



Climate Change – The Heat is On? Edinburgh June 2008

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Livestock and mitigation of climate change: from the IPCC to evidence at the national level

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Inter-governmental Panel on Climate Change (IPCC)

- o 20 co-authors undertaking remit from central committee
- o Examined database of over 200 experiments to derive per-area / per-animal mitigation efficiencies for >60 agricultural mitigation options, for four climate zones
- o Applied to appropriate agricultural (crop, grass, livestock) areas / numbers in each climate zone in each region

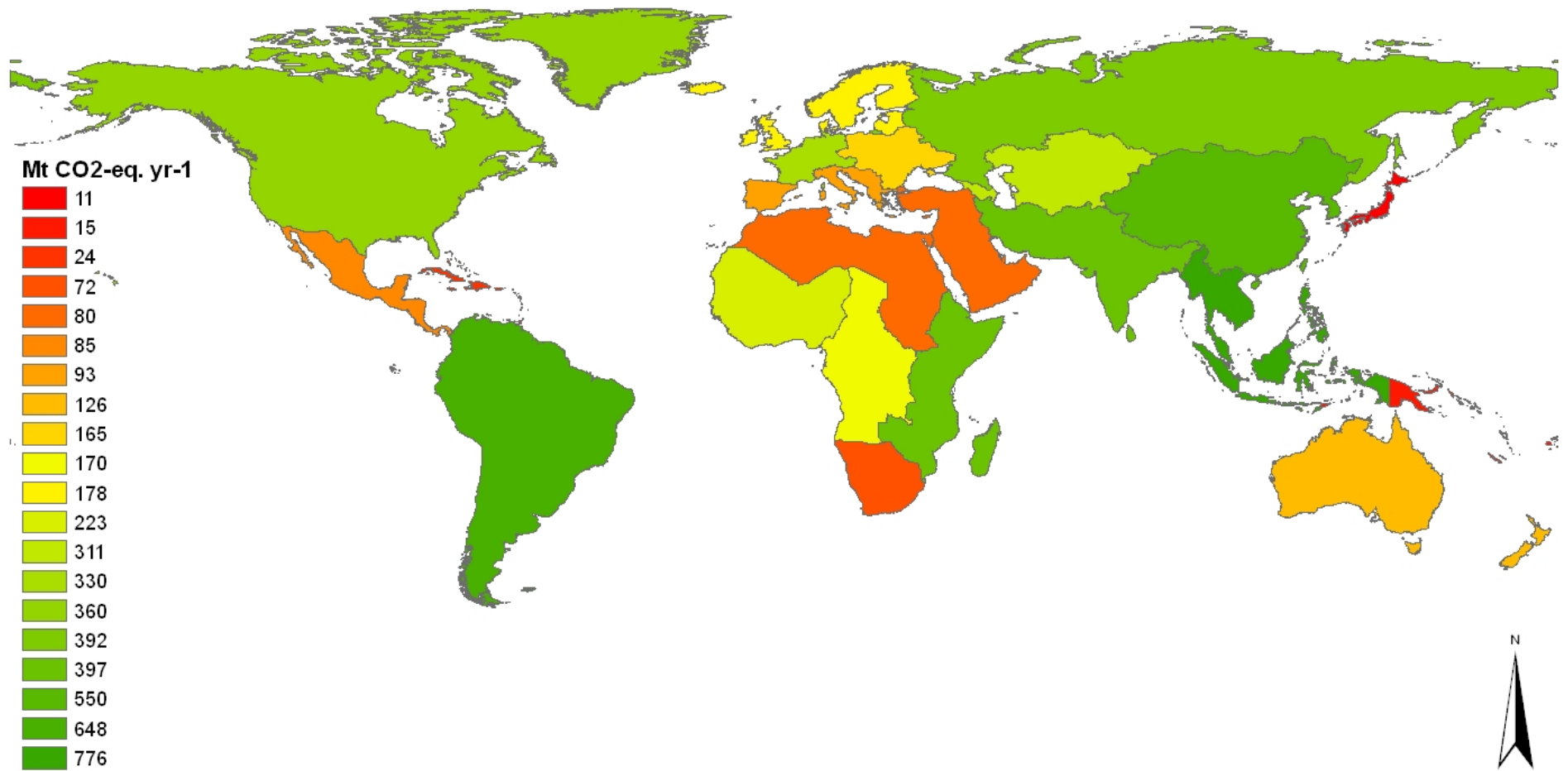
Globally

Agriculture accounted for an estimated 10-12% of global human-induced greenhouse gas emissions in 2005

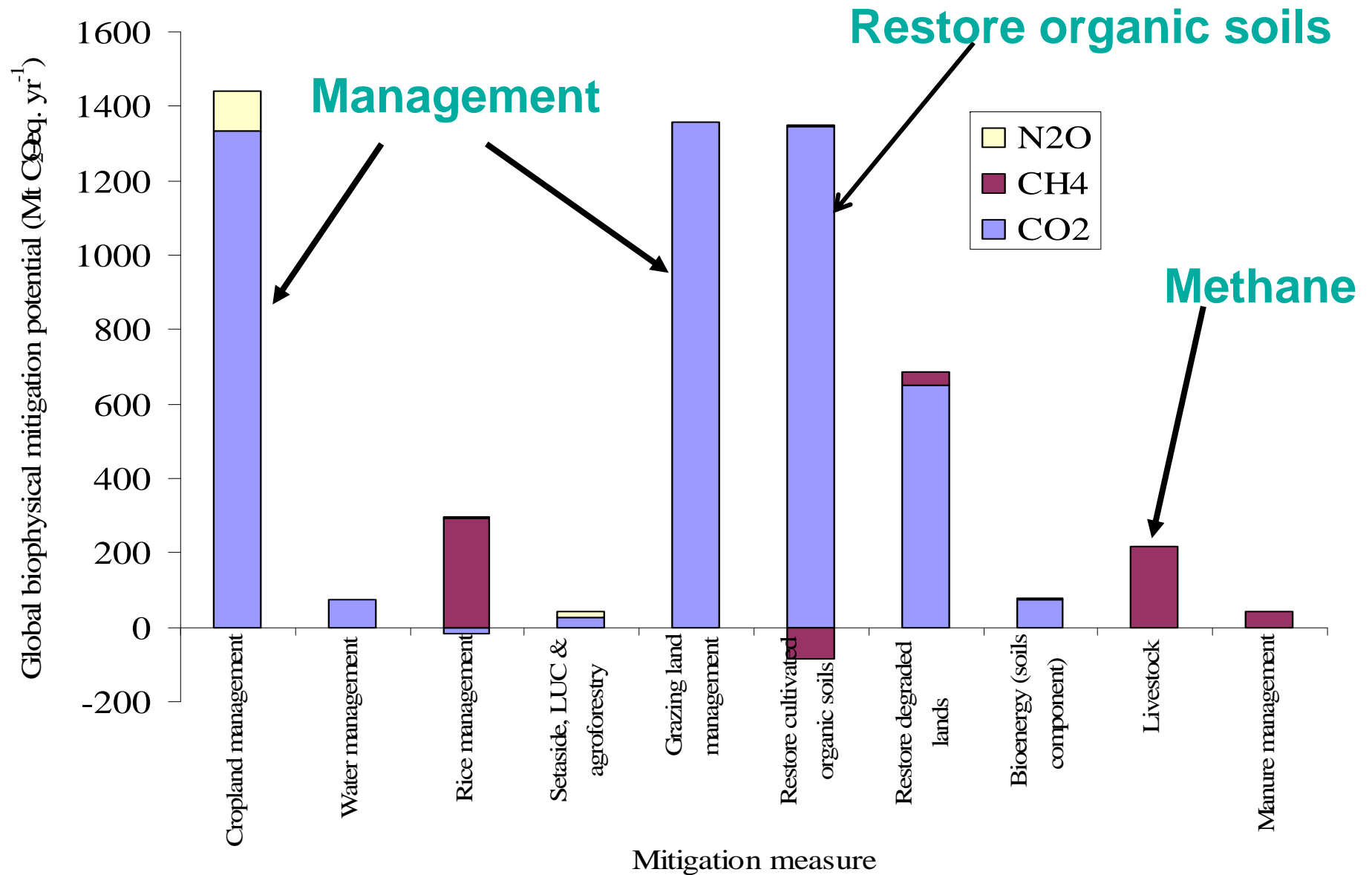
Smith et al (2007) 4th Assessment IPCC report

But this does not take into account contribution from changes in land use, or associated costs such as fuel for cultivation activities, energy associated with livestock housing etc

Mean biophysical mitigation potential

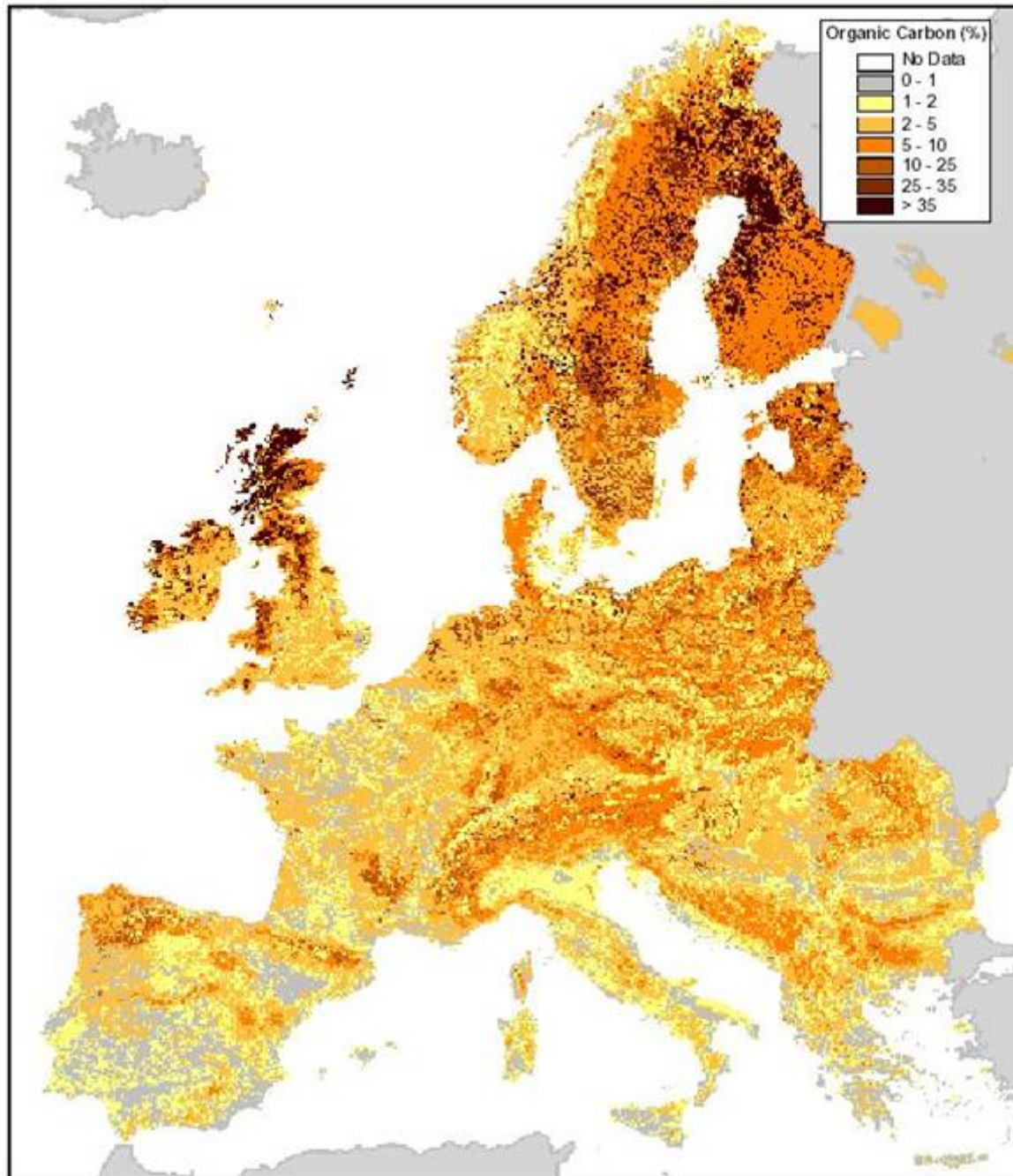


Global mitigation potential in agriculture




Smith et al. (2007a)

**Organic Carbon
content of
European soils**



SCOTTISH SUN EX-COWS-IVE

UDDER GENIUS



Profs: Stop cows breaking wind to save planet

By ANDREW NICOLL

SCOTS scientists are leading a £60million charge to stop cows BREAKING WIND — in an ingenious bid to halt global warming. The professors declared war

In UK: livestock contribute ~7.5% of total GHG emissions of which methane is <3% and fuel associated with feed, transport etc is ~4.5%

Changing land use and carbon storage

Grassland to
arable

Arable to
grassland



negative

positive

Soil carbon change

International actions and targets

- o EU Member States have all signed up to 20% cut in emissions by 2020
- o Individual states, including Sweden (25%) and Denmark (21% in 2008-2012) are already aiming higher
- o UK Climate change bill: proposes a 60% decrease in CO₂ equivalents by 2050: Scottish Climate change bill: proposes an 80% decrease in emissions by 2050
- o Norway, New Zealand, Iceland, Costa Rica are all aiming to be carbon neutral

What evidence is needed?

- Data which enable meaningful comparisons between sectors
- Data which help paint the 'big picture', e.g. consider unintended consequences
- Predictions of the impacts not only of climate change and the WTO but also of climate change legislation from other countries

Who should provide it?

Very complex requirements for data such as life cycle carbon footprints translated into kg carbon/ kg milk

Therefore advocate:

- o Groups of policy makers, scientists, practitioners along the food chain to identify the key questions and prioritise finding the evidence where global averages aren't appropriate at the national level;
- o Then research and analysis phase by scientists
- o Then challenge phase where original groups challenge the findings of the research

Take home message

- o Identifying the most appropriate action for governments to take with respect to reducing Greenhouse gas emissions from agriculture without compromising food security is a challenge
- o The most appropriate options will come from farmers, food chain practitioners and scientists working together to provide robust evidence
- o There are potential 'shocks' ahead from the impact of a combination of national climate change bills
- o International conferences such as this should help to mitigate risk