



# 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

### CLIMATE CHANGE WILL HINDER FOOD SECURITY, SAY EXPERT

By Rohith BR

12 February, 2011 Bangalore Daily News & Analysis

[http://www.dnaindia.com/bangalore/report\\_climate-change-will-hinder-food-security-says-expert\\_1506641](http://www.dnaindia.com/bangalore/report_climate-change-will-hinder-food-security-says-expert_1506641)

“It is scary. Hotter climate is reducing agricultural yield in India and the situation is bad compared to other parts of the world,” said V Prakash, director of Central Food Technological Research Institute (CFTRI). He added that every one degree rise in temperature is reducing agricultural yield by 10%, and rice and wheat are some of the important crops that are the victims of this climate change.

Prakash was delivering the Prof LS Venkataramanan Memorial Lecture on ‘Challenges in reach-out of safe and nutritious food through PPP - The inclusiveness for urban and the more inclusiveness for rural indeed!’ at the Institute for Social and Economic Change (ISEC).

Prakash further stated that the demand for food crops is growing with the population. “How many of us know how to grow paddy? There are very few growers and a large number of consumers. One should wonder how many would be left to do farming and feed urbanites in 2025. The increase in the number of Big Bazaars and other commercial outlets won’t help in addressing food shortage, as there are serious problems with productivity and production,” he said. Prakash, who is also the president of the Nutrition Society of India, said that the falling rate of agricultural production is more in countries like South Asia, including India, South East Asia, and those in Africa. “Experts have zeroed in the drastic effect on agricultural practices in these countries, after analysing over 10,000 years of farming history,” he said.

The ISEC director Dr RS Deshpande said that food processing is a difficult task in India and it is high time public and private minds join hands and develop a holistic plan to address the issue.

## 50 MILLION MAY BECOME ENVIRONMENTAL REFUGEES BY 2020

24 February, 2011 The Times of India, New Delhi

<http://timesofindia.indiatimes.com/home/science/50m-may-become-environmental-refugees-by-2020/articleshow/7553001.cms>

WASHINGTON: Fifty million "environmental refugees" will flood into the global north by 2020, fleeing food shortages sparked by climate change, experts warned at a major science conference that ended here on Monday. "In 2020, the UN has projected that we will have 50 million environmental refugees," University of California, Los Angeles professor Cristina Tirado said at the annual meeting of the American Association for the Advancement of Science(AAAS).

"When people are not living in sustainable conditions, they migrate," she continued, outlining with the other speakers how climate change is impacting both food security and food safety, or the amount of food available and the healthfulness of that food.

Southern Europe is already seeing a sharp increase in what has long been a slow but steady flow of migrants from Africa, many of whom risk their lives to cross the Strait of Gibraltar into Spain from Morocco or sail in makeshift vessels to Italy from Libya and Tunisia.

The flow recently grew to a flood after a month of protests in Tunisia, set off by food shortages and widespread unemployment and poverty, brought down the government of longtime ruler Zine El Abidine Ben Ali, said Michigan State University professor Ewen Todd,

## RISING CO2 IS CAUSING PLANTS TO RELEASE LESS WATER TO THE ATMOSPHERE, RESEARCHERS SAY

4 March, 2011 Science Centric

<http://www.sciencecentric.com/news/08050665-unmanned-aircraft-to-study-southern-california-smog.html>

As carbon dioxide levels have risen during the last 150 years, the density of pores that allow plants to breathe has dwindled by 34 percent, restricting the amount of water vapour the plants release to the atmosphere, report scientists from Indiana University Bloomington and Utrecht University in the Netherlands in an upcoming issue of the Proceedings of the National Academy of Sciences (now online).

In a separate paper, also to be published by PNAS, many of the same scientists describe a model they devised that predicts doubling today's carbon dioxide levels will dramatically reduce the amount of water released by plants. The scientists gathered their data from a diversity of plant species in Florida, including living individuals as well as samples extracted from herbarium collections and peat formations 100 to 150 years old.

'The increase in carbon dioxide by about 100 parts per million has had a profound effect on the number of stomata and, to a lesser extent, the size of the stomata,' said Research Scientist in Biology and Professor Emeritus in Geology David Dilcher, the two papers' sole

American coauthor. 'Our analysis of that structural change shows there's been a huge reduction in the release of water to the atmosphere.'

Most plants use a pore-like structure called stomata (singular: stoma) on the undersides of leaves to absorb carbon dioxide from the air. The carbon dioxide is used to build sugars, which can be used by the plant as energy or for incorporation into the plants' fibrous cell walls. Stomata also allow plants to 'transpire' water, or release water to the atmosphere. Transpiration helps drive the absorption of water at the roots, and also cools the plants in the same way sweating cools mammals. If there are fewer stomata, or the stomata are closed more of the day, gas exchange will be limited - transpiration included.

'The carbon cycle is important, but so is the water cycle,' Dilcher said. 'If transpiration decreases, there may be more moisture in the ground at first, but if there's less rainfall that may mean there's less moisture in ground eventually. This is part of the hydrogeologic cycle. Land plants are a crucially important part of it.'

Dilcher also said less transpiration may mean the shade of an old oak tree may not be as cool of a respite as it used to be. 'When plants transpire they cool,' he said. 'So the air around the plants that are transpiring less could be a bit warmer than they have been. But the hydrogeologic cycle is complex. It's hard to predict how changing one thing will affect other aspects. We would have to see how these things play out.'

While it is well known that long-lived plants can adjust their number of stomata each season depending on growing conditions, little is known about the long-term structural changes in stomata number or size over periods of decades or centuries.

'Our first paper shows connection between temperature, transpiration, and stomata density,' Dilcher said. 'The second paper really is about applying what we know to the future.' That model suggests that a doubling of today's carbon dioxide levels - from 390 parts per million to 800 ppm - will halve the amount of water lost to the air, concluding in the second paper that 'plant adaptation to rising CO<sub>2</sub> is currently altering the hydrological cycle and climate and will continue to do so throughout this century.'

## **CLIMATE CHANGE NATIONAL NEWS**

### **PUSH TO STUDY IMPACT OF SOOT ON CLIMATE**

31 March, 2011 The Times of India, New Delhi

The government on Tuesday (29<sup>th</sup> March) launched a black carbon research initiative to study the phenomenon of soot, its sources and impact on health and environment. Black carbon is among those non-greenhouse gas emissions that is fast becoming the focus of climate change science.

Commonly known as soot, black carbon is a form of respiratory suspended particulate matter that is produced from incomplete combustion through biomass burning, cooking with solid fuels and diesel exhaust. While **India** and **China** are credited for 25-35% of global

black carbon emissions, there is not much scientific information on the actual reasons or sources behind its production.

“We need to be pro-active in our approach. This is an important step forward, not just for India but for the international community. India is well aware of the importance of the issue (of the climate change), and is committed to addressing it, based on sound scientific assessments,” said environment minister Jairam Ramesh.

The black carbon research initiative will be undertaken under the aegis of Indian network of climate change assessment. The Rs 200-crore project will be a five year research programme, and will be a joint effort among the ministries of environment, earth sciences, science and technology and ISRO. The report is meant to build on the existing aerosol study, and will involve nearly 101 institutions in research activities.

“This is one of the most ambitious programme in the world on aerosol research and black carbon. It is a culmination of over 25 years research from pioneering Indian scientists. India has positioned itself to be second to none in this area of research ,”said V Ramanathan.

## ICFRE NEWS

### INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION RECOGNIZED BY UNFCCC AS INDIA'S FIRST DESIGNATED OPERATIONAL ENTITY (DOE) FOR CLEAN DEVELOPMENT MECHANISM

The Indian Council of Forestry Research and Education (ICFRE) has become the first Designated Operational Entity (DOE) in India to be accredited by Executive Board of the Clean Development Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) as Designated Operational Entity (DOE) for validation and verification/certification functions for the sectoral scope Afforestation and Reforestation in its fifty ninth meeting held at Bonn, Germany from 14 to 18 February 2011.

### ONE WEEK TRAINING FOR SCIENTISTS OF ICFRE ON "CLIMATE CHANGE AND FORESTS" FROM 31 JANUARY TO 4 FEBRUARY 2011 AT ICFRE, DEHRADUN

One Week Training Course on "Climate Change And Forest" was organized by the Biodiversity and Climate Change Division at ICFRE, Dehradun from 31 January to 4 February, 2011. 20 scientists participated in the course. The programme was highly appreciated and rated by the participants.



## **TWO DAYS WORKSHOP FOR FINALIZATION OF DST TRAINING PROGRAMMES ON 28 TO 29 JANUARY 2011 AT ICFRE, DEHRADUN**

Two days workshop for finalization of DST training programme was organized by the Biodiversity and Climate Change Division at ICFRE, Dehradun from 28 to 29 January, 2011. 32 participants from different institutes participated in this workshop.



## **UPCOMING EVENTS**

### **GREEN HOUSE 2011: THE SCIENCE OF CLIMATE CHANGE**

4 to 8 April, 2011 Cairns, Queensland, Australia

#### General Information

GREEN HOUSE 2011 will be the most significant climate change science meeting in Australia in 2011. It follows five major GREEN HOUSE meetings in Perth (2009), Sydney (2007), Melbourne (2005), Wellington (NZ) (1994) and Melbourne (1987). These conferences have dramatically advanced knowledge and communication in the field of climate change science.

The 2011 event has a focus on the science of climate change, and will feature sessions covering: oceans, atmosphere, biosphere, climate modeling, climate change projections, climate variability, extreme events, impacts and adaptation, biodiversity policy and economics , communicating climate change.

GREEN HOUSE 2011 presents an opportunity for scientists and representatives from industry and all levels of government to hear about the reality and science of climate change, and discuss the implications for Australia and the region.

#### Key dates

19 November 2010 - Deadline for submission of abstracts

10 December 2010 - Notification of acceptance or otherwise of abstract and whether it is to be a paper or a poster

21 January 2011 - Final date for early bird registration, and for registration by presenters  
4 April 2011 - Conference commences.

For more information visit the conference website –  
[www.greenhouse2011.com](http://www.greenhouse2011.com) [external link]

### **EUROPEAN CONFERENCE ON BIODIVERSITY AND CLIMATE CHANGE- SCIENCE, PRACTICE AND POLICY**

12 to 13 April, 2011 at the Center of Advanced European Studies and Research (CAESAR) Bonn, Germany

Organised by the German Federal Agency for Nature Conservation (BfN) with the support of the University of Greifswald and in collaboration with the European Network of Heads of Nature Conservation Agencies (ENCA)

The 2-days conference, organized by the German Federal Agency for Nature Conservation (BfN) in co-operation with the European Network of Heads of Nature Conservation Agencies (ENCA), will offer a platform to discuss recent research results in the field of climate change and biodiversity. Special attention will be paid on the question of how these results can be fed into political decision making processes and to support practitioners. The conference will be based on talks by invited speakers. No conference fee.

## **C2DC 2011 : INTERNATIONAL WORKSHOP ON CLIMATE CHANGE DATA CHALLENGES**

1 to 3 June, 2011 Tsukuba, Japan  
(<http://www.iccs-meeting.org/>).

International Workshop on Climate Change Data Challenges (C2DC 2011) to be held in conjunction with the International Conference on Computational Science (ICCS) 2011: "The Ascent of Computational Excellence in the Land of the Rising Sun", Computational Science University of Tsukuba, Japan, 1 to 3 June, 2011  
Workshop website: <http://adm05.cmcc.it:8080/C2DC/Home.html>

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