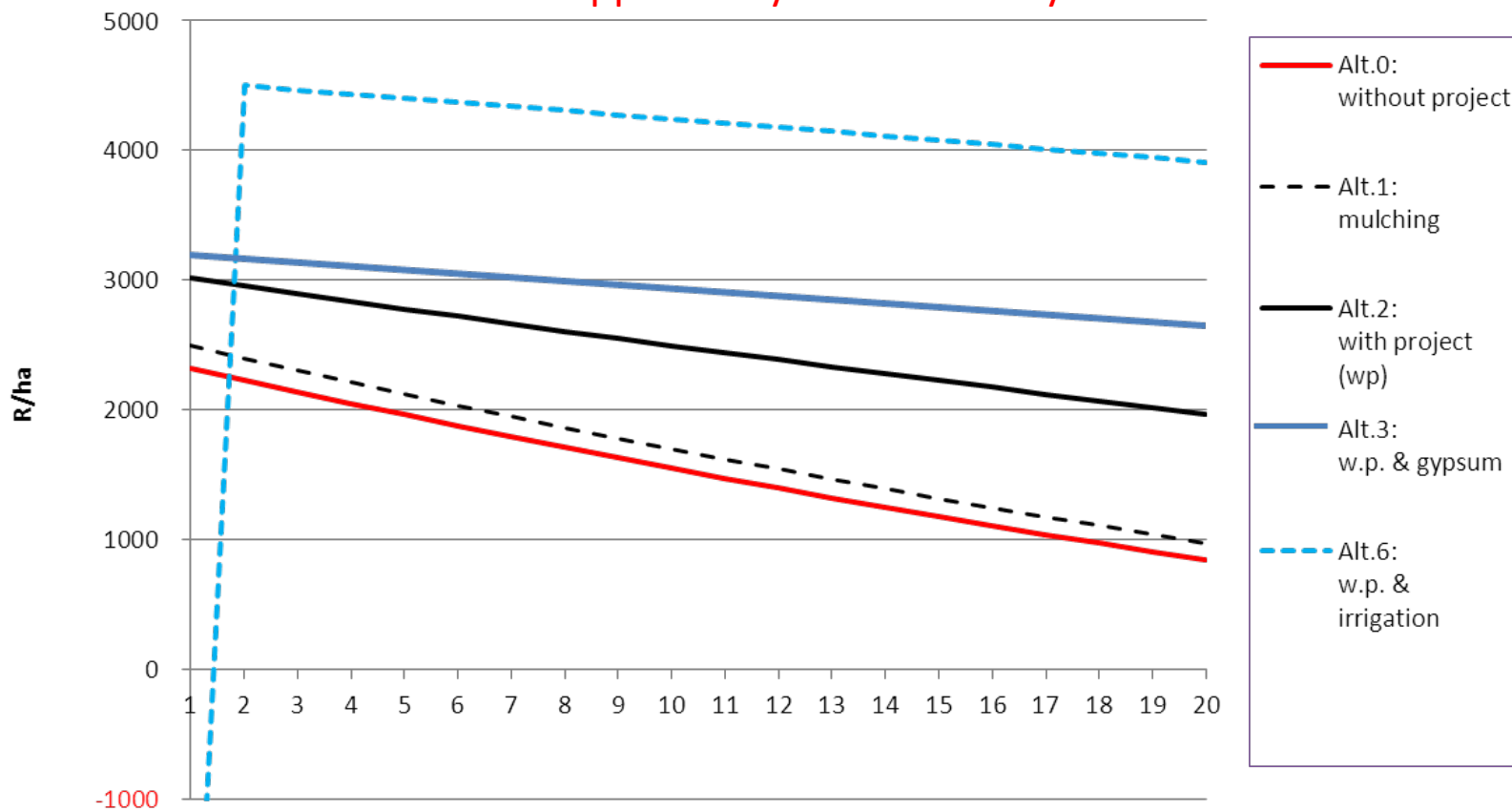
- meteorological, groundwater, pests (cicades)



Cost/Benefit Assessment - Brazil

Annual returns with gradual effects of Climate Change (CC)

- no opportunity cost for family labour -



NB: The initial negative balance with Alt.6 in yr 1 falls outside the plotted range

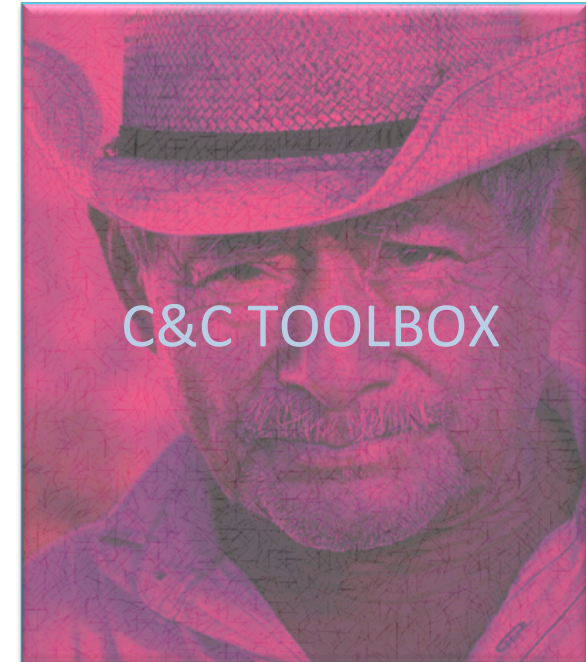
C&C Toolbox

THE C&C TOOLBOX IS...

- A compilation of guidelines, training materials and other didactic material
- A collection of practices + experiences from the field
- A living format which will continuously be further developed

THE OBJECTIVE IS...

- To share, collect and consolidate knowledge and experiences on climate change adaptation
- To support adoption and implementation efforts
- To close the gap between science and the field



C&C Toolbox - Structure

1. **Analysing tools**

2. Enabling tools

3. Adaptation tools

— Farm level

— Community,
landscape,
watershed level

4. Mitigation tools

5. Climate change database

- ROA Risk+Opportunity Analysis
- Triangulation
- Cost-benefit assessment
- M & E System

Structure of the Toolbox

1. Analyzing tools
- 2. Enabling tools**
3. Adaptation tools
 - Farm level
 - Community, landscape, watershed level
4. Mitigation tools
5. Climate change database

- Sensitization
- Planning
- Financing & support mechanisms

Structure of the Toolbox

1. Analysing tools
2. Enabling tools
- 3. Adaptation tools**
 - **On the farm**
 - Beyond the farm
4. Mitigation tools
5. Climate change database

- Temperature
- Drought
- Rain
- Frost

- Shade
- Mulching
- Water harvesting
- Drip irrigation

Structure of the Toolbox

1. Analysing tools
2. Enabling tools
- 3. Adaptation tools**
 - On the farm
 - **Beyond the farm**
4. Mitigation tools
5. Climate change database

- Landslides
- Fire
- Water table level

Structure of the Toolbox

1. Analysing tools
2. Enabling tools
3. Adaptation tools
 - On the farm
 - Beyond the farm
- 4. Mitigation tools**
5. Climate change database

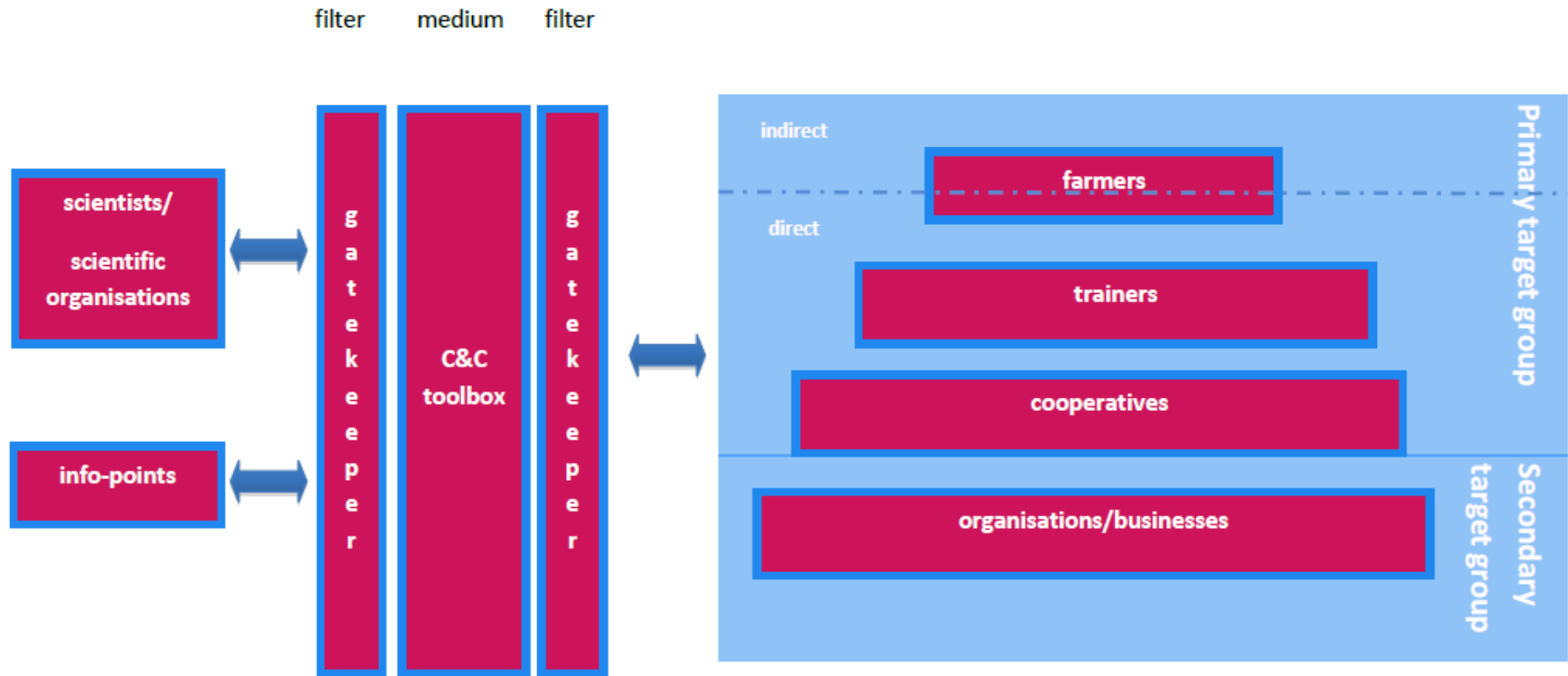
- Product carbon footprint
- Carbon credits

Structure of the Toolbox

1. Analysing tools
2. Enabling tools
3. Adaptation tools
 - On the farm
 - Beyond the farm
4. Mitigation tools
- 5. Climate change database**

- Maxcent maps
- Agricultural zoning maps (Brazil)
- Country reports
- Scientific studies

C&C Toolbox – Target Group

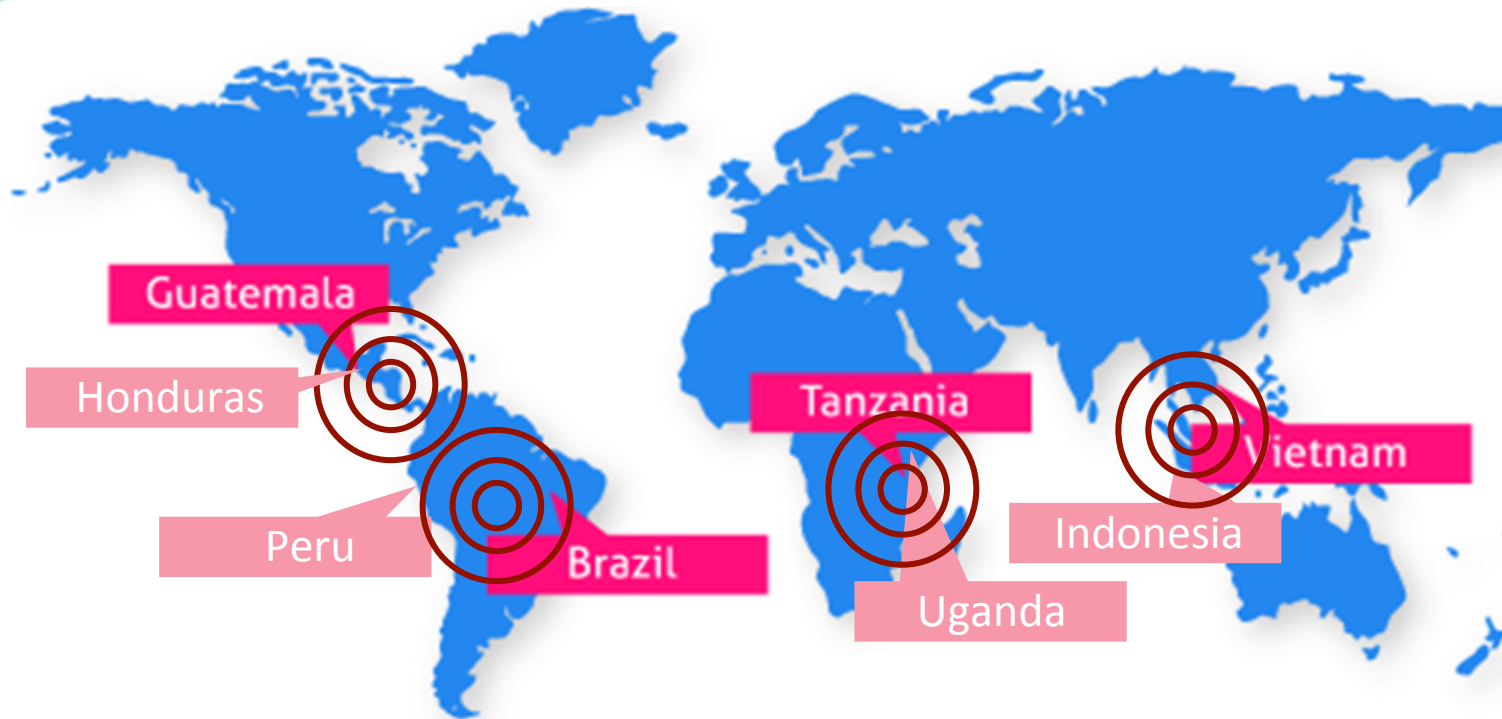


Dissemination



- Local Expert Committees
- Spreading through Training of Trainers
- Local Info Points

Dissemination



- Replication: Sattelite Projects (Honduras, Peru, Uganda, Indonesia)
- Harmonization with Standard Initiatives
- Joint learning and further enriching toolbox
- Business case and long term structure

coffee & climate
enabling effective response



www.coffeeandclimate.org

A ROASTER'S POINT OF VIEW

Michela Stama

november 2012

LAVAZZA

CLIMATE CHANGE = BIG IMPACT ON COFFEE

❖ ICO (ICC 103-6 Rev. 1 of 16 December 2009):

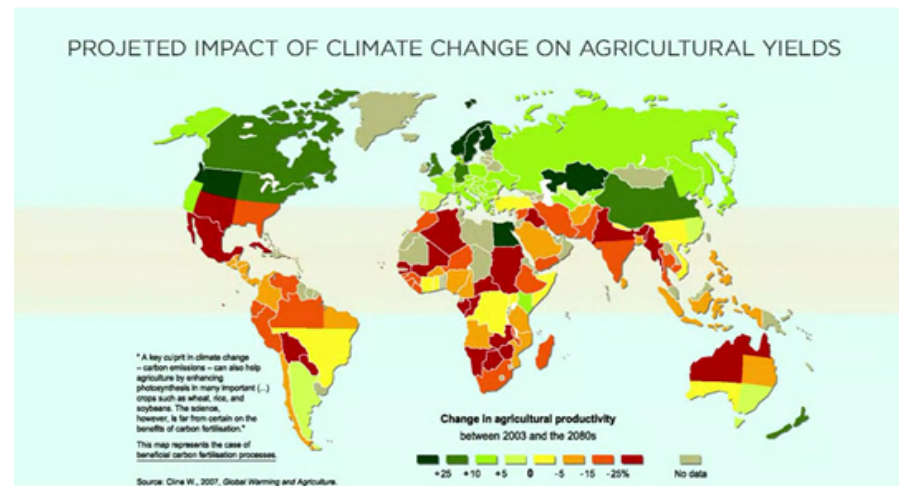
“According to the Brazilian Agricultural Research Agency EMBRAPA, a one degree increase in temperature could reduce by 200,000 square kilometres the current areas with climatic potential for coffee plantation.”

“Temperature increases affect different aspects of the metabolism of coffee trees, such as flowering, photosynthesis, respiration and product composition, which in turn adversely affect coffee yields.”

❖ According to William R. Cline

(Global Warming and Agriculture, 2007)

Climate change will have negative impact mostly on tropical belt. Productivity will decrease ...



HOW DO WE EXPECT COFFEE CONSUMPTION TO BE IN THE FUTURE ?

Ten years from now we would need between 20 and 30 million bags of additional green coffee

In a world situation characterized by:

- ❖ global climate change
- ❖ Increasing competition for natural resources



WHERE WOULD THIS COFFEE COME FROM ?



Only from:

- Marginal increase of production areas close to existing producing land (mostly already happened thanks to good coffee prices)
- New land for coffee production (about 2 million ha – 20.000 square km !!)
- **Increased productivity:** GAP – Irrigation – productive varieties – better yield, and so on... (best option: increased profitability for grower, less impact on ecosystems.....)



LAVAZZA



Possible impacts of Climate Changes:

- Production costs will likely increase.
- The market will be more volatile thus riskier for producers and consumers.
- There will be an increasing need for reliable and perspective information and forecasts to allow a better decision making process for all actors in the coffee world.

IN CONCLUSION:

- ❖ We need productivity increases but
- ❖ Climate changes are forecasted to lower productivity
- ❖ Therefore climate change is a very serious threat to our coffee world and business as we know it, now

It is in the interest of all actors in our supply chain, from the coffee growers and authorities in the coffee producing countries to traders, roasters and coffee consumers,

to do something.....





The **Coffee & Climate** project is a possible answer to these issues.

By pooling knowledge and resources,
with a pre-competitive and cooperational approach,
to address the Climate Change issue and its impacts.