



**DISCUSSION  
PAPER**

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# COVID-19 climate lessons:

Unprepared for a pandemic, can the world learn how to manage the bigger threat of climate disruption?

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## OVERVIEW

Pandemics and climate disruption are catastrophic, and potentially existential, risks. Climate disruption now manifests as an emergency because the climate system is close to tipping points that could drive it to a “point of no return”, where further warming would become self-sustaining. Existential threats require a particular approach to risk management. The COVID-19 pandemic provides an opportunity to understand the world’s preparedness for such a risk, and how and why the world’s response, by and large, was grossly inadequate. This failure has important lessons for the preparedness of human society to respond to the much greater threat posed by human-induced climate disruption. There are also important, positive lessons in the pandemic response about the capacity of society to move quickly into emergency mode.

## INTRODUCTION

The climate problem has been deferred, at least bureaucratically. In an unfortunate turn of phrase, Secretary-General António Guterres announced in mid-March 2020 that C19 is now the world’s top priority and that “climate change will have to be put on the back-burner, for now”. The next large international policymaking conference, COP26 in Glasgow, has been postponed till 2021, though the importance of these conferences in driving future national ambition is doubtful. At the same time, Guterres recognised the wider challenge of crisis preparedness: “We simply cannot return to where we were before Covid-19 struck, with societies unnecessarily vulnerable to crisis.”<sup>1</sup>

Despite multiple warnings of the risk in making short-term decisions that increase carbon emissions and continue to degrade nature in the long term,<sup>2</sup> stimulus packages in response to the pandemic-triggered economic slowdown so far are ignoring such pleas, and preserving industries and services as they are. Unless recovery stimulus has a specific climate focus, the danger is that industries will spring back to their high-polluting worst when C19 recedes. For example, although it has

been recognised that C19 has been beneficial in reducing global emissions and pollution, in the fastest-growing sector of emissions — air travel — companies are being nationalised or bailed out to guarantee their future.

Variations on a Green New Deal theme are a mainstay of after-the-pandemic advocacy. The end of neoliberalism, and of capitalism, are prophesied, even though the course of the pandemic and exit strategies remain unclear, and the consequences remain largely a matter of speculation, including the short-term state of the global economy and the financial system. The pandemic’s impact will be profound and long-lasting. Conservative politics and corporates are shocked that government intervention and leadership has become the saviour of business, not its nemesis. Other questions abound, around the persistence of emergency powers, the advance of the surveillance state, globalisation versus nationalist isolation, the future of redistributive politics, the fate of just-nationalised industries, the value of the public sector, the future of travel and tourism, multilateralism, and much else. As Thomas Homer Dixon asks: “Will multiple social systems flip simultaneously to a distinctly new, and better, state?”<sup>3</sup>

This essay has a narrower focus. Climate disruption remains the greatest threat to human civilisation. The C19 response is necessarily reactive, of relatively short duration, and requires a very different set of policy responses to the climate crisis. However, important parallels can be drawn.

Here we focus on three issues: the emergency response of governments to the pandemic and its relevance to the growing recognition that the world faces a climate emergency; what may be gleaned from the failure of risk management and preparedness by most nations in facing the current pandemic threat; and whether there is the danger of repeating these failures on a grander scale with climate disruption.

With both C19 and climate disruption, there has been a generalised failure to recognise the real risks and be prepared. Modern society has been quite good at dealing with frequent, low-impact disruptions, but bad at managing infrequent, high-impact threats. The pandemic response has displayed a fundamental breakdown in public administration, leadership incapacity, a science policy failure, and attempts to put the economy above the lives of the people.

<sup>1</sup> Guterres, A. (2020, 2 April 2020). Recovery from the coronavirus crisis must lead to a better world. United Nations Secretary-General.

<sup>2</sup> Dixon-Declève, S. (2020, 13 January 2020). We can emerge from our planetary emergency. Here’s a plan. World Economic Forum, Cologny, Switzerland.

<sup>3</sup> Homer-Dixon, T. (2020, 5 April 2020). Coronavirus will change the world. It might also lead to a better future. The Global and Mail.

There are also important, positive lessons in the pandemic response for the capacity of society to face the climate crisis: moving into emergency mode, with fast change, is possible in response to a catastrophic or existential threat; political leaders and the public sector are decisively important in changing public opinion and behaviour; and science matters.

The capacity of China to quickly move into emergency mode with clear strategy and messaging, rapidly ramping up production of key needs — even whole hospitals — and to apply the power of a capable state in the face of catastrophe shows China has the capacity and experience to do the same for the climate emergency. And others can learn valuable lessons too about the role of the state, stronger public policy capacity and science-based decision-making in times of emergency.

## THE CLIMATE EMERGENCY

Since mid-2018, understanding of the climate emergency has exploded globally. The Oxford Dictionary named “climate emergency” its Word of the Year for 2019, and more than 1480 national, regional and local governments in 29 countries have declared a climate emergency.

Understanding of the climate emergency has been driven by many factors, including local government campaigns, Greta Thunberg and the StudentStrike 4Climate movement, the advocacy by The Climate Mobilisation and Extinction Rebellion, and pressure for a Green New Deal. Turning this recognition into emergency climate mobilisation is the only strategy that matches ambition to the scale of the problem.

Emergencies may be of short, medium or long duration, and geographical impact may be local/regional, national or global. And they may be orientated to recovery or prevention. The climate emergency challenge is to stop a problem escalating out of control and return to safety. Drawing on *Climate code red: The case for emergency action*,<sup>4</sup> an emergency response is one in which:

1. There is a brutally honest assessment of immediate, or looming, threat to life, health, property or environment, which has a high probability of becoming overwhelming if immediate action is not taken;
2. The crisis is of the highest priority for the duration;
3. Bipartisanship and effective public leadership are generally the norm;
4. All available resources are devoted to the emergency;
5. Non-essential functions and consumption may be curtailed or rationed;
6. Speed of response is crucial, and a rapid transition and scaling up occurs;
7. Research and innovation are fostered; and
8. Critical targets and goals are not compromised because failure is not an option.

This analysis drew on the Second World War experience, but at a glance it is also a reasonable description of state responses to C19, after initial procrastination in most cases.

In short, echoing the words of Prof. Will Steffen, the climate emergency should be “the primary target of policy and economics” with something “more like wartime

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<sup>4</sup> Spratt, D. & Sutton, P. (2008). *Climate code red: The case for emergency action*. Scribe, Melbourne Vic.

footing” to roll out the transformation “at very fast rates”.<sup>5</sup>

The emergency character of climate change is characterised by recent scientific research:

**First**, at just 1.2°C of global average warming so far, climate change is already dangerous. Three-quarters by volume of Arctic sea-ice has already been lost, the Arctic ecosystem is fundamentally changed. Already many of the most densely populated regions are suffering from high levels of water stress, and 1.8 billion people will be living in water-scarce regions by 2025. One-quarter by volume of the Himalayan ice sheet has already been lost, and perhaps half will be lost by 2050. Tipping points for the loss of large West-Antarctic glaciers and a sea-level rise of several metres have already been crossed.

**Second**, the last time atmospheric carbon dioxide emissions were at the current level was during the early-to-mid Pliocene 3–4 million years ago, when temperatures were around 3°C warmer than the late 19th century, and sea levels were around 25 metres higher.

**Third**, if the current commitments by nations to reduce their emissions under the 2015 Paris agreement are not greatly improved, we face catastrophic warming of 3°C within a lifetime and up to 5°C by century’s end, according to the World Meteorological Organisation. Scientists say warming of 4°C is incompatible with an organised global community, is devastating to the majority of ecosystems, and has a high probability of not being stable.<sup>6</sup> A 2007 study by two US national security think-tanks concluded that 3°C of warming and a 0.5 metre sea-level rise would likely lead to “outright chaos” and “nuclear war is possible”, emphasising how “massive nonlinear events in the global environment give rise to massive nonlinear societal events”.<sup>7</sup>

**Fourth** is the proximity of tipping points, that is, the passing of more critical thresholds which result in step changes in the climate system that are likely irreversible on human timescales. As one example, a recent paper points to “biosphere tipping points which can trigger abrupt carbon release back to the atmosphere... perma-

frost across the Arctic is beginning to irreversibly thaw and release carbon dioxide and methane... the boreal forest in the subarctic is increasingly vulnerable.” They say that “other tipping points could be triggered at low levels of global warming (with) a cluster of abrupt shifts between 1.5°C and 2°C...”.<sup>8</sup>

**Fifth**, scientists also describe a “hothouse Earth” scenario, in which system feedbacks and their mutual interaction drive the Earth’s climate to a “point of no return”, so that further warming becomes self-sustaining. This planetary threshold could exist at a temperature rise as low as 2°C, possibly even lower.<sup>9</sup>

Human-induced climate change is an existential risk to human civilisation, in short an adverse outcome that will either annihilate intelligent life or permanently and drastically curtail its potential.<sup>10</sup> To be clear, it is a threat to contemporary society, not necessarily to the species as a whole leading to human extinction.

On 27 November 2019, in the journal *Nature*, leading scientists wrote that “we are in a climate emergency... this is an existential threat to civilisation”.<sup>11</sup>

Prof. Hans Joachim Schellnhuber, emeritus director of the Potsdam Institute and advisor to Pope Francis and Chancellor Merkel, says the world is in a deep state of climate emergency: “If we don’t solve the climate crisis, we can forget about the rest.”<sup>12</sup> If we continue down the present path “there is a very big risk that we will just end our civilisation. The human species will survive somehow but we will destroy almost everything we have built up over the last two thousand years.”<sup>13</sup>

<sup>8</sup> Lenton, T., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., & Schellnhuber, H. J. (2019). Climate tipping points — too risky to bet against. *Nature*, 575, 592-595.

<sup>9</sup> Steffen, W., Rockström, J., Richardson, K., Lenton, T.M., Folke, C., Liverman, D., Summerhayes, C.P., Barnosky, A.D., Cornell, S.E., Crucifix, M., Donges, J.F., Fetzer, I., Lade, S.J., Scheffer, M., Winkelmann, R. & Schellnhuber, H.J. (2018), Trajectories of the Earth system in the Anthropocene, *Proceedings of the National Academy of Sciences*, 115, 8252-8259

<sup>10</sup> Bostrom, N. (2002). Existential risks: Analyzing human extinction scenarios and related hazards. *Journal of Evolution and Technology*, 9 (1).

<sup>11</sup> Lenton, T., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., & Schellnhuber, H. J. (2019). Climate tipping points — too risky to bet against. *Nature*, 575, 592-595.

<sup>12</sup> Breeze, N. (2019), 3 January 2019). It’s non-linearity, stupid. *The Ecologist*.

<sup>13</sup> Schellnhuber, H.J. (2018). Foreword in Spratt, D. & Dunlop, I., *What lies beneath: The underestimation of existential climate risk*. Breakthrough National Centre for Climate Restoration, Melbourne VIC.

<sup>5</sup> Aronoff, K. (2018, 15 August 2018). “Hothouse Earth” co-author: The problem is neoliberal economics. *The Intercept*.

<sup>6</sup> Spratt, D. & Dunlop, I. (2018). *What lies beneath: The underestimation of existential climate risk*. Breakthrough National Centre for Climate Restoration, Melbourne Vic.

<sup>7</sup> Campbell, K, Gullede, J, McNeill, JR, Podesta, J, Ogden, P, Fuerth, L, Woolsley, J, Lennon, A, Smith, J, Weitz, R & Mix, D 2007, *The age of consequences: The foreign policy and national security implications of global climate change*, Centre for Strategic and International Studies & Centre for New American Security, Washington DC.

## EXISTENTIAL RISK MANAGEMENT

Conventional risk management practices typically emphasise the need to learn from failure. But existential risks are not amenable to this reactive approach. The experiment cannot be conducted many times until the risk management is refined. Traditionally, risk is assessed as the product of probability and damage, but when the damage is beyond quantification, the calculation no longer works.

Special precautions that go well beyond conventional risk-management practice are required if the increased likelihood of very large impacts at the high end of the range of possible outcomes — known as “fat-tail risks” — are to be adequately dealt with. This is a particular concern, for example, with potential climate tipping points where the impacts of global warming are non-linear and difficult to model with current scientific knowledge.

Focusing on middle-of-the-road outcomes may result in an unexpected catastrophic event that should have been anticipated. In other words, we must understand the potential of, and plan for, the worst that can happen, and be pleasantly surprised if it doesn't. What are the plausible worst cases? And how can one tell?

As Schellnhuber notes, conventional risk and probability analysis becomes useless in the context of existential risk because it excludes the full implications of outlier events and possibilities lurking at the fringes:

“We must never forget that we are in a unique situation with no precise historic analogue. The level of greenhouse gases in the atmosphere is now greater, and the Earth warmer, than human beings have ever experienced. And there are almost eight billion of us now living on this planet. So calculating probabilities makes little sense in the most critical instances... Rather, we should identify *possibilities*, that is, potential developments in the planetary makeup that are consistent with the initial and boundary conditions, the processes and the drivers we know.”<sup>14</sup>

Thus society cannot necessarily rely on the institutions, moral norms, or social attitudes developed from our experience with managing other sorts of risks. Because the consequences are so severe — perhaps the end of global human civilisation as we know it — “even for an

honest, truth-seeking, and well-intentioned investigator it is difficult to think and act rationally in regard to... existential risks”.<sup>15</sup>

The bulk of climate research and the reports of the Intergovernmental Panel on Climate Change (IPCC) have tended to underplay these risks, and exhibited a preference for conservative projections and scholarly reticence.<sup>16</sup> Economic analysis applied to climate change has systematically underestimated the cost of future damage, because the economic consequences of a hotter world may be beyond valuation, especially as the socio-economic impacts of climate disruption are translated into national and human security consequences: the breakdown of society, forced migration and conflict.<sup>17</sup>

Prof. Nic Bostrom identifies the unique characteristics of existential threats as:

“the extreme magnitude of the harm that would come from an existential disaster; the futility of the trial-and-error approach; the lack of evolved biological and cultural coping methods; the fact that existential risk dilution is a global public good; the shared stakeholderhood of all future generations; the international nature of many of the required countermeasures; the necessarily highly speculative and multidisciplinary nature of the topic; the subtle and diverse methodological problems involved in assessing the probability of existential risks; and the comparative neglect of the whole area”.<sup>18</sup>

A prudent approach to existential risk management, including for pandemics, would include the following:

1. A tough and objective look at the real risks with an emphasis on the potential consequences of the fat-tail risks, which may be damaging beyond quantification and devastating for human society;
2. A normative view of the targets required to avoid catastrophic consequences, based on the latest science, within a qualitative, moral framework;
3. Application of the precautionary principle when faced with (new) threats that may cause systemic ruin;
4. Being alert and prepared, including a coherent strategy with actions determined by the imperative to

<sup>15</sup> Bostrom, N. & Cirkovic, M. M. (2008). *Global Catastrophic Risks*. Oxford University Press, Oxford.

<sup>16</sup> Spratt, D. & Dunlop, I. (2018). *What lies beneath: The underestimation of existential climate risk*. Breakthrough National Centre for Climate Restoration. Melbourne Vic.

<sup>17</sup> Spratt, D. & Armistead, A. (2020). *Fatal calculation: How economics has underestimated climate damage and encouraged inaction*. Breakthrough National Centre for Climate Restoration, Melbourne Vic.

<sup>18</sup> Bostrom, N. (2013). Existential risk prevention as global priority. *Global Policy*, 4, 15-31.

<sup>14</sup> Schellnhuber, H.J. (2018). Foreword in Spratt, D. & Dunlop, I., *What lies beneath: The underestimation of existential climate risk*. Breakthrough National Centre for Climate Restoration. Melbourne Vic.

achieve the targets, and a clear understanding of the institutions and practices that are necessary to act when the threat is material;

5. Developing strategy that is integrated across national, regional and global boundaries, and which recognises that complex issues are inextricably linked and cannot be treated in separate “silos”; and
6. Maintaining practices to ensure that the approach taken is efficacious and regularly reviewed, and that governments remain fully aware that existential risk reduction is more important than any other global public good, and are so prepared.

## PANDEMIC RISK AND PREPAREDNESS

Pandemics and climate change, along with weapons of mass destruction (nuclear, biological and chemical), ecological collapse, asteroid impact, supervolcanic eruption, solar engineering and artificial intelligence, were named in 2018 by the Global Challenges Foundation as global catastrophic risks.<sup>19</sup>

Risks are catastrophic where a critical system’s safety boundaries may be breached by a potential threat, with mechanisms for the threat to spread globally and affect a population majority, triggering a significant reduction in human survival.<sup>20</sup>

Most of these risks are existential, but there is a debate about whether pandemic risk should also be considered existential.

In public health and health security analyses, global catastrophic biological risks have the potential to cause “sudden, extraordinary, widespread disaster”, with “tens to hundreds of millions of fatalities”.<sup>21</sup>

A high-impact epidemic/pandemic is more probable than usually assumed because all the features of an extremely devastating disease already exist in nature: “essentially incurable (Ebola), nearly always fatal (rabies), extremely infectious (common cold), and long incubation periods (HIV)”. If a pathogen were to emerge that somehow combined these features, “its death toll would be extreme”.<sup>22</sup> Although the characteristics of any one pandemic can vary widely in spread and severity, pandemics have the capacity to cause sudden, widespread morbidity and mortality, and social, political and economic disruption.<sup>23</sup>

In the era before modern medicine, the Plague of Justinian in the sixth century may have killed half the

<sup>19</sup> Global Challenges Foundation (2018). Global catastrophic risks 2018. Global Challenges Foundation, Stockholm Sweden.

<sup>20</sup> Avin, S., Wintle, B. C., Weitzdörfer, J., hÉigearthaigh, S. S. O., Sutherland, W. J., & Rees, M. J. (2018). Classifying global catastrophic risks. *Futures*, 102, 20-26.

<sup>21</sup> Manheim, D. (2019). Questioning estimates of natural pandemic risk. *Health Security*, 16(6), 381-390.

<sup>22</sup> Pamlin, D., & Armstrong, S. (2015). 12 risks that threaten human civilisation. Global Challenges Foundation. Stockholm Sweden.

<sup>23</sup> Madhav, N., Oppenheimer, B., Gallivan, M., Mulembakani, P., Rubin, E., & Wolfe, N. (2017). *Pandemics: Risks, impacts, and mitigation disease control priorities: Improving health and reducing poverty* (3rd ed.). The International Bank for Reconstruction and Development/The World Bank, Washington DC.

world's population. Up to 200 million people, comprising 30-50% of the European population, may have died from the Black Death plague in the fourteenth century. It is estimated that smallpox killed 90% of indigenous Americans, and in Australia killed over half the Aboriginal population in the early years of colonisation, as it spread beyond the Sydney region to communities across the country.

These were clearly existential events that C19 may not match in severity, but pandemics such as C19 are still understood as catastrophic in nature and have the capacity to drastically harm human societies and systems. The head of Africa's Centre for Disease Control and Prevention, Dr John Nkengasong, considers that C19 "is an existential threat to our continent".<sup>24</sup> Studies show considerably lower capacity in the African continent to respond to a pandemic threat than other continents.<sup>25</sup>

Epidemics are a central feature of human civilisation, exacerbated by urbanisation, globalisation and the destruction of natural systems. Deforestation has known links to Zika, Nipah and Ebola, climate change is causing changes in transmission patterns, potentially accelerating outbreaks of some viruses, and global trends show increased outbreak activity from 2010 onward.<sup>26</sup>

Pandemics are natural hazards that are well researched, with developed international response systems, in theory at least.

Valuable lessons were learnt during the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003. They included the value of strengthening systems for outbreak alert, timely global alerts, acting quickly, early travel restrictions, swift development of test capacity, aggressive early testing, tracing and isolating, monitoring self-isolation, encouraging social distancing, rigorous infection control in health facilities, transparency and clear communication, strategic stockpiling of medical supplies, developing health system surge capacity including for vaccine production, high-level expert panels to help

override politics and ensure a rapid response, and international expert collaboration.<sup>27</sup>

Despite these recommendations, most of the world was poorly prepared for C19, possibly because pandemics occur irregularly, so direct observation and learning is limited. But perhaps more so because of complacency that "it could never happen on my watch". A series of studies and reports by the World Economic Forum (WEF) — *Outbreak readiness and business impact* in 2019 and *The global risks report* in 2020 — and the Inaugural *Global health security index* report released in October 2019, paint a disturbing picture.

The WEF found that "health systems around the world are at risk of becoming unfit for purpose", and that the world remains ill-prepared to detect and respond to outbreaks and is not prepared to respond to a significant pandemic threat.<sup>28</sup>

The WEF also describes a "cycle of panic and neglect" of national and global responses to pandemic crises, costing lives and livelihoods: "The foundation of global preparedness consists of every country's technical, financial, socio-economic and political capacity to prevent, detect and rapidly respond", with gaps in nations' capacities being the primary source of risk to global health.<sup>29</sup>

The *Inaugural Global Health Security Index* found "severe weaknesses in countries' abilities to prevent, detect, and respond to significant disease outbreaks". The average overall Index score was 40.2 out of 100, and only just over 50 for the 60 high-income countries assessed.

In stark contrast to the actual C19 responses observed so far, the survey found the USA is the "most prepared" nation (scoring 83.5), followed by the UK (77.9), the Netherlands (75.6), Australia (75.5) and Canada (75.3). China was in 51st place, scoring 48.2. Ominously, it found that "most countries have not tested important health security capacities or shown that they would be functional in a crisis. Fewer than 5% show a

<sup>24</sup> Anna, C. (2020, 4 April 2020). Virus poses 'existential threat' to Africa. AAP.

<sup>25</sup> Kandel, N., Chungong, S., Omaar, A., & Xing, J. (2020). Health security capacities in the context of COVID-19 outbreak: An analysis of international health regulations annual report data from 182 countries. *Lancet*, 395, 1047-1053.

<sup>26</sup> World Economic Forum (2019). *Outbreak readiness and business impact: Protecting lives and livelihoods across the global economy*. World Economic Forum, Cologny Switzerland.

<sup>27</sup> Hille, K. & White, E. (2020, 16 March 2020). Containing coronavirus: lessons from Asia. *Financial Times*; Cheung, H. (2020, 21 March 2020). Coronavirus: What could the West learn from Asia? *BBC News*; Knobler, S., Mahmoud, A., Lemon, S., Mack, A., Sivitz, L. & Oberholtzer, K. (eds) (2004). *Learning from SARS: Preparing for the next disease outbreak: Workshop summary*. National Academies Press, Washington DC.

<sup>28</sup> World Economic Forum (2020). *The global risks report*. World Economic Forum, Cologny Switzerland.

<sup>29</sup> World Economic Forum (2019). *Outbreak readiness and business impact: Protecting lives and livelihoods across the global economy*. World Economic Forum, Cologny Switzerland.



requirement to test their emergency operations centers at least annually”, and only 10% show evidence of senior leaders’ commitment to improve local or global health capacity.<sup>30</sup>

In 2016, UK preparedness for a pandemic was tested in a three-day training exercise, Operation Cygnus. Professor Dame Sally Davies, then UK chief medical officer, said the exercise revealed the National Health Service’s inability to cope had “killed a lot of people”, adding: “It became clear that we could not cope with the excess bodies.”<sup>31</sup>

The US intelligence community’s 2019 threat assessment concluded that the US and the world remain vulnerable to the next flu pandemic or large-scale outbreak of a contagious disease that could lead to “massive rates of death and disability, severely affect the world economy, strain international resources, and increase calls on the United States for support”.<sup>32</sup>

And in 2019, the US health department ran an influenza pandemic scenario over several months, code-named Crimson Contagion, which “drove home just how underfunded, underprepared and uncoordinated the federal government would be for a life-or-death battle with a virus for which no treatment existed”. It documented that Homeland Security, Health and Human Services and White House’s National Security Council officials “were aware of the potential for a respiratory virus outbreak originating in China to spread quickly to the United States and overwhelm the nation”.

In stark contrast, when asked at a news conference on 19 March 2020 about government preparedness, US President Donald Trump responded: “Nobody knew there would be a pandemic or epidemic of this proportion. Nobody has ever seen anything like this before.”<sup>33</sup> Whilst Trump may be an easy target of criticism, many other leaders were slow to act, if less obtuse in their own defence.

<sup>30</sup> Nuclear Threat Initiative (2019). Global health security index: Building collective action and accountability. Nuclear Threat Initiative, Washington DC/John Hopkins Bloomberg School of Public Health, Baltimore MB.

<sup>31</sup> Smyth, C. (2016, 27 December 2106). NHS fails to cope with bodies in flu pandemic test. The Times.

<sup>32</sup> Conger, C., Femia, F. & Werrell, C. (2020, 18 March 2020). Last year, the US intelligence community warned of a coronavirus pandemic: Will we heed their climate warnings? The Center for Climate & Security.

<sup>33</sup> Sanger, D.E., Lipton, E., Sullivan, E. & and Crowley, M. (2020, 19 March 2020). Before virus outbreak, a cascade of warnings went unheeded. The New York Times.

## PANDEMIC RESPONSES

Information on the spread of C19 and the effectiveness of response efforts is patchy, and for some nations inaccessible or non-existent. This is due, in part, to government denial, the suppression of data, the underestimation of infections and non-hospital fatalities, inconsistent methodologies for assessing cases and deaths, and a lack of assessment capacity in some developing nations.

With that proviso, responses to C19 include the following broad categories, which are far from exhaustive, and focus on nations for which semi-reliable data is available.

**China:** The outbreak was initially denied and information suppressed by local and regional officials, resulting in global transmission of the virus. A doctor, now deceased from coronavirus, warned authorities and was disciplined and criticised. Once the Chinese state recognised the severity of the problem, a vast effort was undertaken including proactive surveillance (temperature monitoring, testing and rapid diagnosis), rigorous tracking and quarantining of close contacts, immediate case isolation, a massive scaling-up of capacity for isolation and care, and movement suppression including the shutdown of transport systems and strictly enforced lockdowns. The World Health Organisation says that “China has rolled out perhaps the most ambitious, agile and aggressive disease containment effort in history”.<sup>34</sup> The lockdown had a sharp impact on the Chinese economy, which may have contracted by as much as 40% during peak lockdown, and 10% for the first quarter of 2020,<sup>35</sup> but by April it was recovering.

**South Korea, Taiwan and Singapore:** Pre-emptive action based on first-hand learnings from the SARS experience included rapid widespread testing, specialised clinics, rigorous tracking and tracing, the quarantining and hospitalisation of all positive cases, clear social messaging, and border controls. The scale of lockdowns and suppression of economic activity applied in China was not employed, at least initially, though some moved in this direction subsequently. This approach resulted in lower levels of infection and an earlier “bending of the (statistical) curve” of cases and fatalities compared to

<sup>34</sup> World Health Organisation (2020). Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). World Health Organisation, Geneva Switzerland.

<sup>35</sup> Ferreira, V. (2020, 18 March 2020). US economy will shrink by 14% as coronavirus leads to worst contraction in 50 years: JPMorgan. Financial Post.

those who adopted a “wait and see” approach. Taiwan, with almost 24 million people, had recorded just 376 cases by 8 April 2020. It is too early to determine if these nations have suffered less economic damage, but that is a workable proposition.

**The procrastinators**, including the USA, UK and European community nations, Turkey, Iran, India and many others: Whilst details of this story vary, this large group of nations were slow to act for any number of reasons (explored below) ranging from denial to “wait and see”. They are characterised by a lack of early testing, tracking and quarantining, and being slow to close borders. This resulted in a spread of infections which were opaque to policymakers for too long. In many cases it was only when it became obvious that the problem might overwhelm their health systems, which might in turn push the fatality rate up from around 1% to perhaps 4%, that they acted. Belatedly, China’s blueprint of testing and quarantining, social isolation and shutdown — with huge economic consequences — was adopted in one form or other. In a large number of instances the response was confused, hampered by shortages of basic equipment, lacked clear lines of responsibility and coordination, contained mixed messages and was strategically unclear. Emergency medical stockpiles were inadequate or nonexistent, and capacity to quickly scale up production of supplies and equipment was inhibited. The economic disruption is likely to extend longer than in China. The US and the Euro economies are projected to shrink by 4% and 15% respectively in the first quarter, and 14% and 22% in the second quarter of 2020.<sup>36</sup> While it is too early to be definitive, it is likely that the failure to act early will deepen the length and extent of the economic pain.

**New Zealand** had, outside of China, perhaps the “most decisive and strongest lockdown in the world” by April 2020, and may stand alone as “the only Western country that’s got an elimination goal”.<sup>37</sup> Others who appear to have started with a herd immunity strategy are now shifting to this goal.

Some commonalities in response are worth exploring for their relevance to the climate crisis:

1. **Risk:** There was a generalised failure to recognise the real risks and be prepared. Responses included widespread underestimation of the likelihood and

severity of the threat, and subsequent delay in acting.

2. **Mobilisation:** The necessity of an unprecedented peacetime mobilisation (often accompanied by a formal declaration of emergency powers) in response to a catastrophic threat, with widespread reference to the “war economy”, was demonstrated. The changes have been staggering in speed and scale, overturning conventional wisdoms, and driven by state leadership, planning and coordination. Everything abhorrent to neo-liberalism manifested: the market’s incapacity to respond to such threats, the protection of the people and their health and well-being winning over short-term economic concerns, the economy being driven into a deliberate, sharp — and possibly deep — recession and the state running up huge deficits and subsidising almost everything in sight — including business, wages, rents — and health and social security spending being boosted. Judged against the characteristics of an emergency mobilisation discussed earlier, the pandemic response largely fits the bill: the crisis is the highest priority, there is bipartisanship and effective public leadership, all available resources are being devoted to the emergency, non-essential functions and consumption are being curtailed, a rapid scaling up of capacity is occurring, and research is being prioritised.
3. **Strategic uncertainty and opacity.** The strategies employed by countries in response to COVID-19 have not been uniform, indicating a lack of “best-practice” pandemic response amongst institutions and experts, or a lack of understanding of “best-practice”. Although circumstances vary considerably among countries, which partially justifies different response measures, there is considerable debate as to whether suppression or mitigation measures should be employed, and what method (infection or vaccine) should be employed to achieve herd immunity. There are two approaches:
  - a. **Suppression** of cases, targeting complete elimination of the virus. This was employed by New Zealand and some of the early-to-act Asian states. At time of writing the success of this approach is unclear. If suppression measures were not employed early and strictly enough, it is likely that the virus will return as soon as social controls are loosened.
  - b. **Mitigation by herd immunity:** the controlled suppression of the virus, shielding the most vulnerable members of the population to delay

<sup>36</sup> Ferreira, V. (2020, 18 March 2020). US economy will shrink by 14% as coronavirus leads to worst contraction in 50 years: JPMorgan. Financial Post.

<sup>37</sup> Wilson, S. (2020, 6 April 2020). Three reasons why Jacinda Ardern’s coronavirus response has been a masterclass in crisis leadership. The Conversation.

peak infection, and “flattening the curve” to reduce pressure on health systems, but with the goal of infecting 60% or more of the population to reach herd immunity. This was very likely to overwhelm health systems and result in a large number of deaths. This was the case in the UK. A default mitigation strategy was adopted by governments when they recognised that delay meant the opportunity had passed for suppression/elimination, and this was coloured with a hope that a vaccine would save the need to infect 60% of the population with the virus itself. This was not fully communicated and left the public in the dark about the stark reality of the situation. Modelling scenarios were released “most likely with a smothering of hand sanitiser because the raw numbers could be so grim”.<sup>38</sup> At the same time, it remains unclear whether immunity to the virus can actually be developed. Preliminary studies show that some individuals who have recovered from the virus have low antibody levels and therefore may not be immune to reinfection.<sup>39</sup>

The latter case is similar to the climate change scenarios in which the largest risks are redacted from IPCC reports and more palatable middle-of-the-road impacts are emphasised. Evidence pointing to the greatest imperatives to act is sidelined and the can is kicked down the road.

The pursuit of herd immunity in the absence of a vaccine is worth exploring in more detail, because many nations appear to have initially adopted this approach. It is difficult to analyse the thinking behind the various national strategies due to a lack of transparency. However, it appears that in many cases action was delayed in order to avoid a significant economic cost, and the idea of achieving herd immunity by allowing the infection of a majority of the population was a justification for doing so. Knowledge is emerging that infection could also have long-term adverse health consequences.

What appears to be at play in the developed world is a policymaking morality in which the unnecessary deaths of a large number of people are traded off for maintaining economic growth. This is neo-liberalism in its purest form: the dispensability of people in the service of “the economy”. Of course, downturns in economic activity in

developed countries can have very severe consequences, including on health and employment, and there is risk that containment measures in more fragile, developing nations may trigger economic collapse.

The herd immunity plan was revealed by UK officials, including Sir Patrick Vallance, England’s chief scientific adviser, who said the government was looking “to try to reduce the peak, broaden the peak, not suppress it completely” so as “to build up some kind of herd immunity”.<sup>40</sup> The UK Prime Minister’s chief advisor was more colloquial: at a private engagement at the end of February, Dominic Cummings outlined the government’s strategy; those present said it was: “Herd immunity, protect the economy and if that means some pensioners die, too bad.”<sup>41</sup>

The calculation is brutal; no hippocratic oath applies here. US President Trump declared that “we cannot let the cure be worse than the problem itself”, while the Wall Street Journal editorialised that “no society can safeguard public health for long at the cost of its overall economic health”. Presidential advisor Larry Kudlow agreed with Trump: “We’re going to have to make some difficult trade-offs.”<sup>42</sup> Former Australian Foreign Minister Alexander Downer also saw it as a zero-sum game, drawing an equivalence between economic recession and the destruction of society: “We either save avoidable deaths & destroy society OR accept avoidable deaths & save society. The moral dilemma of our time.”<sup>43</sup> Society, in Downer’s worldview, is only an economic construct.

The UK strategy came to an abrupt stop when an Imperial College COVID-19 Response Team report, projecting as many as a quarter of a million deaths in the country if the government pursued the milder mitigation measures that would accompany a herd immunity strategy, created public uproar. The government appeared to turn to a more aggressive containment

<sup>38</sup> Crowe, D. (2020, 6 April 2020). The cruel choice for Australia in the next virus modelling numbers. *The Age*.

<sup>39</sup> Mannix, L. (2020, 10 April 2020). Scientists at odds after study finds coronavirus antibody puzzle. *Sydney Morning Herald*.

<sup>40</sup> Stewart, H. & Busby, M. (2020, 13 March 2020). Coronavirus: science chief defends UK plan from criticism. *The Guardian*.

<sup>41</sup> Shipman, T., & Wheeler, C. (2020, 22 March 2020). Coronavirus: ten days that shook Britain — and changed the nation for ever. *The Times*.

<sup>42</sup> Rucker, P., Stein, J., Dawsey, J., & Parker, A. (2020, 24 March 2020). Trump says he may ditch coronavirus safety guidelines to jolt economy. *The Philadelphia Inquirer*.

<sup>43</sup> Downer, A. (2020, 7 April 2020). 10:18pm. *Twitter*.

strategy, but there are intimations that herd immunity remains, privately, a long-term objective.<sup>44</sup>

Australia, too, was on the herd immunity path. The Chief Medical Officer defended keeping schools open because “if they (school children) are getting infected and they’re perfectly well, whilst they might spread it, it also creates a herd immunity”.<sup>45</sup> Australia appears to have changed path due to the stronger advocacy by State premiers, and the alarming evidence from Europe as to the consequences when the virus takes hold of a population.

Gail Whiteman, director of the Pentland Centre for Sustainability in Business at Lancaster University, told CNBC: “This is the first time I have seen governments choosing humanity over economics in such a significant way — ever.”<sup>46</sup>

In this case, clear, scientific evidence about the consequences for people’s lives was persuasive in changing a government’s policy direction. Yet clear evidence has not played that role on climate change, perhaps because the lives at risk are not those of our friends and families, but of future generations and people distant in place and culture.

Of course not every life can be saved, but choosing to allow people to die for a higher cause is the military calculus of “acceptable loss”, that is, tolerable damage, injury and death. It is the poor and vulnerable who are disproportionately among the dead, and that is true both for pandemics and climate change.

The World Bank had estimated that a severe global influenza pandemic could cost around 5% of global GDP. Would letting it run be cheaper than the disruption caused by trying to suppress it? And how much is a human life worth, if such a valuation is not absurd? The Commission on a Global Health Risk Framework for the Future estimated the annualised impact of flu pandemics at around \$60 billion, but when the statistical value of life

years lost is considered, the estimate may grow almost ten-fold to \$570 billion.<sup>47</sup>

A staple tool of economics, cost-benefit analysis is about trade-offs that exclude non-monetary values including human life. The parallel with climate policy choices is not exact, because a rapid decarbonisation of production would not be as disruptive as the pandemic shutdown, the time frames are different and so is the scale of life at stake. But the prospect of economic dislocation — though often exaggerated and neglectful of the benefits of the economic transition — has been a mainstay of those encouraging delayed or incremental climate action.<sup>48</sup>

<sup>44</sup> Whickam, A., Nardelli, A., Baker, K., & Holmes, R. (2020, 1 April 2020). Even the US is doing more coronavirus tests than the UK. Here Are the reasons why. BuzzFeed; Kelly, J. (2020, 7 April 2020). Imperial’s Neil Ferguson: “We don’t have a clear exit strategy”. Financial Times.

<sup>45</sup> Commonwealth of Australia (2020, 15 March). Interview with David Speers on ABC Insiders about coronavirus (COVID-19) with the Chief Medical Officer. Commonwealth of Australia Department of Health.

<sup>46</sup> Meredith, S. (2020, 20 March 2020). “This is a yes-we-can moment”: What the coronavirus response means for climate action. CNBC.

<sup>47</sup> World Economic Forum (2019). Outbreak readiness and business impact: Protecting lives and livelihoods across the global economy. World Economic Forum, Cologny Switzerland.

<sup>48</sup> Spratt, D. & Armistead, A. (2020). Fatal calculation: How economics has underestimated climate damage and encouraged inaction. Breakthrough National Centre for Climate Restoration, Melbourne Vic.

## RISK-MANAGEMENT CATASTROPHE

Overall, the response to C19 has been a catastrophic failure of government and of risk management. The world is plunging into a deep economic recession, with very large and inequitable social consequences. In some places, it is now a wicked problem with no politically acceptable way out.

There was a failure of preparedness that had been well documented in 2019 and could have been rectified, a failure to recognise the crisis once it manifested, then an underestimation of the risks, delay and confusion. Modern society has been quite good at dealing with high-frequency, low-impact disruptions, but bad at managing low-frequency, high-impact crises.<sup>49</sup> And perhaps there was also a racially-infused “Western exceptionalism”.

The symptoms of failure abound, including the denial and hubris of world leaders from countries such as the US and UK, nations that had been rated less than a year earlier as the two most prepared to act. Even the ratings of national preparedness seem to have been askew.

In January 2020, US President Trump declared: “We have it totally under control”; and in February: “I don’t think [further spread] is inevitable”. He claimed repeatedly that the virus wasn’t much worse than the seasonal flu. His actions were to deny or downplay the threat, blame and undermine existing preparations. Then there was the hubris of British Prime Minister Boris Johnson: “I was at a hospital the other night where I think a few there were actually coronavirus patients and I shook hands with everybody, you’ll be pleased to know, and I continue to shake hands.” He ended up in intensive care. On Friday 13 March, Australian Prime Minister Scott Morrison announced a ban on public gatherings of more than 500 people to start the following Monday, and then quipped with a grin: “I am going [to the football] on Saturday because it might be the last chance for a while.

It is a truism to say there was a failure to recognise a crisis, the risks were unexpected, and the emerging virus threat in too many cases was ignored initially and then underestimated. The World Economic Forum’s 2020 *Global Risks Report* categorised infectious diseases in the top 10 for “impact”, but not for “likelihood”. Economic downturn did not make the top 10 in either category.<sup>50</sup> Yet the Forum in 2019 had also recognised elsewhere that:

“Infectious disease risk can no longer be thought of exclusively as the threat of low-probability, high-risk”<sup>51</sup> indicating some awareness of the increasing occurrence of new, contagious infectious diseases globally.

The European Banking Authority’s worst-case scenario for their 2020 EU-wide stress test exercise — a 4.3% decline in EU economic output by the end of 2022 — may prove to be understated, even before the stress test could be carried out.<sup>52</sup> In the US, analysts from Morningstar Inc. said this would be a “mild pandemic”. In Australia, the Treasury’s best estimate at the end of February was that the pandemic would cut just 0.5% off GDP growth in the first quarter, and the economy would rebound “in subsequent quarters”.<sup>53</sup>

When mitigation responses did eventuate, they were often characterised by confusion, mixed messages, and poor coordination. Initial efforts by New York officials to stem the outbreak “were hampered by their own confused guidance, unheeded warnings, delayed decisions, political infighting”.<sup>54</sup> New York Governor Mario Cuomo admitted: “This is an enemy that we have underestimated from Day 1, and we have paid the price dearly.”<sup>55</sup>

Failure of preparedness was common around the world. Emergency health stockpiles had been run down, which further added to the incapacity to engage in early mass testing, and for health professionals and hospitals to treat and safely admit patients. Senior advisers in the UK admitted that the lack of investment in mass testing “may have been a mistake”, as they had believed influenza was a bigger threat.<sup>56</sup> Adam Kamradt-Scott, an Australian public servant working in pandemic preparedness, described how a national stockpile of personal protective equipment that was designed to get the country through the first months of a pandemic had been “subject to a raft of efficiency savings, cut backs and

<sup>49</sup> McKenzie, K. (2020, 8 April 2020). Global finance can’t afford to ignore externalities any longer. Bloomberg Green.

<sup>50</sup> World Economic Forum. (2020). The Global risks report. World Economic Forum, Cologny Switzerland.

<sup>51</sup> World Economic Forum (2019). Outbreak readiness and business impact: Protecting lives and livelihoods across the global economy. World Economic Forum, Cologny Switzerland.

<sup>52</sup> Ewing, J. (2020, 6 April 2020). European banks prepared for a crisis. But not this one. The New York Times.

<sup>53</sup> Hutchens, G. (2020, 7 April 2020). Treasury underestimated coronavirus like the rest of us, FOI documents show. ABC.

<sup>54</sup> Goodman, D. (2020, 8 April 2020). How delays and unheeded warnings hindered New York’s virus fight. The New York Times.

<sup>55</sup> Lyons, P. J. (2020, 8 April 2020). Why NY has so many cases: ‘Everything was slow’. The New York Times.

<sup>56</sup> Gardner, B. (2020, 2 April 2020). Exclusive: The systematic failures in the government’s pandemic strategy laid bare. The Telegraph.

clawbacks by a string of governments unfamiliar with how critical that stockpile was to our plans".<sup>57</sup>

Why such failures occurred will be material for researchers and government inquiries, books and documentaries. However there are some aspects which may be relevant to climate policymaking, which are briefly discussed.

## REASONS FOR FAILURE

The contradiction is stark. There was plenty of expertise on how to respond to a pandemic, but surveys found that governments were unprepared. The lessons from state high-level scenario work were not absorbed by governments. Controlling risk is at the core of private and public sector management, but this capacity went missing when a predictable — and not a black swan — low-probability, high-impact event occurred.

Clearly, there has been a fundamental breakdown in public administration and policymaking. This is another example of the price to be paid for the hollowing out in many places of the state bureaucracy, the loss of expertise and institutional memory, the politicisation and the diminution of independent advice, and political leaders ignoring expert advice.

A senior White House adviser, Peter Navarro, starkly warned in late January that the coronavirus crisis could cost the country trillions of dollars and put millions of Americans at risk of illness or death.<sup>58</sup> His warning was ignored.

Reasons may include the following:

**Leadership incapacity.** Corporate and public sector leadership may lack the ability to spot, identify and handle unexpected, non-normative events. A 2016 analysis found this ability "perilously inadequate" at critical moments, and identified an "executive myopia" to see and even contemplate the possibility that "unthinkables" might happen, let alone how to handle them. Time is at such a premium that the need to think in ways required by the new "unthinkables" is largely marginalised. The report said that whilst "Thinking the unthinkable" has an attractive rhetorical symmetry, a more appropriate phrase might in many cases might be "Thinking the unpalatable".<sup>59</sup> This is the case in the current instance, because the risk was well known. Yet it seems unlikely that most governments had even contemplated the idea that our lives and the global economy could be dramatically disrupted all at once.

**Science policy failure.** Richard Horton, editor of medical journal *The Lancet*, says Britain's handling of the C19 crisis was "the most serious science policy failure in a

<sup>57</sup> Kamradt-Scott, A. (2020, 1 April 2020). I helped prepare Australia's pandemic plan and so far it's unfolding reasonably well. Sydney Morning Herald.

<sup>58</sup> Haberman, M. (2020, 6 April 2020). Trade adviser warned White House in January of risks of a pandemic. The New York Times.

<sup>59</sup> Gowing, N. & Langdon, C. (2016). Thinking the unthinkable: A new imperative for leadership in the digital age. Chartered Institute of Management Accountants, London.

generation”, and pointed to a statement by England’s deputy chief medical officer that “there comes a point in a pandemic where that (testing) is not an appropriate intervention”.<sup>60</sup> In many places, including Australia where the authors reside, there was a noticeable difference between the advocacy of most epidemiologists and policy experts, who were demanding that more be done, more quickly, and statements from politically appointed chief medical officers and other senior government officials, who were more cautious and incremental in their advice. Were the latter tailoring their advice to suit their political masters? Prof. Sheila Jasanoff describes a “regulatory science” (as opposed to pure “research science”) which straddles the dividing line between science and politics as scientists and regulators try to provide answers to policy-relevant questions.<sup>61</sup> In this engagement between science and politics, science is seen “neither as an objective truth, nor as only driven by social interests, but as being co-produced through the interaction of natural and social orders”.<sup>62</sup>

**Economic imperatives.** Bill Clinton famously declared: “It’s the economy, stupid.” Margaret Thatcher’s view is there is “no such thing as society”, only individuals who work and consume and have a right to own shares. As the pandemic spread, there was clearly a line of thought, dominant in the UK government as just one example, that the economy should be kept going despite a steep cost in lives. This could be justified as the herd immunity strategy that had to be abandoned when scientists explained that the sacrifice to keep the economy at full tilt would be an enormous, planned death toll. Most nations explained their strategy as “flattening the curve”, but it was (deliberately) ambiguous as to whether this was in pursuit of the UK approach that “if some pensioners die, too bad”, or something else. If “we cannot let the cure be worse than the problem itself”, then downplaying the problem, procrastinating, keeping schools open and holding back action was a strategy, not an expression of confusion. Letting the virus spread to keep economic disruption to a minimum was not going to work, because the large death rate would create such fear and panic that it could not be sustained. But that does not mean it wasn’t

behind a lot of what transpired in February and early March 2020.

**Optimism bias:** Were there assumptions that “this won’t happen to us”, that this was a “Chinese virus”? Such unrealistic optimism leads to poor decision-making. Boris Johnson was foolhardy enough to believe that shaking hands with coronavirus patients was low risk. Prof. Nic Bostrom points to a survey in which almost half of all sociologists believed that they would become one of the top ten in their field, and 94% of sociologists thought they were better at their jobs than their average colleagues.<sup>63</sup> Perhaps we were also “wildly unprepared” in part as a result of our belief that humans are on a separate journey from the rest of the natural world, “headed toward a perfected existence in which nature obeys all of our commands and bothers us not at all”.<sup>64</sup> Before C19 hit, was the idea of anything other than “business-as-usual” inconceivable? In modern business usage, “systemic risk” is considered a term pertaining to financial markets, rather than physical systems.

**War on science:** Many of the forces who have laid siege to the science of climate change — Fox, fossil-fuel-funded think tanks, maverick economists, and conservative commentators — have used the same armoury in response to C19: It’s a hoax and not happening; it’s not our fault; it’s not that bad; solutions are too costly; and then, whoops, it’s bad and too late to act. From the beginning there was downplaying and denial of the severity of the emerging threat and claims that COVID-19 was not worse than the ‘flu. Alexander Downer, for instance: “The panic about coronavirus is madness. Calm down. This isn’t the Black Death. Vulnerable people should be very careful. The rest? Get on with normal life”.<sup>65</sup> Inconsistent health messaging between national and state governments led to panic-shopping on the one hand, and people flocking to beaches and outdoor events on the other. Differing advice from health researchers and government-appointed health advisors allowed decision-makers to pick-and-choose a course of action that was inconsistent with the precautionary principle and with the best expertise. This has striking similarities to the way governments have cherry-picked data and advice in handling climate policy. Those who ignored the best advice have brought greater calamity on their

<sup>60</sup> Lawless, J. (2020, 1 April 2020). ‘Public message: Utter confusion.’ UK Prime Minister Boris Johnson under fire for low number of COVID-19 tests. Time.

<sup>61</sup> Jasanoff, S. (1998). *The fifth branch: Science advisers as policymakers*. Harvard University Press, Cambridge MA.

<sup>62</sup> Dooley, K., Christoff, P., & Nicholas, K. (2018). Co-producing climate policy and negative emissions: trade-offs for sustainable land-use. *Global Sustainability*, 1(e3), 1-10.

<sup>63</sup> Bostrom, N. (2002). Existential risks: Analyzing human extinction scenarios and related hazards’, *Journal of Evolution and Technology*, 9 (1).

<sup>64</sup> Cobb, K. (2020, 8 March 2020). Coronavirus reminds us we are organisms in an environment. Resource Insights.

<sup>65</sup> Downer, A. (2020, 10 March 2020). 8:51AM. Twitter.

constituents, and this lesson is now helping to restore an appreciation of the value of science in policymaking.

## LESSONS FOR CLIMATE MOBILISATION

The novel coronavirus pandemic of 2020 has striking parallels with climate disruption.

The threat was well known and catastrophic, even existential. History's valuable lessons were ignored. Researchers were clear on what needed to be done, and how to respond. The UN had devoted a whole section to the issue, governments ran risk scenarios and national security analysts warned of the consequences. The developed world had the capacity to be ready. And to support less prosperous nations, or should have been. When it became fatal, it was conceived by wealthy nations as a threat somewhere else, because they were insulated. Then there was the denial, the delay, wanting to avoid any economic dislocation. Modern society was good at research, solutions would appear, no need to panic. Humans had tamed nature.

This description fits both cases. The pandemic is a dress rehearsal for climate change: "COVID-19 is climate on warp speed."<sup>66</sup>

The current pandemic is a foretaste of the shocks that the climate crisis could cause "to supply and demand, disruption of supply chains, and global transmission and amplification mechanisms".<sup>67</sup> Both are systemic, physical shocks that propagate fast in an interconnected world. They are regressive, non-stationary and risk multipliers, and can only be remedied by understanding and addressing the underlying physical causes. Both reflect the "tragedy of the commons" problems, in that individual actions can run counter to the collective good and deplete a precious, common resource.<sup>68</sup>

Climate change will increase the geographic range of infectious diseases and air pollution increases susceptibility to respiratory illness.

The pandemic emergency teaches us valuable lessons about how to respond to the climate emergency:

1. **Moving into emergency mode**, with fast change, is possible: a clear focus on the leading role of the state allowed a fast, innovative, society-wide mobilisation to face the threat, even after initial

<sup>66</sup> Gardiner, B. (2020, 23 March 2020). Coronavirus holds key lessons on how to fight climate change. *Yale Environment* 360.

<sup>67</sup> Pinner, D., Rogers, M., & Samandari, H. (2020). Addressing climate change in a post-pandemic world. *McKinsey Quarterly*.

<sup>68</sup> Pinner, D., Rogers, M., & Samandari, H. (2020). Addressing climate change in a post-pandemic world. *McKinsey Quarterly*.



delays. Disruptive socio-economic shifts that would have been considered impossible have been experienced, and normalised.

2. **Leadership is decisive**, including in changing public ideas: Political leadership, where it has been exhibited, and public sector competency, have made the difference between success and failure. Clear, nonpartisan messages that describe why it is fair and necessary to change behaviour, and explain government decisions, can produce public support for ideas that would in other times be considered radical and unacceptable.
3. **The public sector matters**: the crisis is building understanding of the importance of a well-functioning, proactive government and state apparatus, and the disastrous consequences for public and health services of austerity and politicisation.
4. **People matter**: Governments can decide that health and life is more important than the economy: the first duty of a government is to “protect the people”, and attempts to delay responding to the pandemic to avoid economic disruption made it worse, increasing the economic damage.
5. **Science matters**: Sidelining expert opinion for political purposes or economic expediency was counterproductive. An ideological myopia in accepting expert advice costs lives and dollars.
6. **The precautionary principle** should be applied. Problems which start out small, but have the potential to create systemic ruin, must be solved while they are small. Waiting to see if they become large is courting the very ruin we seek to avoid.<sup>69</sup>

There are also big differences between pandemics and climate disruption. A pandemic is imminent with visceral danger; the climate threat may seem distant in time, even as damaging impacts occur. And a pandemic may be geographically contained, whereas climate risks are global. Pandemics impacts are discrete (individual) and patients may recover, vaccines can be developed and populations gain immunity, whereas climate risks are cumulative. Pandemics do not suffer the same degree of system-level feedbacks and interdependencies as the climate system.

As well, it is only possible to act in response to a pandemic once it manifests, whereas if climate mitigation is not seriously enacted until the crisis is upon the world in full measure, then it is too late. Due to inertia in the global climate system, the impact of increasing atmospheric carbon concentrations from continuing fossil fuel use, modern agriculture and land clearing is not evident for years ahead. By the time those impacts become clear it will be far too late to act. With climate disruptions, we may reach a point — not too far away — when the “hothouse Earth” scenario is realised and interacting system feedbacks drive the Earth’s climate to a “point of no return”.

There was a catastrophic failure of risk management in response to C19. An even more rigorous approach to existential risk management is necessary for climate disruption. But this is not happening:

1. Existential risk management requires an objective look at the real risks with an emphasis on the fat-tail risks, but climate policymakers and the IPCC reports have failed to fully understand the existential nature of climate disruption. A trend towards “erring on the side of least drama” has emerged, yet “when the issue is the survival of civilisation is at stake, conventional means of analysis may become useless”.<sup>70</sup>
2. Normative targets within a moral framework have not been set. Policymakers adopt targets which will result in the destruction of the world’s coral systems, drown nations, and inundate agriculturally-important deltas and megacities. And their actions fall woefully short of their goals. The precautionary principle has not been applied in the face of threats that may cause systemic ruin.
3. The world is sleepwalking towards disaster. The UN climate science and policymaking institutions are not fit-for-purpose and have never examined or reported on the existential risks. There are no national or global processes to ensure that such risk assessments are undertaken and are efficacious. The World Economic Forum reports on high-end global risks, including climate disruption, once a year and then everybody goes back to ignoring the real risks.
4. Even as climate change impacts are being etched into the Earth’s surface, there is no coherent strategy with actions aligned to normative targets, and the

<sup>69</sup> Cobb, K. (2020, 29 March 2020). Overreacting to coronavirus? The perverse logic of panic during a potential pandemic. Resource Insights.

<sup>70</sup> Schellnhuber, H.J. (2018), Foreword in Spratt, D. & Dunlop, I., What lies beneath: The underestimation of existential climate risk. Breakthrough National Centre for Climate Restoration., Melbourne Vic.

establishment of institutions and practices to carry out that task.

If the first duty of government, and the international community, is to protect the people, then the focus must be on the biggest threats. Existential risk reduction is more important than any goal, and a first, urgent step is for governments to recognise this need, understand the existential climate threat, and take the commensurate actions — even though they will be disruptive — before it is too late.

15 April 2020



