Climate Smart Agriculture - BLESSING OR CURSE?

Anika Schroeder, Climate Change and Development, COP 18, 2012

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Climate Smart Agriculure

Agriculture that sustainably increases productivity,

resilience (adaptation),

reduces/removes GHG (mitigation) and

enhances national food security/ development goals.

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CSA = Organic Agriculture?

	CSA	Agroecology
Agriculture that sustainably increases productivity,	X	X
resilience (adaptation),	X	X
reduces/removes GHG (mitigation)	X	X
and enhances national food security/ development goals	X (?)	X (even food souvereignity, livilihoods)
GMO	(X)	
Pesticides	(X)	internal regulating mechanisms
Nitrogen Fertilizers	(X)	
culturally adapted	(X)	X
Family / Community Farming	(X)	X

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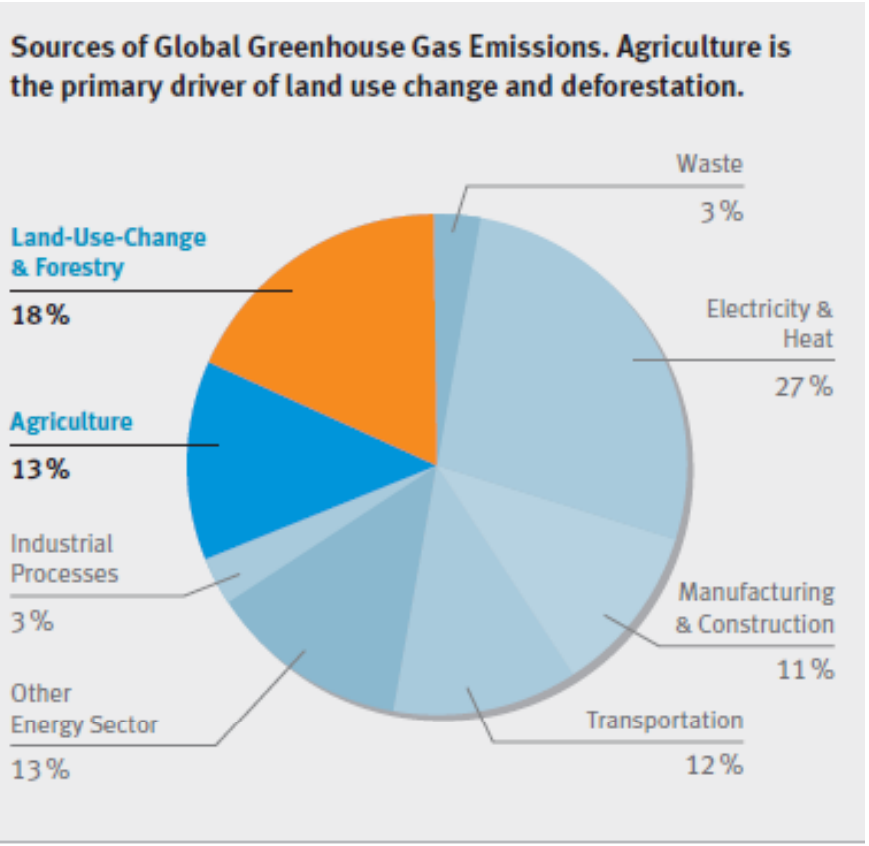
74% of all agricultural GHGs from developing countries (IPCC)

up to 90% of the total mitigation potential in agriculture through increased soil carbon sequestration (FAO 2009)

?



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GHGs from developing countries?

- China: 1,2 t per capita
- Latest rise due to N2O in Annex 1
- Sector does not include emissions from production of pesticides and fertisers

Soil carbon sequestration?

- numbers do not include substitution of ind. Fertilizer, post harvest losses, food waste and consumption patterns!
- Sequestering = reducing emissions?

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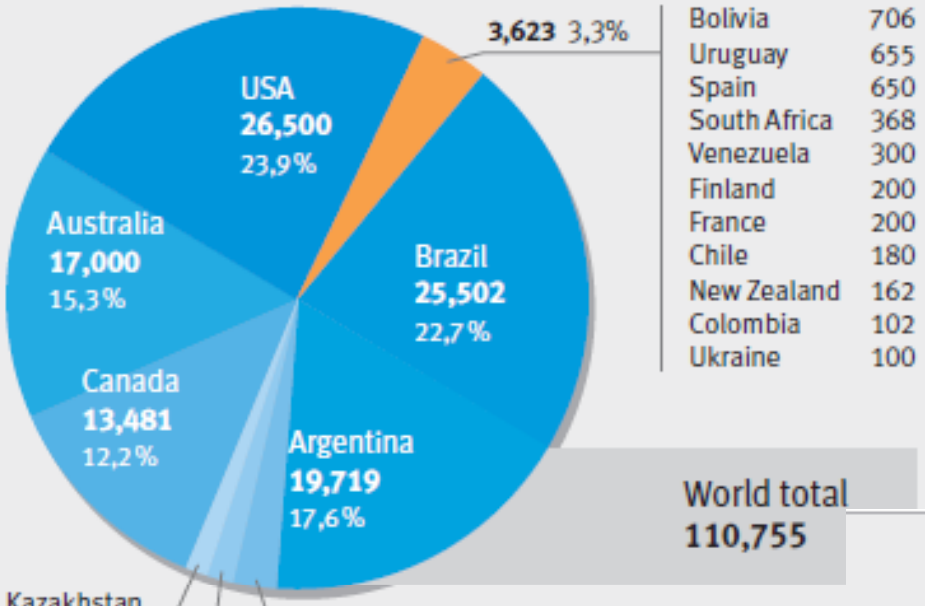
Pitfall 1: No-till

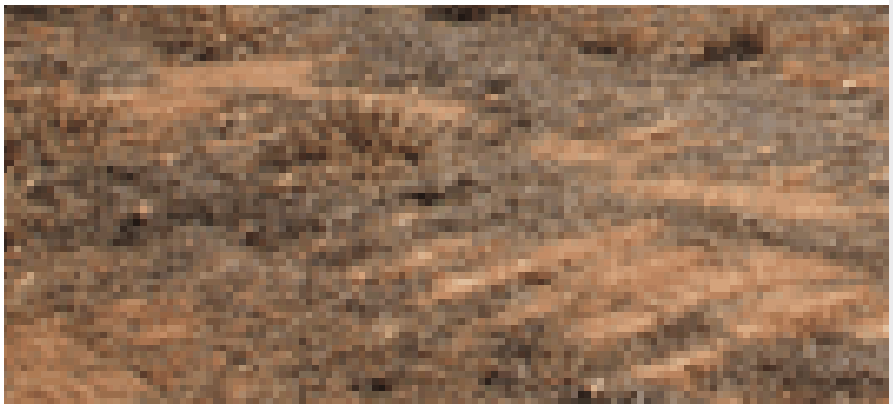
Extent of no-tillage adoption worldwide (x 1,000 ha) for the year 2008/2009



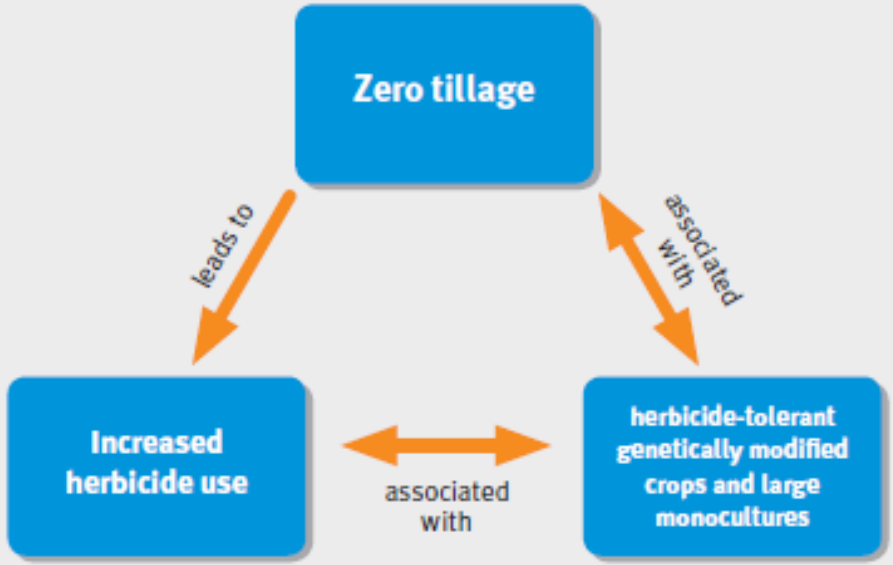
Bolivia	706
Uruguay	655
Spain	650
South Africa	368
Venezuela	300
Finland	200
France	200
Chile	180
New Zealand	162
Colombia	102
Ukraine	100

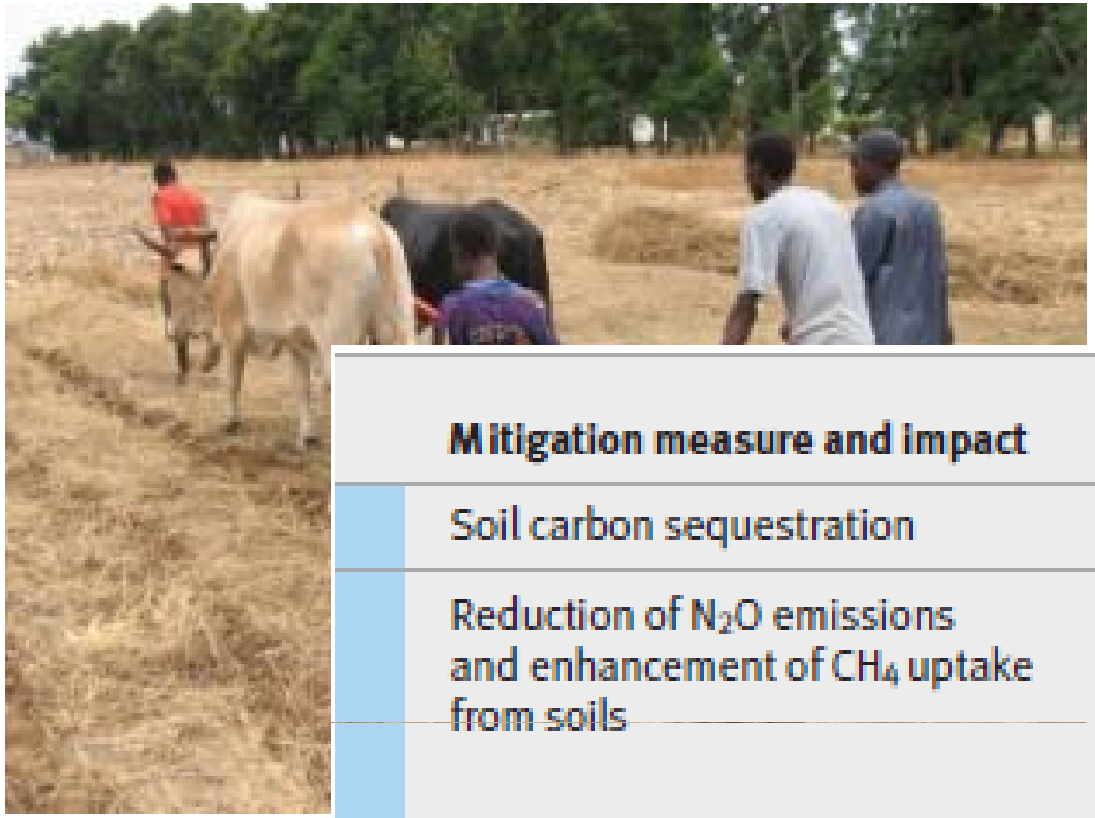
World total
110,755

Data compiled from Derpsch et al. (2010), mainly based on estimates made by farmer organizations and agro-industry.



Interactions between zero tillage (= no-till) and increased herbicide use, herbicide-tolerant GMO crops and large-scale mono-cropping systems





Pitfall 1: No-till

	Mitigation measure and impact	Scientific evidence
	Soil carbon sequestration	No clear evidence
	Reduction of N_2O emissions and enhancement of CH_4 uptake from soils	N_2O reduction only after 10 years of adoption for humid climate regimes, no reduction for dry climate Enhanced CH_4 uptake
	Reduction of fossil fuel use	Consumption decreased by 36-70%
	Reduction of CO_2 and N_2O due to reduced use of synthetic nitrogen fertiliser	Uncertain, especially for small-holders and only effective when legumes are part of crop rotation

No to little effect Little effect High effect

Pitfall 2: Carbon Market

1. Undermining climate change mitigation

complex biological processes in soils and biomass make it difficult to obtain reliable soil carbon measurements – these, however, would be essential for the quantification of sequestered CO_2 and the generation of corresponding CERs

2. No benefit for small-scale farmers

upfront costs vary from US$ 12 to 600 per ha (FAO)

even where farmers manage to receive carbon credits intermediaries soak up most of the financial resources

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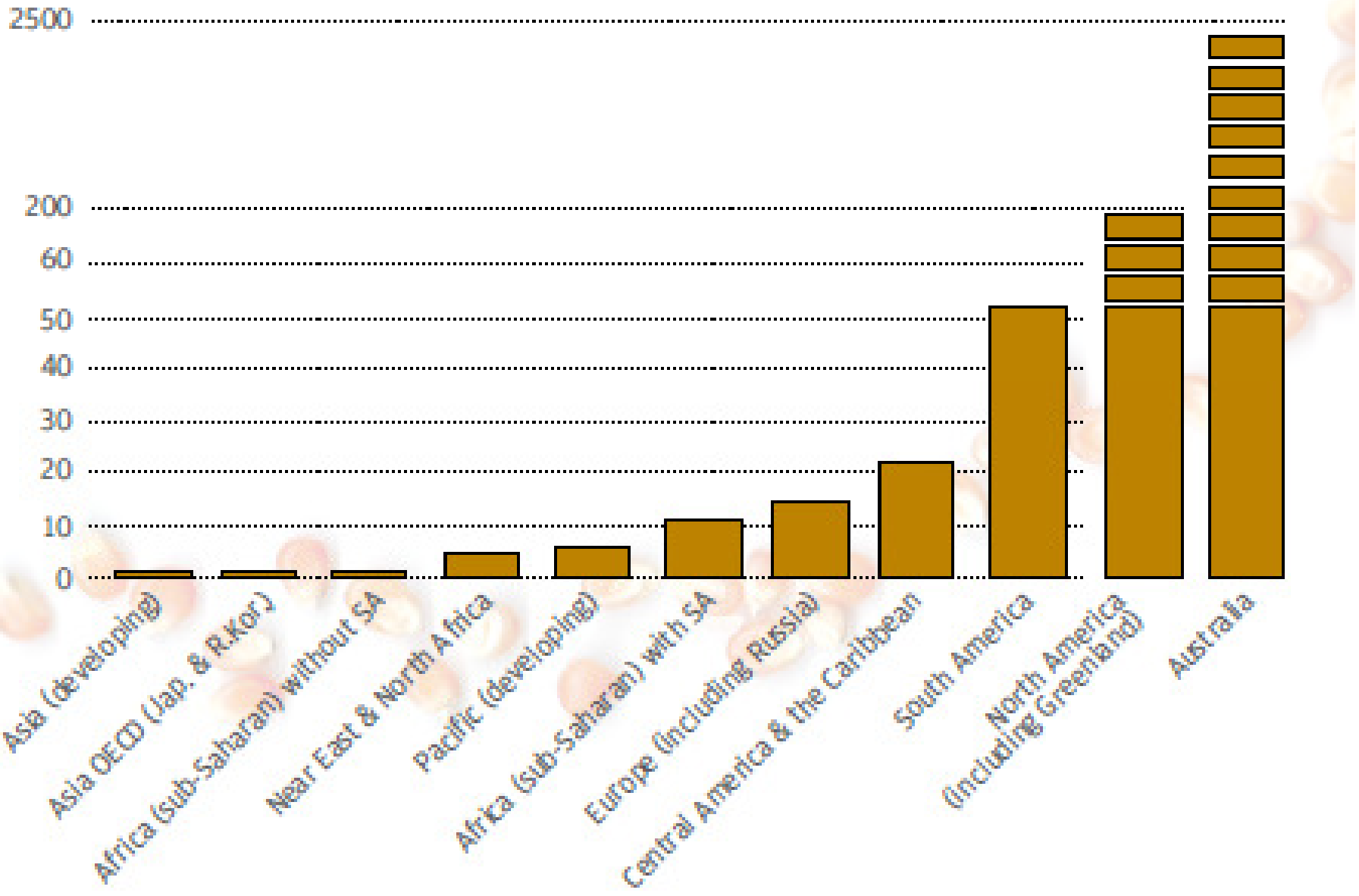
AVERAGE SIZE OF AGRICULTURAL HOLDINGS (ha)



Pitfall 2: Carbon Market

3. Non- appropriate technology

Introduction of non-appropriate technologies at the expense of locally appropriate, affordable and ecologically sound measures.

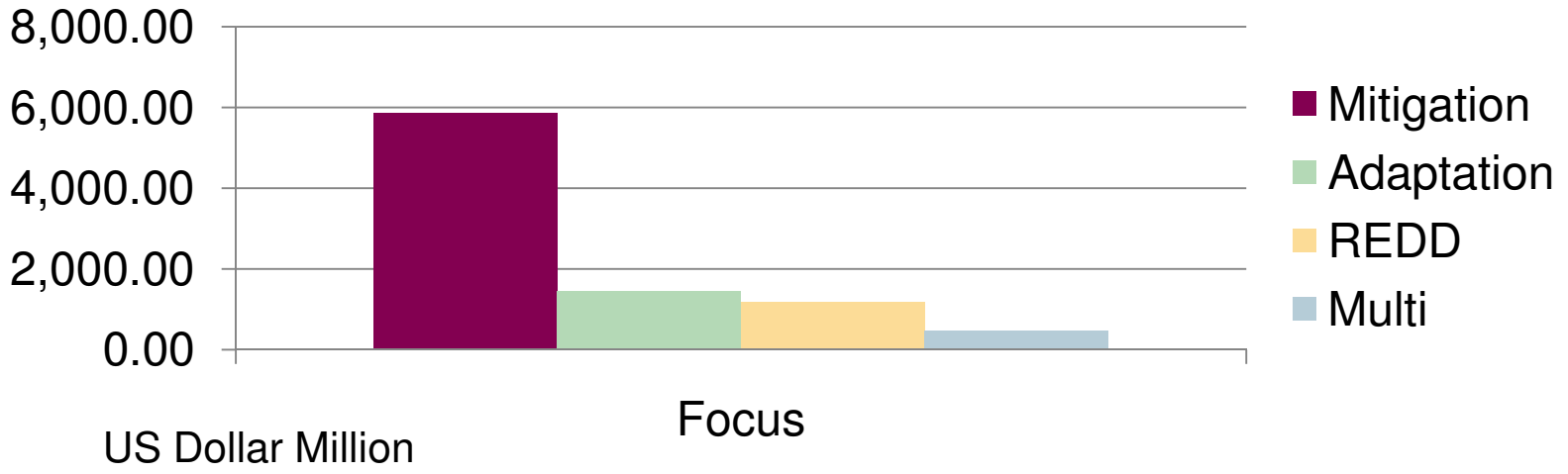
Risk of the displacement of food production in favour of more easily calculable carbon sinks (Pinto et al. 2010)

4. Diversion of ODA

17 billion Euros needed between 2010 and 2030 to establish trading from soil carbon sequestration

Carbon market ‘readiness’ projects may divert institutional, human and monetary resources away from other development efforts, as a large part of this cost will be met by Official Development Assistance (ODA)

Focus of current Climate Finance



see: www.climatefundsupdate.org

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Where is the market?

- Price: €5.5 and 1 € (CER)
- adding non-permanent carbon credits into this unstable and unreliable scenario is likely to further undermine the price of carbon
- reduces incentives to mitigate in Annex 1
- no acceptance under the EU ETS

A guessing game at the cost of global temperature rise and, consequently, at the expense of those most vulnerable to climate change.



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