

# SCIENCE, FAITH AND THE CLIMATE CRISIS

## **Praise for *Science, Faith and the Climate Crisis***

‘In our supposedly secular age, when humans are transforming the world’s physical geography like never before, we need alternative thinking about the nature of the problems that confront us. Religious and secular thinking must make space for a dialogue of equals, so that we can identify ways forward on Earth that are feasible, are desirable and possess legitimacy. This book of thoughtful essays represents, and might in turn help to build, such a dialogue.’

**Professor Noel Castree**, University of Manchester, UK

‘A timely and important contribution to “why” and “how” science and faith need to collaborate to combat the climate crisis.’

**Willy Telavi**, Former Prime Minister of Tuvalu

# SCIENCE, FAITH AND THE CLIMATE CRISIS

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**Rev Dr Sally Myers** is a priest in the Church of England and an academic. She has worked with a number of HE institutions in the strategic development of teaching and research programmes. Her own research and professional interests are concerned with how individuals and communities represent their faith to themselves and others, how this impacts attitudes and behaviour, and particularly, how this changes over time in response to learning and crisis to form 'wisdom'. She draws upon narrative and cognitive psychology to understand the mechanisms of change involved in 'changing minds' and the effectiveness of educational interventions. She is currently a Visiting Scholar at the Woolf Institute, Cambridge. At the time of the 2019 conference, she was Principal of the Lincoln School of Theology.

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# ACKNOWLEDGEMENTS

The authors would like to thank the organisers of the 2019 Moana: Water of Life Conference: the Diocese of Lincoln and the University of Lincoln, UK, in particular the Lincoln Centre for Water and Planetary Health, and also Bishop Grosseteste University, UK, and the Lincoln Faith and Environment Group for their significant contributions in making the event a meeting of minds and hearts. We also thank Sorina Hanna for help with figure redrafting.

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# FOREWORD

It becomes ever clearer that climate change is the greatest challenge that we and future generations face; a true horseman of the apocalypse. This book comes at a crucial time. Without swift, decisive action, the consequences of climate change will be devastating.

On a trip to Fiji last year, I was told by my hosts, ‘For you Europeans climate change is a problem for the future; for us, it is a problem of everyday survival’. The contributions of our Polynesian friends in this book illustrate how, for many, climate change is already climate crisis. And, Polynesia is just one example of the repercussions of climate change we are seeing worldwide. In Nigeria, desertification has caused conflict amongst tribes competing for dwindling resources. In Bangladesh, monsoons have killed thousands. There are many many more examples.

As a Christian, I believe in the words of Psalm 24, ‘The earth is the Lord’s, and all that is in it’. We are the stewards of God’s creation and it is our sacred duty to protect the natural world, which we have so generously been given. Responding to climate change is an essential part of this responsibility. But it is not only that. When we look at Jesus we see one who instinctively stood alongside the most vulnerable in society. It is absolutely clear that following Jesus today must include standing alongside those who are on the front line of this unfolding catastrophe.

The situation is difficult, but it is not hopeless. There is still a chance to act. With prayer and fruitful discussions, fresh inspiration for action that makes a lasting impact can be found.

I am constantly inspired and encouraged to hear of the passionate, creative and committed ways individuals and churches are living out their faith, working to address the causes of climate change and to reduce its effect. It is happening across our global Anglican Communion, and it will rightly be a central part of our conversations at the forthcoming Lambeth Conference.

However, although important action is already being taken at local, national and international levels, there is much more to be done, and it needs to be done far more urgently. We must continue to speak out and act. We also need to highlight the wealth of academic research on this subject and at the same time amplify the voices of those who are suffering and living with the daily impacts of climate change. I am delighted that this book is doing just that.

The book follows on from the international conference on climate change held in Lincoln in 2019. The conference was a collaboration between the University of Lincoln, UK, Bishop Grosseteste University, UK (an Anglican foundation), and the dioceses of Lincoln and Polynesia. I think that the partnership between religious institutions and science can make a profound difference in facing many of the world's problems, not least this one. The combination and collaboration of expertise, global reach and diverse experience is a real and powerful route to substantial change. This book illustrates how when different voices are listened to carefully, new perspectives, opportunities and solutions can begin to be found.

Justin Welby  
Archbishop of Canterbury

## PREFACE

Creation is God's gift to everyone. The climate is a global phenomenon. Whoever we are and wherever we live on this incredible planet of ours, we share a responsibility to protect the environment and to do so as people connected with one another across geographical and cultural boundaries. Living in isolation is no longer an option for any of us, and neither can we retreat into the bliss of ignorance. Scientists have been naming the issue and telling us what is happening to the environment for a long time. Responding to climate change and taking seriously our stewardship of God's creation is an essential part of our responsibility as human beings.

Some parts of the world are more exposed than others to the effects of climate change, and there is a particular threat to the low-lying islands of Oceania from rising sea levels. This book follows on from the 2019 Moana: Water of Life Conference, which brought together academics, educators and faith leaders from Aotearoa, New Zealand, and the Diocese of Polynesia, with whom the Diocese of Lincoln is linked, and the Episcopal Church of the United States. Both projects set out to be deliberately collaborative in nature and to provide an opportunity to hear first-hand from those who come from places and cultures different from our own. I hope and pray that in listening to each other we will be challenged in our

thinking and encouraged in our actions and that together we will gain a deeper understanding of what God is calling the church to be and do as the Body of Christ at this time in human history.

The Rt Rev Dr David Court  
Acting Bishop of Lincoln

# INTRODUCTION

Earth's climate is changing faster than at any point in the history of modern civilisation through human-induced global warming, resulting in damaging weather extremes across all borders, social and geographic. Our combined decisions on greenhouse gas (GHG) usage will determine the size of the carbon footprint inherited by future generations. Yet there remains significant reluctance to respond robustly to compelling scientific evidence on human-induced climate change. When the subject is mentioned, many people tend to retreat into everyday economic, social and political issues and cultural conflicts of interest. This is at least in part a way of avoiding difficult-to-hear information from others. One way to help unblock this impasse is to bring together diverse stakeholders for intentional conversation.

The 2019 conference *Moana: Water of Life: Navigating Climate Change for Planetary Health* brought together physical and social scientists, educators, students, theologians and activists, including many who are already living with the effects of climate change in the Pacific Island Region (PIR) in face-to-face conversation. Following on from the conference, this edited volume brings together papers from some of the contributors to that conversation and examines the nature, challenges and potential fruits of future dialogue between these different stakeholders.

The conference was an example of *Talanoa*, a Fijian word, which is used across the Pacific to describe a process of round-table (or rather round-bowl) participatory, inclusive, ‘blame-free’, open and honest discussion. Deep receptive listening to, and reflective dialogue with, those with different perspectives is difficult and requires sustained concentration. This is further exacerbated when issues are emotive, urgent, and where there are conflicting priorities and no clear solution. The conference, and this book, set out to address this difficulty. The volume deliberately includes and takes seriously diverse perspectives to explore and elucidate complex understandings and attitudes, in this instance specifically towards water and the climate crisis. It includes chapters that are written by authors who are deeply grounded in the Christian faith and authors who do not profess a faith. It offers perspectives from very different kinds of research and academic writing in science, theology and education. Practical solutions are offered alongside spiritual reflections. Whilst all of the contributors are academics, no one discipline, methodology or epistemological foundation is taken as normative. What is privileged, however, is the voice of the young, and especially of the students involved in research projects focused on and based in the PIR.

As with the voices heard at the conference then, the chapters in this book are authentic to their authors. Beyond referencing, their contributions have not been edited to a proscribed template. Nor are they presented as a string of ideas neatly arranged and pre-digested for easy consumption, as this would suggest a cohesion that does not exist in the reality outside of the pages. Rather, in an attempt to recreate the delight and creativity of genuine dialogue the editors invited each author to write ‘in their own voice’. We believe that one of the most important ways of honouring another human being is to truly listen to what they have to say, for it is



in the messiness of real encounter that real understanding might begin to emerge. The book comprises 12 chapters and invites the reader to ‘listen’ in turn to perspectives from students living and researching on the front line of the climate crisis as it unfolds in the PIR, climate scientists, climate educators, climate theologians and people offering practical solutions to the climate crisis. The final chapter then offers an overview and exploration of the contributions. It sets out the challenges involved in dialogue between stakeholders with diverse backgrounds and world views, drawing out common themes and assessing areas of divergence, and provides an interpretative overview of emerging patterns together with suggestions for taking the conversations forward.

The first two chapters are written by young researchers of deep faith from the PIR. In Chapter 1, Fetalai Gagaeolo explores the socio-cultural impacts of relocation due to climate change with reference to the people of Kiribati moving to Fiji. Local community perceptions and experiences reveal that relocation is considered the last ‘adaptation resort’, which will compromise their socio-cultural practices and values in the long term. Communities have spiritually come to terms with the climate crisis and just do not want to relocate.

In Chapter 2, Peni Hausia Havia considers the effect of climate change on PIR livelihoods, health, overall well-being and sustainability through the lens of a deep Christian faith in God. He argues that no current development model addresses the relationship between physical ‘climate change impacting factors’ and God. He outlines how his research led to the creation of a framework called ‘Moana: Nothing is impossible with God’ (Luke 18:27) for use by community leaders and policy-makers in tackling the PIR response to the climate crisis.

The next two chapters offer two complementary inputs by leading environmental scientists from the Lincoln Centre for Water and Planetary Health, University of Lincoln, UK. In

Chapter 3, Mark Macklin and John Lewin set the scene with an overview of how rivers have played a defining role in the global development of human societies and culture. They explore how this will undoubtedly continue in the twenty-first century with a growing demand for water, increasing pollution of river channel and floodplain environments, and anthropogenic global warming-related changes in the frequency of floods and droughts. They consider how rivers initially shaped societies, and then how urbanisation, industrialisation and intensified agriculture have more recently transformed river systems, compromising planetary health and human ways of life. They highlight likely areas facing the greatest challenges and offer insight into how interdisciplinary catchment-based approaches, and new technologies such as those based on satellite imagery, are now beginning to address pressing societal and planetary problems in the unfolding climate crisis.

In Chapter 4, Edward Hanna and Richard Hall recount the overwhelming scientific evidence that human activity through enhanced GHG emissions is largely responsible for recent climate change and accompanying extreme weather. They discuss the scientific evidence for recent climate change, focusing on the very rapid environmental changes recently seen in the Arctic and Antarctic icy realms that affect global sea level rise and may also influence extreme weather events in densely populated Northern Hemisphere mid-latitude regions. They then consider further likely changes in climate during the rest of this century. In the final section, they briefly propose necessary actions and solutions by the global community including religious stakeholders, arguing that fully involving religious communities is essential in order to help decarbonise the economy.

The next two chapters offer two different approaches to climate change education. In Chapter 5, Sarah Hemstock,

Siu Jione, Mark Charlesworth and Patrina Dumaru argue that in order to help society at large adapt to and survive the climate crisis, it is important to foster climate change education. They explore the international policy context which has led to ground-breaking research and Pacific educational initiatives (such as recognising climate change and disaster risk reduction as employment sectors, leading to the development of regional vocational qualifications, and regional accreditation of qualifications) before considering a Pacific Small Island Developing States (P-SIDS) case study.

In Chapter 6, Theresa Mercer and Andrew Kythreotis discuss how society can be more involved in climate research and policy by fostering a more socially equitable and just way of tackling future climate impacts through education. They outline how previous and contemporary social and political conditions relate to increased and fairer citizen engagement in climate action in the science-policy domain. They then explore how collaborative education approaches through Education for Sustainable Development (ESD) might increase citizen engagement in climate action. Their chapter concludes by critically discussing future directions for research in ESD and climate change for a more inclusive and just form of climate governance.

The following two chapters are written by two very different theologians. In Chapter 7, Marc Andrus, Bishop of the Episcopal Diocese of California, argues that the water crisis is in fact a spiritual crisis. He draws together personal experience and scripture, especially the story of the flood in Genesis and the account of Jesus walking on the water in Mark's Gospel, to reflect on the relationship between humanity and the rest of creation. He details some of the devastating consequences of our continued disregard of the earth's delicate ecosystem, including freshwater scarcity, plastic pollution, species loss and endangerment and climate

refugees. He ends with a review of the role of faith bodies in addressing the water crisis, through theological interpretation and practical action.

Chapter 8 is written by biblical scholar Emily Colgan of Trinity Theological College in Auckland, New Zealand. She outlines the concept of an ecological interpretation of scripture. She argues that one way to cut through the all-too-human tendency to ignore or answer away the need for personal and corporate climate action is to connect directly with the religious beliefs held by people as a result of the interpretation of scripture. Her chapter offers a compelling way of thinking about coherence between scripture and religion and their relationship with the natural environment. She argues for a creation-centric reading of the Bible and in doing so suggests that the preservation of the natural world and reversal of climate change is a realistic and indeed urgent response to the authority of scripture.

The following three chapters offer three very different practical responses to the climate crisis. In Chapter 9, Mike Colechin explores the role that technology may have in addressing global warming. He argues that a range of solutions will be required, involving changes to social practices and the development of energy supply solutions that have a net zero impact on GHG emissions. He then explores a range of potential changes that individuals can make to their daily lives in support of the wider transformation needed within society as a whole.

In Chapter 10, Sheila Andrus observes that although the climate crisis is frightening for many people, it is often not clear what one person, or one community, can do to drive down GHG emissions. She introduces a practical solution in the form of an Internet accessible tool, [sustainislandhome.org](http://sustainislandhome.org), that can help people and communities be part of climate solutions. Her chapter focuses on why [sustainislandhome.org](http://sustainislandhome.org) was developed,

its design principles and how it works, and the lessons the Episcopal Church is learning from the rollout of this tool across Episcopal dioceses in the United States.

In Chapter 11, Lynnaia Main looks at the role played by faith-based organisations in discussions at the United Nations. She offers a brief history of faith in action at the UN, including a comprehensive overview of the history and structures involved. She then outlines success stories, future challenges and potential obstacles. Finally, she explores how people of faith can work more effectively with and within the United Nations to address climate change.

In Chapter 12, Sally Myers looks back over the first 11 chapters of the book and offers an analysis of the different voices and perspectives they contain. She briefly sets out the challenges involved in bringing together and deeply listening to those with diverse backgrounds, priorities and traditions. She then explores the main themes that have emerged from the chapters and conversations, offering an overview of areas of difference, but also of surprising fundamental agreement, not just on the ‘what’, but also the ‘how’ of what needs to happen next.

The conclusion draws together the dialogue between all those who participated in the conference. It makes suggestions as to how people of faith, and the Anglican Church in particular, might respond to the challenge of climate change in ‘thought, word and deed’. It then identifies areas for further investigation, dialogue, decision and action.

There were two significant contributions to the 2019 conference that have not yet been mentioned but are listed below:

The Diocese of Lincoln launched its Environmental Policy at the 2019 conference, which may be found at <https://www.lincoln.anglican.org/Handlers/Download.ashx?IDMF=277ea34d-9e7b-480a-8d75-5250dd47a121>.

Project Pressure provided an exhibition visualising the climate crisis: <https://www.project-pressure.org>.