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## **ENVIRONMENT: CLIMATE WATCHERS FEAR IMPENDING WORST-CASE SCENARIOS**

(English IPS News)by Stephen Leahy

BROOKLIN, Canada, Dec. 27, 2005 (IPS/GIN) -- With 2005 the warmest year in modern times and new research confirming scientists' worst fears, most experts agree that urgent and innovative international action on climate change is needed.

But neither action nor urgency was in evidence earlier this month in Montreal when 189 nations spent two weeks attempting to deal with climate change. Although the United Nations-sponsored talks were widely seen as an international success, they accomplished little beyond supporting the Kyoto Protocol and an agreement for more talks.

"As usual, national self-interest dominated, but at least the whole process wasn't derailed," said Dale Marshall, a climate change policy analyst with David Suzuki Foundation, a Canadian environmental NGO, who attended the meetings.

Under the Kyoto Protocol, which took effect in February, industrialized nations are legally bound to reduce their greenhouse gas emissions by an average of 5 percent from 1990 levels each year between 2008 and 2012.

Long-time climate watchers were gleeful about getting all nations, including the United States, to agree to hold more talks, Marshall told IPS.

"But that's a very, very small step forward towards the deep emissions cuts that are needed," he added.

Meanwhile, several climate research studies released in December show that the impacts of climate change are coming faster than predicted. This suggests that the worst-case disaster scenarios may be the most likely unless there is concerted global action to reduce emissions.

Satellite photos taken this year revealed that there was 20 percent less Arctic sea ice compared with the first pictures taken in 1978, according to the National Snow and Ice Data Center (NSIDC) in Boulder, Colo.

The loss of ice is not too surprising given the 4 degrees Celsius rise in average winter temperatures in the Arctic. However, the extent and speed with which the Arctic ice is melting is unprecedented.

And that's not just bad news for polar bears and native people of the North.

"The Arctic is a major driver for Earth's weather cycle. [The melting] we see is going to be very profound in terms of global weather change," said Ted Scambos, a research scientist at the NSIDC.

Those changes are impossible to predict with precision, but Scambos believes that the sea ice will continue to melt. The loss of sea ice appears to have triggered a major feedback loop because there is less ice and snow to reflect the sun's energy, making the region ever warmer.

"We think that these feedbacks are starting to take hold and that we're going to see an accelerated decline in sea ice," Scambos said in a release.

Warmer temperatures are also thawing the top three meters of permafrost beneath the western Siberian peatlands, creating giant lakes and swelling rivers. Permafrost is also melting in Alaska and northern Canada. A new study predicts that over half of the northern hemisphere's permafrost could thaw by 2050.

The melting of millions of square kilometers of permafrost will unleash

billions of tons of methane, the U.S. National Center for Atmospheric Research (NCAR) reported in the Dec. 17 issue of Geophysical Research Letters.

Methane is a greenhouse gas 20 times more potent than carbon dioxide, and will dramatically accelerate global warming. A major permafrost meltdown will have a major impact on climate, NCAR scientists said.

The first direct measures of Greenland's massive ice sheets released in December found that they lost 162 cubic kilometers of ice a year between 2002 and 2005. This is higher than all previous estimates and is contributing to rising sea levels, scientists from the U.S. National Aeronautics and Space Administration reported.

Greenland alone has enough ice to raise global sea levels three meters.

Earlier in the year, European scientists reported that analysis of ice cores from Antarctica shows that today's level of carbon dioxide in the atmosphere is 27 percent higher than any previous peak -- looking back 650,000 years.

In a bizarre twist, air pollution has so far cushioned the full impact of all that additional carbon dioxide, a team of international scientists reported in the Dec. 22 issue of the journal Nature.

Tiny lung-clogging particles from burning coal, diesel and other fossil fuels scatter sunlight in the upper atmosphere and have been preventing the full heat of the sun from reaching the Earth's surface. The full effect of these particles or aerosols had never been calculated before now. It turns out that the "cooling effect" offsets about 30 percent of the warming from greenhouse gas emissions.

In other words, without a haze of polluted air circulating the Earth, global temperatures ought to be 30 percent warmer right now. However this "pollution umbrella" is weakening. Because of the major health effects of air pollution on children and the elderly, ever-stricter emission controls means cleaner air. Good for lungs, bad for global climate.

The only way to avoid the worst impacts of climate change is to cut emissions, experts agree.

"Kyoto won't be enough. Emissions will need to fall by 80 or 90 percent, rather than 5 or 10 percent, to have an effect on the models. In terms of a response, Kyoto is only a start," Guy Brasseur, head of the Hamburg-based Max Planck Institute for Meteorology, told the European Parliament in late November.

"Political leadership is all that's missing to achieve emissions cuts of 30 to 40 percent," said Marshall.

While the public is more concerned about the issue than politicians, most people tend to believe that if climate change is a truly serious problem, their governments would take action, he said.

"We need to deepen people's understanding of impacts and that they have to be directly involved in doing something about it," Marshall said.

The Suzuki Foundation and other environmental groups commissioned a detailed study of how Canada could achieve greenhouse gas emissions levels 25 percent below 1990 by 2020, and 80 percent below 1990 levels by 2050.

A number of other studies have also shown that existing technologies combined with the right government policies could achieve emissions reductions between 20 percent and 40 percent relatively quickly at a modest or little cost.

Despite those studies, the public will have to pressure politicians to take action, said Elliot Diringer of the Pew Center on Climate Change, a U.S.-based NGO.

"The Europeans want to talk about how get to global emission reductions of 60 percent but the U.S. is a long way from even thinking about that," Diringer told IPS. "It's going to take a 'perfect storm' of political alignment and public pressure to turn this around."

That "perfect storm" may come over the next two years as thousands of climate scientists finalize a series of studies and reports that will become the next Intergovernmental Panel on Climate Change (IPCC) climate synthesis report. The IPCC's 2007 report will be the authoritative and complete assessment of climate change and its impacts.

And it's unlikely to have much in the way of good news.

"It will be much more difficult for politicians not to take concrete action when that comes out," said Marshall.

As agreed in Montreal, negotiators will meet next March to start talking about how to reduce emissions when the Kyoto agreement expires in 2012. That agreement took five years to create, and will go into effect 16 years after nations decided to do something about climate change.

Marshall thinks a new agreement with cuts of 20 percent or more could be completed relatively quickly if there's enough public pressure.

"However, there's a million ways this could still go off the rails over the next few years," he warned.

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