

# Farming and Climate Change

Part of the problem, part of the solution

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# Farming as a CC problem - generating GHG

- Farming is done on land cleared for other vegetation (Land Use Change)
- 'Modern farming' degrades soil carbon
- 'Modern farming' requires a lot of GHG-intensive inputs
- Animal husbandry release much methane, as does flooded rice

# Farming as a CC problem - Poor farmers are hit the worst

- Drought, excessive rains (floods), storm damage, temperature extremes - all hit poor farmers the most...
- And they usually have few resources to adapt..

# Farming as a CC solution

- Methods exist to build up soil carbon and maintain productivity - mitigation on REALLY large scale possible
- And cropping systems can otherwise be climate-adapted

# Farming as a necessary CC solution

- 'An initial 350 ppm CO<sub>2</sub> target may be achievable by phasing out coal use except where CO<sub>2</sub> is captured and adopting *agricultural* and **forestry** practices that *sequester* carbon. If the present overshoot of this target CO<sub>2</sub> is not brief, there is a possibility of seeding irreversible catastrophic effects.' (*James Hansen et al, November 2008*)

# So what needs to be done?

- Basically - replace input-intensive farming with LEISA (Low External Input Sustainable Agriculture)
  - *Improve soil fertility, applying organic matter*
  - *No till or reduced tilling*
  - *(Re)plant trees in agricultural landscapes.*
  - *Avoid external inputs as far as possible..*
  - *Stop eating meat.. Or find ways to eliminate methane from ruminants.*

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# Easy - or any obstacles?

- Agro-industry and its lobby
- Habitual thinking in agricultural research and extension systems
- And among farmers..
- Economic incentives in distribution of agro-inputs
- Policies..
- And the press...

# What to do?

- Policy development - get LEISA into post-Kyoto (or earlier..)
- Maybe involve WTO?
- National policy changes, promote CC friendly farming, change incentives..
  - *Large farms: regulations, public pressure*
  - *Family farms: information dissemination. How - to millions of farmers???*
- Research - practice oriented in farming, holistic in agricultural economics and policy

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# Example

## Nordeco in Cambodia:

- ❖ A local NGO convert farmers to LEISA
  - They participate because it improves their livelihoods (reduced expenditures, better yields)
  - At the same time they do climate mitigation (reduced CO<sub>2</sub> through inputs, increased soil carbon, increased tree planting, reduced CH<sub>4</sub> because rice not water-logged)
  - And they do climate adaptation (crop more drought resilient) as well as disaster preparedness (social organisation).
- ❖ Much, much cheaper than official 'development assistance' and much better results
- ❖ May be scaled up (and the press is crazy about it..)
- ❖ Will CC-funding become available for such interventions?

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