



Humanity must act collectively and urgently to change course through leadership at all levels of society. There is no more time for delay.

United Nations Foundation on confronting climate change

Introduction

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Humanity is gradually awakening to the climate crisis and is starting to take action. However there is little time to spare, and all of us must contribute to this effort. This book explores what we as South Africans, irrespective of our roles in society, need to do about climate change.

Chapters 2 to 6 provide a comprehensive overview of the crisis and include a description of the latest research findings regarding our state of the environment and climate change. This is followed by a review of the broader socio-economic implications and a reflection of what we have done to bring about this crisis.

From here we move on to describe how each of us can become part of the solution, what actions we need to take as a society to prepare for and tackle climate change, what emissions South Africa is responsible for and what national mitigation efforts are required in the energy sector. The remaining chapters then explore the actions that need to be taken by specific sectors of society and with respect to particular issues such as transport and waste. Chapters each begin with a short abstract and end with a “Resources” list of recommended further reading.

In South Africa, when a new dinner-table topic successfully competes with discussions of crime, corruption, soccer and rugby, we know it is important. 2007 is notable for being the year in which the issue of climate change went mainstream, and we have seen a fast progression in the nature of discussions from “what is it about?” and “are we really the cause?” to the all-important “what do we need to do about it?”

Globally, society has at last reached a stage where it is gradually moving from deliberation to action. In 2007, even the US recommitted to international efforts to reduce emissions, and there is now regular news of major corporations upping their commitment to tackle climate change. While the rich nations have caused the bulk of the problem, major developing nations with high emissions – particularly Brazil, India, China and South Africa – must now also contribute to reducing their outputs. South Africa has undertaken to contribute its fair share. Trevor Manuel’s 2008 budget speech was the first that took cognisance of the need to build sustainability thinking into our economy when he talked about issues such as energy efficiency, responsible use of our natural resources and the fact that we cannot sustain economic growth using the same principles and technologies as we have in the past.

“We have a very small number of years left to fail or to succeed in providing a sustainable future to our species.”

Jacques Cousteau

There is a growing recognition that our wellbeing as humans and the vitality of our economies are entirely dependent on a healthy environment. Just a few degrees separate us from a world of far greater weather extremes in the form of vicious storms, terrible flooding and cruel droughts. Ecosystems would not be able to support the density and diversity of plant and animal life we see now. The result? A drastic and traumatic decrease in human population numbers in what James Lovelock refers to as a global “cull”. This world would be a harsh world to leave to our children. A cooler Earth, as we still have it, makes for a healthier and more hospitable home.

For several generations, we have been conducting a foolhardy global experiment with the only biosphere we have, and this tinkering has now progressed to dangerous levels. You and I, with our insatiable desire to burn greenhouse gas-emitting fossil fuels, plough the lands and cut down forests, are the undisputed cause. While cyclical climate change is a naturally occurring phenomenon, our anthropogenic emissions are boosting the Earth’s warming effect to perilous levels and, as a result, are pushing this delicately balanced natural system into an unstable state.

Climate change is unequivocal and very serious, and constitutes a *global emergency*. It is an 11th-hour crisis we can barely feel or fathom yet. The good news is that the science states that if we decide to take bold action quickly, the most severe

consequences of global warming can be avoided, and at a cost that need not significantly inhibit economic development. The bad news is that our existing and planned international efforts are not ambitious enough – there is an unacceptable gap between what is required by science and the actions being taken by global society. If we don’t close this gap, we will fail.

We have no choice but to succeed. All of us are compelled to ramp up our efforts dramatically and learn to live in harmony with nature. In this undertaking, we must all recognise our role, each according to our individual and organisational abilities and sphere of influence. And as an energy-hungry society, South Africans have a weighty obligation to mitigate their emissions. Government is responsible for creating policies that encourage a low-carbon economy and allow us to continue to create a more equitable society. Business must find ways to minimise environmental impacts caused by producing and delivering the products and services that we consume. We as individuals are obligated to drive the change in government and business, while each of us – particularly those who are middle- to upper-income earners – strives to reduce our personal consumption levels.

The climate crisis challenges virtually everything we do. We give it little thought when we get water from a tap, brush our teeth, switch on the lights, drive or fly somewhere, and purchase food, products or services. Yet all these activities are dependent on our all-pervasive use of coal, oil and gas and other unsustainable practices. The causes of the problem are deeply embedded in the structures of our economy, society and individual behaviour. Successfully tackling climate change will require a fundamental rethink of how we live our lives. Not only will it necessitate exceptional levels of national and international cooperation, but it will also demand unprecedented levels of commitment from you personally.

We all have a stake in this issue and, as consumers, parents, voters, citizens, employers and employees, we have an obligation to ensure that we make an expedient and just transition to a more sustainable society. This is a situation that requires “all hands on deck”.

“Few will have the greatness to bend history itself; but each of us can work to change a small portion of events, and in the total of all those acts will be written the history of this generation.”

Robert F. Kennedy

This book, which contains contributions from numerous experts in many disciplines, explores the details of the problem and what we as individuals and a society must do to tackle climate change. Chapters 2 to 6 describe *the crisis* in which we find ourselves. We investigate why a healthy environment is the bedrock of our social, economic and personal wellbeing, before exploring the overall state of our

environment. Then we describe the climate crisis, arguably the most pressing of many environmental issues, and the latest research findings as they relate to South Africa. This is followed by a discussion of possible social and economic repercussions. In *Chapter 6* we review how we got into this mess and end on an upbeat note, describing a possible vision of a more sustainable future.

The remainder of the book focuses on what we need to do to *tackle climate change*. In *Chapter 7*, we consider some of the behavioural issues that must be identified and confronted. Then we describe some overarching strategies for tackling climate change, and move on to investigate the source and nature of South Africa's emissions, before exploring the emission-mitigation options open to us as a nation. *Chapters 11* and onwards explore possible solutions for specific themes and sectors of society, such as you at home, government, the business sector, investors, farmers, civil society, property developers, urban planners, transport, waste and education.

You will note that some chapters are targeted at very specific audiences. I recommend that to obtain a good overview of the most important issues, you read all chapters up to and including *Chapter 11: Your government, our government*, and then dip into the remaining chapters as they are of interest to you. On a cautionary note, you will find that some of the initial chapters are packed with bad news, which may lead to despair and an urge to stick your head in the sand. But bear in mind that there is no better antidote for this state than to roll up your sleeves and get stuck in. This book is bursting with solutions and taking action is guaranteed to help raise your levels of optimism.

While each chapter could constitute a book in itself, collectively they aim to offer a succinct and practical overview of the major issues. Abstracts provide you with a quick overview of the chapter content and "Resources" lists at the end of chapters indicate suggestions for further reading. Key facts are referenced throughout and a references chapter is included at the back of the book. While a few chapters are necessarily more technical, you will find most of them to be easy reads. Where you are left with questions, I can recommend the Internet-based Wikipedia as a great information resource to assist with unknown terminology and concepts.

Please be aware that with so many co-authors – unless one has an overabundance of time for editing – there is some unavoidable overlap in information, a few minor variations in opinion and differences in writing styles. In isolated instances you may notice some discrepancies in data, which does not mean one of the sets is wrong. Data – particularly about greenhouse gas emissions – can vary, depending on when it was compiled, what emission sources are included (e.g. only fossil-fuel emissions or also emissions from deforestation and other sources) and how it is stated (e.g. as CO₂, an equivalent amount of CO₂ or as a carbon equivalent).

This book has been sponsored by a number of corporations – funding without which it could not have happened – and there is sometimes the impression that such publications pander to specific wishes or objectives of their sponsors. I can assure

you that this has not been the case here and we have maintained absolute editorial independence. It must also be said that the purpose of this book is not in any way to put blame on any particular institutions or industry sectors, but to state the facts and describe what needs to be done. We are all part of the problem and we all rely on power utilities, industry and business to supply us with electricity, liquid fuels and the myriad other products and services that we consume on a daily basis. Together we must find the solutions and support those that are the most proactive.

It was just over 25 years ago – I was a teenager – that I first learnt about global warming. My uncle, then a science journalist, explained how burning fossil fuels and deforestation were exacerbating the Earth's natural greenhouse effect, with potentially serious consequences for humanity. This discussion caused me to despair about our future for a while, but, quite naïvely, I felt secure in the knowledge that adults would solve this problem by the time I had grown up. Not a chance! Aghast, I have witnessed the scale of the problem becoming infinitely worse. Now, there is no time to wait for another generation to take action.

Recently I talked to someone whose teenage daughter experiences deep despair and anxiety about climate change. I can't help but wonder how many other young people today worry deeply about the issue and their future. I hope they are not being naïve in their faith that we can successfully tackle the problem. Let us not disappoint the next generation.

“How wonderful it is that nobody need wait a single moment before starting to improve the world.”
Anne Frank

During times of emergencies, humans are known to put aside their petty political and ideological differences and pursuit of self-interest for the benefit of everyone. This is such a time. Climate change provides us with a common cause and is as much about confronting our personal gremlins of self-interest and short-sighted profiteering, as it is about taking united and just action. We are witnessing a gathering groundswell as millions of people around the world are starting to adapt their personal habits and contribute to institutional change. The speed and success of our efforts to bend the curve on our emissions will determine what kind of planet our children will inherit. I deeply and urgently hope that you too will become an agent for change as we belatedly but inexorably move into the environmental age and begin creating a better future for all. Take action now to help bend the curve.