The CCB-bulletin, no 4, 12 June 2003
http://www.wageningen-ur.nl/ccb/

In this Bulletin:

1. Air Quality for a better life in the new millenium (Dubai, 21-25 February 2004)

An International Conference on "Atmospheric Pollution" will be held in Dubai, United Arab Emirates, on 21 - 25 February 2004. The Organizing and Scientific Committees invite papers on Air Pollution Monitoring, Assessment and Control. These papers should enhance our understanding of local, regional and global patterns of atmospheric change as a result of urban, industrial and natural emissions.
More info: www.zayedprize.org

Topics

Air Quality in Urban Areas

1) Monitoring and assessment of air quality in urban areas
2) Auto-emissions
3) Industrial emissions
4) Municipal Waste emissions
5) Dust pollution
6) Fog, Smog and related phenomena
7) Air quality Standards and Regulations
8) Case studies of best practice
9) Socio-Economic cost of air pollution

Trans-boundary Air Pollution

2) The Asian Brown Cloud and related phenomena
3) Wild and Man-made fires
4) Acid Rain

Global Air Pollution

5) The relation between recent environmental disasters and atmospheric pollution
6) Impact of Environmental Disasters on air quality.
7) Climate Change: convention and progress.
8) The role of the Intergovernmental Panel on Climate Change (IPCC)
9) The role of international organizations.

Governance

1) Regional conventions and protocols
2) National laws and strategies to control air pollution
3) Political and security implications of trans-boundary air pollution.
4) Regional cooperation in air pollution control and management
5) Global cooperation for the management of the earth atmosphere: the Montréal Protocol Model

Abstracts and Proceedings

Abstracts are to be one page, typed in English, single-spaced. The abstract should contain sufficient information for evaluation. Therefore the abstract should include the following:

- *Description of the Presentation*: outline the scope and nature of the work upon which the study is based.

Results and Conclusions: summarize the results and major conclusions.
*Application*s: describe any possible applications of your work.
Technical Contribution: describe the significance of your presentation.

Please indicate your choice of presentation (oral or poster) and the topic under which your paper should be classified. Include name(s) of author(s) and affiliation(s).

Abstracts will be evaluated in accordance with the following criteria:
- Presentations must contain original data within the scope of the conference.
- Technologies presented should be applicable in developing countries.
- Abstracts and presentations should not be commercial in nature.

Note:

- The best 30 papers will be selected for oral presentation and the rest will have to be presented as posters due to the time limits.
- Poster presentations should be well structured with colored figures and tables with a total area of no more than one square meter.
- Keynote speakers and *one author* of each oral paper will be offered an economy class ticket and free accomodation close to the venue
- Submision of full paper is required 4 months ealier in order to be included in proceedings
- All accepted papers will be included in the proceedings and the Zayed Prize reserves the right to publish selected papers in a conference book..
- At the time of registration, a volume of proceedings and conference program will be delivered to all participants.

Deadlines

Receipt of abstract:	15 June 2003
Acceptance of abstract:	30 July 2003
Receipt of full papers:	30 September 2003

2. EZ workshop: Biomassa breed aan de slag met bedrijven, kennisinstellingen en NGO's (1 juli 2003)

(Bron: Nieuwsbrief Energie Transitie EZ, 28 mei: energietransitie@minez.nl)

1 juli: Transitie Biomassa, publieke workshop voor de vaststelling van de visie over de rol van biomassa in de toekomst en mogelijke transitiepaden, o.l.v. Theo Herwijnen (ministerie van Economische Zaken). U kunt zich nu reeds vooraanmelden bij **tenkroode-vanzee@wxs.nl** onder vermelding van "vooraanmelding workshop transitie biomassa 1 juli 2003" met opgave van naam, adres, telefoon, organisatie en functie.

Biomassa kan verder met het door hen voorgestelde plan van aanpak. De actieve rol daarin van bedrijven en organisaties kon rekenen op enthousiaste reacties van de opdrachtgever Hugo Brouwer (EZ). Praten, denken (over de visie en over duurzaamheidscriteria) en het uitvoeren van concrete acties (marktplaats ontwikkeling, pilots) zijn de pijlers voor het komende jaar. De werkgroep Duurzaamheidsafspraken van biomassa is reeds van start gegaan onder leiding van Hans Jager (SNM) en heeft gekozen voor drie hoofdpunten om mee te starten:

3. MSC Colloqium: climate scenario study for Hydrology in the Hupselse Beek 12 juni 2003, 15:15u, Nieuwlanden

"Simulation of discharge data for the year 1996 and comparison between baseline and 2050 climate scenario in the Hupselse Beek by the Wageningen model"

By: Emmanuel Remon Bazan

The research is divided in two parts: The calibration of a rainfall-runoff model and consequent computation of missing daily flow data for the year 1996 in the Hupselse Beek and the estimation of streamflow in the same basin under the Ukhi 2050 climate scenario.
The computation of the missing discharge values for the year 1996 was done by the conceptual deterministic Wageningen model, after calibration using the period 1997-1999 and verification of the model using the 1992-1995 period. A set of parameters that satisfactorily fulfilled the simulation of daily flow values was found.
Afterwards, the input data set of 1992-1999 was modified by the Ukhi climate scenario of 2050 and run again to compare differences between the baseline streamflow and climate changed streamflow.

Supervisor: P. Warmerdam

4. Duurzame energie een bron van emoties (KLV workshop, 18 juni 2003)

Duurzame energie technologie blijkt zowel voor gewone mensen als voor ingenieurs een bron van veel emoties. Ratio en gevoel lopen in de discussie over de keuzes die gemaakt worden bij het toepassen van duurzame energiebronnen sterk door elkaar. Mag kippemest als bron van groene stroom gebruikt worden? Waarom willen vrouwen in Afrika geen solarcooker gebruiken terwijl het ze veel werk bespaart? Waarom is het makkelijker veel overheidsgeld aan kernenergie dan aan duurzame energie te besteden? Waarom besteden we liever geld aan het schrijven van rapporten over het toepassen van duurzame energie, dan aan de marktintroductie van duurzame energie technologie?

Tijdens deze workshop die onderdeel vormt van de KLV-themamiddag op 18 juni as wordt geprobeerd een aantal aanbevelingen m.b.t. de opstelling en het gedrag van een ingenieur te formuleren. De workshop wordt geleid door dr. Annemarie Goedmakers, directeur NUON Corporate Sustainability Centre.

Zie www.klv.nl voor het volledige programma en een opgaveformulier.

5. POSTDOC NIEUWE DISCUSSIE VORMEN IN KLIMAATBELEID EN BEDRIJFSMANAGEMENT

Vacaturenummer: ALT-03-CWK-14
Standplaats: Wageningen

Functie informatie:
Vanuit Alterra (Centrum Water en Klimaat) zult u ingezet worden voor werkzaamheden bij het Climate Change and Biosphere Research Centre (CCB Wageningen-UR). Bij het CCB zijn diverse Wageningse instituten betrokken. Het CCB bundelt de kennis binnen Wageningen-UR op het gebied van de vele mogelijke interacties tussen het klimaatsysteem, de biosfeer en de maatschappij.
Een belangrijke doelstelling van CCB Wageningen-UR betreft het tot stand brengen van maatschappelijk gedragen innovaties in nationaal & regionaal klimaatbeleid en bedrijfsmanagement. Dit project zal in strategisch opzicht moeten bijdragen aan de profilering van CCB Wageningen-UR op nationaal (ICES/KIS3) en internationaal niveau (EU Zesde kader Programma) en in wetenschappelijk opzicht moeten leiden tot een verdere integratie en onderbouwing van participatieve methodieken in het Wageningse klimaatonderzoek. Een goede dialoog tussen CCB Wageningen-UR, overheid en private instellingen is zeer belangrijk waarbij nieuwe discussievormen nodig zijn.

De taken die de postdoc zal moeten vervullen:
- Rapportage en (semi)-wetenschappelijke publicaties over het gebruik van participatieve methoden in de context van de recente wetenschappelijke & beleidsontwikkelingen rondom het klimaatvraagstuk.
- Mede-begeleiding van een promotieonderzoek over participatieve methodieken
- Het ontwikkelen van participatieve methodieken ter ondersteuning van keuzes in het klimaatbeleid.
- Het meewerken aan CCB activiteiten in het kader van ICES/KIS3, het zesde kader programma van het EU en kenniseenheidoverschrijdend onderzoek binnen Wageningen-UR,

Wat wij vragen:
U bent bij voorkeur gepromoveerd op een interdisciplinair onderwerp en heeft affiniteit met vakgebieden zoals milieubeleid en –economie, ruimtelijke ordening, landgebruik, geografie, meteorologie en waterbeheer. U bent breed inzetbaar, en beschikt over goede communicatieve vaardigheden.

Wat wij bieden:
Een aanstelling voor de periode van één jaar (met eventuele mogelijkheid tot verlenging). De salariëring bedraagt maximaal € 3998 bruto per maand bij een volledige werkweek (schaal 11). Inschaling is afhankelijk van ervaring en achtergrond.

Informatie:
Voor informatie over deze functie kunt u terecht bij Prof. Dr. Pavel Kabat (pavel.kabat@wur.nl / 0317-47 43 14) of met Prof. Dr. Ekko van Ierland (Ekko.vanIerland@wur.nl / 0317-484307).

Sollicitatie:
Stuur uw sollicitatiebrief, met cv o.v.v. het vacaturenummer vóór 18 juni a.s. naar Alterra, t.a.v. mevrouw A.C.C.N. Meisner, afdeling Personeel & Organisatie, Postbus 47, 6700 AA Wageningen. Of e-mail: vacatures.alterra@wur.nl

6. Book release: Issues in International Climate Policy

Edited by: Ekko C. van Ierland (CCB Wageningen-UR), Joyeeta Gupta (IvM VU Amstrdam), Marcel T.J. Kok (RIVM)

Climate change is currently at the centre of scientific and political debate, and the need for well-designed international climate policies is widely recognised. Despite this, the complexity of both the climate change problem and the international negotiation process has resulted in a large number of outstanding issues which still require attention. The authors of this book attempt to address and resolve some of the problems which have remained on the climate change agenda, without serious action, for far too long.

The authors contribute to the many discussions on international climate policy and provide an in-depth analysis of the main characteristics of the problem of climate change. They highlight the various potential solutions to the problem and their consequences, and look at the development and implementation of the international climate regime. Adopting a long-term perspective, they pay particular attention to the economic, institutional, political and social aspects of climate change.

Issues in International Climate Policy is a comprehensive book which makes the complicated themes and issues accessible to a wider audience. It will be invaluable reading for all scientists, policymakers and environmental economists with a serious interest in climate change and the negotiation process.

7. Nature (23 May 2003): Feedback could warm climate fast

Holistic model hints next century could get even hotter than we thought. *23 May 2003*

The twenty-first century could see more warming, more quickly, than was previously estimated, hints a new approach to modelling the Earth's climate[1].Average global temperatures could be 5.5 ºC higher by 2100, the model estimates. That's around 1.5 ºC higher than one commonly accepted forecast.Earlier climate models looked at a limited set of factors and often measured changes in the ocean and on land separately. The new approach, developed at the Hadley Centre for Climate Prediction and Research in Bracknell, UK, accounts for as many influences as possible, including volcanoes belching out millions of tonnes of carbon dioxide, fluctuations in the Sun's activity as well as changing levels of greenhouse gas and ozone. It also allows oceans to affect the land, and vice versa.

The Hadley Centre team first raised the alarm in 2000[2]. They showed that, as increasing levels of carbon dioxide in the atmosphere warm the planet, more carbon dioxide would be released from vast reserves in oceans and forests. Even a slight drying of the Amazon rainforest, for example, would release billions of tonnes of carbon dioxide into the skies.This feedback would accelerate warming, giving a temperature in 2100 that could be 7.5 ºC higher than their initial model suggested. "It was one of the most interesting and challenging results in our field," recalls climatologist Jorge Sarmiento of Princeton University in New Jersey.

Yet Sarmiento and his colleagues remained to be convinced. When the model was run backwards - a standard way of testing predictive power - it calculated a twentieth century significantly warmer than it actually was.Now the Hadley team balances the books with a new holistic climate model - dubbed the Earth systems approach. "We can recreate twentieth-century climate and still have a strong positive feedback in the future," says the team's leader, Chris Jones. "You need to look at more than just greenhouse gases."

One of the most significant factors in models of climate warming is future production of sulphates. These atmospheric pollutants, released in huge amounts by the burning of coal and oil in the twentieth century, actually cool the planet by reflecting sunlight. So as sulphate emissions fall due to clean-air regulations warming will actually increase. "It looks like [Jones' team is] about right," says Sarmiento. But he warns that modelling the importance of the feedback from stored carbon from oceans and forests of the future is a tricky business. "There is a lot of uncertainty associated with this stuff". Other scientists using similar models have found no feedback, just gradual warming due to greenhouse-gas emissions. Nonetheless, the Earth systems approach looks here to stay. "In the future, all models will be essentially like this," says Sarmiento.

References

Jones, C. D., Cox, P. M., Essery, R. L. H., Roberts, D. L. & Woodgate, M. J. Strong carbon cycle feedbacks in a climate model with interactive CO2 and sulphate aerosols. *Geophysical Research Letters*, **30,** 1479 - 1482, (2003).

Cox, P. M., Betts, R. A., Jones, C. D., Spall, S. A. & Totterdell, I. J. Acceleration of global warming due to carbon-cycle feedbacks in a coupled climate model. *Nature*, **408,** 184 - 187, (2000).

8. Global warming's sooty smokescreen revealed (New scientist 4 june)

Smoke is clouding our view of global warming, protecting the planet from perhaps three-quarters of the greenhouse effect. That might sound like good news, but experts say that as the cover diminishes in coming decades, we are in for a dramatic escalation of warming that could be two or even three times as great as official best guesses. This was the dramatic conclusion reached last week at a workshop in Dahlem, Berlin, where top atmospheric scientists got together, including Nobel laureate Paul Crutzen and Swedish meteorologist Bert Bolin, former chairman of the UN's Intergovernmental Panel on Climate Change (IPCC).

IPCC scientists have suspected for a decade that aerosols of smoke and other particles from burning rainforest, crop waste and fossil fuels are blocking sunlight and counteracting the warming effect of carbon dioxide emissions. Until now, they reckoned that aerosols reduced greenhouse warming by perhaps a quarter, cutting increases by 0.2 °C. So the 0.6 °C of warming over the past century would have been 0.8 °C without aerosols. But the Berlin workshop concluded that the real figure is even higher - aerosols may have reduced global warming by as much as three-quarters, cutting increases by 1.8 °C. If so, the good news is that aerosols have prevented the world getting almost two degrees warmer than it is now. But the bad news is that the climate system is much more sensitive to greenhouse gases than previously guessed.

As those gases are expected to continue accumulating in the atmosphere while aerosols stabilise or fall, that means "dramatic consequences for estimates of future climate change", the scientists agreed in a draft report from the workshop.

Parasol effect

Past calculations of the cooling effect of aerosols have been inferred from "missing" global warming predicted by climate models. But direct measurements reported in *Science* (vol 300, p 1103) in May by Theodore Anderson of the University of Washington in Seattle show a much greater parasol effect. Anderson says climate sensitivity could be larger than climate models suggest.

The Berlin meeting also heard evidence that past warm eras had higher temperatures than they ought to, if estimates of the atmospheric composition at the time and greenhouse models are correct. Again this suggests greater sensitivity.

"It looks like the warming today may be only about a quarter of what we would have got without aerosols," Crutzen told **New Scientist**. "You could say the cooling has done us a big favour. But the health effects of many aerosols in smog are so great that even in the poor world, they are already cutting emissions." For good reasons, aerosol levels look set to fall.

Moreover, most aerosol emissions only stay in the atmosphere for a few days. Most greenhouses gases remain for a century or longer. So as time goes on, aerosols will protect us less and less from global warming. "They are giving us a false sense of security right now," said Crutzen.

'Sooner, not later'

One tentative estimate put warming two or even three times higher than current middle-range forecasts of 3 to 4 °C based on a doubling of greenhouse gases in the atmosphere, which is likely by late this century. That suggests global warming well above the IPCC maximum forecast of 5.8 °C. Back-of-the-envelope calculations now suggest a "worst case" warming of 7 to 10 °C. Will Steffen of the Swedish Academy of Sciences says the message for policy makers is clear: "We need to get on top of the greenhouse gas emissions problem sooner rather than later."

9. Analysis: Land use, climate change linked

By Dan Whipple, UPI Science News, From the Science & Technology Desk
Published 6/3/2003 6:09 PM

Current land use practices in the United States -- from asphalt paving to irrigation -- seem to be contributing twice as much to global climate change as scientists previously thought, a discovery that portends difficult decisions ahead for future land use planners, developers and zoning commissions.New evidence comes from two University of Maryland researchers, who analyzed the impact of U.S. land use practices and found those practices have boosted the nation's mean lower atmospheric temperature by 0.2 degrees Fahrenheit since the 1960s.

That is "quite important, about one-half of the total (climate) impact," meteorology professor Eugenia Kalnay told United Press International. Land use change "is an additional factor that cannot be neglected," she added.

Kalnay said the findings, published in the May 28 issue of the British journal Nature, do not mean greenhouse gases are less important in contributing to global warming. Rather, when the effects of land use practices are added in, the human impact on climate change might be even greater than previously thought.

If land use is a major factor in global warming, this raises difficulties for anyone attempting to deal with the issue -- and not just among scientists. In the United States, most land use questions are raised and resolved at the local level, while climate issues are the purview of national and international institutions.

Over the past century, Earth's mean surface temperature has warmed by about 1 degree F. Over the next century, scientists expect an additional warming of 2-to-6 degrees. These seemingly small changes can cause big effects. For example, at the peak of the last ice age, some 18,000 years ago, Earth's mean temperature was only 7 degrees F. cooler than it is today. Yet that difference resulted in mile-thick glaciers covering much of North America.

According to the work of Kalnay and co-author Ming Cai, current land use practices are altering the climate in ways comparable to the greenhouse effect produced by carbon dioxide gas released into the atmosphere. One major component is the construction of concrete urban buildings, which store heat during the day and release it at night -- the well-known "urban-

heat-island" effect. Retained heat from concrete buildings and asphalt streets increases nighttime temperatures, though it results in a slight decrease in maximum temperatures.

Agriculture irrigation also plays an important role in this drama. "Irrigation would increase the heat capacity of the soil, thus increasing the minimum temperature," the authors write in Nature. "Therefore both urbanization and agriculture effects could be consistent with the general increase in the minimum temperature."

The Nature paper examines only U.S. land use changes, but Kalnay told UPI preliminary work done in Argentina and China has found "a similar but smaller amplitude."

Asked if their work has implications for local land use planning, Kalnay responded, "It is a very important question, but it is not our area of expertise. At the very least, it has to be considered. County governments or state governments should include this in their plans," she said.

"It's pretty obvious that the lower part of the atmosphere is highly influenced by land use," Robert Harriss, director of the environmental and societal impacts group at the National Center for Atmospheric Research in Boulder, Colo., told UPI. "People are beginning to quantify that in modeling and observation. The evidence is ... quite substantial that this a major consideration in understanding climate variability and change at the local scale."

The situation presents a conundrum for policymakers, he said, because there is no easy way of coordinating actions at the local, national and international levels, so "it complicates issues of carbon management and climate change."

Nevertheless, Harriss thinks it might be premature to amend the organizational charts. "The quantitative analysis that has provided convincing evidence land use change affects local environmental characteristics is still a new enough arena," he said. "There are only four or five groups that have worked on this in enough depth ... (and) it hasn't (yet) gotten on the global scientific community's agenda in a significant way."

Harriss said the question might only complicate policy discussions. "There may be some individuals who would rather not hear it (because) there are significant social issues associated with something like this."

Roger Pielke, Sr., president of the American Association of State Climatologists in Fort Collins, Colo., has done considerable research on the connection between land use and climate.

"The connection between land use change and climate has not been considered by the U.S. national assessment or by the (Intergovernmental Panel on Climate Change)," Pielke told UPI, referring to the international body established to review global warming issues and the annual report to the IPCC by his organization.

"Actually, I think it is inappropriate to talk about global warming," he noted. "CO2 is increasing, but it has radioactive and biological effects of unknown consequences. It is more difficult to predict than is the common perception. Our association concludes that there is no predictive skill when you're talking about years and decades."

Pielke added that land use analyses suggest "much of the warming is not due to an atmospheric change. Because land cover change has occurred in so many places, it is having an effect not only locally but globally."

One area of uncertainty, Pielke said, is how the locations of the temperature monitoring stations are affecting the data. He recommended examining those locations to see if they are being influenced by local land use changes -- buildings, parking lots -- as well as atmospheric changes.

In a paper published in 2002 in the Philosophical Transactions of the Royal Society of London, Pielke and seven other authors concluded a phenomenon called the "surface-energy budget" might be more important than carbon-cycle effects in measuring the impact on climate change. It involves how solar energy is either reflected or absorbed by materials on the surface, such as plants, soil, water, pavement and structures.

Pielke's group urged adoption of a new way to measure human disturbance of Earth's energy budget. "This concept would provide a mechanism to monitor potential local-scale environmental changes that could influence biodiversity," the paper said.

"It is important to note that the most important anthropogenic things affecting climate are greenhouse gases," David Schimel, a senior scientist at NCAR, told UPI. The Kalnay-Cai paper does not refute that, he said. "The effects of land use change have been very difficult to estimate and difficult to separate. There are some areas that have large climate changes without changes in land use -- like the oceans," he added.

"The more global issue is that our understanding of climate change over the past decade or so has included an effect of greenhouse gases and direct land use change," Schimel explained. "While we've been able to estimate the greenhouse effect, we haven't been able to come up with a good way to estimate the urban effect. This is first time anyone's done that ... They are arguing for a large effect of land use change. That will amplify the greenhouse effect."

10. HYDROLOGIE VERKENNINGEN SITE KNAW

De Koninklijke Nederlandse Akademie van Wetenschappen (KNAW) nodigt diegenen die geinteresseerd zijn in de activiteiten van de KNAW werkgroep die zich buigt over de toekomst van het hydrologisch onderzoek in Nederland, een bezoek te brengen aan de site van de Werkgroep Voorstudie Verkenning Hydrologie, www.knaw.nl/verkenningen/hydrologie.html. U wordt van harte uitgenodigd uw reactie aan de werkgroep te zenden!

Colofon:

The CCB-Bulletin is a news bulletin for researchers in the field of global environmental change from Wageningen University and Research Centre, as well as for people who are interested.The bulletin is provided by the Climate Change and Biosphere Research Centre (CCB - Wageningen UR). This bulletin board is intended for information exchange, like announcements of workshops, conferences, job oppurtunities and education courses in relation to global change research. It will be sent to you every 3 weeks, in case of vacancies we may use it ad-hoc.

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Please, contact us by e-mail: Jeroen Veraart: jeroen.veraart@wur.nl