

Final Concept Note for Side Event

Re-assessing agriculture and other potential drivers of Climate Change

Marrakech, COP22, Green Zone, Room Draa, Thursday Nov. 17th 2016; 11:00h to 12:30h
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Mean Carbon Dioxide concentration in the air rose from about 3 molecules to 4 molecules in 10.000 air molecules since the industrial revolution. Concentrations of other Greenhouse Gases (GHG) such as Methane and Nitrous Oxide also increased during this period. Besides fossil fuel consumption, livestock husbandry and agriculture have been accused of being mayor contributors to these observed changes in atmospheric composition, - interpreted with growing confidence in the IPCC assessment reports as the main drivers of temperature increase / climate change observed during the past century.

We analyze basic scientific principals in quantifying anthropogenic GHG emissions from managed ecosystems, as well as available data on climate response to Greenhouse Gases and other potential drivers of Climate Change under a variety of methodological approaches. While there is growing empirical evidence of beneficial effects of rising CO₂ for natural ecosystems, crops and pastures, dangerous impacts of CO₂ on the climate are becoming increasingly doubtful.

Agenda:

11:00-11:02h Opening message

11:03-11:25h

Jan-Erik Solheim: Attempts to verify the greenhouse effect by experiments

11:26-11:45h

Albrecht Glatzle: Re-considering Livestock's and Agriculture's Role in Climate Change

11:46-12:15h

Nils-Alex Mörner: Re-considering Solar Forcing, Climate Change and Sea Level Rise

12:16-12:30h Questions and Answers

Summaries and biographic notes:

Albrecht Glatzle, Paraguay: Representing "Asociación Rural del Paraguay" in "Comisión Nacional de Cambio Climático". PhD sc. agr. Hohenheim University, Germany. 32 years of applied research in range ecology and pasture management in Germany, Morocco, Botswana and Paraguay. Over 50 short term missions in more than 25 countries. Author of more than 100 publications, including two books. Now running his own cattle ranch in the Gran Chaco.

Summary: Reductions of global livestock numbers and meat consumption have been recommended for climate change mitigation. However, basic methodological deficiencies have been identified to be associated with such kind of recommendations: (1) Carbon footprint, emission intensity, and life-cycle assessments of domestic livestock products reported in scientific literature consistently overlooked the necessity of correcting non CO₂ GHG emissions (nitrous oxide and methane) from managed ecosystems for baseline emissions over time and space (pristine ecosystem and/or pre-climate change emissions); (2) Uncertainties associated with the climate sensitivity of anthropogenic GHG-emissions have been ignored; (3) The virtual lack of a discernible livestock signal in global methane

distribution and historical methane emission rates has not been acknowledged. A considerable over-assessment of potential livestock contribution to climate change is the logical consequence of these important methodological deficiencies which have been inexorably propagated through recent scientific literature.

Relevant publications:

Glatzle, A. (2014): Questioning key conclusions of FAO publications 'Livestock's Long Shadow' (2006) appearing again in 'Tackling Climate Change Through Livestock' (2013). Pastoralism: Research, Policy and Practice, 4:1. DOI: 10.1186/10.1186/2041-7136-4-1
<http://www.pastoralismjournal.com/content/4/1/1>

Glatzle, A. (2014): Planet at risk from grazing animals? Tropical Grasslands – Forrajes Tropicales 2, 60-62 DOI:10.17138/TGFT(2)60-62 <http://tropicalgrasslands.info/index.php/tgft/article/view/144/92>

Glatzle, A. (2014): Severe Methodological Deficiencies Associated with Claims of Domestic Livestock Driving Climate Change. Journal of Environmental Science and Engineering B 2, 586-601
<http://www.davidpublishing.com/davidpublishing/Upfile/5/8/2014/2014050882981745.pdf>

Nils-Axel Mörner, Sweden: Representing “Independent Committee on Geoethics” and “Paleogeophysics & Geodynamics”. Ph.D. in Geology, Associated Professor in Quaternary Geology, Paleogeophysics & Geodynamics and General Geology. Head of the Institute of Paleogeophysics & Geodynamics at Stockholm University (1991-2005). Author of several books and several hundreds of peer-reviewed articles, 50 years of active science covering field studies in 49 different countries. Specialist on sea level changes, climate change and planetary-solar-terrestrial interaction. Expert reviewer of IGCP sea level chapters. Former president of the INQUA Commission on “Sea Level Changes and Coastal Evolution” and “the Maldives Sea Level Research Project”.

Summary: CO₂ plays a very small to insignificant role in climate change as evident when we consider observational facts, experimental tests and physical laws (instead of models that do not even agree with measured facts). CO₂ is “the gas of life” and hence beneficial for plant growth; by no means is it a “pollutant”. Climate change is predominantly driven by the Sun, its emission of luminosity and solar wind, and the filtering and amplification of this emission within the terrestrial physical processes. By 2030-2050 we will be in a new grand solar minimum with colder climatic conditions. Sea level is by no means in a mode of alarming rise. Instead sea level has remained virtually stable over large parts of the globe, and in some parts rising but only at rates in the order of 1.0 ±0.1 mm/yr. By the year 2100, our best estimate of possible sea level changes is only +5 ±25 cm, which is very little to insignificant. The claim of a present increase in extreme weather events is simply not true. In conclusion, this calls for a total reassessment of the role of CO₂ on planet Earth.

Relevant publications:

Mörner, N.-A. (2015): Planetary Influence on the Sun and The Earth, and a Modern Book-Burning. Nova Science Publishers, 194 pp.

Mörner, N.-A. (2015): The approaching New Grand Solar Minimum and Little Ice Age climate conditions. Nature Science, 7: 510-518. <http://dx.doi.org/10.4236/ns.2015.711052>

Mörner N.-A. (2016): Sea level changes as observed in nature, In: Evidence-Based Climate Change, D.J. Easterbrook, ed, Chapter 12, p. 219-231. Elsevier.

Mörner, N.-A. (2016): “New Dawn of Truth”, the London Conference on Climate Change: Science & Geoethics, September 8-9, 2016, Extended Abstracts & Commentary Notes, 124 pp.
<https://www.researchgate.net/publication/306013278>

Jan-Erik Solheim, Norway: Representing Klimarealistene (Climate Realists), a government independent organization for freedom of speech in climate questions. Professor (em) in physics (astrophysics) at the University of Tromsø, Norway. Several publications in astrophysics and in relations between the movements of planets, the solar radiation, solar activity and climate.

Summary: Our atmosphere is compared with a greenhouse, where the so called greenhouse gases keep the atmosphere warm, in the same way as the glass-roof does in real greenhouses. It is claimed that one can, with a simple experiment, demonstrate the warming effect of the CO₂ gas. We have done experiments with small greenhouses, and demonstrate that it is roof and walls that keep the greenhouse warm. This stops the natural cooling by convection and evaporation/condensation. The effect of walls and roof is much bigger than the difference between a glass roof and IR-transparent roof. We have also tried to measure the warming effect in a greenhouse filled with CO₂, and tried to measure the climate sensitivity for doubling the CO₂ content. So far our experiments have been negative. We are not able to show that more CO₂ in the air makes it warmer. We conclude that the warming effect of more CO₂ in a greenhouse is very small or non-existent and the climate effect may be negligible.

Relevant publications:

O. Humlum, J.E. Solheim, K. Stordahl, Identifying natural contributions to late Holocene climate change, *Global and Planetary Change*, 79, 145-156, 2011

O. Humlum, K. Stordahl, J.-E. Solheim, The phase relation between atmospheric carbon dioxide and global temperature, *Global and Planetary Change*, 100, 51-69, 2013

J.-E. Solheim, Signals from the planets, via the Sun to the Earth, *Pattern Recognition in Physics*, 1, 177-184, 2013

J.-E. Solheim, T. Eriksen, Y. Engebretsen, The Greenhouse effect – a high school experiment, Abstract, The London Conference on Climate Change: Science and Geoethics, Sept 8-9. 2016

H. Yndestad, J.-E. Solheim, The influence of solar system oscillation on the variability of the total solar irradiance, *New Astronomy*, 51, 135-152, 2017