

NAVIGATING THE
UNIMAGINABLE PAPER 2



THE EVIDENCE FOR COLLAPSE

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RECAP

Our world is being transformed. In every country, on every continent, ordinary people are doing extraordinary things. They are greening cities, bringing diverse communities together, growing food regeneratively. They are supporting each other through the pandemic, building local renewable energy grids, running repair shops and grief cafes.

Together, these initiatives are building a new human civilisation, from the ground up. This is a civilisation that cares deeply about people and planet. It dares to dream big and act small. It is the future. Here and now. This is an emerging civilisation based on the exchange of gifts, the regeneration of land, air and water and on harnessing the raw human potential in each and every one of us.

At the same time, something else is happening. A rapacious economy beyond political or social control is steadily destroying life on Earth.

As the pursuit of profit and economic growth speed ever faster, our window of opportunity for systemic change is shrinking. It is becoming clear that the Business As Usual path will risk the collapse of civilisation as we know it.

Yet this does not mean it risks killing off the grass-roots initiatives that are building a new world. Because they are local, decentralised and self-organised they are resilient enough to survive even the collapse of the out-going civilisation.

What's more, anyone, everyone can contribute to building the new world. Now is the time to join the movement of the future. Think Global. Act Local. Start Now!

Where is your place in the transformation?



INTRODUCTION

We know that we are facing a global crisis unlike any before. The data on climate, ecology and economy tell us as much. The feeling in our gut confirms something potentially catastrophic is looming.

But does this mean Collapse – the end of civilisation as we know it? Might it even mean human extinction? Could we ride it out? Can we turn things around before it's too late?

This paper looks at some of the evidence. It journeys through four steps:

1. A review of our historical understanding of how civilisations collapse
2. A proposed framework of indicators that would allow us to track the proximity of collapse
3. An overall assessment of our current global situation in relation to potential collapse
4. A look at whether collapse can be avoided within the terms of the status quo.

1. HOW SOCIETIES COLLAPSE

Our world is littered with the ruins of fallen empires. Rome, Mandinka, Maya, Toltec, Aztec, Zimbabwe. Perhaps we carry a collective memory of how this must have felt. The denial. The fear and chaos of war and social decay. The hedonism and decadence. The urge to run for the hills.

Archaeologists and historians have been fascinated by the process of collapse for well over a century. The topic recently gained popular interest with the publication of Jarred Diamond's book Collapse and his accompanying TED Talk. Though seen by some historians as over-simplified, his framework provides a useful five-point explanation of the key factors that contribute to collapse. These are:

- Human impacts on the environment - particularly unintended destruction of essential resources
- Climate Change - historically this has been the natural cycles of Ice Ages but increasingly this will be human-induced climate chaos
- Relations with neighbouring friendly societies - when mutual exchange disappears a civilisation can be undermined
- Relations with hostile societies - resulting in war, conflict, blockade or siege
- Internal political, economic, social and cultural factors that create social conflict.

While some civilisations have successfully maintained their existence for centuries, in many other cases these five factors repeatedly undermined human societies. Diamond notes that this is particularly true when societies are extremely unequal:



If the elite can insulate themselves from the consequences of their actions, they are likely to do things that profit themselves, regardless of whether those actions hurt everybody else... Throughout recorded history, actions or inactions by self-absorbed kings, chiefs, and politicians have been a regular cause of societal collapses, including those of the Maya kings, Greenland Norse chiefs, and modern Rwandan politicians
Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed*, Penguin, 2011.



Writing in the early twentieth century following a comprehensive study of the fall of the world's great historic empires, Sir John Glubb characterised seven stages in this growth and eventual decline of empires. He noticed a pattern of expansion followed by degeneration into what he calls "The Age of Decadence" and then Collapse. These stages are shown in the diagram on next page.

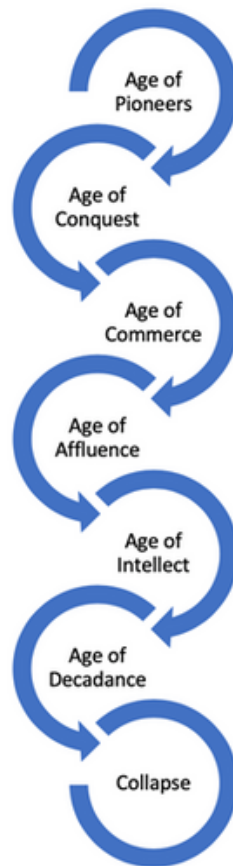
Drawing on patterns he detected in numerous past civilisations, Glubb states: "Decadence is marked by:

- Defensiveness
- Pessimism
- Materialism
- Frivolity
- An influx of foreigners
- The Welfare State
- A weakening of religion.

"Decadence is due to:

- *Too long a period of wealth and power*
- *Selfishness*
- *Love of money*
- *The loss of a sense of duty."*

Taking up this framework, Margaret Wheatley the complexity scientist and management consultant has applied the notion of decadence and collapse to our current situation. She observes:



In The Age of Decadence... everyone is focussed on their self-interest. Elites protect their wealth, leaders protect their power and the masses clamour for entertainment. We worship actors, musicians and athletes. We are bought off with food and grand spectacles; we become obsessed with sports... I know this sounds depressingly familiar, so let me remind you that this is how humans always behave during the decline of their civilisation. Always.
Margaret Wheatley, *Who Do We Choose To Be?* Berrett-Koehler Publishing 2017.

This pattern of growth, overstretch and collapse is also reflected in the research of Joseph Tainter. He describes a cyclical pattern which we might see as overlaying Glubb's schema. This characterises civilisations as typically moving from simplicity to complexity. As complexity deepens, a society will be prone to collapse under the weight of overly complex bureaucracy and systems.

This process, according to Tainter is driven by the creation of institutions to solve problems the civilisation faces (such as access to food, energy, the rule of law and so on). So it is the development of problem-solving institutions that eventually leads to collapse. In this framework collapse is marked by a sudden shift from extreme complexity to drastic simplification of a society.

2. WHAT HAPPENS WHEN CIVILISATIONS CHANGE?

In the run up to collapse then, we see increasing complexity within the institutions of the prevailing order combined with a more hedonistic zeitgeist at large. There is a focus on celebrity, materialism, sportspeople, chefs and musicians. As inequality widens, collapse looms.

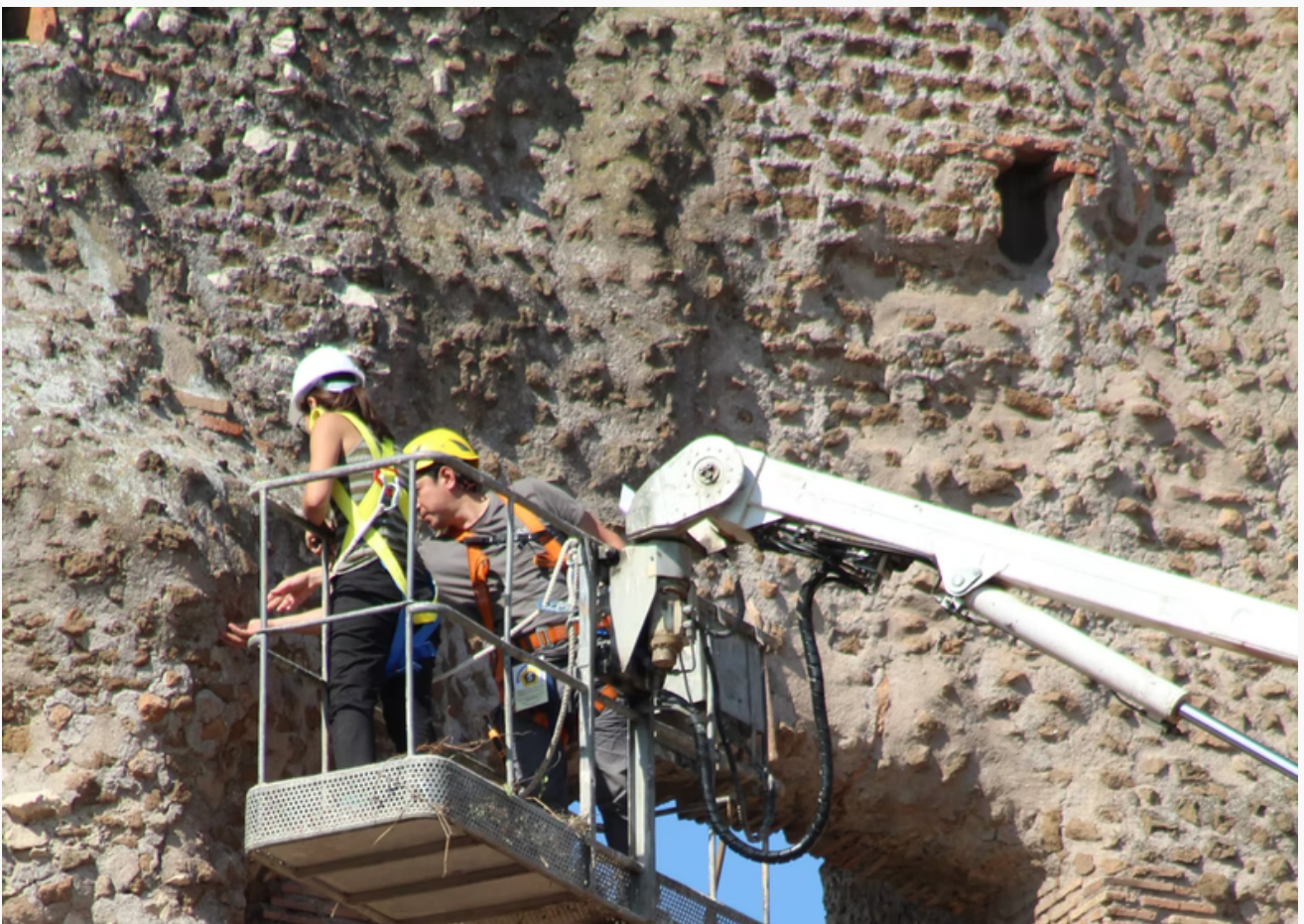
On the one hand demagogues and fundamentalists appear, calling for a return to order, authority and tradition. And at the same time, others, seeing the impending collapse, look for a transcendent path to a new order. Environmental columnist George Mombiot describes this dynamic as The Restoration Story:



“Disorder afflicts the land, caused by powerful and nefarious forces working against the interests of humanity. But the hero will revolt against this disorder, fight those powerful forces, against the odds, overthrow them and restore harmony to the land. You’ve heard this story before. It’s the Bible story. It’s the “Harry Potter” story. It’s the “Lord of the Rings” story. It’s the “Narnia” story. But it’s also the story that has accompanied almost every political and religious transformation going back millennia.

In fact, we could go as far as to say that without a powerful new restoration story, a political and religious transformation might not be able to happen. It’s that important.”

George Monbiot, The New Political Story That Could Change Everything, TedTalks.



The patterns of what happens after collapse are less easy to establish - because historic records are inevitably less common. That said we might expect some or all of the following:

- Civil strife, disease, conflict and even war
- A collapse of major cities, especially capital cities
- Falling tax incomes
- The collapse of existing state systems, the welfare state and other services funded by taxes
- The dispersal of populations to new smaller communities
- A return to the land and to agriculture
- A levelling of incomes and a decline in the fortunes of the super-rich
- Increased demand for practical skills such as farming, building and other essential professions.

Cities are likely to empty as people return to the land or head for the hills. Systems fall apart and become exponentially more expensive to run. In the modern era this might include financial and trade systems, food, energy, even the internet.

One definition of collapse which is now gaining wider usage is as a “*process at the end of which basic needs (water, food, housing, clothing, energy, etc.) can no longer be provided to a majority of the population by services under legal supervision*” (Yves Cochet, Quoted in 'How Everything Can Collapse'). Existing systems of production, distribution and law disintegrate, leaving the majority of the population at the mercy of events.



It is not the end of the world, nor the Apocalypse. Nor is it a simple crisis from which we can emerge unscathed.
Pablo Servigne & Raphael Stevens, How Everything Can Collapse,
Polity Press, 2020.



The other trend seems to be that society equalises. The extremely wealthy lose their position of status and very practical skills become more sought-after. As systems break down the wealth and income of the rich cannot be supported. Simultaneously basic skills to support life (farming, cooking, housing, making consumables) become increasingly important – and the fees they attract increase.

Overall we might expect to see a protracted period of social disruption, a significant reduction in human populations and the decline of existing centres of population. This is then followed by a return to nature and a return to greater equality. A more simple, less complex, more localised and less hierarchically structured way of life emerges.

3.A FRAMEWORK FOR ASSESSING COLLAPSE PROXIMITY




The data in this section was compiled by [Callum Taylor](#), economist researcher. With deep gratitude.

History shows that civilisations can be brought to their knees by external factors such as war, invasion or natural disaster. They sometimes fall due to random events or mere bad luck. But more often than not, they commit social suicide, falling into excess or decay as a result of their own internal contradictions.

In a [recent article](#) for the BBC, Cambridge Professor Luke Kemp identifies four warning signs of impending collapse that arise again and again throughout history. These closely echo Jared Diamond’s themes: climate change, environmental destruction, economic inequality and complexity. Any or all of these are enough to trigger significant social disruption and eventually civilisation collapse.

Computer modelling suggests these factors play off each other. Social inequalities drive environmental destruction, which feeds climate change (either locally or globally). Meanwhile the ever-increasing complexity of institutions and governance make radical change unlikely and drain society’s ability to respond. ([See the work of Joseph Tainter on this video summary](#))

Adopting Professor Kemp’s model we have constructed a dashboard of indicators to assess how likely it is that our civilisation is heading for impending collapse:

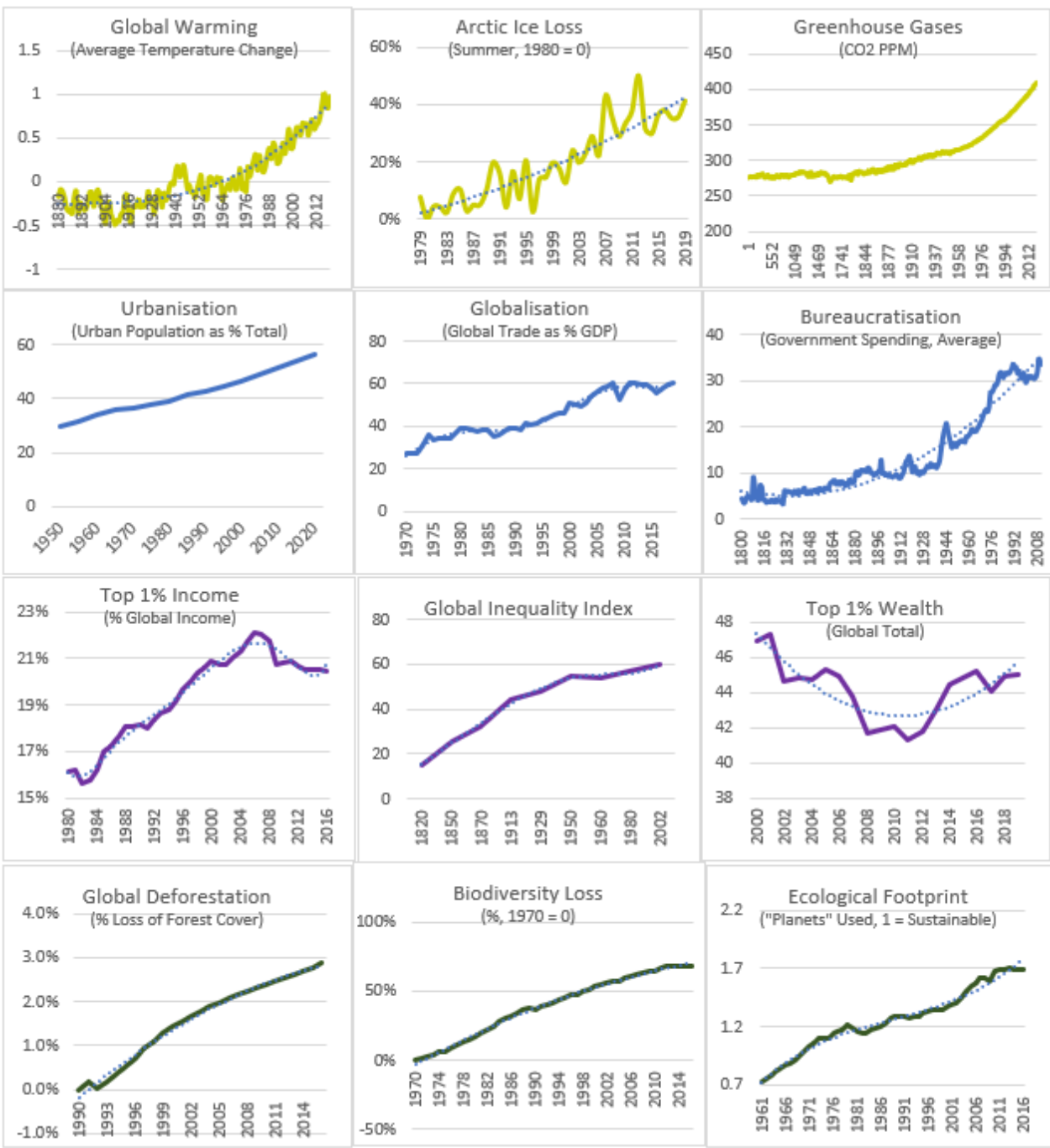
	<p>CLIMATE</p>	<ul style="list-style-type: none"> • Global Warming – Average Surface Temperature (°C) • Polar Ice Melt - Loss of Summer Arctic Ice • Greenhouse Gases (Atmospheric CO2 - Parts Per Million)
	<p>COMPLEXITY</p>	<ul style="list-style-type: none"> • Urbanisation (Urban Population as % Global Population) • Globalisation (Global Trade as % Global GDP) • Bureaucratisation (Government Spending as % GDP. Average)
	<p>INEQUALITY</p>	<ul style="list-style-type: none"> • Top 1% Income (as % Global Income) • Global Inequality (Global GINI. Estimated) • Top 1% Wealth (as Global Wealth)
	<p>ECOLOGY</p>	<ul style="list-style-type: none"> • Deforestation (Global Forest Cover as % All Land) • Biodiversity Loss (Loss of Vertebrate Populations) • Ecological Footprint (“Planets” being consumed)

Together, these indicators give us a sense of our trajectory towards collapse. Is it approaching? How fast? Have things reached a critical position? Have we passed a point of no return?

In reality, assessing the proximity of global civilisation collapse is more of an art than a science. The indicators certainly give a sense of direction of travel – especially when viewed over decades or centuries. Knowing when things have reached a critical juncture is harder to judge. It is more impressionistic and is perhaps best seen alongside more subtle and less quantifiable indicators like celebrity culture, authoritarian populism, the capture of political institutions and the occurrence of pandemics.

The latest data for our twelve indicators, which we have called the Planetary Collapse Index, is set out in the graphics below. You can view the raw data and its sources by clicking [this link](#) to an online spreadsheet.





PLANETARY COLLAPSE INDEX: OVERALL ASSESSMENT

Eleven of the twelve indicators show a consistent increase in the factors that together lead to societal collapse. There has been a blip in the indicators around inequality as the fortunes of the world's most wealthy were temporarily impacted by the global economic crash of 2008. Things have since started to rebound and seem to be exacerbating economic inequalities once again.

Despite all our efforts, all the fine words and global summits, we are still inexorably heading on the pathway to Collapse. Global Warming continues unabated, complexity is increasing, economic inequalities remain stubbornly persistent and the natural world is being steadily consumed in our race for material comfort and technological innovation.

Sadly, we have been able to see this situation unfolding for around five decades. Nearly fifty years ago the world's first super computers were used to build projections of how our economic growth would impact on the world. Published in the Limits to Growth book, these projections remain chillingly accurate. Reviewed after forty years by researchers at Melbourne University, the Business As Usual scenario predicts:







The BAU scenario results in collapse of the global economy and environment, where standards of living fall at rates faster than they have historically risen due to disruption of normal economic functions...

Global population therefore falls, at about half a billion per decade, starting at about 2030. Following the collapse... average living standards for the aggregate population resemble those of the early 20th century ([Paper here](#))

We are on track for a radical disintegration of modern life as we know it.

Taking all this data into account we suggest the following overview assessment, our impression of the state of these four warning signs:

 <p>CLIMATE</p>	<p>Critical - We are locked into at least 4°C of global warming. All data continue to rise and show no signs of slowing.</p>	 <p>COMPLEXITY</p>	<p>Nearing Critical - Once Urbanisation and Globalisation pass 2/3, the system will become very top heavy. Government spending over 50% globally would exacerbate the situation.</p>
 <p>INEQUALITY</p>	<p>Serious - Although inequalities continue to rise again, they are nowhere near historical levels. Top 1% income of over 1/3 and wealth levels of over 2/3 would likely stoke both social unrest and environmental decay.</p>	 <p>ECOLOGY</p>	<p>Critical - Vegetative cover is reducing steadily, soils are depleting, water is under pressure, species are under threat and our overall Global Ecological Footprint is way in excess of a sustainable level.</p>

Overall, we would categorise the condition of Planetary Health as “Serious” – one level below “Critical”. An increase in inequalities in particular would be likely to push the globe into a critical state – both because of a social backlash and because widening inequalities feed ecological destruction. Early indications seem to suggest that the COVID pandemic has served to once again exacerbate wealth and income inequalities (although this hasn’t yet fed through to the data sets used above).

STOP WHAT YOU'RE DOING

A message from Amazonian Chief Raoni Metuktire

For many years we, the indigenous leaders and peoples of the Amazon, have been warning you, our brothers who have brought so much damage to our forests. What you are doing will change the whole world and will destroy our home – and it will destroy your home too.

We call on you to stop what you are doing, to stop the destruction, to stop your attack on the spirits of the Earth. When you cut down the trees you assault the spirits of our ancestors. When you dig for minerals you impale the heart of the Earth. And when you pour poisons on the land and into the rivers – chemicals from agriculture and mercury from gold mines – you weaken the spirits, the plants, the animals and the land itself.

When you weaken the land like that, it starts to die. If the land dies, if our Earth dies, then none of us will be able to live, and we too will all die.



4. CAN COLLAPSE BE AVERTED?

The fact that history has repeated itself in the past, doesn't mean it's destined to do so in the future. What are the prospects of averting collapse this time round? Clearly this is difficult to judge given the number of variables at play and the complexity of creating meaningful action at a global level.

It seems that the momentum (or from another perspective, inertia) of the status quo is moving us steadily in the Business As Usual direction. In fact, it's possible that the pace is accelerating. Applied mathematicians using a model partly-funded by NASA have looked at a range of scenarios and found that economic stratification and civilisation collapse are closely linked. This is because excessive consumption by an elite drives either poverty in the population or environmental degradation (or both). They conclude:



Over-exploitation of natural resources and strong economic stratification can independently result in a complete collapse. Given economic stratification, collapse is very difficult to avoid and requires major policy changes, including major reductions in inequality and population growth rates. Even in the absence of economic stratification, collapse can still occur if [environmental] depletion per capita is too high. However, collapse can be avoided and population can reach equilibrium if the per capita rate of depletion of nature is reduced to a sustainable level, and if resources are distributed in a reasonably equitable fashion ([Article here](#))

It seems that social and environmental justice are intertwined. If we want to address one, we have to tackle both.



PERSPECTIVES AGAINST COLLAPSE

The notion that we are facing the collapse of civilisation as we know it is contentious to say the least. There are a number of counter perspectives which argue for example:

- The data used to suggest collapse are selective and/or suggest disruption but nothing so drastic as collapse
- We will be able to use technology to avoid catastrophic climate change (especially Carbon Capture and Storage and/or renewable energies)
- The Green New Deal will change the course of civilisation allowing us to “decouple” economic growth from climate change
- Continuing global negotiations over Green House Gas emissions will bring things under control.

Most of these arguments centre on Climate Change. As we’ve seen this is only one of four societal trends that are driving collapse. Even if we were able to control carbon emissions will this do anything to counteract the other three drivers?

There is also significant concern about placing all our hope on technological solutions. Many of these have rebound effects (see next page) which mean they have a positive impact in one part of the global ecosystem with negative impacts elsewhere.



7 REASONS GREEN GROWTH IS NOT HAPPENING

Based on Decoupling Debunked, European Environmental Bureau 2019.

For some, the prospect of using green technologies will allow us to invent our way out of trouble. Renewable energy, smart cities and carbon capture may help address many of the challenges. On the other hand, the “Rebound Effect” means they sometimes make things worse. According to the European Environmental Bureau there are seven reasons why:

- **Worsening impact of energy extraction** - as easily accessible fossil fuels run out, the environmental cost of extracting new reserves increases
- **Rebound Effects** - energy and financial savings from “low hanging fruit” often lead to redeploying the savings elsewhere. Psychologically we reassure ourselves we are doing our bit and increase our consumption elsewhere.
- **Problem Shifting** - A cleaner environment in one place often comes at the expense of another. For example, zero emissions cars are based on Rare Earth Metals, which have a significant impact in the place they are mined.
- **The Service Economy** - this can look clean but is still based on the material economy. It is estimated that the internet will soon account for 20% of all electricity use and will produce more GHG emissions than the whole of world’s transport or the entire USA by 2040.
- **Recycling and Reuse are currently marginal** - rates vary dramatically between countries and anyway use high levels of energy input. Over 8.3b tonnes of plastic have been produced and only 9% is currently being recycled.
- **Inappropriate Technology** - the vast bulk of science and technology are focussed on increasing profits rather than regenerating the environment.
- **Cost Shifting** - much decoupling experienced so far has actually shifted impacts to the Global South. Footprint calculations based on consumption give a very different picture to those based on production.



Some statistical models even suggest that an over-emphasis on climate change could prove counter-productive. For example, a significant shift to renewable energy would do nothing to slow wider ecological destruction or social inequalities. In fact, the economic machine would continue to over-consume a range of natural resources making collapse just as likely. The computer models run at the University of Melbourne found that in this kind of scenario.



collapse is not avoided but simply delayed by one to two decades and when it occurs the speed of decline is even greater
Is Global Collapse Imminent, Graham Turner, Melbourne Sustainable Society
Institute 2014.

Accepting the possibility, even the probability of collapse completely changes our approach to the situation. It shifts the central focus from mitigation (trying to reduce emissions) to adaptation (working out how to survive global catastrophe). The mitigation approach has so far failed to yield any significant impact on our overall situation. We have emitted more atmospheric carbon since we've known for certain about climate change, than we did in the two centuries of industrialisation before that.

At a policy level our priorities would change radically. As author Jonathan Franzen has noted:



Every billion dollars spent on high-speed trains, is a billion not banked for disaster preparedness, reparations to inundated countries, or future humanitarian relief. Every renewable-energy mega-project that destroys a living ecosystem, erodes the resilience of a natural world already fighting for its life ([Link here](#))



The basic behavior mode of the world system is exponential growth of population and capital, followed by collapse...This behavior mode occurs if we assume no change in the present system or if we assume any number of technological changes in the system
The Club of Rome - Limits to Growth 1972

The essential lesson of the models and scenarios we have seen is that there are four inter-related factors driving the path towards collapse - climate change, ecological destruction, social complexity and economic inequalities. Tackling any one of these in isolation will not address the problem and may even make it worse.

Tinkering at the edges is a form of bargaining -hoping against hope that incremental changes will make a difference. What is needed is a fundamental realignment of human civilisation which addresses all four factors fundamentally and permanently.