

**CLIMATE CHANGE FROM THE PERSPECTIVE  
OF THE TORRES STRAIT**

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Eddie Mabo occupies a large place in the history of relations between Indigenous and other Australians. He played that role because he was a man of exceptional capacity and tenacity, and also because he was part of the minority of Indigenous Australians whose original home was in the islands of the Torres Strait.

The Torres Strait and the adjacent lands of Australia, Indonesia and Papua New Guinea, and the people who live there, share many things, including exceptional vulnerability to Climate Change.

We are presently accustomed to hearing about human-induced—anthropogenic—climate change. It is potentially highly destabilising to the human societies that have grown around the equable and relatively stable climatic conditions of the past ten or twelve thousand years.

There is also natural climate change—mostly less rapid than we can expect from anthropogenic change in the absence of effective global mitigation. This has been important since the formation of the earth. For many millions and some billions of years it took the earth through conditions in which human life was impossible. It is not beyond possibility that it would do so again, but this would seem to be a much more remote prospect than the changes that humans are causing now through our own activity.

Some people have persuaded themselves that the fact of natural climate change somehow reduces the importance of doing something about the potentially disruptive forces that we ourselves have unleashed. The big natural climate change worked its large effects before the human footprint was heavy on the earth's environment, before human society took anything like its present form, and long before nation states constrained the movement of people across the lands and seas. The more rapid, anthropogenic climate change that is probably in prospect if humanity fails in effective mitigation will test the adaptive powers of human civilisation in ways that have no precedents. The challenges are likely to be large even if humanity excels in meeting the challenge before us, and does well in mitigation from now on.

That is not to say that natural climate change did not at times have large effects on patterns of human life. For most of the time that humans have been living in Australia and on the island of New Guinea, they were living on a single land mass. Then the rising of the seas that accompanied the end of the last ice age about ten thousand years ago created a natural barrier that was influential in defining international boundaries in colonial times and subsequently. That rising of the seas roughly coincided with the emergence of agriculture in human

societies in many places of the world including New Guinea, but not in Australia. The narrow and shallow new seas separating Australia from New Guinea were easily crossed through the many small islands, but became a surprisingly effective cultural boundary between people who were later to become known as aboriginal Australians and Melanesians.

The islands between New Guinea and Australia came to be occupied by the Melanesian people from the northern island. The opportunities of colonial power drew the international boundaries tight by the Papua New Guinea coast, and made Australians of almost all of the inhabitants of the eastern half of the Torres Strait.

In the early days of boundaries between Queensland and British then Australian Papua, the lines on the map did not matter to the villagers on either side. Many people had relatives on the other side, and visited them at whim. Similar Australian or English missions established beachheads on both sides and brought Melanesian people into a Christian fold. The same lilt of singing human voices moved across the waters. If a man living near Daru across from the tip of Cape York Peninsula needed money, he would find a boat heading for Thursday Island and the pearl luggers and the jobs on the wharves—maybe taking one or two of his children for the ride. As late as the 1960s, but still in the full bloom of the White Australia Policy, some of the gangs of tall, strong men laying the sleepers for the first railway lines in the Pilbara bore the unmistakable lines of the Kiwai from the mouth of the Fly River whose forefathers had chased Bligh's boats on its awful journey from Tahiti to Timor.

Sir Ebia Olewale told me about the times he travelled by boat from Daru to Thursday Island with his father as he sought and found work. Sir Ebia was the first education minister in a Papua New Guinea Government, later the Attorney General who recommended the new constitution to the Parliament in preparation for Independence, and then the Minister for Foreign Affairs and Trade who negotiated the maritime boundaries in Torres Strait. The eminent early leader of Papua New Guinea died earlier this year in the undersupplied hospital of Daru, just across the water from the tip of Cape York.

Over time, the international boundaries became important. The new laws agreed between independent Papua New Guinea and Australia respected the old movements from village to village across the waters, but the location of one's main roots mattered more and more. The coming of social security to Indigenous Australians introduced a difference in incomes. That, in turn, led to new sources of employment in services for poor cousins from the north. Naturally, the better medical and other services to the south were a magnet for people who had some choice of declared home. And the right to move further

south provided a security for Australians that was not available to people whose homes were north of the border.

In the old times, the people of the lowlands across the waters in New Guinea and the surrounding islands including the Torres Strait were fractured more than any on earth by geographic barriers which became barriers of other kinds. They developed hundreds of distinct languages and patterns of life. But they kept some cultural traits in common, including strong attachment to the land on which they grew their food and lived their lives.

Amongst these peoples, the young were educated in the importance of owning land inherited from ancestors and passed on to their descendents. This was the practice discovered as law by the Australian High Court in 1992. This discovery enhanced concern to correct perceived wrongs between Indigenous and non-Indigenous Australians extending far beyond Mabo's lessons on land. As Paul Kelly said in his recent book, this triggered a revolution in Australian governance. For the first time, an Australian Prime Minister made indigenous justice his main priority in time and politics. The resulting catharsis changed Australia for the good. But there was also a shudder of reaction that made it harder to right some newly prominent historical wrongs.

But that is another history.

This evening I am focussing on another shock to old and comfortable but inadequate established perceptions.

The Melanesians of the southern lowlands of the island of New Guinea on both sides of the Indonesia-Papua New Guinea border are water people. This is so in the islands, and on the coasts, and through the vast wetlands and river banks and levees extending for hundreds of kilometres inland. Villagers move about by traditional wooden or new aluminium boats and live from the plants and fish and animals of the sea, river and swamp, now supplemented by trade store goods in proportion to their money incomes. They build their gardens, waterholes, houses and social places down to the water, with a prudent allowance for the greater reach of the seas and coastal rivers in storms and the occasional freakishly high tides.

A few years ago, some of the common 'king tides' which arise regularly when the moon and sun are aligned in their gravitational pull on the seas started to have uncommon effects. The water rose above the beaches and flooded the places of human settlement. On the Torres Strait islands, the people of Eddie Mabo's island, Mer, moved to higher ground. Villagers in the Fly River delta and some of the adjacent coasts found their gardens and watering places inundated and ruined by salt. Thousands sought sustenance in the crowded and

impoverished town of Daru, which had long outgrown the demands for a livelihood that people placed on it.

This looks like anthropogenic climate change. Global warming will raise the sea level simply by expansion of the water as it warms. The average rate of sea-level rise from 1961 to 2003 was almost 1.8mm plus or minus half a millimetre per annum. In the decade to 2003, it was 3.1mm plus or minus 0.7mm per annum. This doesn't sound much, but the accumulation of increases at a few millimetres a year, accelerating over times, soon becomes hugely disruptive for people who live in such close proximity to the water. And this is a lot of people on the other side, where the lowlands south of the high mountains extend over many hundreds of kilometres. The Fly River, for example, flows in its great arcs for almost a thousand kilometres between the town of Kiunga and the Fly River mouth, and only falls about 8 metres over this great distance.

The IPCC Report of 2007 estimated that for business-as-usual emissions growth similar to that anticipated by the Garnaut Climate Change Review, probable sea level rise would be 26-59cm. Three quarters of this was expected to come simply from thermal expansion, with a small contribution from the melting of land-based ice. Dynamic changes in ice flow could raise the upper limit by 10-20cm. A key conclusion of the IPCC sea-level rise projections was that larger values above the upper estimate of 79cm could not be excluded.

As we have seen from the smaller increases of the late twentieth century, a rise of sea level by half a metre would have a large effect. At the same time, the increased energy in the atmosphere in a warmer climate would increase the intensity of storm events. The king tides and storms would come from a higher base, and the storm surges would be stronger. These unsettling events would reach deeper into the island and coastal villages.

All of that could be expected to happen without a major contribution to sea level rise from the melting of land-based ice in Greenland and West Antarctica. Here we are in a world of some genuine scientific uncertainty, especially about West Antarctica. There is unfortunately not much doubt in mainstream science that if there is no effective and strong control on emissions, the melting of the Greenland ice cap is only a matter of time. How long it takes will make a big difference to the damage that it does to human settlement and society. That time will be shorter the warmer the temperatures. And when the ice from Greenland is gone, it will have added about seven metres to what would otherwise be the levels of the seas. How much this century? I tried to pin some of the best scientists who work in this area to a number and a probability, but they resisted. The idea of a four metre contribution this century, however, was not thought to be outside the bounds of possibility.

In Antarctica, most of the continent is so cold that the expected anthropogenic warming in the absence of mitigation is unlikely to melt ice. The West Antarctic sheet is different, and its melting could contribute 6 metres to sea levels. It would probably take longer than Greenland to have a large effect. The West Antarctic effect may be balanced to some or even a large extent by increased ice in the cold interior resulting from greater precipitation.

So there is great uncertainty in detail about the contribution of the melting of land-based ice in Greenland and Antarctica to sea-level rise will add to the more predictable thermal expansion, but there is a high probability of serious disruption, and considerable risk of something worse. Fifty centimetres of sea level rise will make life vulnerable to the king tides and the storm surges in the places where most of the 8,000 or so Torres Strait people now live. The number of people affected across the waters in the mainland of New Guinea, in Papua New Guinea and Indonesia, would in each case be many times larger. A metre of sea level rise would be much worse. The relevant point is made strongly enough without reflecting upon four metres.

For most of Mabo's Australian fellow-citizens of the Torres Strait, and the larger numbers of Papua New Guineans and Indonesians in adjacent areas, their only choice would be to seek new livelihoods in new places. It will be easier for Torres Strait citizens of Australia, with their rights to live and work and access to social security and services in Australia. Successful development in the Western and Gulf Provinces of Papua New Guinea and the Merauke and Asmat Districts of Indonesian Papua would ease the strain. It is in all of our interests to assist such development where we can. But we would be optimists to think that successful development in these places alone could carry the resettlement load. The more benign possibilities from a failure of effective global mitigation are likely to require the relocation a long way from their homes of hundreds of thousands living in and adjacent to the Torres Strait.

And even if these relocations turn out to be possible without huge trauma, there will be a loss of human heritage. A loss of the capacity for communities like that in which Eddie Mabo lived his early years to evolve gradually in response to expanding opportunity, and to preserve those parts of old places and patterns of life to which they attach value. The loss would go well beyond the economic losses that I tried to measure in intricate detail in the Garnaut Climate Change Review. These are the immeasurable Type 4 losses to which I referred in Chapter One of the Review—the loss of natural and human heritage—that we must try to bring to account outside the economic models.

Humanity is now in the process of a collective decision on whether to take great risks for the economy and the natural and human heritage of the future by

failing to break the link that has been present since the industrial revolution between economic activity and greenhouse gas emissions. Climate change mitigation is a conservative issue. The central policy issue is whether and how much we are prepared to pay to conserve established patterns of human life and civilisation, and to improve our prospects for handing on prospects for more enriching lives from generation to generation.

To be sure, there are uncertainties about the precise effects of a failure of mitigation. But careful analysis of the economic costs and benefits under “most likely” climate change scenarios show that the benefits of mitigation exceed the costs of avoiding them if we value the economic welfare of the future in ways that come naturally to humans when they understand the choices. In the process we buy insurance against the distinct possibility that the consequences will turn out to be much worse than in these most likely cases.

The avoidance of immense loss of natural and human heritage—the preservation for as long as people value parts of life in at least some of the places that would have been visited by Eddie Mabo in his early years, and the patterns of life which grew on them—is then a bonus. A bonus that most people would value immensely.