

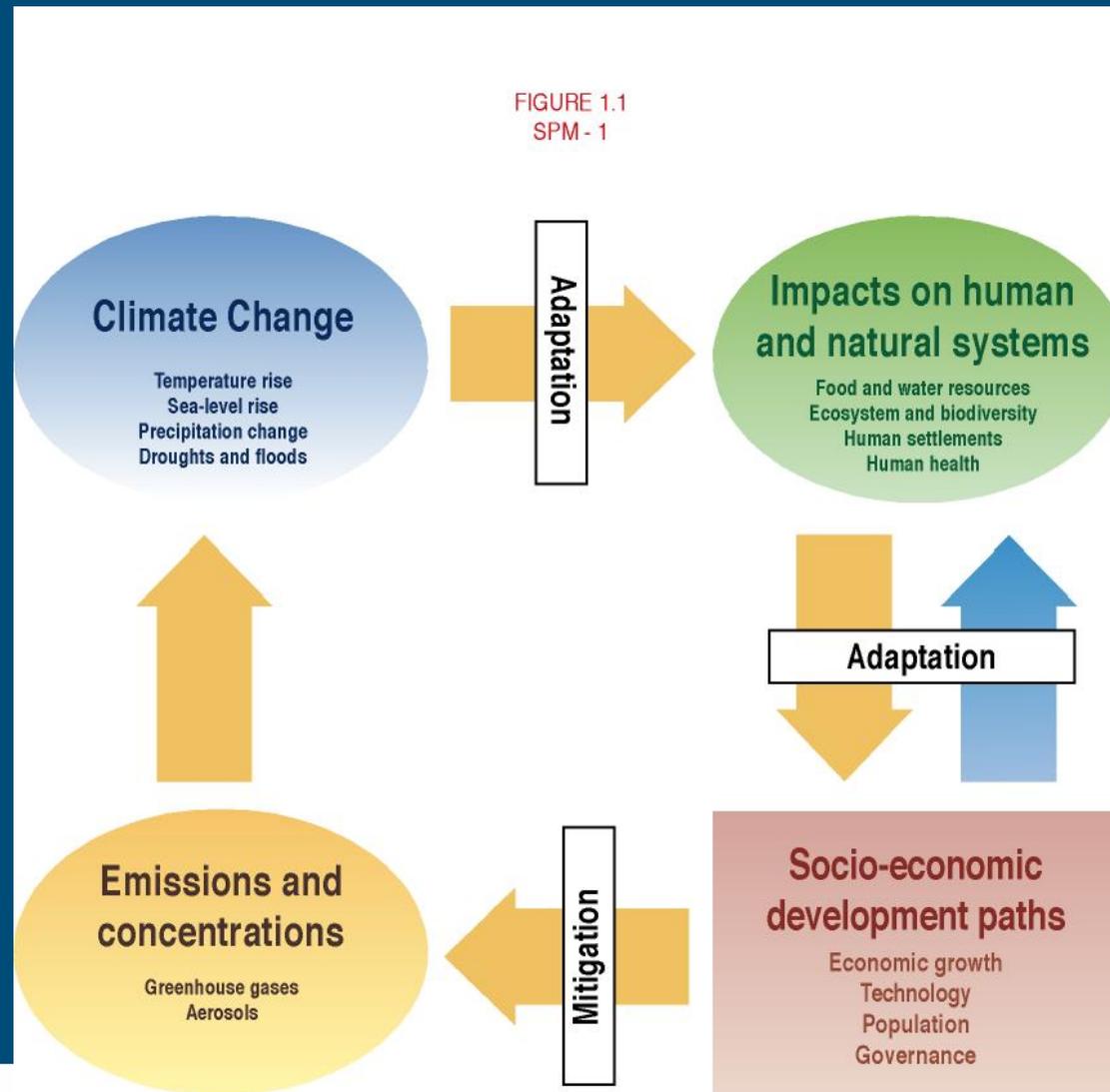
(Organic) agriculture in future climate regimes

Jan Verhagen
Agrosystems Research
Plant Research International



Climate Change – An Integrated Framework

FIGURE 1.1
SPM - 1



UNFCCC, Article 2

... the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

... be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

UNFCCC, Article 4

To promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gasses not controlled by the Montreal protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems.

Why include land use and sinks?

- The terrestrial biosphere is a significant source of carbon. (essential for reaching objective of the UNFCCC / EU 2-degree target)
- Short term/immediate gain: buying time
- Strengthen coalition
- Broadening participation
- Increasing flexibility
- Possible synergies between mitigation, adaptation and sustainable development

Short history of sinks

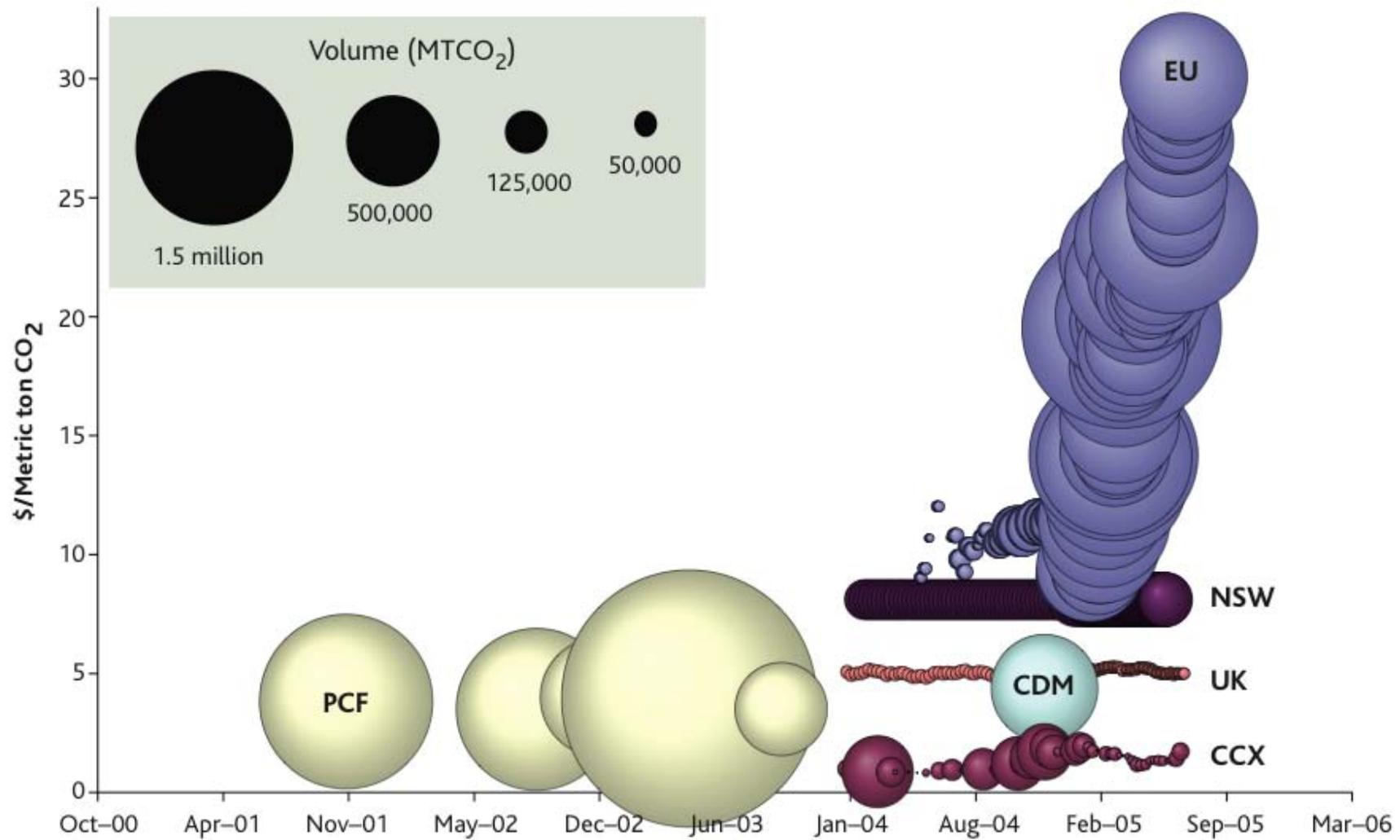
- Dec 1997 Kyoto
 - Sinks controversial
 - Accepted AR & D (Article 3.3)
 - Agreed that there may be other activities (Art 3.4)
- Asked IPCC for special report on sinks (LULUCF)
- May 2000 - Delivered to negotiators
- Aug 1st 2000 USA put forward a comprehensive accounting for all sinks – including the “free ride”
- Nov 2000 CoP6 Hague collapses
- March 2001 USA withdraws from Kyoto protocol
- July 2001 CoP6 resumed in Bonn – USA proposal forms basis of agreement on sinks
- Nov 2001 CoP7 Marrakech Accords
 - Only AR under CDM
- Aug 2002 Rio +10 meeting in Johannesburg
- Various initiatives looking at post 2012 regimes
- Feb 2005 Kyoto entered into force
- COP 11 Montreal Action Plan: start negotiations future commitment

From: Ian Noble, Bas Claabbers

Kyoto

- Targets and timetables (2008-2012)
- Three market-based mechanisms:
 - Emissions Trading (ET)
 - Joint Implementation (JI)
 - Clean Development Mechanism (CDM)
 - To assist developing countries who host CDM projects to achieve sustainable development.
 - To provide developed countries with flexibility for achieving their emission reduction targets by allowing them to take credits from emission reducing projects undertaken in developing countries.
- For the First Commitment Period (2008-2012), activities involving LULUCF is limited to afforestation/reforestation (AR), (Decision 11/CP.7, FCCC/CP/2001/13/Add.1. paragraph 13).

Prices & volumes



Investments in Developing countries

	\$B per year
Net FDI^A	300
ODA	60
WB Loans	12
WB Grants	8
Other IFIs	15
CDM Mitigation	0.5
GEF Mitigation	0.15
GEF Adaptation	0.025

Ian Noble, World Bank. Presentation: Adapting to Adaptation. 200?

Carbon and land use

- conservation of existing C pools (immediate benefits via prevention of emissions)
- sequestration by increasing the size of C pools (start slowly, reaches maximum and relaxes to zero)
- substitution of fossil fuels or energy-intensive products via bio-products
- efficiency by optimising energy, fertiliser use at farm level

Issues

- Multi-gas approach (methane, nitrous oxide)
- Non-permanence of sinks/sink saturation
- Direct indirect effects
- Monitoring & verification
- Baseline (spatial coverage)
- Leakage
- Additionality
- Conflicts with development objectives (social, economic)
- Transaction costs
- Institutional requirements

Post 2012

- Environmentally effective
- Based on sound science
- Room for choices/negotiation
- Information/data is crucial
- Ongoing process: no list of options
- Level of commitment to 'Kyoto'; prejudgments
- Geo-politics
- Economist vrs environmentalists

Issues

- Multi-gas approach (methane, nitrous oxide)
- Non-permanence of sinks/sink saturation
- Direct indirect effects
- Monitoring & verification
- Baseline (spatial coverage)
- Leakage
- Additionality
- Conflicts with development objectives (social, economic)
- Transaction costs
- Institutional requirements

Approaches

- *Targets and timetables approaches*: Proposals that lay an emphasis on environmental targets, whether binding or non-binding
- *Policies and measures approaches*: Proposals which emphasise specific measures for achieving climate mitigation or adaptation
- *Pathways approaches*: Proposals that set out a longer-term timetable for the staged implementation of a climate management regime

Options

- ***Carrots or sticks:*** Should climate policy be framed in terms of incentives or in terms of constraints?
- ***Front door or back door:*** Should greenhouse gas emission reduction result more from climate policy or from other policies?
- ***Markets or regulation:*** Should climate policy rely more on market-based policy instruments or on direct regulation?
- ***Team-player or John Wayne:*** Should climate policy rely more on a comprehensive, multilateral treaty or on partial treaties and unilateral action on parts of the problem?
- ***Adapt or mitigate:*** Should climate policy emphasize mitigation or adaptation?

Land use post 2012?

- Currently focus on large stocks and conservation: high impact. E.g avoiding deforestation. (increasing attention for peatlands)
- Agriculture still unclear
 - Large potential (but which activities, how to measure targets?,...)
 - Good possibilities to link to sustainable development
 - Extremely unlikely that organic agriculture will be given a different status from conventional agriculture.

Concluding remarks

- Don't expect too much from the UNFCCC
- Embed in sustainable development objectives. (climate resilient, climate proof, climate inclusive,...)
- Combine mitigation and adaptation in land use
- Explore the voluntary carbon market (e.g. via carbon neutral or positive products)

Thanks

© Wageningen UR

