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# ScienceToday



If air pollution and climate change were tackled together, extra benefits would come from small improvements, writes **Lorna Siggins**, Marine Correspondent

With this year set to be the hottest on record worldwide, there is little to cheer regarding climate change. However, politicians and electorates reluctant to face up to the challenge on economic grounds may find some solace in a report published by NUI, Galway's Environmental Change Institute.

The report advises that an integrated approach to tackling air quality and climate change could be cost-effective and mutually beneficial. Both have been treated as very separate issues, but could be tackled positively with "carefully devised" strategies, the report edited by Dr Colin O'Dowd of NUI, Galway (NUIG) and Hans-Christian Hansson of Stockholm University, Sweden, argues.

"Not all areas of air quality and climate change are closely linked, partly due to their different impacts over different time scales," O'Dowd explains. However, pollution emissions have a greater impact on both with increasing economic activity, he says. "For example, methane, a global greenhouse gas, is also a source of ozone, a local pollutant. Therefore, reductions in methane emissions can lead to a reduction in ozone levels."

O'Dowd is already involved in one of the largest international studies to date on how microscopic marine plants may affect the global climate. The €3 million Marine Aerosol Production (MAP) project, has drawn on NUIG's Mace Head research station and the Marine Institute research vessel, *Celtic Explorer*, to find out how dense blooms of tiny oceanic plankton may interact with and enrich bursting bubbles or aerosol particles on the sea surface to form stable clouds that slow down the rate of global warming.

Mace Head is Ireland's key monitor-

## The good of small things



ing station for pollutants affecting both climate and regional air quality - and in a sense it already represents an integrated approach, O'Dowd points out. It contributes to the Global Atmospheric Watch programme run by the World Meteorological Organisation (WMO), and also to the European Monitoring and Evaluation Programme set up under the Convention on Long-range Transboundary Air Pollution.

He and European colleagues have been involved in the report through a network known as Accent (Atmospheric Composition Change - the European Network of Excellence). It deals with broader issues relating to research

needs and policy issues.

"On average, in a 'climate action' scenario, a 1 per cent reduction in carbon dioxide will result in 0.55 per cent reduction in emissions of particulate matter (or fine aerosol)," O'Dowd says. "In such cases, reduced emissions will lower the cost of emission control and simultaneously lower the impact of air pollution."

Air pollution reduction can in turn save governments money on health care, he says. "The net effect of climate action policies working in conjunction with air quality policy targets for 2030 would be savings of €10 billion per annum across Europe," the report says.

**'Methane, a global greenhouse gas, is also a source of ozone, a local pollutant. Therefore, reductions in methane emissions can lead to a reduction in ozone levels,' says Dr Colin O'Dowd, above**

There are additional compelling reasons for joined-up thinking on policy, he says. Much has been made of biomass fuels in terms of reducing greenhouse gas emissions. However, not all biomass fuel types are conducive to better air quality - hence another reason for integrated policy development.

Dr O'Dowd acknowledges that such an approach requires co-operation on a global scale. This is a daunting task given that the Kyoto Protocol, the world's only international action plan to curb carbon emissions, has been rejected by the largest polluter the United States, and is non-binding on rapidly growing economies in China and India.

The report outlines research national policymaking. Its key findings presented to relevant Ministers including Minister Dick Roche, his d Environmental Pro

◆ Common Issues and climate change recommendations of *ten Hansson and Coable from NUIG's E Institute. More info on [2/2](http://www.accent-netw</a></i></p></div><div data-bbox=)*