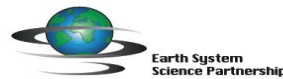


Status of knowledge on how agriculture can contribute to adaptation and mitigation

Friday, 18 May 2012
18:15 - 19:45

Ministry of Transport: Room METRO
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Status of knowledge on how agriculture can contribute to adaptation and mitigation



James Kinyangi
Regional Program Leader

Agriculture in the UNFCCC

- At COP 17, Parties agreed on a Decision to advance discussions on agriculture during SBSTA 36
- Areas of commonality and divergence and to understand possible scenarios to bridge the differences
- Negotiators to identify innovative/new ideas that could be adopted to reach agreement
- Issues that support convergence of Parties and those aspects that are completely opposed to inclusion of agriculture in UNFCCC negotiations

Understanding the Submissions in the Context of the Work of SBSTA

A review was commissioned by COMESA and CCAFS, to synthesize the submissions to SBSTA, summarizing the issues relevant to agriculture:

- number of submissions reviewed included Parties (21), IGOs (5) and NGOs (24)
- covered issues of key scientific and technological aspects of agricultural adaptation, productivity, livelihoods and food security
- identified actual and potential conflicts (divergent issues) in the submissions between African parties and those of other submissions

The Issues Informing the Positions of Parties

- priority issues identified under impacts, barriers to implementation of adaptation actions, measurements, technologies and approaches relevant to climate change adaptation
- Parties recognize the existence of high quality scientific and technical information
- They observe that there is a failure to recognize the need to address and improve understanding of the scientific, technical and socio-economic basis of adaptation.
- **Can be summarized as: Data for quantification; Science of adaptation; Technological development and application and tools and methods for measurements**

Divergent Issues; Is it Adaptation with Mitigation Co-Benefits?

- Emerging position that Parties need to step up efforts to safeguard the agricultural sector against the worst effects of climate change since GHG mitigation approaches have long time-lags before the benefits can be realized
- Some Parties including the Gambia on behalf of the LDCs acknowledge the positive interaction between mitigation and adaptation, thereby advocating for pursuit of climate actions that address both adaptation and mitigation
- Potential tradeoffs between adaptation, food security and mitigation; so no clear distinction is made between small scale and large scale agricultures, and research, development and technology transfer are still undifferentiated

Is a Work Program on Agriculture a likely Outcome at SBSTA 36?

- **Good news**-majority of the submissions by the parties are in favor of a work program on agriculture
- **Even those opposed**-point out that UNFCCC does not allow for meaningful participation of smallholder farmers and that UNFCCC has mostly concentrated on measurement, reporting and verification
- **Capture the mood**-SBSTA should establish a framework for the work program on agriculture with a clear goal of supporting adaptation actions with mitigation co-benefits

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What could SBSTA do now on agriculture?

Dr Sonja Vermeulen
Head of Research, CCAFS

What should a 2020 global climate agreement look like for agriculture?



What do we need in a SBSTA work programme in order to get to a 2020 agreement?

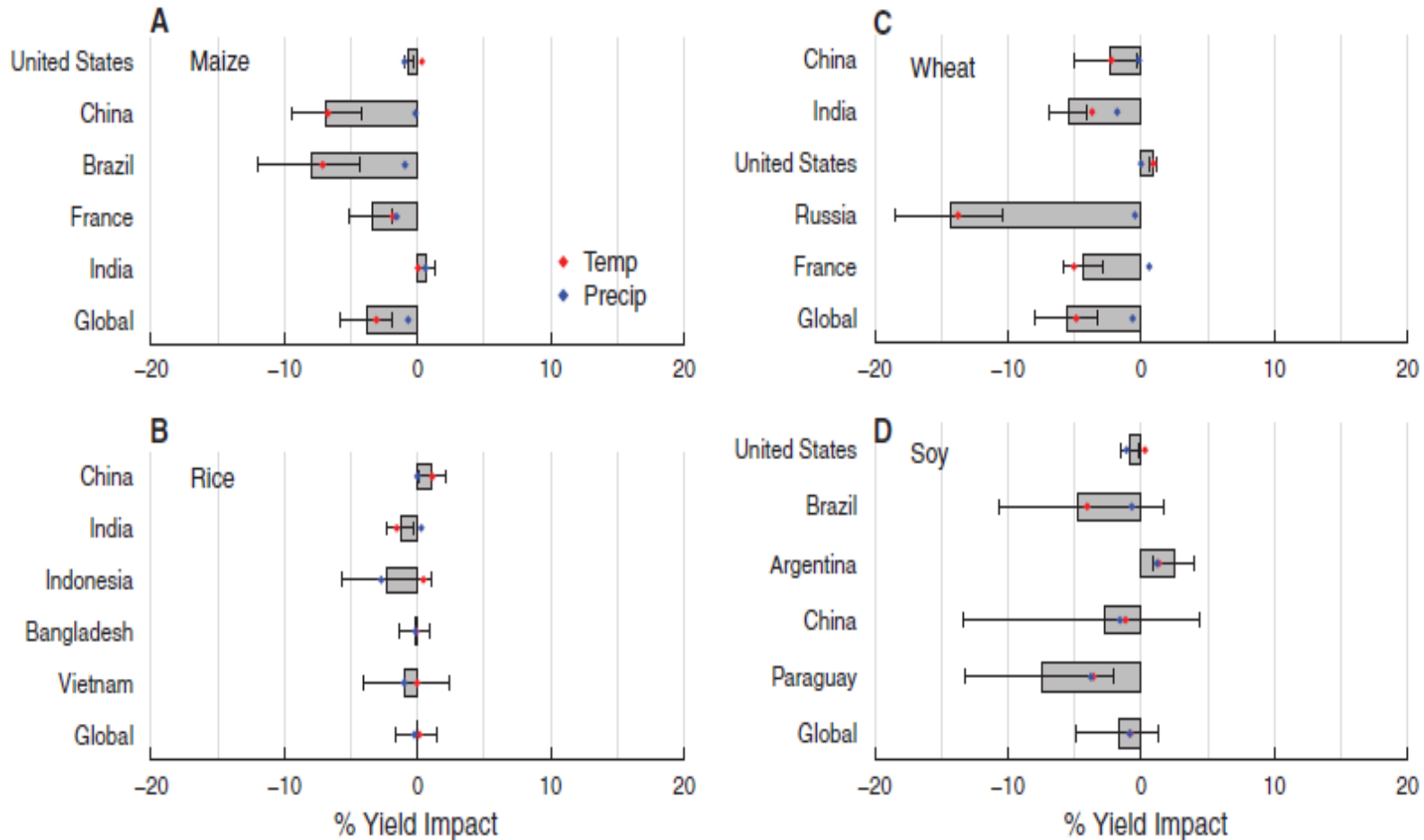


What can SBSTA do now or soon?
(and what are the longer-term issues?)

2020 agreement: what might it cover?

1. Mechanisms to build adaptive capacity in agriculture?
2. Mechanisms to support mitigation activities?
3. Capacity building and technology transfer for agriculture?
4. Compensation for agricultural loss and damage?
5. Safeguards for the most vulnerable populations as a result of rising food prices due to climate change?

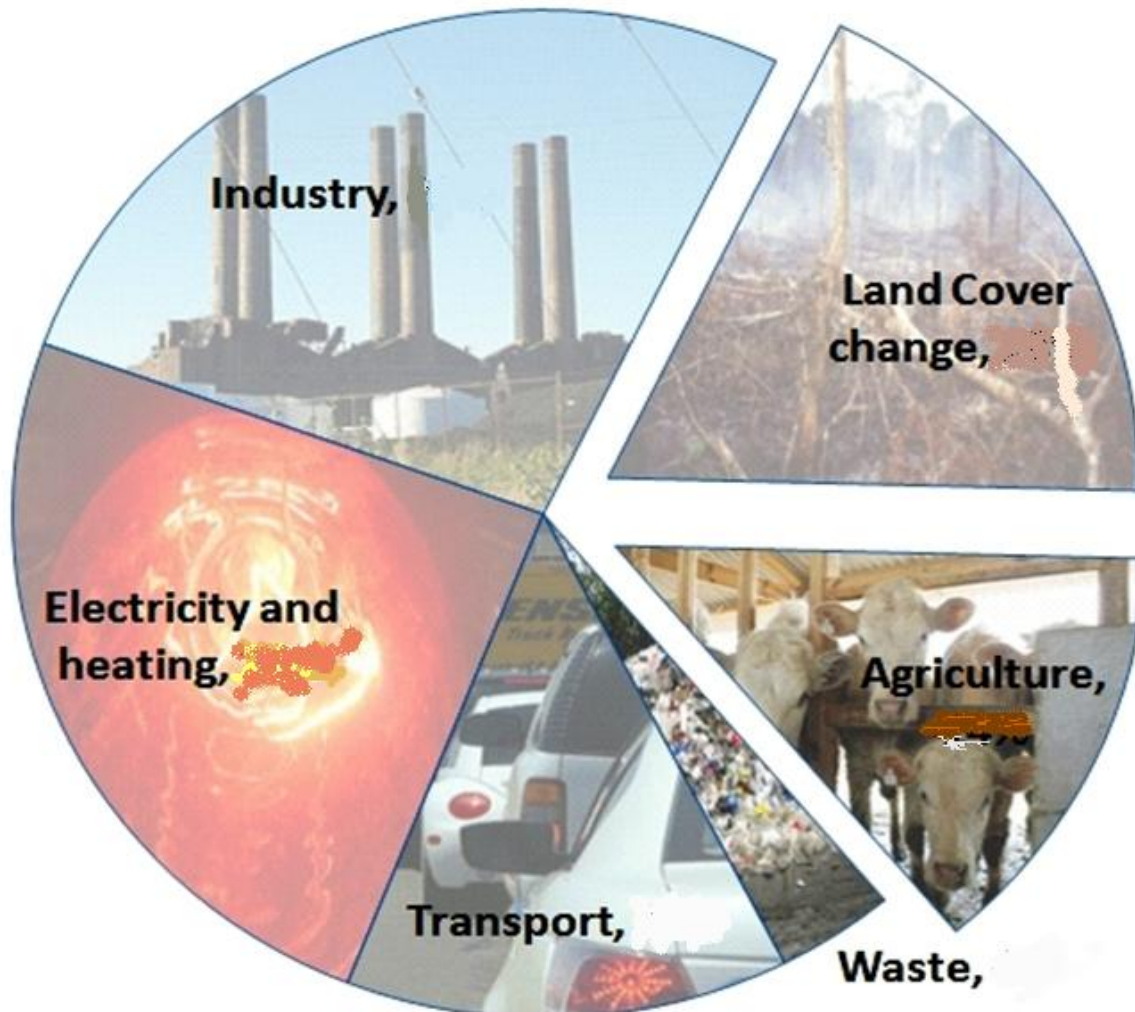
Climate change is already compromising agriculture



Lobell et al. 2011
Science



By 2050,
severe
childhood
stunting up by
23% in central
Africa and
62% in South
Asia

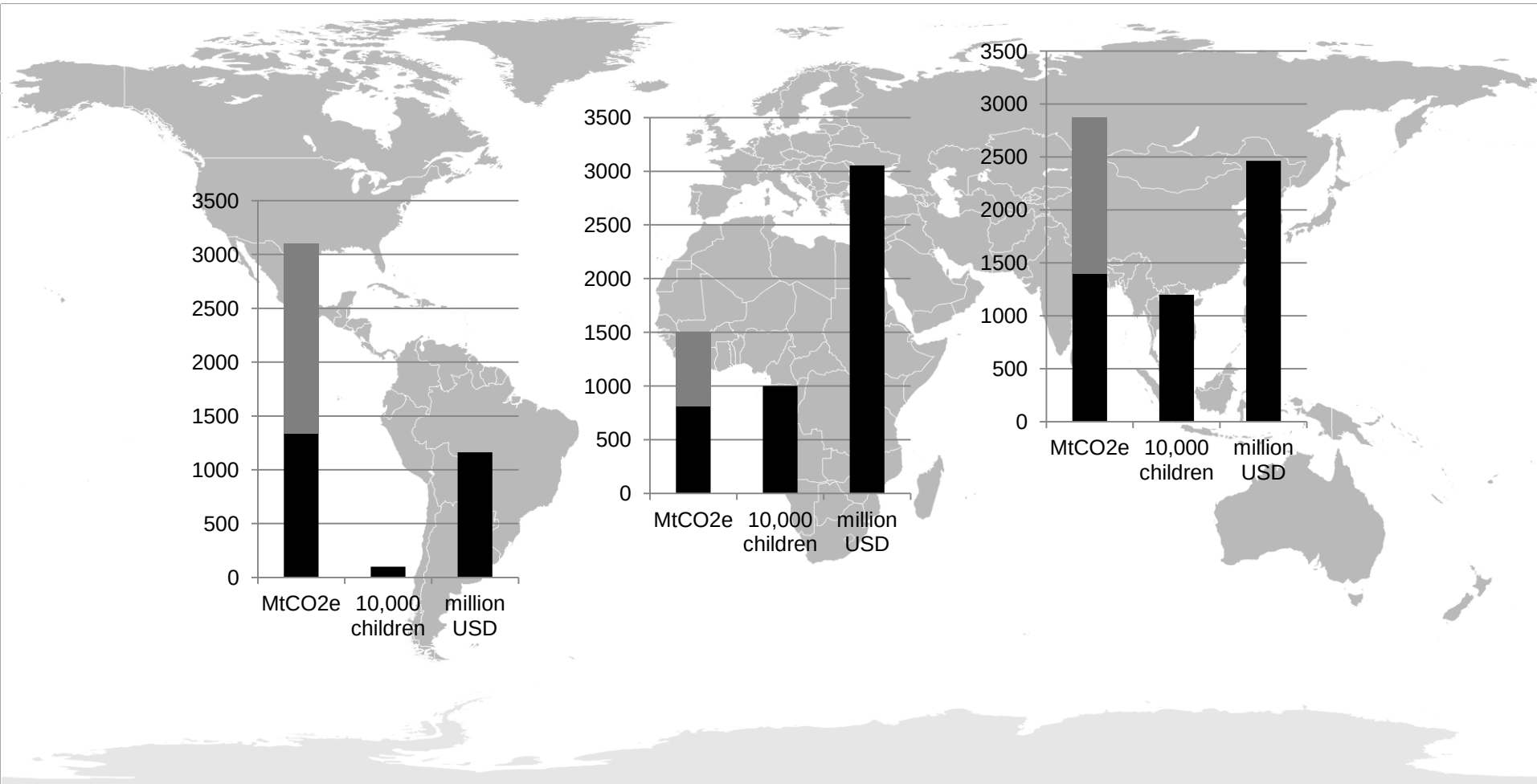


Food
systems
contributes
19-29%
GHGs

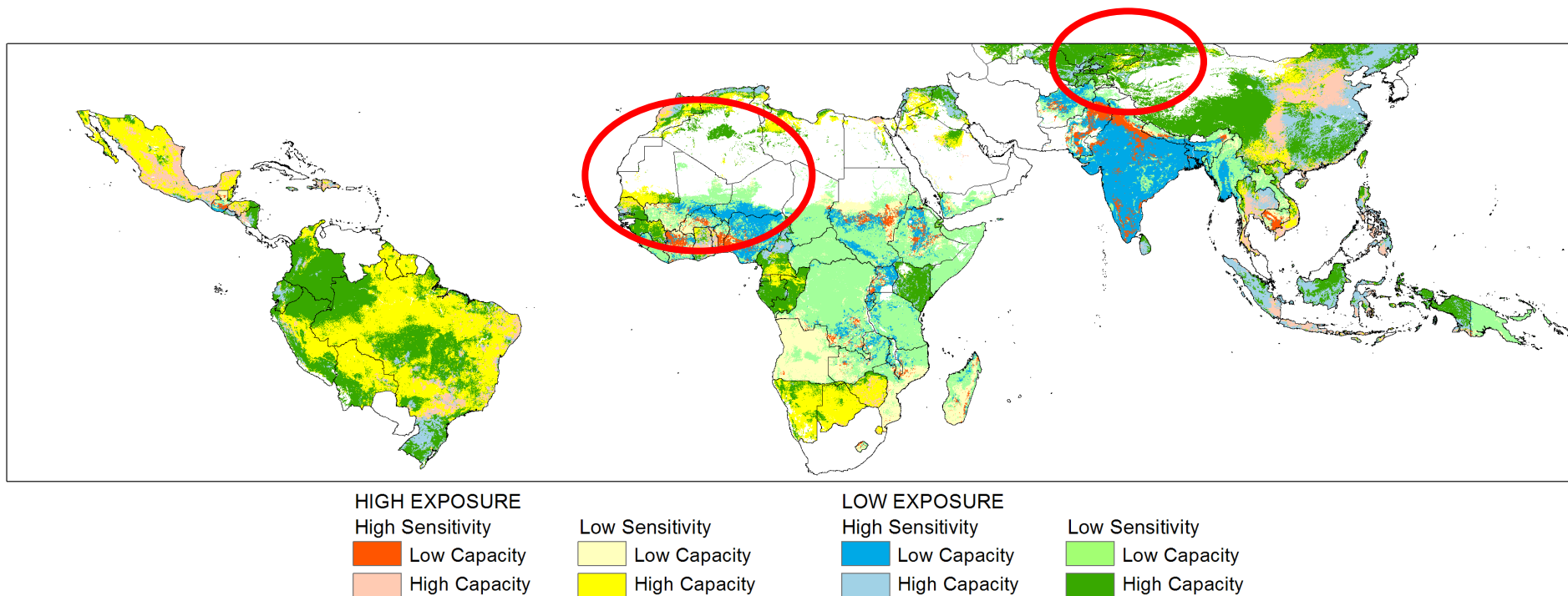
Vermeulen et al. 2012

Annual Review of Environment and Resources (in press)

Considerable regional variation



Vulnerability hotspots: growing season contraction by 5% or more



Places with HIGH exposure + HIGH sensitivity + LOW coping capacity extend over 1.4 million km² and contain 267 million people

Ericksen et al. 2011, "Mapping Hotspots of Climate Change and Food Insecurity in the Global Tropics", online at <http://ccaafs.cgiar.org/resources/reports-and-policy-briefs>

Know more...

- Types and magnitudes of impacts
- Categories of technical and institutional interventions that provide adaptive capacity in agriculture
- Most promising technical options for mitigation

Know less...

- Uncertainty on development pathways, emissions, level of response
- Local and regional specificities
- Complex interactions among climate change, food security, livelihoods

FOUR STRATEGIES

Foley et al 2011

EIGHT FOOD WEDGES

Clay 2011

SEVEN RECOMMENDATIONS

Beddington et al 2012

What could SBSTA do soon?

- Specify options for adaptation in different farming systems, taking advantage of synergies with food security & mitigation
- Improve methods and collect better measurements of GHG fluxes in different farming systems
- Establish methods to identify the most vulnerable households, farming systems and regions

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SACAU

SOUTHERN AFRICAN CONFEDERATION OF AGRICULTURAL UNIONS



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Climate Change and Agriculture

- Significant impacts on farming already
- Farmers have already started taking action
- Transition not at the required scale/pace
- Agriculture has to be part of the solution
- Farmers face major obstacles



Farmers face many obstacles

- Access to Information, e.g. examples of implementable solutions
- Access to Technology
- Disconnect with research
- Lack necessary Financing
- Poor extension support
- Limited government/policy support all round



What Farmers Expect from SBSTA/UNFCCC

- Urgent, decisive action
- An Agriculture work program
- Clarity on GHG accounting from Agric and other land use
- Significant, targeted, accessible financing mechanisms for Agric – inclusive, transparent governance
- Implementable technology transfer mechanisms





Thank You



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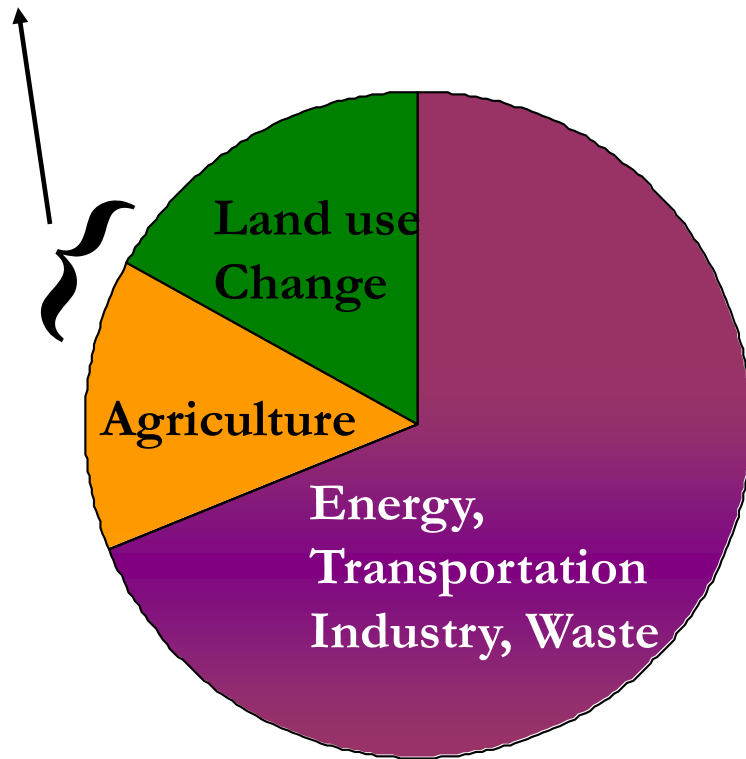
A greenhouse gas emissions measurement and monitoring network and protocol for the agricultural sector in the developing world

A CCAFS proposal

Henry Neufeldt
World Agroforestry Centre (ICRAF)

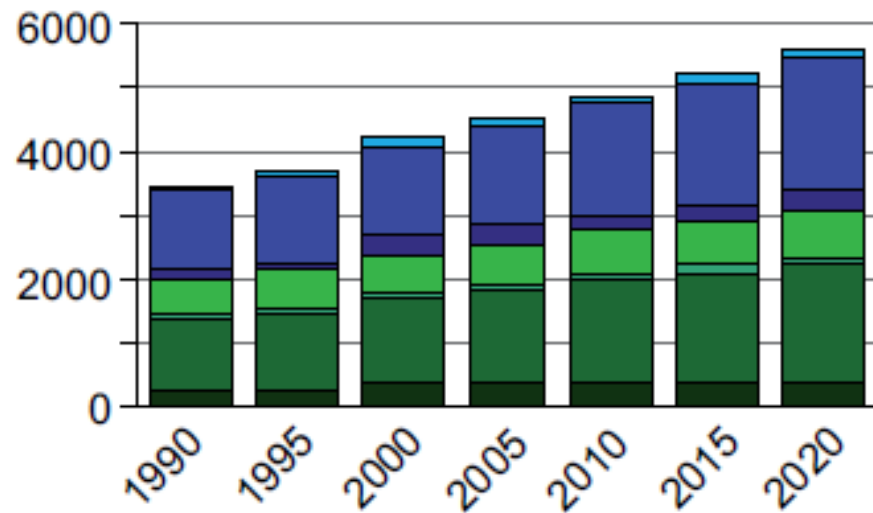
Ag & Land Use are major GHG source categories

31% of Global Warming effect



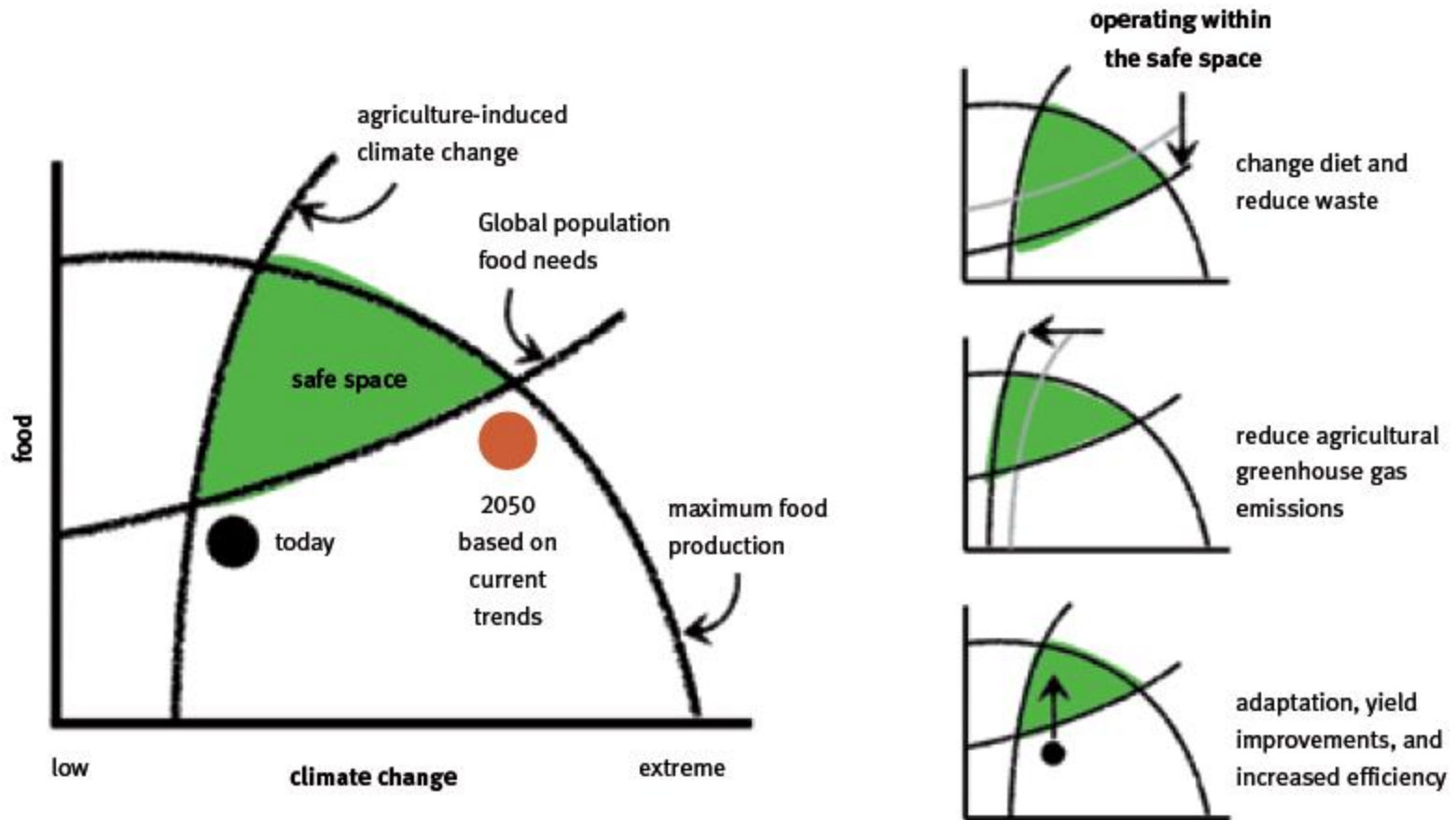
Historical and projected ag. N₂O and CH₄ emissions (Mt CO₂ eq.)

Developing regions



IPCC WGIII – 4th Assessment (2007)

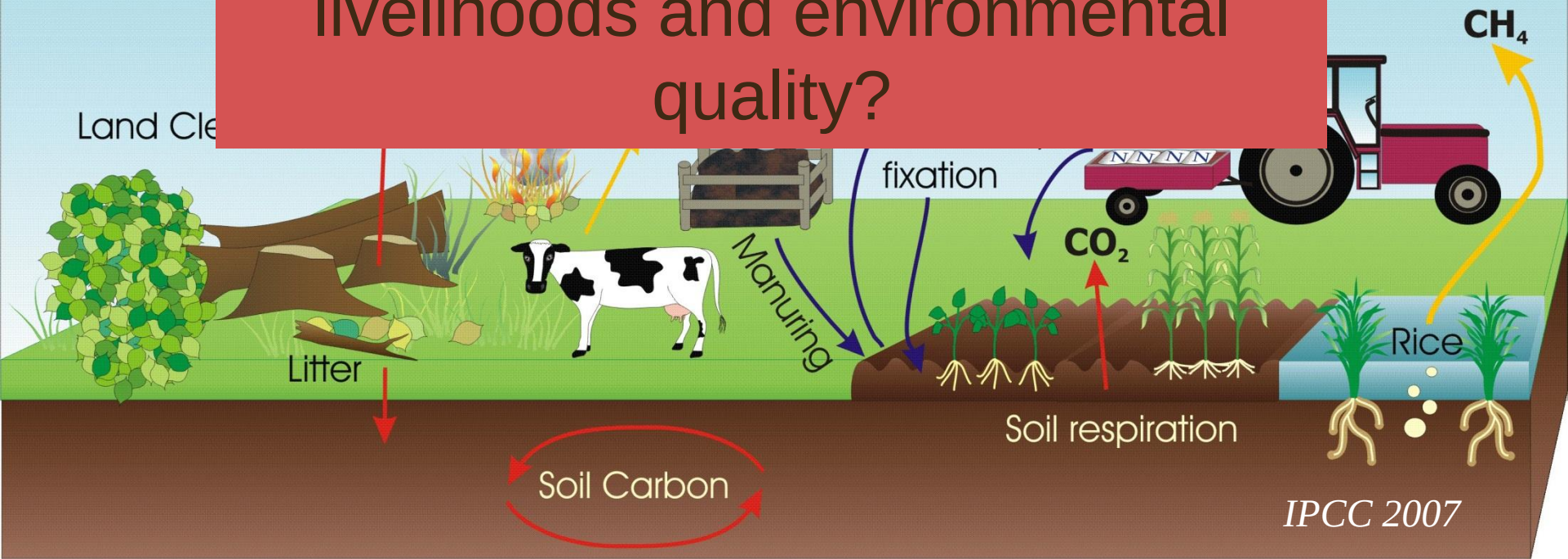
Safe operating space for interconnected food – climate systems



Beddington et al., 2012. Achieving food security in the face of climate change.

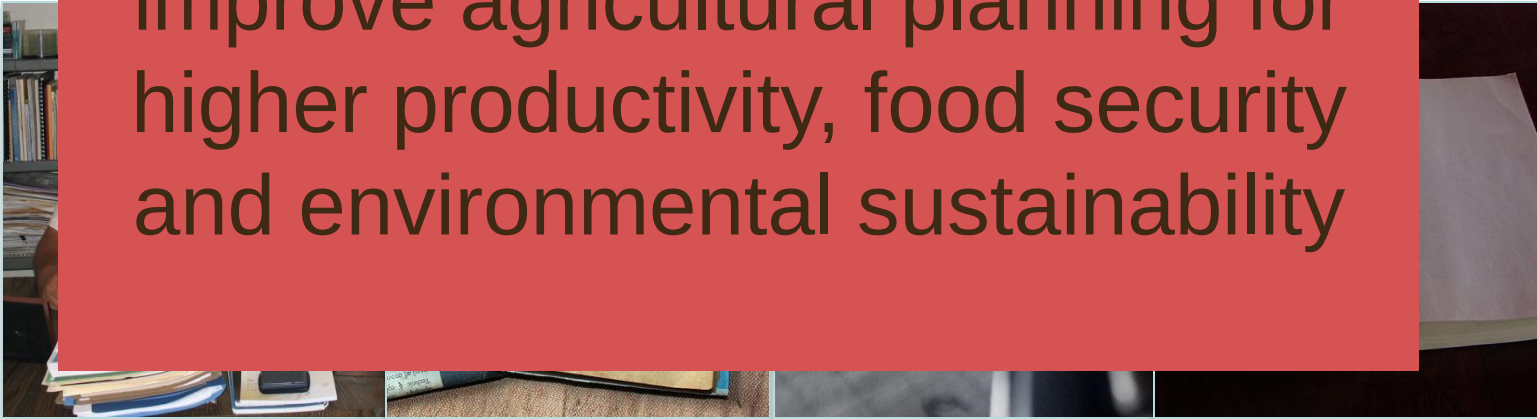
Agricultural sources and sinks of greenhouse gases

Can we ensure that agriculture GHG reductions/removals are **'real'** and that mitigation practices can maintain or enhance livelihoods and environmental quality?



Challenges for Conducting National Inventories in Developing Countries

Better data is necessary to improve agricultural planning for higher productivity, food security and environmental sustainability



**Small teams
with limited
resources and
multiple
responsibilities**

S

**Incomplete or
non-existent
activity data**

**Lack of
country-
specific
emission
factors**

**Insufficient
documentation
from previous
inventories**

Outputs

- Measurements network in key systems where uncertainties could be very large
- Well designed, economically feasible and upscalable mitigation practices
- Trained local personnel and assistance in inventory development (currently done with default or very basic Tier 2 methods) Much better emission factors needed (uncertainty in Tier 1 methods = 50%)
- Well equipped labs
- A common protocol for GHG measurement at the whole farm and landscape level tested in 3 countries in Africa, Latin America and Asia

Potential partners

- IPCC, Greenhouse Research Alliance, local institutions, CCAFS (all CG centres)
- Is there buy-in?
 - Yes! GRA, IFAD, World Bank for now
 - Donor consortium

Next steps

- Initial concept note drafted
- Needs to be disseminated for feedback
- Final draft ready by August
- Begin work on protocol
- Initial discussion with SROs in Africa, details
- IPCC Emissions Task Force approached, details
- Discussion with UNFCCC and donors

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Reality check: what is feasible?

**A Possible Work Programme on
Agriculture by SBSTA**

**M. Asaduzzaman
Bangladesh
May 18, 2012, Bonn**

Present Mandate of SBSTA for a Work Programme on Agriculture

- Durban decision was on Exchange of Views for a Work Programme on Agriculture (WPA)
- Several issues to be considered in developing such a WPA
 - SBSTA general mandate and the multi-dimensionality of agriculture - policy and national circumstances (read politics) may be more important than technical and scientific issues – SBSTA needs to find its clear niche and decide how to integrate scientific & technical issues with policy issues
 - Defining agriculture (crop/non-crop, food/non-food)) – and activities for a particular type: production or production *plus*
 - How to handle core concerns of food security – should only availability through production be considered or aspects such as access and utilisation (nutrition)?
 - Intertwining of adaptation and mitigation and the boundary lines between them in relation to food security
- Fortunately, a huge literature on many aspects within UN system and outside exist

Possible Elements of a WPA

- **A critical review of the existing works and literature on both scientific and policy issues**
- **Decide upon the gaps and stress the technical aspects of gaps to be filled up by SBSTA itself – rest to be forwarded with recommendation based on wide consultation to COP for a decision on how to address those important and inalienable issues particularly related to coordination and cooperation with other Convention, UN and global bodies**
- **Examine specific and technical issues related to specific technology such as GMOs, prepare relevant technical notes and papers**
- **Development of simple technical tools for measurement of vulnerability of agriculture, adaptation needs, GHG emission and mitigation potentials without jeopardising food security – prepare relevant papers and notes**
- **Prepare and circulate for comments a report based on above works to Parties, Expert groups and other stakeholders, finalise and submit to COP for its final decision on the report as well as follow-up activities related finance, capacity-building, technology development and transfer**

THANK YOU

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