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1. Laser fusion test results raise energy hopes

By Jason Palmer Science and technology reporter, BBC News

<http://news.bbc.co.uk/2/hi/science/nature/8485669.stm>

A major hurdle to producing fusion energy using lasers has been swept aside, results in a new report show.

The controlled fusion of atoms - creating conditions like those in our Sun - has long been touted as a possible revolutionary energy source.

However, there have been doubts about the use of powerful lasers for fusion energy because the "plasma" they create could interrupt the fusion.

An article in Science showed the plasma is far less of a problem than expected.

The report is based on the first experiments from the National Ignition Facility (Nif) in the US that used all 192 of its laser beams.

Along the way, the experiments smashed the record for the highest energy from a laser - by a factor of 20.

Star power

Construction of the National Ignition Facility began at Lawrence Livermore National Laboratory in 1997, and was formally completed in May 2009.

The goal, as its name implies, is to harness the power of the largest laser ever built to start "ignition" - effectively a carefully controlled thermonuclear explosion.

It is markedly different from current nuclear power, which operates through splitting atoms - fission - rather than squashing them together in fusion.

Proving that such a lab-based fusion reaction can release more energy than is required to start it - rising above the so-called breakeven point - could herald a new era in large-scale energy production.

In the approach Nif takes, called inertial confinement fusion, the target is a centimetre-scale cylinder of gold called a hohlraum.

It contains a tiny pellet of fuel made from an isotope of hydrogen called deuterium.

During 30 years of the laser fusion debate, one significant potential hurdle to the process has been the "plasma" that the lasers will create in the hohlraum.

The fear has been that the plasma, a roiling soup of charged particles, would interrupt the target's ability to absorb the lasers' energy and funnel it uniformly into the fuel, compressing it and

causing ignition.

Siegfried Glenzer, the Nif plasma scientist, led a team to test that theory, smashing records along the way.

"We hit it with 669 kilojoules - 20 times more than any previous laser facility," Nif's Siegfried Glenzer told BBC News.

That isn't that much total energy; it's about enough to boil a one-litre kettle twice over.

However, the beams delivered their energy in pulses lasting a little more than 10 billionths of a second.

By way of comparison, if that power could be maintained, it would boil the contents of more than 50 Olympic-sized swimming pools in a second.

'Dramatic step'

Crucially, the recent experiments provided proof that the plasma did not reduce the hohlraum's ability to absorb the incident laser light; it absorbed about 95%.

But more than that, Dr Glenzer's team discovered that the plasma can actually be carefully manipulated to increase the uniformity of the compression.

"For the first time ever in the 50-year journey of laser fusion, these laser-plasma interactions have been shown to be less of a problem than predicted, not more," said Mike Dunne, director of the UK's Central Laser Facility and leader of the European laser fusion effort known as HiPER.

"I can't overstate how dramatic a step that is," he told BBC News. "Many people a year ago were saying the project would be dead by now."

Adding momentum to the ignition quest, Lawrence Livermore National Laboratory announced on Wednesday that, since the Science results were first obtained, the pulse energy record had been smashed again.

They now report an energy of one megajoule on target - 50% higher than the amount reported in Science.

The current calculations show that about 1.2 megajoules of energy will be enough for ignition, and currently Nif can run as high as 1.8 megajoules.

Dr Glenzer said that experiments using slightly larger hohlraums with fusion-ready fuel pellets - including a mix of the hydrogen isotopes deuterium as well as tritium - should begin before May, slowly ramping up to the 1.2 megajoule mark.

"The bottom line is that we can extrapolate those data to the experiments we are planning this year and the results show that we will be able to drive the capsule towards ignition," said Dr Glenzer.

Before those experiments can even begin, however, the target chamber must be prepared with shields that can block the copious neutrons that a fusion reaction would produce.

But Dr Glenzer is confident that with everything in place, ignition is on the horizon.

He added, quite simply, "It's going to happen this year."

2. Be truthful on climate: British science boss John Beddington

Ben Webster and Matthew Franklin From:[The Australian](#) January 28, 2010 12:00AM

<http://www.theaustralian.com.au/news/nation/be-truthful-on-climate-british-science-boss-john-beddington/story-e6frg6nf-1225824148004>

THE impact of global warming has been exaggerated by some scientists and there is an urgent need for more honest disclosure of the uncertainty of predictions about the rate of climate change, according to the British government's chief scientific adviser.

John Beddington said climate scientists should be less hostile to sceptics who questioned man-made global warming. He condemned scientists who refused to publish the data underpinning their reports.

Australia's chief scientist, Penny Sackett, told The Australian last night she shared Professor Beddington's concerns.

Professor Sackett said climate change was a scientific reality but there was a need for absolute openness and rigour in the presentation of evidence, including recognition of which aspects of climate change science were imprecise and required further research.

Professor Beddington said public confidence in climate science would be improved if there were more openness about its uncertainties, even if that meant admitting that sceptics had been right on some hotly disputed issues.

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CLIMATE SCIENCE

How much do you trust scientific projections concerning global warming?

Completely

Somewhat

A little

Not at all

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He said: "I don't think it's healthy to dismiss proper scepticism. Science grows and improves in the light of criticism. There is a fundamental uncertainty about climate change prediction that can't be changed."

He said the false claim in the Intergovernmental Panel on Climate Change's 2007 report that the glaciers would disappear by 2035 had exposed a wider problem with the way some evidence was presented.

"Certain unqualified statements have been unfortunate. We have a problem in communicating uncertainty. There's definitely an issue there. If there wasn't, there wouldn't be the level of scepticism.

"All of these predictions have to be caveated by saying, 'There's a level of uncertainty about that'."

Professor Beddington said particular caution was needed when communicating predictions about climate change made with the help of computer models. "It's unchallengeable that CO2 traps heat and warms the Earth and that burning fossil fuels shoves billions of tonnes of CO2 into the atmosphere. But where you can get challenges is on the speed of change.

"When you get into large-scale climate modelling, there are quite substantial uncertainties. On the rate of change and the local effects, there are uncertainties both in terms of empirical evidence and the climate models themselves."

He said it was wrong for scientists to refuse to disclose their data to their critics: "I think, wherever possible, we should try to ensure there is openness and that source material is available for the whole scientific community."

He added: "There is a danger that people can manipulate the data, but the benefits from being open far outweigh that danger."

Professor Sackett said there was no real dispute within the scientific community about the reality of climate change but she wanted non-scientists to have greater access to the evidence to help inform the necessary public debate about crafting policy responses to the problem.

"The public must be provided with the best possible advice," Professor Sackett said.

"It must have available to it some understanding or the ability to develop an understanding about which issues the science is quite clear on and where there is less precision in our understanding."

For example, Professor Sackett said, while the reality of climate change was clearly understood, there was less certainty about its effects on rainfall patterns in Australia. More research was required before conclusions could be drawn with any scientific confidence.

She said the work of Australian climate change scientists had been "quite good" and that people should not assume that because some British research had been questioned there was a doubt over the existence of the phenomenon.

Opposition climate action spokesman Greg Hunt said the scientists were correct, and he accused Kevin Rudd of taking a "McCarthyist" approach to anyone who disagreed with his views on climate change.

"While I happen to believe the balance of science is that there is climate change, unlike the Prime

Minister I believe it is a breach of democratic responsibility to demonise scientists and the three million Australians who disagree with me," Mr Hunt said.

Phil Jones, the director of the University of East Anglia's Climatic Research Unit and a contributor to the IPCC's reports, has been forced to stand down while an investigation takes place into leaked emails allegedly showing that he attempted to conceal data. In response to one request for data, Professor Jones wrote: "We have 25 or so years invested in the work. Why should I make the data available to you when your aim is to try and find something wrong with it?"

Professor Beddington said that uncertainty about some aspects of climate science should not be used as an excuse for inaction.

"Some people ask why we should act when scientists say they are only 90 per cent certain about the problem," he said. "But would you get on a plane that had a 10 per cent chance of crashing?"

Mike Hulme, professor of climate change at the University of East Anglia, said: "Climate scientists get kudos from working on an issue in the public eye, but with that kudos comes responsibility. Being open with data is part of that responsibility."

He criticised Rajendra Pachauri, the IPCC chairman, for his dismissive response last November to research suggesting that the UN body had overstated the threat to the glaciers. Mr Pachauri described it as "voodoo science".

Professor Hulme said: "Pachauri's choice of words has not been good. The question of whether he is the right person to lead the IPCC is for the 193 countries who make up its governing body. It's a political decision."

3. Innovation key to mitigating climate change

Ziggy Switkowski From: *The Australian* January 28, 2010 12:00AM

<http://www.theaustralian.com.au/news/opinion/innovation-key-to-mitigating-climate-change/story-e6frg6zo-1225824116274>

IS it possible that global warming might be the first example of irreversible large-scale environmental change caused by humankind?

Certainly over the centuries we've been responsible for wars, chemical and nuclear accidents, the spread of disease, depletion of resources, habitat and species destruction as well as experiencing the full range of natural hazards, humanitarian disasters and pandemics that have had shocking and permanent effects.

Yet from a historical and global perspective, a reversion to a positive trend occurs, albeit over generations, wherein new technologies and improved social and political processes combine to produce continuing improvements in average global standards of living, and futures unconstrained by the past.

Climate model forecasts, however, suggest that runaway climate change might defy this history and so demands urgent and costly preventive measures.

What is runaway climate change? Fundamentally, a process once started - such as global warming or melting of Greenland ice - continues, perhaps even accelerates, under the influence of positive feedback, with irreversible consequences for the environment and life as we know it.

An example of positive feedback is when large white ice sheets melt, reducing the reflection of incoming sunlight and increasing solar energy absorption by the darker underlying surface, exposed rock or sea, further increasing temperatures, which leads to more melting, and so on.

A textbook example of irreversible climate change is the planet Venus, which started its warming

journey three to four billion years ago and evolved from a water-bearing environment to a toxic inferno. But is the threat of a billion-year transition what alarms us today?

Self evidently, there has been no consequential runaway event in the 15,000 years of modern man since the last ice age, or even in the million-year span of human existence. Climate and environment appear to have followed patterns understandable to us today. Certainly, strong climate cycles have shaped the earth's history, but concerns about runaway effects arise from complex climate models whose predictions are sometimes disputed.

But the industrial era has produced two forces that seem capable of triggering runaway-like effects on our environment: population growth and associated energy production.

Global population has increased from one billion people after the start of the Industrial Revolution about 1800 to nearly seven billion today, with a four-fold increase in the past 100 years alone. This looks like a runaway trend. But the world's population is now confidently forecast to level out near 10 billion people during the second half of this century.

Energy production and consumption loosely follow population growth but accelerate as the standards of living in the developing nations catch up to the West. As a result, global energy output will increase two or three times by the century's end.

But the combination of slowing population growth, closing the lifestyle gap with the West and the arrival of new clean energy systems supplying more efficient products and processes could stabilise greenhouse effects by century end.

Along the way, adapting to climate changes is a matter of resources and resolve - barriers can be built to withstand sea-level rises, emergency services can be improved, property and personnel can be better protected, and so on.

But the legacy of generations of excessive emissions remains: our climate and environment will be highly stressed and may yet be locked into a runaway warming trajectory.

A key headline claim is that the 200-year industrial era has brought the planet to within 100 years of irreversible climate catastrophe and that the responsibility lies with today's generation to prevent such a cataclysmic situation.

This conclusion rests on the assumption that the risk of climate catastrophe is growing faster than the rate at which technology can be developed to mitigate this risk. Is this a reasonable assumption?

The US National Academy of Engineering recently produced a list of the most significant technical advances of the 20th century. The top 10 included: electrification, automobiles, airplanes, water supply and distribution, electronics, radio and television, agricultural mechanisation, computers, telephony, air conditioning and refrigeration (the early internet appeared at No. 13).

Might the 21st century of innovation produce an even more influential list that, if appropriately prioritised, includes the tools to address global warming before runaway effects occur?

Today even seemingly permanent damage such as species extinction appears addressable with emerging gene technology.

Tomorrow, geo-engineering (extracting greenhouse gases from the atmosphere), soil sequestration and non-fossil fuel systems may give us all the answers.

Is it a modern vanity to presume we must solve technological challenges today that will seem trivial to society next century, especially if our history of technical innovation continues? (As Jesse Ausubel writes in *New Scientist*, "At the start of the 20th century there was widespread concern

that horse manure and chimney smoke would bury or choke cities.)

This reasoning does not suggest global inaction but emphasises the key role that public policy, innovation, research and development must play.

Climate change should be a global priority that leads to collaborative focused research efforts to find solutions. Australia's leadership in carbon capture and storage technology is one good example of this. Nations have to be wealthy enough to make the required long-term investments in R&D. In any policy choice between economic growth and more conservative, restricted lifestyles, go for growth and wealth creation supporting a culture of innovation every time.

Ziggy Switkowski is a former chief executive of Telstra and a fellow of the Australian Academy of Technological Sciences and Engineering.

4. Report undercuts Kevin Rudd's Great Barrier Reef wipeout

Jamie Walker From: [The Australian](#) February 03, 2010 12:00AM

<http://www.theaustralian.com.au/news/nation/report-undercuts-kevin-rudds-great-barrier-reef-wipeout/story-e6frg6nf-1225826128644>

KEVIN Rudd's insistence that the Great Barrier Reef could be "destroyed beyond recognition" by global warming grates with new science suggesting it will again escape temperature-related coral bleaching.

The Prime Minister yesterday put the reef at the centre of political combat over climate policy, telling parliament it would be obliterated in the worst-case scenario that "temperatures went through the roof".

But for the second year running, the reef has defied predictions of its imminent demise, with researchers from the Australian Institute of Marine Science reporting that mass coral bleaching was unlikely this summer.

While the finding was welcomed by the research community and those on the Queensland coast whose livelihood depends on the reef, it will entrench scepticism about gloomy forecasts for climate change.

Going head-to-head with Tony Abbott for the first time since he became Opposition Leader, Mr Rudd said the reef would be destroyed if global temperatures increased by 4C.

"I noticed the other day, by the way, that the Leader of the Opposition said that, if the worst-case scenario put out by scientists on the Intergovernmental Panel on Climate Change were to come to pass and we were to see global temperature increases of the order of 4 degrees centigrade, it did not represent any big moral challenge for the future," Mr Rudd said. "Can I say that, if we saw temperature increases like that, as far as the Barrier Reef is concerned, frankly, it would be destroyed beyond recognition."

Mr Rudd's warning reflects the findings of the 2007 report of the IPCC that is under intensifying fire for exaggerating the threat to Himalayan glaciers and the Amazon rainforest. The IPCC predicted the reef would be subject to annual bleaching by 2030 if climate change continued unchecked, destroying much of its coral cover.

But after scouring 14 sites at the vulnerable southern end of the GBR last month, the team from Townsville-based AIMS found only a handful of "slightly stressed reefs".

The onset of an El Nino episode in the Pacific -- conducive to hot and still conditions that heat waters on the reef shelf in late summer to the point where corals eject photosynthesising algae, whiten and die -- had triggered alarm about the potential for mass bleaching.

Those fears have been now been substantially allayed, with the AIMS scientists, including Kerryn Johns, finding no sign of endemic bleaching on Swains reefs, east of Yeppoon in central Queensland, and only a few cases where corals appeared slightly stressed in the nearby Capricorn Bunker area.

The leader of AIMS's long-term reef monitoring program, Hugh Sweatman, said the reef was "not at a threshold" to bleach widely.

"We saw literally a handful of colonies that are looking pale, mainly in the Capricorn area," he told The Australian, outlining the survey team's preliminary findings. "But you get that every year. So there is no evidence of concerted bleaching across the reef whatsoever."

The Great Barrier Reef Marine Park Authority, having last summer warned of a bleaching outbreak that did not eventuate, rates the risk of one this year as low.

Dr Sweatman said a deep monsoonal trough, reinforced by tropical cyclones Olga and Neville, had averted "doldrums" conditions associated with coral bleaching on the reef.

The team of six AIMS scientists surveyed an area about a fifth of the area of the GBR, Dr Sweatman said. He said widespread bleaching had been evident by this time of year in 2002 and also in 1998, when 42 per cent of the reef was hit. Bleaching generally happens when the temperature of the sea rises in late summer, stressing corals. Scientists fear that mass bleaching events will become more frequent due to global warming, leaving less time for the reef to recover between attacks.

5. Don't trust the weatherman's forecasts

Christopher Pearson From: [The Australian](#) January 30, 2010 12:00AM 15 comments

<http://www.theaustralian.com.au/news/opinion/dont-trust-the-weathermans-forecasts/story-e6frg6zo-1225824634542>

THE Intergovernmental Panel on Climate Change has suffered a number of significant blows to its reputation in the past fortnight.

As I noted last week, its confident endorsement of the proposition that most of the Himalayan glaciers would in all probability melt by 2035 has had to be withdrawn.

Murari Lal, the IPCC's co-ordinating lead author, told The Mail on Sunday that he was "well aware" the panel's finding didn't rely on peer-reviewed science but on speculation in the form of reported remarks in an eco-journal by an obscure glaciologist, Syed Hasnain, recycled in a report by the World Wildlife Fund.

And Lal made an even more telling admission. "We thought that if we can highlight it, it will [influence] policymakers and politicians and encourage them to take some concrete action."

The overall head of the IPCC, Rajendra Pachauri, also runs India's Energy and Resources Institute, known as TERI.

He employed Hasnain as TERI's chief glaciologist and has recently recycled the IPCC's findings based on Hasnain's commentary in research applications that have received a substantial, as yet undisclosed share of multimillion-dollar grants.

There have been calls by prominent scientists for Pachauri's resignation, which he looks like resisting.

Once researchers' and science bloggers' attention had been drawn to the problem of alarmist claims not backed up by peer-reviewed science, a lot of what courts call "similar fact evidence" began to emerge. As The Australian reported on Monday, the IPCC had claimed the world had

"suffered rapidly rising costs due to extreme weather-related events since the 1970s".

It ignored warnings from other scientists in the field, basing the findings on an unpublished paper that had not been subjected to routine scientific scrutiny. When published, the paper cautioned: "We find insufficient evidence to claim a statistical relationship between global temperature increase and catastrophic losses."

The lead author, Robert Muir-Wood, says: "The idea that catastrophes are rising in cost because of climate change is completely misleading."

Another misapplication of Muir-Wood has just come to light. The Stern review report in Britain cites the paper, while seeming to pluck from the air the figure that future losses from tropical cyclones would amount to 1.3 per cent of global gross domestic product.

However, elsewhere in the report Nicholas Stern cites Nordhaus to suggest future tropical cyclone losses could rise from 0.06 to 0.13 per cent. Roger Pielke Jr spotted the order of magnitude blunder and published on the issue in a peer-reviewed journal in 2007.

Recently he noticed that the electronic version of the report had been discreetly adjusted, with no note or admission of error. Still, Stern's maths, and his hugely overstated cost estimates, remain uncorrected.

The responses from the IPCC and Stern's spin doctor, complete with Pielke's refutations of them, make fascinating reading and can be found at his self-titled blog.

The IPCC report also warned that global warming could devastate African agriculture. This was on the strength of non-peer-reviewed, non-scientific research from a sustainability lobby group. Combined with the claims on extreme weather events, it underpinned the claims for \$100 billion for African nations from First World countries at Copenhagen.

The IPCC report also cited what's politely termed advocacy research from the WWF as sole authority for findings on coastal developments in Latin America. A WWF report and a conference paper delivered in 2002 but still not published are the only citations for findings on mudflows and avalanches linked to melting glaciers.

Last but not least on this short list, the IPCC report asserted that "up to 40 per cent of the Amazonian rainforest could react drastically to even a slight reduction in precipitation", citing a joint paper by a journalist and a one-time employee of the WWF. Oddly enough, there seems to be nothing in the paper to warrant The IPCC alarmism.

It's obvious that there are a lot of pleasant, public-spirited and not noticeably zealous people associated with the WWF, as indeed there must be with the IPCC. However it's only fair to quote from one of the famous Climategate emails. The WWF's Alan Markham wrote on July 29, 1999, to University of East Anglia climate scientists Mike Hulme and Nicola Sheard about a paper they had written on climate change in Australasia.

"Hi Mike, I'm sure you will get some comment direct from Mike Rae in WWF Australia, but I wanted to pass on the gist of what they've said to me so far. They are worried that this may present a slightly more conservative approach to the risks than they are hearing from Australian scientists. In particular, they would like to see the section on variability and extreme events beefed up if possible . . . I guess the bottom line is that if they are going to go with a big splash on this they need something that will get good support from Australian scientists (who will certainly be asked to comment by the press)."

Is it any wonder that the British government's chief scientific adviser, John Beddington, should have conceded on Wednesday that the impact of global warming has been exaggerated by some scientists and that there's an urgent need for more honest disclosure of the uncertainty of predictions about the rate of climate change?

He also thinks that public confidence in climate science would be improved if there were more openness about its uncertainties, even if that meant admitting that sceptics had been right on some hotly disputed issues.

Referring to the IPCC's recent problems, he said: "Certain unqualified statements have been unfortunate. We have a problem in communicating uncertainty. There's definitely an issue there. If there wasn't, there wouldn't be the level of scepticism. All of these predictions have to be caveated by saying 'there's a level of uncertainty about that'."

Coming from the top science adviser to the Blair-Brown government, which until six months ago was proclaiming the Stern report as though it were holy writ, this version of sweet reasonableness is welcome. Let us note in passing the Sir Humphrey Appleby touch in referring to exaggerated claims as "unfortunate".

Beddington's remarks are also a sure sign that the British government knows that man-made global warming is a public relations disaster, with no end in sight. In terms of quelling scepticism, Beddington's intervention is too little and too late.

Closer to home, who can tell what Kevin Rudd or Penny Wong is thinking about what they were wont to describe as the greatest moral and political challenge of our time?

Have the pre-Copenhagen delusions of being manifest destiny incarnate been wholly dispelled? Or, like Paul Keating's conviction that on a trampoline you can expel cancers at the top of each bounce, does a little of the madness linger?

Wednesday's announcement that the government would stick to a 5 per cent emissions target suggests they know they've got a political problem. And matching the Coalition's target may serve to minimise it, even though it upsets the ALP's Left and green supporters. However, deciding to go ahead with another debate over the amended emissions trading scheme legislation will only concentrate attention on the winners and losers from the scheme, its unwieldiness and its cost. Since these are new bills, their introduction could have been plausibly delayed for a month or so until the government decided either to proceed or defer them.

The big winners in the ETS debate next week are likely to be Tony Abbott, who'll be in his element, and the Coalition generally. There's nothing better to improve backbench morale and discipline than a flummoxed government, overtaken by events.

6. More flaws emerge in climate alarms

Jonathan Leake From: [The Australian](#) February 01, 2010 12:00AM

<http://www.theaustralian.com.au/news/more-flaws-emerge-in-climate-alarms/story-e6frg6n6-1225825250835>

A STARTLING report by the UN climate watchdog that global warming might wipe out 40 per cent of the Amazon rainforest was based on an unsubstantiated claim by green campaigners who had no scientific expertise.

The Intergovernmental Panel on Climate Change said in its 2007 benchmark report that even a slight change in rainfall could see swaths of the rainforest rapidly replaced by savanna grassland.

The source for its claim was a report from WWF, an environmental pressure group, which was written by two green activists. They had based their "research" on a study published in the science journal *Nature*, which did not assess rainfall but looked at the impact on the forest of human activity such as logging and burning. WWF said on Saturday it was launching an internal inquiry into the study.

This is the third time in as many weeks that serious doubts have been raised over the IPCC's

conclusions on climate change. Two weeks ago, after reports in London's *The Sunday Times* and *The Australian*, the panel was forced to retract a warning that climate change was likely to melt the Himalayan glaciers by 2035. That warning was also based on claims in a WWF report.

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The IPCC has been put on the defensive as well over its claims that climate change may be increasing the severity and frequency of natural disasters such as hurricanes and floods.

IPCC chairman Rajendra Pachauri was fighting to keep his job over the weekend after a barrage of criticism. Scientists fear the controversies will be used by climate change sceptics to sway public opinion to ignore global warming - even though the fundamental science, that greenhouse gases can heat the world, remains strong.

The latest controversy originates in a report, *A Global Review of Forest Fires*, that WWF published in 2000. It was commissioned from Andrew Rowell, a freelance journalist and green campaigner who has worked for Greenpeace, Friends of the Earth and anti-smoking organisations. The second author was Peter Moore, a campaigner and policy analyst with WWF.

In their report, they suggested that "up to 40 per cent of Brazilian rainforest was extremely sensitive to small reductions in the amount of rainfall" but made clear this was because drier forests were more likely to catch fire.

The IPCC report picked up this reference but expanded it to cover the whole Amazon. It also suggested that a slight reduction in rainfall would kill many trees directly, not just by contributing to more fires. The IPCC said: "Up to 40 per cent of the Amazonian forests could react drastically to even a slight reduction in precipitation; this means the tropical vegetation, hydrology and climate system in South America could change very rapidly to another steady state.

"It is more probable that forests will be replaced by ecosystems that have more resistance to multiple stresses caused by temperature increase, droughts and fires, such as tropical savannas."

Simon Lewis, a Royal Society research fellow at Leeds University who specialises in tropical forest ecology, described the section of the report by Rowell and Moore predicting the potential destruction of large swaths of the Amazon as "a mess".

"The *Nature* paper is about the interactions of logging damage, fire and periodic droughts, all extremely important in understanding the vulnerability of Amazon forest to drought, but is not related to the vulnerability of these forests to reductions in rainfall," he said.

He believes the IPCC should ban the use of reports from campaign groups.

"In my opinion, the Rowell and Moore report should not have been cited; it isn't sufficient evidence to back any claim at all, as it contains no primary research data," Mr Lewis said. The WWF said it prided itself on the accuracy of its reports and was investigating the latest concern. "We have a team of people looking at this internationally," said Keith Allott, its climate change campaigner.

The Amazon constantly undergoes huge changes because of natural variability in the weather, aside from damage caused by human factors such as logging and agricultural clearance.

Spotting the additional impact of global warming against such a changing background is difficult, especially when the world has so far warmed by about 0.7C since the 18th century.

The Sunday Times

7. Action can be 'riskier than doing nothing'

Andrew Fraser From: The Australian January 30, 2010 12:00AM

<http://www.theaustralian.com.au/news/nation/action-can-be-riskier-than-doing-nothing/story-e6frg6nf-1225824863745>

BRITISH climate change sceptic Christopher Monckton told a Brisbane audience yesterday that acting because of the risk of climate change could be riskier than doing nothing.

Lord Monckton dismissed the "risk management" argument about climate change -- which broadly runs that, even if the science is not definitively proved, then taking actions to reduce the risk is sensible management -- by claiming that these actions often had unintended consequences.

He said that one such action was growing crops for biofuels instead of food, which was leading to widespread starvation in Third World countries.

"The laws of supply and demand, which cannot be repealed even by the UN's climate change panel, are that prices will go up," Lord Monckton said. "And they have gone up; they have doubled in a couple of years. For us, that is an inconvenience -- a burger that used to cost \$1 now costs \$2. But in Third World countries, in a dozen different regions, there have been major food riots in the last two to three years."

Lord Monckton also questioned the independence of the scientists who formulated the UN Intergovernmental Panel on Climate Change's 2007 report, claiming the admission this month that the rate of glacial melt in the Himalayas had been grossly exaggerated showed how they were prepared to manipulate data.

"The scientist who said that said 'I know it was wrong, but I wanted it to be said because I wanted to influence government policy'," Lord Monckton said.

"The moment you have scientists tampering with science and telling scientific lies for the sake of influencing government policy, that is a body in which you would not place any faith whatsoever."

While most of Lord Monckton's appearances in Australia have taken the form of an address, yesterday in Brisbane he had a broad debate in front of about 500 people, with his main opponent being professor Barry Brook of Adelaide University.

Professor Brook presented data showing that the world's climate had changed, especially since the 1940s, with most of the change coming about in Arctic regions. But he stressed that science is about "projections rather than predictions", and while it was unwise to expect that scientific reasoning and research could give a definitive answer, it could "narrow the boundaries of uncertainty".

Lord Monckton says that even if UN figures were accepted as true, the proposed remedies would have a huge cost but negligible impact in forestalling perhaps warming of 0.02C over the next decade.

He was a policy adviser to former British prime minister Margaret Thatcher, where he first investigated the issue of climate change, and then a columnist. He is a mathematician by training.