GREAT BARRIER REEF
FOUNDATION

Working to protect and preserve the Great Barrier Reef

SUBMISSION TO THE JOINT STANDING COMMITTEE ON TREATIES

REVIEW OF THE KYOTO PROTOCOL

Submission 6
TT 25 June 2008

SUMMARY

This submission asks the Joint Standing Committee on Treaties to consider the Great Barrier Reef Foundation's proposal for a biodiversity based carbon credit scheme attached to the proposed Carbon Pollution Reduction Scheme. The suggested scheme will stimulate private investment for research into how the Great Barrier Reef and other natural heritage sites under threat of climate change will ***adapt*** *to climate impacts. The basis for this is that the more we know about the Reef, the greater our chance of protecting it from the adverse effects of climate change.*

The Great Barrier Reef is one of Australia's most valuable natural assets, providing a benefit worth around $6 billion to the economy every year. Losing the Reef would directly affect the lives of many Australians. Culturally, it is unthinkable.

Australia has excellent research ability and capacity and could make a huge difference globally, leading the way on climate change adaptation research as well as marking out new ways of funding it . All World Heritage sites, like the Great Barrier Reef, which are unequivocally affected by global climate change, will be the direct beneficiaries.

Introduction

The Great Barrier Reef is the largest, most pristine, continuous coral reef archipelago on earth. It is of great importance to Australia and the world, and recognised as such with its listing as a World Heritage site. More than a natural show piece, it holds vital information about our planet, our history and ourselves.

With a maritime territory of 16 million square kilometres, stretching along the Queensland coast, these iconic reefs are inextricably linked with Australia's national identity and brand. Beyond its cultural significance, it also has tremendous economic value – contributing a conservatively estimated $5.8 billion to Australia's economy, primarily in the tourism industry, and directly influencing the livelihoods of many coastal communities. Reef associated industries employ more than 60,000 people in the coastal area between the tip of Cape York to the area just north of Bundaberg[1].

Established in 1999, the Great Barrier Reef Foundation's mission is to protect and preserve the Reef. To this end, it has become Australia's pre-eminent independent fundraiser for coral reef research, providing a "way in" for those in the private sector who share its concern for the Reef and who wish to invest in its protection. Its work over the last three years reflects the Foundation's commitment to working across society to develop lasting and effective solutions

[1] The Foundation is currently undertaking a study to determine the loss should a mass bleaching occur in the Cairns region, an area heavily dependent on tourists visiting the Reef. We would be happy to advise the Committee the results of this study when they are finalised.

and responses. Working with partners, the Foundation develops and funds a range of strategic projects which address the major threats to the Reef.

Much of the Foundation's work is now driven by the imminence and scale of the threat that climate change presents to the Reef.

The Foundation has established a number of initiatives that are already increasing urgently needed private investment in research into how Australia will meet the challenge of climate change on the Reef. The most important of these is the ZooX™ Fund, which takes its name from zooxanthellae, the critically important micro-organisms that sustain reef-building corals. The ZooX™ Fund was launched in February 2007 to provide a way for everyone –companies, their staff and customers, philanthropists, Trusts, Foundations, and the general public - to address their concerns about the effects of climate change on the Great Barrier Reef.

The Reef in danger

Recent predictions[2] that global temperatures will rise by at least 2°C by 2050 present a future in which corals are likely to become increasingly rare on reef systems, with both global warming and an increasingly acidic ocean compromising corals and driving reefs closer to a tipping point for functional collapse. 2008 has been designated the International Year of the Reef[3], acknowledging a decade of science and research since the first mass bleaching event was experienced across the world's coral reefs and in particular, the Great Barrier Reef.

The Foundation realises that Australia alone cannot save the Great Barrier Reef. Climate change has direct local impacts created and exacerbated on a global scale. We need to address it globally by reducing emissions in all countries to give our Reef a chance of survival. Locally, our focus must also be on adaptation.

It is generally accepted that climate change affects the oceans' ecosystems. Scientists estimate the rate of climate change which we are experiencing is 1000 times faster than anything the Earth has experienced in the last 750,000 years, putting at risk the ability of coral reefs to adapt.

Leading coral reef scientist, Professor Ove Hoegh-Guldberg[4] foresees serious consequences for reef-associated fisheries, tourism, coastal protection, and the populations that depend on coral reef health for their welfare and stability. Against this backdrop, there is a consensus amongst scientists that a significantly scaled-up management intervention will be needed, if the loss of coral-dominated ecosystems is to be avoided. Informing that intervention will be an active and aggressive research campaign to accelerate our knowledge of how the Reef can buttress its natural and manmade resilience to new and unwelcome climate generated impacts.

Only research will better inform the adaptation strategy so urgently needed for the Reef to survive, until mitigation efforts can take effect. To adapt, we need to know a lot more about the

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[2] **Impacts, Adaptation and Vulnerability Working Group 11**, Fourth Assessment Report, Intergovernmental Panel on Climate Change 2007.

[3] **International Year of the Reef (IYOR), www.iyor.org/ (2008)**

[4] Science **318**, 1737 (2007); O.Hoegh-Guldberg, et al. **Coral Reefs Under Rapid Climate Change and Ocean Acidification**

nature of the risk that climate change presents as well as how best to manage these risks. We also need the means to fund what will be a massive research effort.

Opportunities under the Carbon Pollution Reduction Scheme

The Federal Government's proposed Carbon Pollution Reduction Scheme (CPRS) will focus on mitigation and how the amount of emissions we create in Australia are controlled and eventually reduced. As critically important as this is, we cannot ignore the importance of adaptation in this environmental equation.

Just as research will be key to Australia's transition to a low carbon economy, so too is an accelerated, coordinated research effort vital to securing the future of the Great Barrier Reef.

The Foundation has already been successful in recruiting funds from the corporate sector for Reef based research, establishing significant funding partnerships with Rio Tinto Alcan, BHP Billiton and the Commonwealth Bank of Australia, to name a few.

Aware that there is an appetite for investment and that it could be quickly accelerated if the right incentives were in position, it now proposes to use the CPRS to stimulate further private investment particularly into adaptation-based research and development efforts. Private investment in areas such as health and medical research has proven invaluable – the same can be done for adaptation based research projects for fragile environments like the Reef.

One option is for permits to be allocated in return for investments in verified research. Clearly for such a proposal to progress, we would have to align the value of a tonne of carbon and the value of that research. The Foundation suggests that a bridge may be found in valuing biodiversity and using that in exchange for carbon credits.

Among scientists there is a huge push to recognise that the real impact or "body count" of climate change is going to be in the loss of biodiversity through a loss of species. They also recognise that once local reefs deteriorate, we will also witness the devastation of local tourism on the Reef and our national and international tourism offering.

The GBRF has commenced a valuation process which will quantify species and begin to produce a definitive valuation of life on the Reef and the Reef itself. With this information, not only could biodiversity be measured and valued, but also the impacts on biodiversity. A simple rate of exchange between such a "biodiversity credit" and a conventional carbon credit could then be set.

Australia has excellent research ability and capacity and could make a huge difference globally leading the way on adaptation research as well as marking out new ways of funding it.

Such a model for funding adaptation-based research in our Great Barrier Reef ecosystem, linked back to a carbon trading model and the broader market, could also be applied to other World Heritage sites in Australia and around the globe, to huge effect.

Building an adaptation-based credit scheme into our national CPRS is a good way to fund the research necessary to help the Great Barrier Reef adapt to the inevitable challenge it faces from climate change and greenhouse gas emissions.

Conclusion

It is generally accepted that climate change is an issue which needs to be addressed globally to allow mitigation and adaptation to have an effect locally.

Further research is urgently needed to assess and predict the impacts of climate change on the ecology and biology of the Great Barrier Reef and the broader impact on the local communities and industries dependent on it. Such knowledge significantly enhances the ability to adapt in the face of climate change.

By directly funding this research through the proposed biodiversity credit scheme, we harness the power of multiple stakeholders to increase our knowledge and modes of responding to the threats that climate change presents to the Reef and stand the best chance to manage these risks.

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