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THE THREAT OF CLIMATE CHANGE TO THE PACIFIC REGION:
PROBLEMS, SOLUTIONS AND PROSPECTS*Alberto Costi and James Renwick**

1.1 In the eye of the storm

This volume is a record of the Second Pacific Climate Change Conference hosted by Te Herenga Waka—Victoria University of Wellington and the Secretariat of the Pacific Regional Environment Programme (SPREP) at the Museum of New Zealand Te Papa Tongarewa in Wellington on 21-23 February 2018. One of the main strengths of the conference series is that it brings together perspectives from across all sectors of society, from science to policy; engages community activism; and highlights the role of the arts and of faith communities. Hence, this book is a collection of disparate voices, representing the diverse participants to the conference.

There is a wide range of styles and substantive content, but there is a strong common theme: climate change affects us all, and a successful response involves all sectors of society. To adapt to changes that are already under way, a concerted effort is required to protect communities from changing hazards associated with sea level rise, increasing extremes of rainfall, more violent cyclones, and the inevitable impacts on food and water security. To bring climate change to a halt, the whole of the global community must reduce emissions of greenhouse gases to zero as soon as possible, ideally by 2050.¹

The risks and the challenges of climate change are huge, and no more so than across the Pacific. This book is titled "In the Eye of the Storm" because the Pacific, especially the western Pacific, is at the front lines of the changing climate; the title also pays tribute to the theme of the inaugural Pacific Climate Change Conference held in Wellington in 2016. Sea level rise is higher than the global average, rainfall variability is set to increase dramatically, the tropical cyclone season is lengthening and the most powerful storms are becoming more frequent. Many communities live on low-lying clusters of islands, especially prone to the effects of sea level rise. While Pacific nations have done very little to cause the climate change problem, they are very much at the forefront of suffering the consequences.

* Book editors.

1 Nicolas Stern "We must reduce greenhouse gas emissions to net zero or face more floods" *The Guardian* (online ed, 8 October 2018) <<https://www.theguardian.com/environment/2018/oct/08/we-must-reduce-greenhouse-gas-emissions-to-net-zero-or-face-more-floods>>.

After having briefly raised some of the key issues facing the region, we introduce below the core chapters in this book, before concluding with some prospects about the efforts of the Pacific region to tackle climate change.

1.2 Ongoing problems

The foreword to the book, written jointly by Hon Luamanuvao Dame Winnie Laban and Leota Kosi Latu, points out that the problem is not new. Yet, for a long time, climate change failed to gain traction with those states most responsible for greenhouse gas emissions, as illustrated by the many difficulties with the implementation of the Kyoto Protocol,² despite the fact that already in 1988, the World Meteorological Organization was devoting resources to the issue.³

Moving forward three decades to the Second Pacific Climate Change Conference, the welcoming remarks by the Vice-Chancellor of Te Herenga Waka—Victoria University of Wellington, Professor Grant Guilford, reminded us that by 2018, climate change had grown into a central concern of the international community, even more so in the Pacific region. Resilience building has gained resonance throughout the region as a call for Pacific Islands to control their destiny by staking their claims to their existing maritime zones and embarking on large and small adaptation projects, thus ensuring that they will continue to prosper in their ancestral lands and harvest the goods from the sea and soil of the place to which they belong.

Although there might sometimes be differences of views among them, the fight against climate change unites Pacific peoples. The Prime Minister of Samoa, Honourable Tuilaepa Dr Sailele Malielegaoi, in his opening address, canvasses the role of regional organisations in tackling climate change and highlights some of the initiatives at the national level in Samoa to illustrate the leading role governments must play in tackling this multifaceted problem. Equally, he informs us about the work of regional organisations such as the Pacific Islands Forum, the Secretariat of the Pacific Community and SPREP in building home-grown capacity for tackling environmental challenges.

Besides state-led programmes and policies, we must not forget the role played by non-governmental organisations and other civil society actors. Whether they be part of global networks or emerging from grassroots movements, it is often through their hard work that innovative solutions may be found to address climate change while governments argue and timidly iron out their differences in order to reverse current trends. No doubt more efforts are needed to find sustainable solutions.

2 Kyoto Protocol to the United Nations Framework Convention on Climate Change 2303 UNTS 162 (opened for signature 16 March 1998, entered into force 16 February 2005).

3 Intergovernmental Panel on Climate Change *Report of the First Session of the WMO/UNEP Intergovernmental Panel on Climate Change GE (IPCC) (World Meteorological Organization, Geneva, 9 - 11 November 1988 IPCC-1)* (World Meteorological Organization, 1988). Only four years later was adopted the United Nations Framework Convention on Climate Change 1771 UNTS 107 (opened for signature 4 June 1992, entered into force 21 March 1994).

The chapters in this volume detail the effects of climate change. These are felt not only through extreme weather events and sea level rise, but also in terms of growing pressure on limited resources, increased displacement within and across borders. Addressing these effects necessitates legal measures and enlightened policies, bold initiatives, from the local to the global and from the global to the local. The timid steps taken at the international level to successfully work out mitigation goals and the equally tepid efforts at long-term adaptation strategies are in part the result of the international community producing environmental agreements with weak legal obligations, too often wrapped in aspirational goals without sufficiently strict deadlines, despite the fact that the clock is ticking.

1.3 Some suggested solutions

This book covers many of the important topics around the most pressing of issues that is addressing climate change and its effects. All the contributors have one aim – to present the problem, highlight possible ways forward, and ensure we prevent rather than wait. The book is divided into three informal clusters.

First, a number of contributors cover the science of climate change and the current state of the climate across the Pacific, while others look at adaptation responses. Chapter 2 sets the scene by outlining the current climate of the southwest tropical Pacific, and how it is likely to change through the rest of the 21st century. It is a scientific account of the concrete impacts of global warming on our oceans and its consequences, the rise in sea levels, the precipitation of extreme weather events and the recurrence of droughts as well as its impact on marine life, thus challenging the nations of the Pacific. Needless to say, this chapter testifies to the lack of success of mitigation strategies so far.

As mitigation has failed to materialise, even as a stop-gap against climate change, the focus has shifted towards adaptation strategies, very much strengthened by the adaptation mechanisms adopted in Paris in 2015.⁴ For Dr Judy Lawrence, Celia Wade-Brown QSO, Shenuka de Sylva and Dr Paul Blaschke, the authors of Chapter 3, there are several examples of innovative and integrated adaptations, but they require the involvement of communities to succeed. Although they acknowledge the fact that Pacific nations have been able to adapt in the past, their current predicaments require solutions that too often are challenged by governance, institutional and financial constraints and barriers. Through examples taken from New Zealand, they question current governance and institutional arrangements that tend to shift the burden on future generations. They argue that innovative solutions, to be optimal, require the active role of communities in addressing hazards and threats and find suitable options to adapt to climate change. Looking at Niue, they show that traditional architectural designs, building techniques and materials for dwellings and facilities may provide much better and more economical buffers to climate events than dependency on imported technologies and materials. Turning to Vanuatu and the Solomon Islands, they give examples of capacity development and working with nature in a way that builds multiple benefits and long-term solutions.

4 Paris Agreement 55 International Legal Materials 743 (adopted 12 December 2015, entered into force 4 November 2016).

In Chapter 4, Dr Patila Amosa discusses the current state of knowledge of climate change in the Pacific and how the region is addressing existing and projected impacts. She presents sobering statistics about climate patterns in the Pacific and the challenges that communities already face. Yet, the resilience of the region is exemplified by the examples the author gives about the various initiatives taken by Pacific Island nations at the regional level.

Chapter 5 by Associate Professor Nicola Gaston, Professor Justin Hodgkiss and Shane Telfer completes the first informal part of the book. The authors offer a fascinating account of attempts in materials science to reduce carbon emissions and avoid the worst scenarios of climate change, by making some of the required economic and behavioural adjustments easier. They introduce readers to several current and emerging technologies that could reduce emissions through either provision of carbon-free energy, materials-based energy conservation, or the use of advanced materials in energy hungry technologies, such as computing. They also look at the issue of carbon capture and storage, including a range of porous materials that show promise in negative emissions technologies and offer potential for productive repurposing of atmospheric carbon.

Following on, a number of chapters are dedicated to matters of law and policy, rather than science. Chapter 6 by Professor Christopher Wright explores the political and security implications of these unprecedented changes to our world within the context of Australia and the wider Pacific region. The chapter offers a stark contrast between the position taken by Australia – whose national interests have been tied to the global fossil fuel industry – and that of Pacific Islands. After an overview of the general political economy of the climate crisis, the author explores political responses taken by Australia, and then outlines the implications of these for politics and security in the Asia-Pacific region.

In Chapter 7, Adrian Macey, a seasoned diplomat, asks the question whether climate change negotiations and programmes are fit for the Pacific. Although small developing island states nowadays voice their concerns and participate more actively in international negotiations, there is still a sentiment that international fora remain under the control of economic powers and that better strategies are required, with the need for building capacity in the region.

The next two chapters offer legal perspectives and highlight the fact that at the heart of decisions on both mitigation of, and adaptation to, climate change lies political decision making. In Chapter 8, Sir Geoffrey Palmer QC stresses the importance for international norms to be translated into domestic law in order to have "bite". The making and enforcement of domestic environmental law and policies may take time to design and to enact; they may be subjected to judicial review; and statutes are subject to interpretation by courts. Focusing on New Zealand law, he examines the degree to which judicial decisions and other processes (such as the Waitangi Tribunal and the Parliamentary Commissioner for the Environment) can correct and encourage government policies on climate change and give them a "nudge" towards making them effective.

Chapter 9 examines the current state of international law with regard to legal personality, especially where sea level rise threatens low-lying Pacific Island nations and their very existence. The chapter argues against loss of status through a narrow reading of the criteria of statehood, favouring instead strategies that strengthen their right to existence. The chapter then considers whether there

could be a future basis for action to protect low-lying states. Canvassing existing norms of international law and emerging trends, the chapter makes a case for the future of those states through the principle of respect for the right of peoples to self-determination; the concept of an international or regional "duty of assistance"; or even "a responsibility to protect" nations at risk and their populations. The chapter sketches the nature of such a "duty" and "responsibility": what these terms entail, and whether they translate into legal or political obligations to ensure low-lying nations can put in motion adaptation strategies that protect the state in the long term.

The last cluster of chapters examines climate change through other, diverse viewpoints. In Chapter 10, Tim Grafton from the Insurance Council of New Zealand suggests that much can be learned from the risk analysis and management techniques of the insurance sector. As insurance cannot cover certain and expected events like sea level rise, reliance has to be on adaptation measures. Insurance against the risk of loss from other natural hazards may help countries to reduce the total costs of disasters for their economies.

Jamie Morton, science reporter at the *New Zealand Herald*, looks at the coverage of climate change in the media. One of a breed of media people devoting time to climate change reporting, he shows how the issue has shifted from fringe news towards headlines, and the difficulties in balancing the reporting of scientific certainty with coverage of the views of climate sceptics. He also illustrates that beyond the media, other means of communication make climate change centre-fold, with an energetic arts scene using creative talent to make people aware of climate change, whether it be through dance, theatre, painting and so on.

Finally, Chapter 12 looks at climate change through a faith perspective. In his unique way, Rev John Howell offers a refreshing take on the need for action to combat climate change. He proposes an approach shared across religious beliefs and value systems. He finds in various texts and cultures a similar call for action to protect our environment and change our habits to ensure a better future for the next generations.

1.4 Prospects

Through the work of regional and international organisations, Pacific Island nations have integrated climate adaptation approaches into national strategies. Numerous adaptation measures have been carried out with the involvement of the Secretariat of the Pacific Community, SPREP, the United Nations Development Programme as well as many other organisations, states and civil society actors. It is refreshing to see grassroots movements play a crucial role at the community level and there is increasing awareness of the topic among many decision-makers. All are debating climate change issues and seeking appropriate solutions.

It would be easy to be negative about the future. Yet, as the Prime Minister of Samoa reminded us at the opening of the 2018 conference, Pacific Islands have taken a pro-active role to secure their future. The wise words of the Prime Minister of Tuvalu, the Right Honourable Enele Sopoaga, that to

save Tuvalu is to save the Pacific,⁵ underlines the importance of the choices that must be made today in the interest of future generations.

We hope that the reflections emanating from this multidisciplinary volume generate new conversations and inspire further initiatives to better adapt to the changes we see around us, and most importantly, to redouble efforts to move the world towards the zero-carbon future we all deserve.

5 "Save Tuvalu; save the world"; UN chief echoes rallying cry from front lines of global climate emergency" (29 May 2019) UN News <<https://news.un.org/en/story/2019/05/1039431#:~:text=On%20his%20recent%20Pacific%20tour,warming%20temperatures%20threaten%20the%20region>>.