

Beware how you meddle with climate change

By Robert Matthews, Financial Times

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Everyone knows trees are "A Good Thing". They take in the carbon dioxide that threatens our planet with global warming and turn it into fresh, clean oxygen for us all to breathe.

But now it seems we need to think again. In a discovery that has left climate scientists gasping, researchers have found that the earth's vegetation is churning out vast quantities of methane, a greenhouse gas far more potent even than CO₂. This is not a product of trees and plants rotting, which everyone already knew was a source of methane; it is an entirely natural side-effect of plant growth that scientists had somehow missed. Yet it is by no means trivial: preliminary estimates suggest that living trees and plants account for about 10 to 30 per cent of the methane entering the atmosphere.

The discovery, reported by an international team of scientists in the current issue of the journal *Nature*, is adding fresh fuel to the debate over the confidence we can put in global warming science. It does not affect claims that the earth is warming up, which centre on measured effects rather than their likely causes. It does, however, raise serious doubts over grand plans for combating the warming process - such as the Kyoto protocol. The protocol allows countries to offset their greenhouse gas emissions through reforestation programmes, with trees being thought to cancel out some of the warming effect by

mopping up CO₂. The discovery that these new forests would themselves generate another greenhouse gas raises, at the very least, doubts about the size of the net benefit.

Sceptics of the Kyoto protocol will seize on the findings as evidence of the need for caution before instituting counter-measures.

Environmentalists, sensing a backlash from the research, are already insisting that the findings are preliminary and should not detract from scientists' consensus view that global warming is a genuine threat.

There is no longer any serious debate about the reality of global warming. Some may still quibble about its causes, but the focus is on what nations should do to ameliorate the effects of climate change. And this is precisely what makes the new research so disturbing. For how could so basic a source of global warming have gone undetected until now?

In fact, evidence pointing to huge holes in the science of atmospheric methane has been circulating for years. In 1998, *Nature* carried a study showing global increases in methane were mysteriously leveling off. Now it seems that deforestation - that bete noire of the environmentalist movement - may have helped combat the rise of this greenhouse gas. While no one is suggesting chopping down the world's trees to save the planet, the new research highlights the astonishing complexity of environmental science. Measures to combat climate change that once seemed simple common sense are turning out to be anything but.

Everyone knows fossil fuel power stations are

hefty producers of CO₂ and need urgently to be replaced. Yet they are now also recognised as hefty producers of aerosols - tiny particles in the atmosphere that play a key role in reflecting the sun's heat back into space. The scientific consensus was that this is a minor benefit of fossil fuel burning. But last month Nature published new research showing aerosols may be twice as effective at keeping the earth cool as was thought. Suddenly, wholesale closure of power stations no longer seems such a good idea.

Even so, it surely makes sense to use renewable sources of energy whenever possible. Well, up to a point: new research suggests hydroelectric schemes can be worse than useless in reducing greenhouse gas emissions. A study by the National Institute for Research in the Amazon in the current issue of the journal Mitigation and Adaptation Strategies for Global Change shows that the vast lakes used to feed hydroelectric turbines are a rich source of rotting vegetation - and thus methane. One such scheme in Brazil is now believed to have emitted more than three times as much greenhouse gas as would have been produced by generating electricity by burning oil.

Climate scientists would have us believe there is no doubt about the basics of global warming and the time for action is now. The recent spate of large revisions of the facts tells a different story. Yet politicians are still being pressed to do the impossible: modify the huge, chaotic system that is the earth's climate in ways guaranteed to be beneficial for all.

We should count ourselves lucky that, for once, politicians do not share such delusions of omniscience.

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