



# CLIMATE – NEWS

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**ICFRE – CLIMATE CHANGE NEWS From the Biodiversity and Climate Change (BCC) Division, Indian Council of Forestry Research and Education, P.O: New Forest, Dehra Dun – 248006**

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## CLIMATE CHANGE INTERNATIONAL NEWS

### AUSTRALIA, CHINA TO COOPERATE IN DEVELOPING LOW CARBON CITIES

1 April, 2011 (ENS) Environment News Service  
<http://www.ens-newswire.com/ens/apr2011/2011-04-01-01.html>

Australia and China have agreed to intensify their collaboration on creating low carbon cities to combat global climate change. Australia is the world's highest per capita emitter of greenhouse gases, while China is the world's overall largest greenhouse gas emitter.

The agreement was reached this week in Canberra during the third Australia-China Ministerial Dialogue on Climate Change between Greg Combet, Australia's minister for climate change and energy efficiency, and Xie Zhenhua, China's National Development and Reform Commission vice chairman, a former environment minister.

"The central theme of our discussions was how we can drive the development of our economies as the world moves to a low-carbon future," said Minister Combet.

"I was particularly interested to hear from Vice Chairman Xie about the priority China is giving to low carbon energy, energy efficiency and clean technology under the latest Five-Year Plan," he said. Under a pilot program that began last summer, five Chinese provinces and eight cities are developing low carbon plans, including the use of market mechanisms to achieve emissions reductions.

"To assist this, we agreed today to intensify cooperation in developing low carbon cities, and to share experience on market mechanisms, including emissions trading and a carbon price," Combet said. "Both countries also agreed to continue co-operation on carbon pollution measurement and reporting, as well as strengthen energy efficiency collaboration.

"We also exchanged views on the outlook for UN climate change negotiations. China, as the world's largest emitter, is a key player in these negotiations," Combet said. "I highlighted Australia's focus this year is on implementing the agreements reached at Cancun last December," Combet said.

## **TREE GROWTH AND FECUNDITY AFFECTED MORE BY CLIMATE CHANGE THAN PREVIOUSLY THOUGHT**

4 April, 2011 Science Daily

<http://www.sciencedaily.com/releases/2011/04/110404111050.htm>

An 18-year study of 27,000 individual trees by National Science Foundation (NSF)-funded scientists finds that tree growth and fecundity--the ability to produce viable seeds--are more sensitive to climate change than previously thought.

The results, published April 5 in the journal *Global Change Biology*, identify earlier spring warming as one of several factors that affect tree reproduction and growth.

They also show summer drought as an important but overlooked risk factor for tree survival, and that species in four types of trees--pine, elm, beech, and magnolia--are especially vulnerable to climate change. The findings may help scientists and policymakers better predict which species are vulnerable to climate change and why. "In a sense, what we've done is an epidemiological study on trees to better understand how and why certain species, or demographics, are sensitive to variation and in what ways," says James Clark of Duke University, lead author of the paper.

To conduct the study, Clark and colleagues measured and recorded the growth, mortality and fecundity of each of the 27,000 trees at least once every three years, ultimately compiling an archive of more than 280,000 tree-years of data. Using a specially designed bioinformatics analysis, they quantified the effects of climate change on tree species over time.

"This work demonstrates the limitations of current modeling approaches to predict which species are vulnerable to climate change and illustrates the importance of incorporating ecological factors such as species competition," says Alan Tessier, program director in NSF's Division of Environmental Biology, which funded the research.

The approach allowed the scientists to calculate the relative importance of various factors, alone and in combination, including the effects of localized variables such as competition with other trees for light, or the impact of summer drought. "As climate continues to change, we know forests will respond," says Clark.

"The problem is, the models scientists have used to predict forest responses focus almost solely on spatial variation in tree species abundance--their distribution and density over geographic range." If all trees of a species grew in the same conditions--the same light, moisture, soil and competition for resources--this generalized, species-wide spatial analysis might suffice, Clark says.

Then scientists wouldn't need to worry about demographic variables and risk factors when trying to predict biodiversity losses due to climate change. "But in the real world, we do," Clark says. "That's where the new concept of climate and resource tracking of demographic rates comes in. "Trees are much more sensitive to climate variation than can be interpreted from regional climate averages."

The trees studied included 40 species, located in eleven different forest stands in three geographic regions of the Southeast--the southern Appalachians, the Piedmont and the coastal plain. They were subjected to both natural and experimental variations. "By quantifying the effects and relative importance of competition [between species] and climate variables," says Clark, "including impacts on fecundity, over both time and space, the model we've developed addresses this need and can be used to guide planning."

## **SWEET SOLUTION: SUGARCANE HELPS COOL CLIMATE**

19 April, 2011 The Times of India, New Delhi

Washington: Sugarcane is not only a major source for producing a biofuel alternative to gasoline, but also helps in cooling the climate if cultivated in a massive scale, according to a new study.

Scientists from the Carnegie Institution's Department of Global Ecology found the important agro-industrial plants help lower the temperature of the surrounding air by reflecting sunlight back into space and "exhaling" cooler water. The research, published online in the journal Nature Climate Change, is the first to quantify the direct effects on the climate from sugarcane expansion in areas of existing crop and pastureland of the Cerrado region in Brazil.

For their study, the researchers used data from hundreds of satellite images over 1.9 million sq km.

They measured temperature , reflectivity (also called albedo), and evapotranspiration – the water loss from the soil and from plants as they exhale water vapour. Scott Loarie, who led the research , said: "We found that shifting from natural vegetation to crops or pasture results in local warming because the plants give off less beneficial water.

"But sugarcane is more reflective and gives off more water - much like the natural vegetation."

## **MELTING GLACIERS MAY AFFECT OCEAN CURRENTS**

25 May, 2011 Science Daily

<http://www.sciencedaily.com/releases/2011/05/110525110155.htm>

A team of scientists from the University of Sheffield and Bangor University have used a computer climate model to study how freshwater entering the oceans at the end of the penultimate Ice Age 140,000 years ago affected the parts of the ocean currents that control climate.

A paper based on the research, co-authored by Professor Grant Bigg, Head of the University of Sheffield's Department of Geography, his PhD student Clare Green, and Dr Mattias Green, a Senior Research fellow at Bangor University's School of Ocean Sciences, is currently featured as an Editor's Highlight in the journal, *Paleoceanography*. The study is the first of this kind for the time period.

The research found that freshwater entering the ocean from melting ice sheets can weaken the climate controlling part of the large-scale ocean circulation, with dramatic climate change as a consequence. During the period of the study, the experts noted that the global temperature dropped by up to two degrees over a few centuries, but changes were not uniform over the planet, and it took a long time for the climate to recover after the ice sheets had melted completely.

The team argues that it is not only the volume of freshwater being released from the melting ice sheet which is important but also the state of the freshwater: icebergs act to reduce the ocean circulation less than melt water, but the effects of icebergs last for longer periods of time. The effect is similar to the difference between adding very cold water to a drink or adding an ice cube or two. The study also shows that at the end of the more recent Ice Age 20,000 years ago, the ocean circulation was more sensitive to ice sheet collapses than during the earlier period.

Professor Grant Bigg, Head of the University of Sheffield's Department of Geography, said: "An important component of the work is that it shows that the impact of freshwater releases from past, or future, ice masses depends critically on the form -- whether fresh water or icebergs -- and the location of the release.

"The Arctic has been surrounded by extensive glaciations several times in the past and this study has shown that large-scale changes in such Arctic ice sheets could affect the climate in places far from the release site. Our work also suggests that the Pacific Ocean may have been more sensitive to major changes in past glaciations than previously realised. We plan to investigate this possibility more in the future."

Dr Mattias Green from Bangor University, added: "With meltwater- similar to adding water to your drink, the water spreads out quickly and has an immediate effect, but it is also absorbed quickly into the rest of the ocean. In a similar way to your ice cube, the icebergs drift along and melt more slowly. This means the immediate impact is weaker, but they are there for a longer time and distribute the water over a larger area. "Our results lead us to conclude that a future ice sheet collapse, that might happen in Antarctica or Greenland, would have climatic consequences, but the exact impact needs to be evaluated in each case."

## **GREENHOUSE GAS REDUCTION STRATEGY MAY BE SAFE FOR SOIL ANIMALS**

1 June, 2011 Science Daily

<http://www.sciencedaily.com/releases/2011/06/110601131757.htm>

A new study has found that an emerging tool for combating climate change may cause less harm to some soil animals than initial studies suggested. Earthworms perform many essential and beneficial functions in the soil ecosystem, including soil structure

improvement and nutrient mineralization. However the earthworms' ability to perform these crucial functions can be suppressed when they are exposed to toxic substances. A Baylor University geology researcher, along with scientists from Rice University, tested a new soil additive called biochar for its effects on the common earthworm. The researchers found that wetting the biochar before applying it to the soil mitigates the harmful effects of biochar to earthworms and the earthworms' avoidance of soil with biochar.

"Because of the high potential for widespread application, it is essential to proactively assess and mitigate any unintended consequences associated with biochar soil enrichment," said study co-author Dr. Bill Hockaday, assistant professor of geology at Baylor. "The results show us that depending on rainfall patterns and irrigation, wetting biochar either before or immediately after soil application would be needed to prevent the disappearance of earthworms and enable their beneficial effects on plants."

The results appeared in the June issue of the journal *Soil Biology and Biochemistry*. Biochar is of increasing interest because of concerns about climate change caused by emissions of carbon dioxide and other greenhouse gases. It is a byproduct of renewable energy and fuel production from plant materials like forest wastes and crop residues. Biochar is a form of charcoal that enhances soil fertility and plant growth by increasing soil water and nutrient retention, and can store carbon in the soil for hundreds of years.

The researchers found that earthworms avoided soil enriched with dry biochar, and when they were exposed, their weight decreased. After performing several different tests, the researchers found that insufficient moisture was a key factor affecting earthworm behavior in soil enriched with dry biochar. The researchers also found that biochar did not affect earthworm reproduction.

"Most importantly, we are the first to demonstrate that biochar did not stress the immune system of a very sensitive soil organism," said Dong Li, study co-author and a graduate student at Rice. "This is an important step forward for a very promising strategy in combating climate change."

## **UNFCCC EXECUTIVE SECRETARY: GOVERNMENTS HAVE UNAVOIDABLE RESPONSIBILITY TO MAKE CLEAR PROGRESS TOWARDS 2011 CLIMATE OBJECTIVES**

6 June 2011 Bonn , UNFCCC Press Release

Speaking on the first day of the UN Climate Change Conference in Bonn, Germany (6-17 June), UNFCCC Executive Secretary Christiana Figueres said governments have an unavoidable responsibility to make clear progress towards the 2011 climate objectives which they had agreed in Cancun.

Governments lit a beacon in Cancun towards a low-emission world which is resilient to climate change. They committed themselves to a maximum global average temperature rise of 2 degrees Celsius, with further consideration of a 1.5 degree maximum, she said. Now, more than ever, it is critical that all efforts are mobilized towards living up to this commitment, she said.

Ms. Figueres's reminder comes against the backdrop of stark new warnings of a sharp rise in the volume and concentration of greenhouse gas emissions in the atmosphere.

Last week, the Paris-based International Energy Agency estimated that 2010 emissions from global energy generation returned to record highs, representing an unexpectedly sharp rebound from the effects of the financial crisis. Also last week, the US government's Hawaii-based Mauna Loa laboratory - a key scientific monitor for global climate change - reported that carbon dioxide concentrations peaked yet again in May, at just under 395 parts per million.

Speaking about expectations for the Bonn meeting, Ms. Figueres said that negotiators are working hard to provide clarity on the architecture of the future international climate regime to reduce global emissions fast enough to avoid the worst climate change. A second key field of work relates to the design of the finance, technology and adaptation institutions agreed in Cancun that will allow developing countries to build their own sustainable futures and adapt to climate change successfully.

Governments have a very ambitious agenda, which goes all the way from the procedural to the political. They are arriving here with high expectations of themselves and their partners and a decisive willingness to come out of Bonn with significant progress, she said.

Countries, including the biggest economies, are building new policies that promote low-carbon growth. The private sector continues to increase low-carbon investment and demands bigger, better ways to do more. And we are seeing an inexorable increase in the effectiveness of clean technology and drops in its price, the UN's top climate change official said. The clean and renewable energy revolution has already begun - the challenge is to complete it in time, she added.

The Bonn UN Climate Change Conference (6-17 June) is being attended by more than three thousand participants from 183 countries, including government delegates, representatives from business and industry, environmental organisations and research institutions. The Bonn meeting is designed to prepare the UN Climate Conference in Durban at the end of the year (28 November - 9 December).

## CLIMATE CHANGE NATIONAL NEWS

### UN LAYS BARE RICH NATIONS LOW CARBON CREDIT TARGETS

Nitin Sethi,

17 June, 2011 The Times of India, New Delhi

How ambitious are the emission reduction targets rich nations are ready to adopt for 2020? Pretty low, suggests a technical report that the UN Framework Convention on Climate Change has prepared. The report is based on compiling the offers developed countries made after the Cancun summit last year.

Take the case of the US. It has offered to cut its emissions by a mere 4% below 1990 levels. This too is predicated on developing countries like India, China, South Africa and Brazil willing to make similar commitments. Even for this meagre and conditional target, the US wants to take advantage of the cheap carbon credits it can purchase from developing countries instead of taking actions at home, which would more expensive and also impact lifestyles.

But all this is also not a firm commitment from the US. It has informed the world that it might alter these targets based on what its Congress decides in the future. Also, there is no time frame when a final figure would emerge.

Compare this with the target of 35%-40% reduction developing countries had demanded from rich countries to keep global temperatures from rising by more than 2 degrees Celsius.

The US might have made one of the worst offers, but even the other rich nations are also willing to reduce their emissions by only 13%-18%. And almost all of these countries have put pre-conditions, demanding developing countries give commitments and open their economies to international scrutiny. But look at how this would set the world up for an unequal sharing of atmospheric space. By 2020, if the US sticks to even this meagre offer, its citizens would enjoy per capita annual emissions of 16.8 tonnes, while an average European would enjoy 7.7-8.8 tonnes per capita and an Australian 15.7-19.9 tonnes per capita.

The rubric of commitments rich countries are asking developing nations could limit India at below 3 tonnes per capita for eternity.

## **ICFRE NEWS**

### **PARTICIPATION OF SHRI VRS RAWAT SCIENTIST-E IN THE UNITED NATIONS CLIMATE CHANGE CONFERENCE FROM 3-8 APRIL 2011, BANGKOK, THAILAND**

Shri V.R.S. Rawat, Scientist- E, Biodiversity and Climate Change Division, participated in the 14th session of the Ad Hoc Working Group on Long- Term Cooperative Action under the Convention (AWG-LCA) and the 16th session of the Ad Hoc Working Group on Future Commitments for Parties under the Kyoto Protocol (AWG-KP) 3-8 April 2011, Bangkok, Thailand.

### **PARTICIPATION OF SHRI VRS RAWAT SCIENTIST-E BIODIVERSITY AND CLIMATE CHANGE DIVISION IN THE UN CLIMATE CHANGE CONFERENCE FROM 6 - 17 JUNE2011BONN,Germany**

Shri V.R.S. Rawat, Scientist- E, Biodiversity and Climate Change Division, participated in the 34th sessions of the Subsidiary Body for Implementation (SBI) and the Subsidiary Body for Scientific and Technological Advice (SBSTA) from 6-16 June. The second part of the fourteenth session of the AWG-LCA and the second part of the sixteenth session of the AWG-KP took place from 7-17 June.

## UPCOMING EVENTS

### 10<sup>TH</sup> INTERNATIONAL NCCR CLIMATE SUMMER SCHOOL: CLIMATE CHANGE, EXTREMES AND ECOSYSTEM SERVICES

04 Sep 2011 → 09 Sep 2011; Grindelwald, Switzerland

weblink: [http://www.nccr-climate.unibe.ch/summer\\_school/2011/](http://www.nccr-climate.unibe.ch/summer_school/2011/)

### UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, AWG-KP 16 AND AWG-LCA 14

1-7October,2011PanamaCity,Panama

The third part of the sixteenth session of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (**AWG-KP 16**) and the third part of the fourteenth session of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (**AWG-LCA 14**) will take place in Panama City from Saturday, 1 October to Friday, 7 October 2011 at the Centro de Convenciones ATLAPA, Panama City, Panama

### SIXTH INTERNATIONAL SYMPOSIUM ON NON -CO2 GREENHOUSE GASES (NCGG-6)

02 Nov 2011 → 04 Nov 2011; Amsterdam, Netherlands

**abstract:** The symposium will address the role of non-CO<sub>2</sub> greenhouse gases and aerosols in human-induced climate forcing. It will further examine options for reduction in industry and society

**web link:** <http://www.ncgg.info>

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**related subject(s):** Environmental Chemistry and Geochemistry; Environmental Physics

# UNITED NATIONS CLIMATE CHANGE CONFERENCE, 2011

28 November to 9 December, 2011 Durban, South Africa

The 2011 United Nations Climate Change Conference will be held in Durban, South Africa, from 28 November to 9 December 2011. The conference is officially referred to as the 17th

Session of the Conference of the Parties (COP 17) to the United Nations Framework Convention on Climate Change (UNFCCC) and the 7th session of the Conference of the Parties serving as the meeting of the Parties (CMP 7) to the Kyoto Protocol. In addition, the two permanent subsidiary bodies of the UNFCCC – the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) – are likely to hold their 35th sessions. The 2010 United Nations Climate Change Conference extended the mandates of the two temporary subsidiary bodies – the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) and the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) – so they are expected to meet as well.

A primary focus of the conference will be to secure a global climate agreement as the Kyoto Protocol's first commitment period (2008–2012) is about to end.

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