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Climate dangers increasing
Additional, short notes from the Pacific Institute of Resource Management, for the Bali Climate Negotiations – December 2007.

At the MFAT forum on 16 August 2007, we presented our views on the need for governments to show leadership in negotiating a new legally binding, equitable international climate agreement, with targets and timetables. Without this binding agreement, based on the contraction and convergence of emissions and a world ethic of universal responsibility, individual efforts will fail to resolve global warming. Our earlier submission is on the MFAT website. Some additional notes follow concerning the increasing climate crisis:

The UNFCCC's objective is to avoid dangerous rates of climate change, by stabilising concentrations of greenhouse gases in the atmosphere. However emissions continue to rise everywhere and there's a danger "runaway" rates of global warming will be reached**. Recent reports - see below - make it even more clear, early, urgent action with mandatory timetables and targets is essential if we are to prevent disasters unravelling.** The timeframe for reducing emissions to a safe level is narrowing. We do not have 100 years to get emission reduced to a safe level; it is much more likely to be the next 50 years in which we must reduce emissions 90% or more.

Systems under pressure - Natural sinks failing
The capacity of natural sinks to absorb CO_2 has now been shown to be compromised. A very recent paper, *Contributions to accelerating atmospheric CO_2 growth from economic activity, carbon intensity, and efficiency of natural sinks*, published 25 October 2007 in the US by The National Academy of Sciences, reports: "The growth rate of atmospheric carbon dioxide (CO_2), the largest human contributor to human-induced climate change, is increasing rapidly. Three processes contribute to this rapid increase. Two of these processes concern emissions. Recent growth of the world economy combined with an increase in its carbon intensity have led to rapid growth in fossil fuel CO_2 emissions since 2000: comparing the 1990s with 2000–2006, the emissions growth rate increased from 1.3% to 3.3% y^{-1}." Additionally, the third process shows increasing evidence for a long-term (50-year) increase in the airborne fraction (AF) of CO_2 emissions, ***which implies a decline in the efficiency of CO_2 sinks on land and oceans in absorbing anthropogenic emissions.***

These changes since 2000 characterize a carbon cycle generating stronger-than expected, sooner than expected climate forcing.

Another paper published mid-2007 in *Science* by a group of scientists from many countries, including the UK's Hadley Centre, shows the Southern Ocean is mopping up less of humanity's carbon emissions. The capability of the carbon sink in the Southern Ocean has fallen at around 15%, or 0.08 PgC/y, every

ten years since 1981. **The discovery a major marine carbon sink is failing has come 2 decades earlier than expected. With the Southern Ocean being the world's biggest marine carbon sink, taking 15% of all carbon out of the atmosphere, this has major implications.**

Implications of failing sinks for emissions trading schemes
Undoubtedly failing carbon sinks will affect the effectiveness of carbon trading schemes, since the ability of forests to absorb carbon is now lowered. Of course we should still continue to protect and conserve forests, but **clearly the most vital thing we must now do is to directly reduce our emissions.**

If global warming was considered by governments to be as serious as a war, a plan of action would no doubt be quickly devised. There are many things we could do, if there was this sense of urgency and emergency.

What is dangerous?
When might NZ consider the trajectory of global warming emissions to be dangerous? Will it take a national disaster, or an international disaster? It may take some time for NZ, as a nation to suffer a very bad consequence of global warming, but other countries in our neighbourhood in the Pacific region, will surely suffer very considerably, before this happens to us. Yet, unlike NZ, Pacific Islanders, have few cars, belching out global warming emissions; indeed most Pacific Islanders contribute negligibly to the problem of global warming, yet they stand to suffer the ultimate price, the destruction of their entire countries.

We have a responsibility as citizens of the world to reduce our emissions for the sake of people in other countries, because our rich country, industrial lifestyle in NZ has, per capita, contributed very significantly to global warming. NZ is in this way bringing destruction and death to people in other countries, and to other species.

Promote extended responsibility
Governments have been very reluctant to commit to the action needed to resolve global, based on a narrow understanding of their responsibilities. To find solutions to global warming, nations need to expand their understanding of who belongs to their community of concern so this includes, in addition to their fellow citizens currently alive, people in other nations and future generations, along with species and ecosystems. We need to respect and care for the entire community of life, those alive now and future generations. Otherwise, governments won't make the very significant changes a new binding equitable protocol will demand.

We encourage the NZ government to promote a *world ethic of universal responsibility*, like the Earth Charter, which will help generate the necessary motivation and political will so national governments support and negotiate a strong, binding climate agreement. The advantage of a strong climate agreement will be the certainty it provides and an increasingly ethically motivated global community, where all sectors can focus in earnest on meaningful mitigation and adaptation actions.

Yours sincerely

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