



Great Adaptations

In the shadow of a climate crisis

Climate change haunts the future of humanity. It is unpredictable, fast-growing and scary. Even as we try to tame it, it will re-shape our lives, we will be forced to adapt. The question is how? How well? And at what cost?

Dr. Morgan Phillips FRSA, is UK Co-Director of The Glacier Trust. This is his first book.

The Glacier Trust works in partnership with Nepali NGOs to enable climate change adaptation in some of the world's most remote mountain communities. Founded in 2008, the trust also supports students in Nepal and the UK, to help develop the next generation of adaptation professionals.

This book is part of a wider *Great Adaptations* advocacy project that includes a podcast, a social media campaign, and a series of real world and online events.

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'An important contribution to imagining a different future'

Asad Rehman

'A huge challenge to us all to strive for radical change'

Sonja Graham

'Great Adaptations is a revelation'

Saleemul Huq

'It is only by embracing adaptation that will we be able to build the solidarity and belonging that can bring us out of the crisis'

Wolfgang Knorr

'Provocative, informative and imaginative'

Carne Ross

'A twin wind of reality and hope'

Andrew Simms

'A wake-up call'

Ollie Hayes

'A brave and timely work'

Richard McIlwain

'Read it and leap!'

Skeena Rathor

'My earnest hope is that this book will be a turning of the tide'

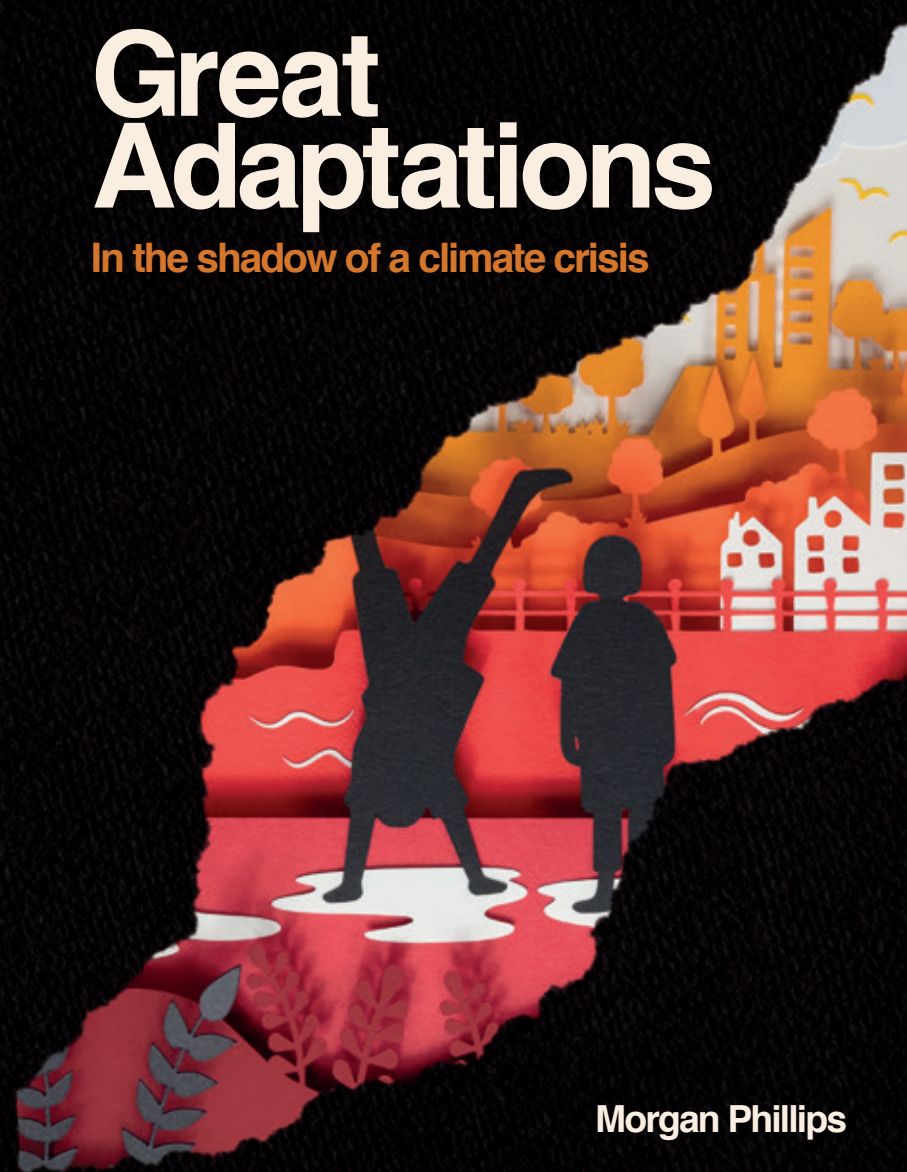
Rupert Read

In the shadow of a climate crisis
Great Adaptations

Morgan Phillips

Great Adaptations

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If you aren't already adapting to climate change, you will be soon, and so will billions of others. It is no longer a topic that can be ignored.

When done well, adaptation can contribute to the achievement of broader societal goals. But when done badly it can exacerbate social injustice, cause deep ecological harm, and hasten the onset of dangerous climate change.

Great Adaptations takes us on a journey from the cool rooms of Paris and the fog catchers of Morocco to the stilted houses of Miami and the air-conditioned pavements of Qatar. It makes this often-neglected topic accessible and relatable at precisely the moment the world is starting to pay attention to it.

And pay attention to it we must.





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Morgan Phillips



TGT

Arkbound

Building futures. Bridging divides

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In the climate action camp we so often have to tick either the “adaptation” or the “mitigation” box – whether at workshops, for grants, or speaking topics. In *Great Adaptations* this unhelpful dichotomy is laid bare through provocative analogies and powerful real life examples. Morgan’s story telling is urgent and matter of fact, yet kind and hopeful. It serves as a huge challenge to us all to strive for radical change as fast as “humanely” – not just “humanly” – possible.

Sonja Graham, CEO Global Action Plan

The writing may be on the wall about the speed and scale of the rapid transition needed to cut pollution and adapt to an increasingly volatile climate, but it takes someone truly able to *see* to be able to read it. Morgan Phillips has accomplished that admirably in *Great Adaptations*. He vividly brings to life the immediate threats and opportunities for how we must change to all thrive within the boundaries of the biosphere. Here is a twin wind of reality and hope.

Andrew Simms, Rapid Transition Alliance

It is only by embracing adaptation that will we be able to build the solidarity and belonging that can bring us out of the crisis. And, as *Great Adaptations* shows, it has to be adaptation from below, not passive feed-down from techno-fixes and bureaucratic intervention.

Dr. Wolfgang Knorr, Lund University

As peaceful warriors, conscientious protectors, activists, rebels and change makers the question now is how do we become our most adaptive and abundant collective selves? *Great Adaptations* is a precious offering of incisive pathways into conversations that might liberate us from underneath the heavy weight of ‘fixing’ the world to place us into the bright dawn of creating the world of our longings. Read it and leap!

Skeena Rathor, Co-Founder, Extinction Rebellion

My earnest hope is that this book will be a turning of the tide; and that, with the silence broken, the world can finally begin the painful process of awakening properly to climate reality... including to the reality of how we must now adapt transformatively, if we are to have any chance of heading off eco-induced collapses.

Prof. Rupert Read, University of East Anglia

It is becoming ever clearer that the world system is in deep trouble, above all the climate crisis. *Great Adaptations* highlights how we not only need to engage with adaptation as a neglected sub-topic of climate change, but how we need to examine the role it plays in either cementing existing inequalities, or breaking them down. *Great Adaptations* is provocative, informative and imaginative.

Carne Ross, Founder, Independent Diplomat

We stand on the edge of climate catastrophe that threatens billions around the world and is unpicking the very life systems we rely on. With the time for tinkering around the edges long past, what is needed now is bold and visionary thinking - this is an important contribution to imagining a different future.

Asad Rehman, Executive Director, War on Want

Great Adaptations is a revelation in terms of unravelling novel conversations and contentions on the topic of climate adaptation and is a remarkable attempt to forge a mutually reinforcing relation with climate mitigation. It forays into diverse sub-topics within the broader spectrum, including topics such as deep adaptation, as well as an introspection of maladaptive strategies, framing arguments on the need to channel more climate finance into adaptation projects and reiteration of the importance of creating a befitting conception of adaptation within the public minds. The author has managed to pen an intriguing combination of confluences and dichotomies, thus creating pathways for further contemplation.

Prof. Dr. Saleemul Huq, Director, ICCAD; Chair, Expert Advisory Group, CVF

This is a brave and timely work, one that not only seeks to raise the profile of adaptation, in a world already experiencing the impacts of 1.2°C of warming, but one that also seeks a greater goal, beyond the current obsession with technical fixes and towards the real heart of the issue. In challenging the prevailing politico-economic paradigm that shapes human development as a fight and a competition, Morgan seeks to frame adaptation in the light of social justice and plots a path towards a more co-operative and kinder future.

Richard McIlwain, Deputy CEO, Keep Britain Tidy

I know Morgan to be an impressive thinker - someone who follows where the climate science leads, rather than bending to what is politically feasible. Someone who understands that any proportionate response to climate change must flow from searching questions about who we are and what we value.

Dr. Tom Crompton, Director, Common Cause Foundation

In 200+ episodes, recorded over six and a half years, not once have we talked meaningfully about climate adaptation. Morgan is too polite to put it this way, but his powerful book asks "why the hell not?". Great Adaptations is a wake up call to gobby podcasters, and - more importantly - to a sector that, in the rich world at least, talks lazily of "fixing" or "stopping" climate change while the fires burn hotter and the hurricanes blow harder.

Ollie Hayes, co-host Sustainababble podcast

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Morgan Phillips

The Glacier Trust



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Dedicated to:
Surbir Sthapit
1967 – 2020

Dilly Phillips
1949 – 2021

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The Glacier Trust

I began writing this book in late 2019, when COVID-19 was something that was happening in a faraway Chinese city and the United Kingdom was pre-occupied by Brexit and a snap General Election. Climate change was on the news agenda, but low on it. This was – *hopefully* – about to change. The UK was preparing to welcome ‘COP26’, the UN’s next big climate conference; the circus was coming to town. By November 2020, the eyes of the world would be on host city Glasgow. Or so we thought.

It is now Spring 2021 and there are no words to adequately describe the impact COVID-19 has had; utterly devastating is the best I can do. We lost a dear member of the Phillips family and a close colleague of The Glacier Trust; this book is dedicated to them both.

Tragically, the shockingly high death toll is still rising, the systems that were supposed to protect the most vulnerable creaked and failed. The machinery of the State has proven to be anything but well adapted to a crisis it was warned about. Amidst all this comes COP26; it has reappeared on the horizon. It is hard to predict what might emerge from it. However, with no US election scheduled, a COVID-19 vaccine programme in place, and a Brexit that is ‘done’ (if not dusted), there is a chance that climate change might creep a few items further up the news agenda than it would have done in 2020. Delays aren’t often a good thing, but this one might work out for the best. We’ll see.

And so, with the world in a state of triage, recovery, and flux, it feels like a timely moment to release a book on adapting to a crisis.

Introduction

I am the UK Co-Director and only paid employee of The Glacier Trust (TGT), an NGO that enables climate change adaptation in Nepal. It is a role I’ve been in since 2016 and it has opened my eyes more than I ever expected. The things I have witnessed – the seen and unseen impacts of climate change – have been extraordinary. Lives in the Himalayan villages I have visited are on a knife edge. Landslides, floods, glacial retreat, drought, fire, air pollution, and insect pests are haunting the future of an already fragile country; it is on the brink of being turned upside down. But Nepal is only one epicentre of the disaster that is unfolding, what I have learned about the damage the climate crisis is doing to wholly innocent people on every continent is horrifying. I knew that climate change needed to be mitigated, but the need to adapt to it is far greater than I’d ever imagined.

Over the last five years – in my role as TGT’s fundraiser, storyteller, director and everything in between – what has struck me is the scale of the damage climate breakdown will do over the coming decades; it is an astonishing amount. It has therefore shocked me how little attention is being given to adaptation as a topic within the environmental movement.

Stories about adaptation are rare. I have been an environmentalist for twenty years and I readily admit to having spent most of those years in almost complete ignorance about adaptation. It wasn’t something that came across my radar in my pre-TGT days. It is easily possible to go a whole year as an employee of an environmental NGO and not hear the term

‘climate change adaptation’ said once. As a consequence, a lot of people, both within and beyond the environmental movement, are still very much in the dark about it. This worries me greatly.

It has thus become something of a personal and organisational mission to bring adaptation out of the shadows. We want to amplify its importance in the minds and work of our colleagues in the environmental movement, and in the wider public. So far, in pursuit of this goal, TGT has (a) published two ‘*We Need To Talk About Adaptation*’ reports to highlight how few mentions adaptation is getting in content produced by the UK’s five largest environmental organisations¹; (b) released a film called ‘*Coffee. Climate. Community.*’ which tells the story of coffee growing as an adaptation strategy in Solukhumbu, Nepal²; and (c) contributed a chapter to ‘*Climate Adaptation: Accounts of Resilience, Self-Sufficiency and Systems Change*’ (also published by Arkbound)³.

Great Adaptations is our latest and most ambitious contribution to the adaptation advocacy effort. It is a book, podcast and awareness raising campaign. We touch on how adaptation is talked about and what that means for how it is done, but our primary aim is to provoke discussion and debate. We want to get people talking about adaptation. If *Great Adaptations* sparks one conversation in one house, one workplace, or on one social media feed, it has done what it set out to do.

The ‘best-case’ scenario is bad enough

The UK stands poised to welcome world leaders to the twenty sixth UN climate change Conference of the Parties, ‘COP26’. It is much anticipated and, as is often the case in the run up

to a major ‘COP’, the mood within the climate movement is oscillating from buoyant optimism to deep despair. The last major COP, number 21, held in Paris in 2015, was judged a success (at least by those whose reputations rested on it being a success). It can’t really be seen that way now. Since Paris, the 196 nations who agreed to ‘*limit global warming to well below 2°C and pursue efforts to limit it to 1.5°C*’⁴ have set out how they plan to contribute to this goal. In short, sadly, they’re not contributing; at least not very well. Their *planned* contributions don’t add up to enough, and their *actual* contributions add up to even less⁵. As Professor Rupert Read puts it: ‘*Paris achieved what was politically possible, not what is needed.*’⁶

So, this is where things currently stand. World leaders have agreed to limit warming to *well below 2°C* (above pre-industrial levels) but – barring a Glasgow-inspired miracle – this looks unlikely to happen. The Paris agreement is too flimsy, too lenient, and too tightly bound to economic paradigms and political ideologies that are incompatible with the goals being set. There is, however, still a glimmer of hope, the blockers are *only* political. From a purely scientific perspective, stabilisation of global warming at or below 2°C is still possible. Indeed, 1.5°C is still (theoretically) possible and, if mitigation efforts expand and accelerate rapidly enough, there is also a chance that – after stabilisation – a gradual temperature decline might start to kick in. It’s all still doable, but I can’t emphasise enough how revolutionary the shift in political and economic thinking, and *doing*, needs to be. If current trends persist, there is only a 5% chance that temperature rises will be limited to 2°C. Even if the signatories of the Paris Agreement

make good on their pledges, the odds only improve to a 1 in 4 shot - a 26% chance⁷. Things feel dangerously off track.

Remarkably, in spite of the scale of social, cultural, political and economic change required to 'save' the climate, very few have given up on that mission; I haven't. In fact, the urgency and severity of the situation seems to be attracting more people than ever to the cause. The determination to cut greenhouse gas emissions remains admirably strong and public support for climate action keeps growing. This is why carbon reduction efforts - and climate change mitigation generally - remain such a strong focus, and rightly so.

Whatever happens, the world simply has to achieve 'Net Zero' emissions (a situation in which the amount of greenhouse gases being pumped into the atmosphere is equal to the amount of those same gases that are removed from the atmosphere by trees and plants, and various 'carbon-sucking' technologies). The mitigation effort is vital, and there is huge value in avoiding every tenth of a degree of additional global warming. Topping out at 2.1°C is better than topping out at 2.2°C or 2.3°C. 'Net zero' - better still 'Real Zero' (a situation where fossil fuel use declines to zero) - needs to be hit. The world needs to achieve 'Zero' fast - not necessarily as fast as *humanly* possible (because some pathways are far less just than others), but none the less fast - as fast as *humanely* possible.

However, even if greenhouse gas emissions are pushed into a hasty descent between now and 2050, with warming kept below a 2°C rise, climate change will still get worse before it (hopefully) gets better. In this *best-case* scenario, the journey from today's 1.2°C⁸ of warming up to a *just below* 2°C peak and then back down again

will take decades - i.e., most, if not all, of the rest of your life. The IPCC's (the UN's Intergovernmental Panel on Climate Change) '1.5°C Special Report' revealed just how dangerous warming in this range will be: it will have devastating effects for billions of people; the next few decades will be tumultuous⁹.

In worse scenarios, global temperatures will keep rising, potentially right up to 3°C above the pre-industrial average by the 2090s. Zeke Hausfather and Glen Peters, two of the world's leading climate scientists, assign a probability of '*likely, given current policies*' to the 3°C scenario¹⁰. Under that dreadful case, the risk of passing several key climate 'tipping points' grows significantly¹¹. We risk hitting temperatures that would trigger irreparable change to forests, mountains, ice caps, oceans, monsoon patterns, permafrost and coral reefs. Scientists can only speculate on exactly what passing these various tipping points will lead to and there are disagreements about how much warming is needed to reach them¹². However, given the strong possibility of domino or cascading effects¹³ - where, for example, accelerated polar ice melt changes ocean circulation patterns, which, in turn, disrupts the timing of the monsoon season in the tropics - it is safe to assume that passing 3°C will cause highly disruptive change and great suffering.

But, worst-cases aside, the 'best-case' scenario is bad enough - a fact that needs to be stressed repeatedly. With just the 1.2°C of warming experienced so far, climate change is already disturbing and destroying millions of lives. Over the coming decades, as the climate crisis intensifies, global average temperatures will still *always* be higher than they are today. Equally, if things *do* start to

get better, average temperatures – this century – will still *always* be higher than they are today. We can expect ice melt, heatwaves, superstorms, fires, and droughts to continue and to be at least as bad as they are today.

It is therefore safe to say that over the first part of this hoped for ‘*getting worse, then getting better*’ period (the next few decades), climate change will be relentless - even under the ‘best-case scenario’. It will cause at least as much damage as it does today, and it won’t ease up. Billions of plants and animals will be impacted, as will the natural and built environments of a multitude of places we call home. It is not an over-exaggeration to say that hundreds of thousands of lives, and thousands of species, could be lost to climate and ecological breakdown between now and 2050. Ancient structures, bridges, buildings and roads of huge architectural, archaeological, historical, and cultural value will also likely be damaged or destroyed. Billions of people will be impacted, year after year, decade after decade. This is the argument for pursuing mitigation *and* adaptation - it is only by doing both, in tandem, that these losses can be minimised.

Predicting the future is a fraught business, but this book needs the grounding of two key working assumptions about where the science and politics of climate change are taking us.

Two working assumptions

Climate change is going to get progressively more dangerous. Without dramatic shifts in policy and action at a global scale, temperatures will almost certainly go beyond the 1.5°C threshold, and quite possibly beyond 2°C too. Either way, **billions of people, animals and plants will be adversely affected by climate change** - that is this book’s first working assumption.

In the face of these dangerous levels of climate change, we – as a species – won’t just stoically accept our fate. We will strive to prevent further warming and **we will adapt to the changes we’re experiencing** - that is this book’s second and most important working assumption.

This book is not an attempt to justify these assumptions, there is no shortage of literature on why climate change is happening and how bad (or otherwise) it could get. It is also not an argument against efforts to mitigate climate change, or that adaptation is a ‘solution’, or an alternative option - it isn’t; it is an ally to mitigation, its strongest one.

What I am assuming is that climate change *is* going to worsen and that a growing number of humans (and other species) *are* going to adapt to its impacts. This book is interested in these adaptations, it explores the forms they will take and the knock-on effects of the choices being made.

There are questions around adaptation that cannot be ignored because adaptations have consequences, and they aren’t all good (or great).

This is a justice issue

Much has been said and written about climate change and its intersections with justice. But at the same time, there are still far too few people discussing it in these terms. Of all the forms that climate justice (and injustice) takes, three stand out.

Firstly, there is the question of who is suffering and who will suffer as the crisis deepens. Climate change disproportionately impacts on the poorest and those who have done the least to cause it, there is no justice in that. This is true in the global South, but also in the North. And, as inequality deepens, the situation looks set to worsen. In this way, climate injustice is intersecting with racial injustice: we know how disproportionate an impact climate change is having on people of colour; that can't be contested¹⁴. David Lammy MP is right to say that the climate crisis is colonialism's natural conclusion¹⁵. Given this, it is becoming very hard not to see racism embedded in the continued shortcomings of those in power who have promised climate action but delivered so little of it. And, as Elizabeth Yeampierre and others¹⁶ argue, the environmental movement isn't entirely innocent in this regard: climate change, let alone climate justice, have not always been at the top of the environmentalist's agenda; indeed, for many it still isn't.

Secondly, there are the injustices that could result from a transition to an 'adapted' and 'net zero' economy that is poorly planned or badly executed. Most pressingly, alternative employment opportunities that are meaningful and desirable need to be found for those whose current jobs are no longer viable. If they aren't, we can expect more 'gilet jaunes' style protests of the

sort that have shaken France. There could also, for example, be strong resistance from farmers and rural communities who fear that their entire way of life is under threat from 're-wilders' and others who want to limit the extent of livestock agriculture. More broadly, as the transition processes develop, there are hundreds of cultures, traditions, landscapes and habitats that need to be carefully considered, conserved, protected or enhanced. A *just transition* is vital.

Thirdly, there is the huge injustice of inflicting the impacts of climate change on those who have done the least to cause them - and then compounding this by doing next to nothing to prevent further damage, enable adaptation, or provide reparations. The prevailing and widening 'Adaptation Gap' (the difference between how much finance is needed for adaptation efforts and the amount that is forthcoming) quantifies how deep this injustice is¹⁷.

Survivors of climate injustices need compensation for losses and damage they suffer as climate change hits, and funds and financing that will enable them to adapt and transition. Survivors also - simply - need the abuse to stop; continuing to knowingly hit people with climate change is akin to continuing to blow cigarette smoke in the face of someone you know has lung cancer.

To prevent and undo these injustices we need leaders who are truly committed to the climate justice agenda. Stated commitments to a cause are not enough; they need to be backed up in law and the redistribution of wealth and power. Money is needed to re-build, retreat, adapt, or to put disaster risk reduction strategies in place. Any hope of securing a transfer of power and



true restorative justice is tied up in the funding arrangements made. Grants must be free from the neo-colonialism that strict and onerous terms and conditions can impose. Loans must be made on terms that are favourable to the loanee and free from political motivations and private-sector profiteering.

However, countries in need of funds do not always need to seek them from external sources. Cancellation of historical and unfair debts would save countries millions of dollars every year. This money could be put to use on climate change mitigation and adaptation projects. Similarly, an overhaul of predatory international trade arrangements would enable nation states in the global South to grow their economies. Currently, as Jason Hickel has shown, the amount of money that flows into the global South – in the form of donations and foreign aid – is dwarfed by the wealth that is extracted by global North governments and multinationals in the form of the profits big businesses siphon off into offshore tax havens¹⁸. Root and branch reform of international trade arrangements and laws could tackle these profound injustices and allow global South countries to generate the money they need to take climate action on their own terms.

Beyond money – because money can't solve every problem – we all also need to be free to find refuge and a new life in a country of our choosing if we want to – or are forced to – migrate because of climate change. I say 'we' because all of us are going to be impacted by climate change and may, one day, need to relocate because of it.

Finally, we need policy instruments, laws and protections, that give us access to the physical materials and skills we need

to mitigate and adapt to climate change in ways that *we* choose, based on *our* expertise.

Sadly, the injustices do not end there. To reiterate: broadly speaking, those who do the *most* to cause climate change feel its impacts the *least* – for they have the resources to adapt. Those who do the *least* to cause it suffer its impacts the *most* – for they are *more likely* to be in its path, and *less likely* to have the resources to cope. The rich adapt with comparative ease, while the poor struggle to adapt at all; the wealthy therefore prosper as the poor get weaker. The result – in an uncompromising free-market economic system – is increased inequality both within and between nations.

We also need to consider that adaptation is not a cost-free exercise; it has its own impacts on society and on the environment, not all of them are good. In choosing an adaptation strategy, one must also choose whether to consider its knock-on effects. When we choose not to, prioritising our own adaptation needs over the wider needs of others (including other species), we risk contributing to the heightening of inequality, injustice and environmental decline.

In the same spirit in which we call for a *just* transition to a low-carbon society, we must also call for *just* adaptation to climate change. They are two sides of the same coin.

Emerging from the shadows

The human species' first major adaptation to climate change came around 12,000 years ago as the cold of the Younger Dryas gave way to the warmth of the Holocene. Slowly, over several generations, our ancestors transitioned from a life of nomadic hunter gathering to a more rooted life of subsistence agriculture, eventually establishing settlements on the newly fertile lands between the rivers Nile and Euphrates. This was a dramatic and transformative change in the way humans lived, worked and related to each other and the environment.

So, whilst we should be alarmed about the onset of climate and ecological breakdown, and mourn the extinction of plants, animals, insects, habitats and landscapes, we should not give up. Nor should we retreat into doom and despair. Despite the dangers it faces, the human species will adapt and endure. It won't be easy, it won't be without loss, but it will happen.

The task is to ensure that adaptation efforts are coupled with mitigation efforts and that both are part of a broader evolution to better ways of living and relating. This is not a time for building bunkers and lifeboats, reinforcing borders and shoring up the wealth of the 1%. It is a time for openness, cooperation and justice, these are the bedrocks of peace, and it will be a struggle to transition to something new without them.

We are once again experiencing a changing climate, but this time it is human-made and happening fast. The warmth of the Holocene is giving way to the heat of the Anthropocene and as it – violently – happens, we face many complex choices. We know that,

through mitigation, we can delay the rate of change, and that through adaptation we can adjust our ways of living to minimise the disruption. But we are forever uncertain of what exactly to do.

In deciding how, when and where to adapt, it must be recognised that trade-offs will be made. Budgets are not bottomless, political incentives come and go, and the choice of one path can close off another. However, once a choice has been made to address climate change (not in today's half-hearted way, but properly, with tenacity and full commitment), there is then a need to balance how much priority is given to all the different forms of adaptation and mitigation that are possible – and, in some cases, whether the last £10 million of a country's annual climate action budget goes to a mitigation project or an adaptation project. These are very difficult choices, but they are the ones that lie ahead. And in the end we may just have to do as Donna J. Haraway advises: *'stay with the trouble'*¹⁹ and muddle our way through.

Adaptation has long been in the shadow of mitigation, but it is slowly emerging. There is an increasing recognition of the need for not only more, but *better* adaptation. By shining more light on its intricacies and peculiarities, we can truly understand its drivers, successes, and failings. Doing this will help us make the best possible adaptation choices and ensure that the legacy of today's early adapters is not only more and better adaptation, but adaptation that *advances* social justice, *enhances* the environment, and *topples* the status quo.

This book explores adaptations that are already underway, it brings the early adapters out of the shadows. It tells the stories

of people, animals, environments, institutions, and communities who have begun to adapt. It covers the good, the bad and the ugly of twenty first century adaptation. Some efforts are absurdly silly, some are brilliant, others are deeply troubling. They are all illuminating.

If you lacked the case study examples and language to campaign for adaptations that are just and transformative, and against adaptations that only serve the interests of the few, this book provides them. Telling these stories will help us lobby for more, and smarter, adaptation. If you are new, or relatively new, to climate change adaptation, this is – hopefully – a way into a topic that is often fascinating, sometimes infuriating, but definitely urgent.

Great Adaptations is divided into four main parts. Part one, **'Silence'**, recounts the story of managed retreat on Staten Island, New York, to explore the agnosticism that sometimes exists around climate change and climate change adaptation.

Part two, **'Adaptation'**, sets out the case for talking about adaptation and then... talks about it. There are chapters on the adaptations being made by individuals, communities, businesses, institutions, and governments - as well as the adaptations being made by wild and feral animals.

Part three, **'Transformation'**, goes deeper. It explores the notion of Deep Adaptation, the emergence of Transformative Adaptation, and what might happen if climate change gets *really* bad.

Finally, part four, **'Stories'**, looks at the reassuring stories being told about climate change, specifically in the UK, and how vital it is for adaptation that those stories are told accurately.

PART 1

Silence

“ *Mother Nature may be forgiving this year, or next year, but eventually she’s going to come around and whack you. You’ve got to be prepared.* ”

Geraldo Rivera



Mother Nature WANTS
Her LAND BACK

1. The storm before the calm

Devastating hurricanes and superstorms have become an almost annual occurrence in North America. Sandy, Katrina, Irma, Harvey, Maria and Zeta have reshaped the American consciousness. For many millions of people, the threat of devastating extreme weather is now very much a present one. Superstorm hurricanes are no longer the ‘once in a hundred years’ events they used to be.

On October 22nd, 2012, a tropical storm formed over the Caribbean Sea. Over the next few days, it began to travel north-east, tracking a few hundred miles off the east coast of North America. It grew, becoming a hurricane - Hurricane Sandy. As it got closer to making landfall, Sandy coalesced with several other storms. It was now not just a simple hurricane; it had transformed into a mutant Superstorm. Eventually, on October 28th, it careered towards the shore and towered over the eastern seaboard, hitting Atlantic City and New Jersey before migrating north to pummel Staten Island and the rest of New York City. The impact was disastrous; it was a wrecking ball of wind and water. One resident described it as *‘like Niagara Falls becoming horizontal.’*²⁰

This chapter focuses on Staten Island and its recovery from Superstorm Sandy. What happened there is a fascinating insight into how climate change adaptations play out. It is also something of an allegory of a wider story about adaptation and our willingness to accept the need for it.

Staten Island lies south-west of Manhattan and Brooklyn. It is New York’s least populated, safest, most suburban, most white

and most Republican borough. Its shoreline properties are some of the most desirable in the New York area. Open spaces, large gardens, beaches, and sea views, all within a commutable distance of downtown, make it a very attractive place to live. It is also, however, extremely vulnerable to climate change.

With a violence that is hard to imagine, Sandy destroyed hundreds of thousands of homes. In total, across eastern USA, an estimated 650,000 buildings were destroyed or damaged, millions more properties lost power and water supplies. Sandy killed 72 people directly and a further 87 died as a result of hypothermia, carbon monoxide poisoning and accidents that occurred during the clean-up. Staten Island was not spared, the wealth and political clout of its residents were no match for the storm. But, unlike many other places, post-Sandy, Staten Island had options. The option they eventually chose isn’t hugely remarkable, what is of interest – as local academic Dr Liz Koslov uncovered – is the way they justified the decision they made.

Koslov spent a lot of time on Staten Island investigating its response to Sandy. She attended community meetings and interviewed various stakeholders. Her interest was less about what Staten Island did post-Sandy, but why certain choices were made. Her analysis is fascinating²¹. In simple terms, two choices faced those whose homes and properties had been destroyed by Sandy: Rebuild *or* Retreat. In the months after the initial clean up, this was the debate. But soon, rumours of State funded ‘buyouts’ to enable a ‘managed retreat’ started to emerge. For property owners, the buyout plan would see them receive the pre-storm value of their property from the State. The State would also support them

to move inland to safer ground. A consensus started to develop around the idea, which is when things started to get curious.

In November 2012, very soon after Sandy hit, Orrin H. Pilkey, a Professor Emeritus of Earth and Ocean Sciences, made a passionate plea for retreat in the *New York Times*. He cited how the warming oceans would make Sandy-like storms more likely, frequent, and deadly. He lamented the *let's come back stronger and better* attitude, called the urge to rebuild understandable but 'madness', and signed off by urging New York and New Jersey officials to consult with the oceanographers, coastal ecologists and others who understand rising sea levels before making any decisions. His advice was clear: *'We need more resilient development, to be sure. But we also need to begin to retreat from the ocean's edge.'*²²

Pilkey was making the climate change case for an adaptation strategy of retreat, he had allies but, contrary to expectations, the climate change case became increasingly less prominent in the debate as calm replaced the storm. Instead, Staten Islander's and their political representatives started making other arguments for managed retreat; in fact, there seemed to be a hunt on to find *any reason other than climate change* to make the case for buyouts and retreat.

Koslov observed how a narrative was emerging about *mother nature wanting her land back*. This argument gained traction quickly, it seemed to suit most people and politicians in a way that the climate change argument didn't. So, whilst for many there was little doubt that climate change multiplied the risk of future hurricanes and storm surges, a code of silence developed. Climate

When we analyse an event like Sandy and inquire into how a community recovers from such a devastating event; it is important to remember one key thing: in New York City recovery *is* possible; the City has the means to respond.

This is an advantage that is missing for so many other sufferers of extreme weather events. In Mozambique, in early 2019, two catastrophic tropical cyclones, Idai and then Kenneth, hit during the same hurricane season. Two years later, nearly 100,000 people were still waiting to be resettled when another cyclone hit, Eloise, which led to more displacement, disruption and loss of life²³.

The capacity of the US Government means that when disaster strikes, recovery can happen swiftly; not that it always does of course. The horrors of post-Katrina New Orleans teach us how, despite its vast wealth, the US Government is not always as swift, or as humane as it should be. It can spectacularly fail thousands of people during and after catastrophic events. When Katrina hit New Orleans, the US Government treated its citizens shamefully. Inequality exists between countries, but it also exists within them - Staten Islanders had the means to recover; many others don't.

Gov. Cuomo
"Mother Nature WANTS
HER LAND BACK."
BUY US OUT
AND Give it BACK

change was the factor that was left unspoken; to raise it was to endanger the chances that the ‘buyout’ plan would be enacted.

In 2014, law professor Katrina Fischer Kuh coined a new phrase to explain this silence. She was describing how individuals were beginning to adapt to climate change but doing so without knowing – or sometimes acknowledging – that it was climate change they were adapting to. She called this ‘agnostic adaptation’²⁴; it can be accidental or deliberate. Koslov is convinced that what she witnessed on Staten Island was agnostic adaptation of the *deliberately not acknowledging* variety.

Looking for a way to respond to Sandy, New York State’s Democratic Governor Andrew Cuomo latched onto the *mother nature wanting her land back* argument. The Government clearly needed to do something and, more pressingly, he required a politically palatable reason for doing it. After tentatively citing climate change in speeches and interviews, Cuomo soon pivoted and began talking a lot less about climate and a lot more about *giving mother nature her land back*.

The ‘mother nature’ argument was built on the foundations of long-standing opposition to the development of housing on Staten Island’s low-lying coastal wetlands. Community groups had been arguing the case for less development and better flood protection since an unnamed ‘Nor’easter’ had caused huge damage in 1992. Superstorm Sandy vindicated their warnings.

The ‘*give her land back*’ campaign that rose up post-Sandy seemed to have a quasi-religious feel. Mother nature was framed as a higher power made angry by the recklessness of humans ‘taking’

Her (wet)lands. Sandy was *Her* messenger, *Her* way of telling Staten Islanders that she wanted *Her* wetlands back - Staten Islander’s became determined to ‘*give it back*’.

Koslov’s paper is a captivating exploration of the politics of silence. She identified many nuanced reasons why people from all different backgrounds decided not to talk about climate change and opt instead for mother nature:-

- Although many were in favour of managed retreat, there wasn’t total agreement across the community that it was the best option; some wanted to rebuild. Climate change was seen as a polarising issue. So, in order to minimise conflict and sustain ‘retreat’ group harmony, it felt wise to avoid it as a topic. Discord within the group would threaten the united front seen as vital for securing a favourable result (managed retreat) in negotiations with the government.
- This part of Staten Island is politically conservative and neo-liberal; government intervention is generally viewed with suspicion, something to be discouraged. But every rule has an exception, ‘buyouts’ looked attractive, so government intervention was now, suddenly, fine. A legitimate reason for asking for it was therefore needed. By framing greedy developers and the politicians who supported them as rogue actors, in an otherwise functioning system, they found their reason. The flood risk was presented as the fault of rogue actors, it was *they* who had taken the land from mother nature and *they* who had

allowed the flood plain to be covered with impermeable concrete surfaces. Intervention to right previous wrongs was therefore warranted in this special case.

- Linked to this, there was a feeling that climate change might give politicians and other powerful actors a get out of jail free card. If the focus was on climate change it would enable powerful actors to avoid responsibility for creating the problem and therefore for funding the solution.
- Governor Cuomo seemed willing to go along with this scapegoating of rogue actors from the past, but for a different reason. He knew that if climate change was positioned as the pivotal argument for managed retreat, he would find it very hard to narrow the geographical scope of his responsibilities. It therefore also suited him to focus on the *'mother nature wants her land back'* narrative; the amount of land she wanted back was considerably smaller than the amount of land threatened by future climate change powered superstorms.
- This narrowing of the geographical scope also helped Staten Islanders who were worried that Sandy survivors from Queens and other affected areas would compete with them for the limited pot of funding available for buyouts. If localised bad planning was the reason for managed retreat, rather than climate change, claims for buyouts from Queens and elsewhere would have little validity.

Staten Island wasn't adapting to climate change, it was righting the wrongs of historical flood management plans!

- In the wake of Sandy, environmental justice campaigners were calling for systemic change to help marginalised communities in New York (and elsewhere) secure the financial and political support needed to deal with the everyday impacts of climate and ecological breakdown they are already suffering. Koslov argues that the wealthy, conservative, neo-liberal residents of Staten Island's east shore mostly oppose action on climate change of the sort proposed by environmental justice campaigns. So, for them, finding an argument for managed retreat that didn't mention climate meant that they could avoid alignments with pressure groups whose politics they were opposed to. Removing climate change from the argument for managed retreat starved environmental campaigners of oxygen; a bonus outcome that suited the broader political objectives of Staten Island's more politically conservative residents.
- It was not just wealthy Staten Island residents who saw benefits to remaining silent on climate change; low earners seemed keen to avoid the topic too. They worried that a focus on climate change would lead to calls for carbon taxes, insurance price hikes and more fundamental systemic change. As Koslov puts it: *'those who, while reaping diminishing benefits from the [economic] system as it stood, also felt that they could ill afford its dismantling.'*

Some of these justifications for agnostic adaptation are easier to sympathise with than others. When there is very little money left over at the end of the month, the threat of an additional tax can feel existential. In societies with high levels of income inequality, it is unsurprising to hear those near or below the poverty line expressing serious concern about government imposed increases to their costs of living. The other reasons for remaining silent that Koslov teased out sit less comfortably. The behaviours she describes range from nose holding political pragmatism, to outright selfishness.

Managed retreat is now well underway on Staten Island. The ocean facing neighbourhood of Oakwood beach has been largely abandoned. Its former citizens have used their buyout money to purchase homes inland. Where there were once busy houses, roads, gardens and swimming pools there are now trees, flowers and wildlife. Oakwood beach is not quite a ghost town, but mother nature *has* got her land back and Staten Island is now a little bit more resilient to climate change. A lot can be learned from this case study, but it can also be used as a mirror to reflect on the stories being told (and not told) about climate change.

2. Code of silence?

On post-Sandy Staten Island it became taboo to talk about climate change; people declined to publicly acknowledge its importance, or the role it was playing in the decision-making process.

For climate change deniers, who had spent their lives trying to ignore, dismiss, refute and play down the level of risk attached to the continued release of greenhouse gases, it was unthinkable that they would admit that their retreat from the shoreline was based on their concerns about climate change. Such an admission would have consequences, and they knew it. It would humble and embarrass them, denting something core to their identity. It would also embolden their political rivals.

Climate change ‘believers’ resolved that it was more pragmatic to let the ‘deniers’ tell themselves (and the world) that the case for managed retreat had nothing to do with climate change. Not talking about climate change became the politically expedient thing to do. The case had to be based on something else - *anything else*.

As understandable a strategy as it was, the climate change ‘believers’ on Staten Island who went along with the deliberate silence on climate change were, in effect aiding denialism, while also implicating themselves in another negative consequence of agnosticism. Staten Island’s Oakwood Beach is just one of many communities along the US coastline that is threatened by rising sea levels, hurricanes and superstorms. Homeowners in other coastal communities will be looking at Oakwood Beach with

sympathy of course, but also some envy. They will have seen how buyouts cushioned the devastating blow dealt by Sandy, while they experienced a much harder landing.

However, because climate change was missing or downplayed by those making the case for retreat, campaigns that cite Staten Island as a case study to be repeated are far less powerful than they should be. This is the downside to the story told by Staten Islanders; it denies campaigners the option of pointing to what happened there as being a replicable example of climate change driven managed retreat. They are not able to argue that Staten Island is a precedent. If they were able to, they could ask the US Government: why, if Oakwood Beach was deemed at risk of climate change catastrophe, isn't their community also worthy of the support needed to retreat? But they can't ask those questions because – officially – managed retreat on Staten Island isn't driven by climate change. Staten Islanders were simply *'giving back to mother nature'*.

This is what makes *deliberate* agnostic adaptation so distasteful. Refusing to acknowledge climate change as a factor in decision making, refusing to even talk about it – just to protect one's own self-interest (whether you are a 'believer' or 'denier') – has repercussions for others. Managed retreat on Staten Island unequivocally is an adaptation to climate change, but it was an adaptation story that wouldn't be told.

On behalf of all those people, all over the world, who are crying out for support for managed retreat – as a way to adapt to climate change – we should be angry with the agnostic adapters

of Staten Island. But we, who are part of the climate movement, should also look deep into the mirror and ask ourselves if we are just as agnostic about adaptation, as Staten Islanders were about climate change?

- Are we acknowledging the climate change adaptations that are happening all around the world?
- Are we reporting on them?
- Are we asking authorities to invest deeper and faster into projects that will enable the most vulnerable to adapt?
- Are we pointing out the precedents?
- Are we ensuring that those who are making adaptations aren't doing it in selfish ways, ignoring the knock-on effects of their projects on neighbouring communities or future generations?
- Or, are we staying quiet?