A Finer Future: Creating an Economy in Service to Life

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Chapter One: Imagine

Vision is the most vital step in the policy process. If we don't know where we want to go, it makes little difference that we make great progress…The best goal most of us who work toward sustainability offer is the avoidance of catastrophe. We promise survival and not much more. That is a failure of vision.
Dana Meadows[1]

Imagine....

The day dawns fine and clear. You stretch your 87-year-old bones in your bed, luxuriating in the tropical sun pouring in through the super-insulated windows in your Passivhaus co-housing unit in Indonesia.[2] Initially designed for northern climates, the concept of super-efficient buildings has, with some modifications,[3] transplanted well to the hotter weather of the Global South. These structures keep residents comfortable year around[4] with only solar energy gathered by rooftop units to power them. Small, but suited to your needs, your unit is part of a larger community committed to working together. This has allowed you to stay in your own home as you age, eating communally with your neighbors when you wish, but able to fix your own meals in the trim kitchen when you want privacy.

You were alive in 2015, when a group of applied mathematicians released the HANDY study.[5] It warned that, "Cases of severe civilisational disruption due to "precipitous collapse—often lasting centuries—have been quite common." The title: "Human And Nature DYnamical Study (HANDY) was clearly chosen for the acronym, but the subtitle: Is Industrial Civilization Headed for Irreversible Collapse," crisply set forth the thesis. Using a NASA-funded climate model, it explored the history of collapses. It did not set out to make short-term predictions, but the warning is stark: Under conditions "closely reflecting the reality of the world today... we find that collapse is difficult to avoid."

The study described prior collapses variably as: population decline, economic deterioration, intellectual regression, and the disappearance of literacy (Roman collapse), serious collapse of political authority and socioeconomic progress (repeated Chinese collapses), disappearance of up to 90 percent of the population (Mayan). Some collapses the study profiled were so complete that the forest swallowed any trace until archaeologists rediscovered what had clearly been a complex society (many Asian collapses).

The authors concluded: despite the common impression that societal collapse is rare, or even largely fictional, collapse is real: "the picture that emerges is of a process recurrent in history, and global in its distribution."

Historic collapses, the study argued, were neither inevitable, nor natural; they were human caused. They inflicted massive misery, often for centuries following. The study identified two underlying causes of collapse throughout human history:

1. "...**the stretching of resources** due to the strain placed on the ecological carrying capacity"[emphasis added]; and
2. "...**the economic stratification of society** into Elites [rich] and Masses (or "Commoners") [poor] [emphasis added]"

These causes, the study concluded, have played *"a central role in the process of the collapse."* This finding was reached based on all of the cases over *"the last five thousand years"* the authors examined.

The study elicited reams of criticism, most posted on ideological websites.[6] Critics objected that the study's use of mathematical models made collapse seem unavoidable. To be fair, the HANDY authors stated, in terms, that collapse is not inevitable.

The analysis led you to change your life. And today, in 2050, it feels very distant. Children play outside in the central spaces, safe from cars, which, as in the early car-free city of Vauban, Germany,[7] are banned from this and many neighborhoods. A few residents still own electric cars, although they pay handsomely for the privilege, and wonder why they do, as their vehicles reside in garage where the carshare program used to live. Now almost no one drives herself: driverless cars deliver last mile services[8] and regional transit works spectacularly well.

Today the air is clean. When you moved here, thirty-four years ago, 100,00 people died each year of acute air pollution across Indonesia.[9] The killing smoke spread across Southeast Asia from forests burned to clear land for palm oil plantations. Since Unilever[10] and other major users of the oil shifted in 2020 entirely to sustainable soy[11] and algae oil, the palm oil market collapsed, except for a vibrant small-holder palm industry.[12] Their trees are integrated into sustainable forestry initiatives that support rural communities. Tied closely to the eco-tourism industry,[13] this has enabled Indonesia to ensure that the once endangered orangutans and tigers have plenty of forest home in which to flourish, adding to visitor appeal. Indonesia once exported almost half of the world palm oil.[14] Unilever[15] and governments like Norway funded the creation of an algae oil industry that now employs twice the number of people who once worked on plantations.

But it was not always so....

Collapse is a serious risk.

New York Times columnist Tom Friedman opened 2016 with the query: what if, "the recent turmoil in international markets isn't just the product of tremors but rather of seismic shifts in the foundational pillars of the global system, with highly unpredictable consequences."[16]

He cited the bursting of the Chinese economic growth bubble,[17] the likelihood of durably low oil prices,[18] the end of Cold-war support for banana republic nations, the rise of artificial intelligence and the destruction of the jobs market by robots,[19] the dissolution of European Union[20] under the flood of refugees,[21] American political polarization and the resulting populism,[22] the inability of Central banks to prop up faltering economies.[23] Are these tectonic plates all moving at once, he wondered, overwhelming the ability of our civilization to cope?

Humanity was on a bus hurtling towards a cliff and we, the passengers, were looking out the windows remarking at the pretty the view. An array of studies found worrying signs that if we did not change course quickly, we risked total civilizational collapse. We left it until too late, these voices said, our speed is too great to brake in time and turn the bus without just rolling it off the cliff: collapse is inevitable. A web search for "Economic Collapse," delivered something like 35 million claims that we were doomed. From *The Moron's Guide to Global Collapse*[24] to books on *Surviving the Coming Collapse,*[25] depressing literature was widely available.[26]

Stop a moment and think about that: total civilizational collapse.

The loss of everything that you care about.

Impossible?

Consider the global forces that combined to make such systemic collapse likely. Collapse was already a reality for millions of people around the globe. In the developing world, in areas wracked by civil war, totalitarianism or increasingly common natural disasters, societal breakdown was commonplace. Poor communities hit by violent weather, developing countries without infrastructure to withstand sudden shocks or failed states experienced various levels of collapse. Millions of Chinese[27] and Indians[28] died every year from acute air pollution. In the wake of Hurricane Maria, 3.5 million Americans on Puerto Rico suffered collapse. Months later, many citizens of the wealthiest nation on earth remained without electricity, fuel, clean water or reliable supplies of food.[29] The world around, such storms became more frequent and more violent.

A combination of climate change, religious conflicts and civil wars from Africa to Syria and Iraq to Afghanistan were all worsened by climate change.[30] This unleashed a flood of 67 million refugees,[31] estimated by Mercy Corps in 2016 as growing at 24 new refugees every minute.[32] This was more people on the move than the

population of Italy, and more than at any time since World War Two.[33] Threatening the stability of the European Union,[34] this flow of humanity drove xenophobic populism around the world.[35]

Life was not much better for those left behind. One hundred and twenty-five million people needed an estimated $35 billion each year in humanitarian assistance because of conflict or disasters.[36] This exhausted the willingness of even the most generous donor nations to react. And this was before counting the estimated $1.4 trillion a year needed to implement the Sustainable Development Goals (SDGs).[37] Frustrated young men with nowhere to go, no jobs and no prospects were increasingly easy to radicalize, resulting in predictable attacks, for which there was no defense.[38]

Former UN official, Christiana Figueres put it,

> People have lost trust that their lives can get better and that institutions are on their side. This in turn is leading to apathy, depression, despair and in some cases to the development of radical views. This cycle must be stopped, before it consumes our collective future.[39]

This ought to have been unacceptable, but the crass reality seemed to be that only when various aspects of collapse became more common in the developed world would policy elites pay attention.

Collapse was coming to a community near you. Despite people begging on the streets in major cities,[40] infrastructure crumbling,[41] American cities unable to supply clean drinking water to their citizens,[42] companies, communities and countries said "we cannot afford to solve these crises."

So, they worsened.

Kids asked if they were going to have a future. They feared that climate change and other environmental harm would cut short their lives.[43] Young people suffered record rates of affective anxiety disorder (fear of the future); some said as high as 25 percent of the youth population. Suicide, after years of falling rates, was at its highest level in 50 years, triple US homicides.[44] Teen suicide was the second largest cause of death for youths aged 15 -24.[45] Suicide rates in the U.S. grew at two percent per year, higher in 2016 than any time since 1986.

They were not just scared of monsters under the bed. The failure of the nations of the world to reduce their nuclear arsenals led to nuclear brinksmanship and scares of actual launches. In 2018 a false alarm gave Hawaiian citizens 38 minutes of terror as the Governor scrambled to remember his Twitter password to tell panicked residents that someone had pushed the wrong button.[46]

Science told us that humanity was living beyond the planetary boundaries.[47] Esquire titled a 2015 article, "When the End of Human Civilization is Your Day Job." It wrote,

“Among many climate scientists, gloom has set in. Things are worse than we think, but they can't really talk about it.”

It profiled the emotional trauma, nightmares and depression felt by climatologists who tracked the indicators that showed that climate change was happening far faster, even, than their most pessimistic models. They had the scientific knowledge of just how bad things were going to get but could only watch in frustration as ever more frightening science failed to rouse a somnolent population to do anything about it.[48]

It all seemed just too much.

But take a deep breath, close your eyes, and remember, we created a better world.

What it will be like when we win

A world away from your snug co-housing unit in Indonesia, New York City is settling into autumn. Arjana, a young African graduate student, steps off the electric trolley that now runs down the middle Broadway. An urban farm adjoins the rails, running the length of Manhattan. What were once concrete canyons echo with birdsong. Part of a program begun back in 2016 called Growing Roots,[49] the farm is one of many across Manhattan and dozens of other major cities. Like your neighborhood in Jakarta, Manhattan is car-free, with the space was once taken up by vehicles freed for housing and local food-production.

Arjana stops a few blocks north of Wall St. to chat with the previously-incarcerated young woman who is just ending her day weeding the kale patch, suggesting that they should try growing cassava.

They both laugh, as Arjana hurries off to her classes at the Bard MBA in Sustainable Management.[50] Sent to study social entrepreneuring and sustainable development, she is only the latest of thousands of students funded by WE-Africa[51] to study at innovative programs that teach young Africans how to regenerate their continent.

It's working. With stronger, locally based economies prospering across the Africa, the temptation for young men to hire themselves out to terrorists has plummeted. Renewable energy now powers Africa, and because it creates ten times the number of jobs per dollar invested than central fossil fueled power plants,[52] it has become one of many job creation engines for the continent. Refugees who once believed that their only option was to flee to Europe can now create a flourishing life at home.

In North Africa, Nur Energy[53] successfully deployed solar technologies that not only supply energy for Morocco, Tunisia and much of the Maghreb, but also cable low-carbon energy (instead of migrants) across the Mediterranean to power Greece, Italy, Spain and France. Nur also develops renewable energy projects in these Southern European countries, creating jobs, ending the crushing economic collapse[54] there, which had seen youth unemployment above 60 percent.
The whole world now runs entirely on renewable energy, as Stanford Professor, Tony Seba,[55] predicted back in 2014 that it would: [See Chapter Five: Transforming Energy for how we did it.] In the years following his predictions, hundreds of companies, from Google and Apple to Ikea and Unilever, led the conversion to 100 percent renewable power.[56] They realized that failing to act on climate change exposed them to increased risks, from physical disruption to financial loss.[57] Countries like Scotland,[58] Costa Rica,[59] Denmark,[60] Dubai,[61] Germany and finally even Saudi Arabia[62] followed suit. Cities joined the race.[63] It was better business to shift off the fossil fuels that were threatening the climate and implement the cheaper, job creating renewable technologies.

Coupled with regenerative agriculture pioneered by the Africa Centre for Holistic Management at Dimbangombe, near Victoria Falls,[64] we are rolling climate change backwards. The practice of holistic grazing actually takes carbon from the air and returns it to the soil, where it is needed as the building block of life. [See Chapter Nine, Growing a Finer Future, for the details of how this works.] Coupled with the success of renewable energy, over the last 30 years, the world is beginning to cool, and the climate become more stable. Soon concentrations of carbon dioxide in the atmosphere will have returned to preindustrial levels.

The approach of regenerative development not only enabled Africans to produce sufficient food for all its citizens, it is ending hunger around the world. The recognition that securing food security is the basis for implementing the Sustainable Development Goals[65] enabled the world to meet the targets set back in 2014 well before 2030.[66]

But you sigh deeply, thinking about just how close it was. We turned from collapse only at the last moment.

What could have been

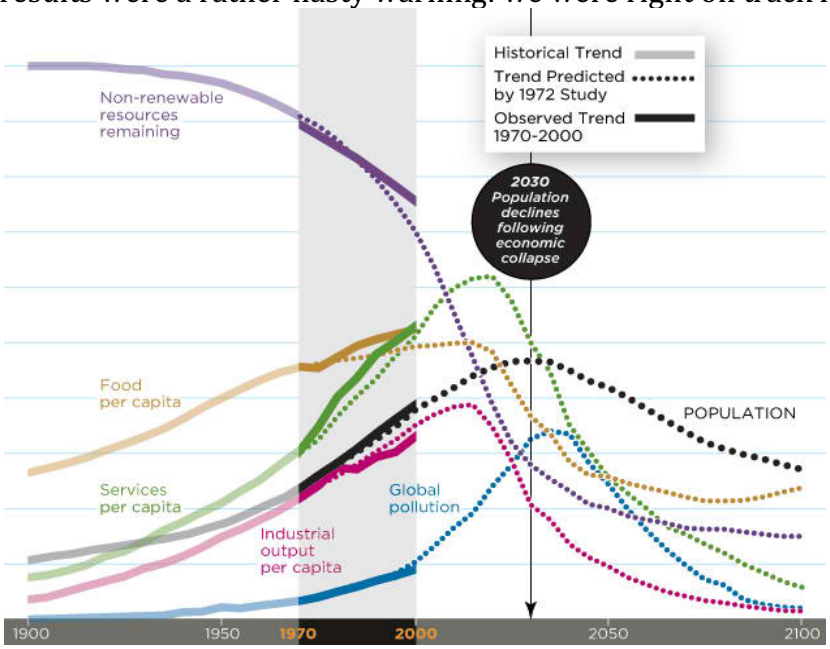
In 2018, it looked as if the collapse scenario of *Limits to Growth* was coming to pass. Principally authored by Dr. Donella Meadows, the 1972 report[67] set forth work she and her co-authors did using the massive MIT computer model, World 3.

Incorporating all that was then known about the world, the authors examined four primary runs of the model using different assumptions: business as usual, high growth, low growth, and a transition to what they called "sustainability." The latter was the first known use of that word in the English language. They found that in every one of nine runs (mostly variants of the first three) humanity collapses. Unless we implement "sustainability."

In the business-as-usual run of the model, use of resources grew, population grew, availability of non-renewable resources began to fall, until at some point, estimated to be in the mid-2030s, it all came apart. At that point human activity and, indeed, population was projected to decline, in some cases precipitously.

In 1992, in *Beyond the Limits*,[68] the 20-year up-date of *Limits to Growth*, Dr. Meadows warned that society was then in a state of overshoot, and that the result would likely not to be a single massive collapse, but the compounding of growing numbers of smaller crises, collectively overwhelming the ability of the world's managers to cope.

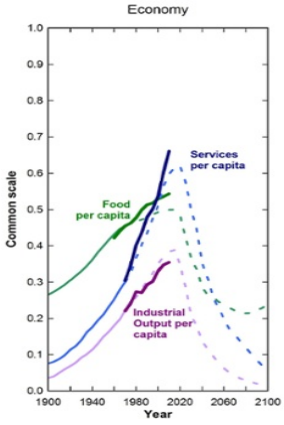
In 2012, the Smithsonian Magazine was so unkind as to resurrect the old *Limits* collapse graph, plotting on top of it the actual data from 1972 until 2000.[69] The results were a rather nasty warning: we were right on track for collapse.



The dotted lines in this graph are the original collapse scenario. The solid lines on the graph are the actual data from the time Limits was published until 2000.

The modeling was brought up to date in Graham Turner's 2014 report, "Is Collapse Imminent."[70] It reiterated that humanity was continuing on the Business As Usual (BAU) trend line, warning, "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),

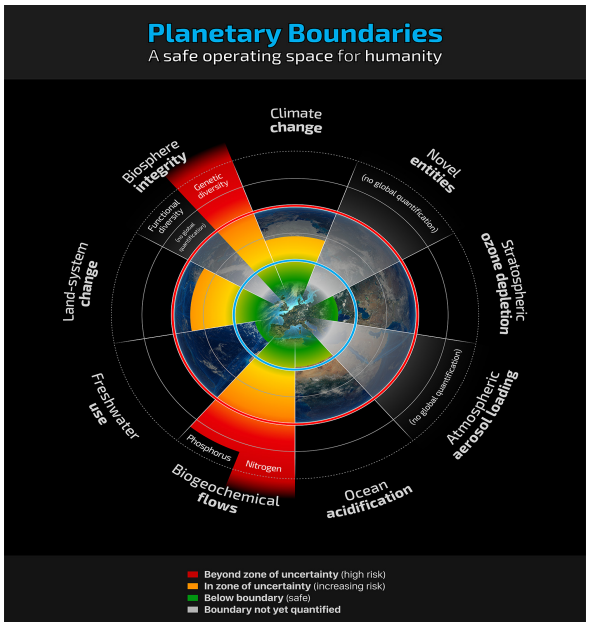
subsequently forcing population down. Although the modeled fall in population occurs after about 2030—with death rates rising from 2020 onward, reversing contemporary trends—the general onset of collapse first appears at about 2015 when per capita industrial output begins a sharp decline."



Exceeding the Planetary Boundaries

In 2009, Professor Johan Rockström at Stockholm Resilience Centre and 27 leading academics from around the world identified nine "planetary life support systems" essential for human survival.[71] They proposed that these be used as a framework of planetary boundaries, designed to define a "safe operating space for humanity." The group sought to quantify just how close human activity had come to the limits in these systems, and how much further we could go before our survival is threatened. Breaching the planetary boundaries, they warned, "could see human activities push the earth system outside the stable environmental state of the Holocene, with consequences that are detrimental or even catastrophic for large parts of the world." Understanding and staying below these limits, the scientists said, could enable humanity to return to the stability of Holocene-like conditions.

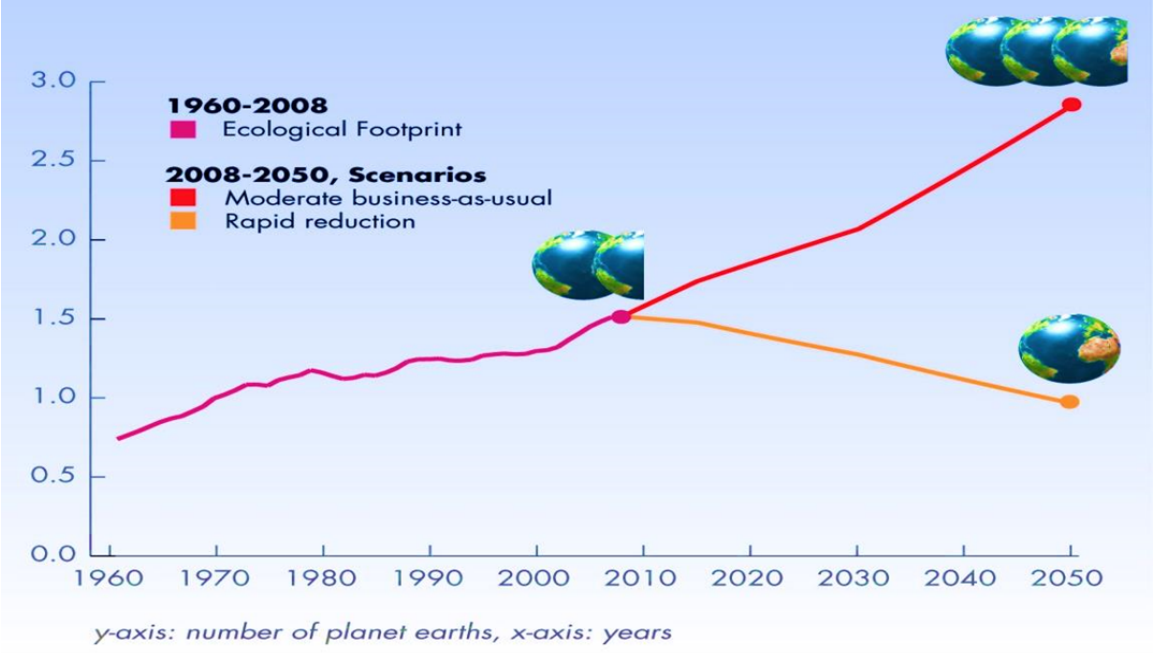
Rockström's team showed that humanity had already crossed four of the nine boundaries: climate change, biosphere integrity, land-system change, and biogeochemical cycles (phosphorus and nitrogen cycle).



The green areas represent human activities that are within safe margins; the yellow areas represent human activities that may or may not have exceeded safe margins; the red areas represent human activities that have exceeded safe margins; and the grey areas represent human activities for which safe margins have not yet been determined.

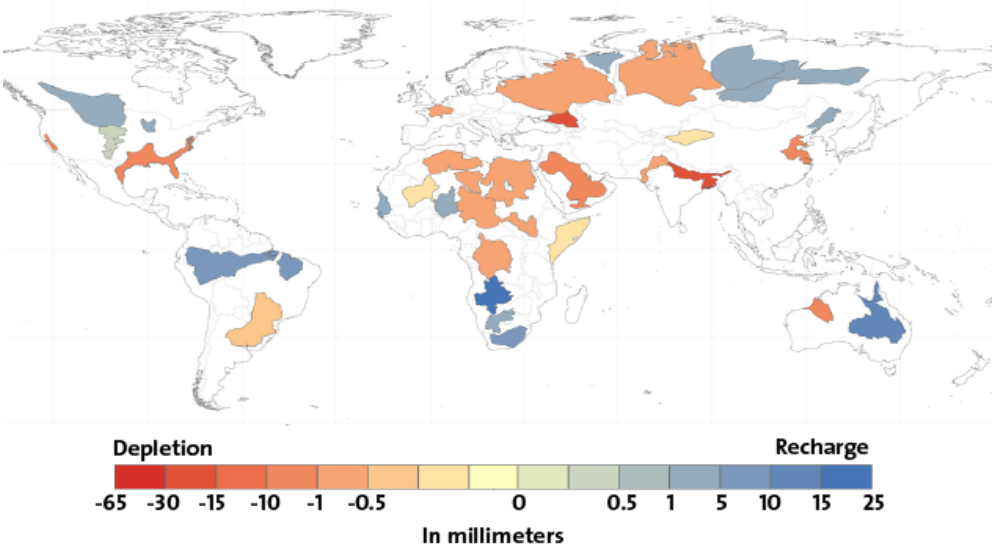
The scientists were very clear about the dangers of exceeding some of the nine boundaries. Climate change and biosphere integrity were described by the scientists as "core boundaries." Significantly altering either of these would "drive the earth system into a new state."[72] They were less certain about the risk of exceeding others. However, the Precautionary Principle argued that people must learn to live within all nine of these boundaries. The scientists stated, "If one boundary is transgressed, then other boundaries are also under serious risk. For instance, significant land use changes in the Amazon could influence water resources as far away as Tibet."[73]

This work echoed earlier analysis by Club of Rome members William Rees at the University of British Columbia and Mathis Wackernagel, who created what they called the Ecological Footprint. They point out that humans have inhabited this planet for approximately 200,000 years. During most of these, we lived within the planet's ability to regenerate itself...until about 40 years ago. Rees and Wackernagel calculated that by 2008 humanity used the equivalent of 1.5 planets to provide the resources humans used and to absorb our wastes.[74] The approach became popular among scientists, businesses, governments, agencies, individuals, and institutions, who used it to measure the 'footprint' of various populations—individuals, cities, businesses, nations, and all of humanity. Assessing the pressure on the planet enabled them to manage ecological assets more wisely and to take personal and collective action to support a world where humanity lives within the earth's bounds.



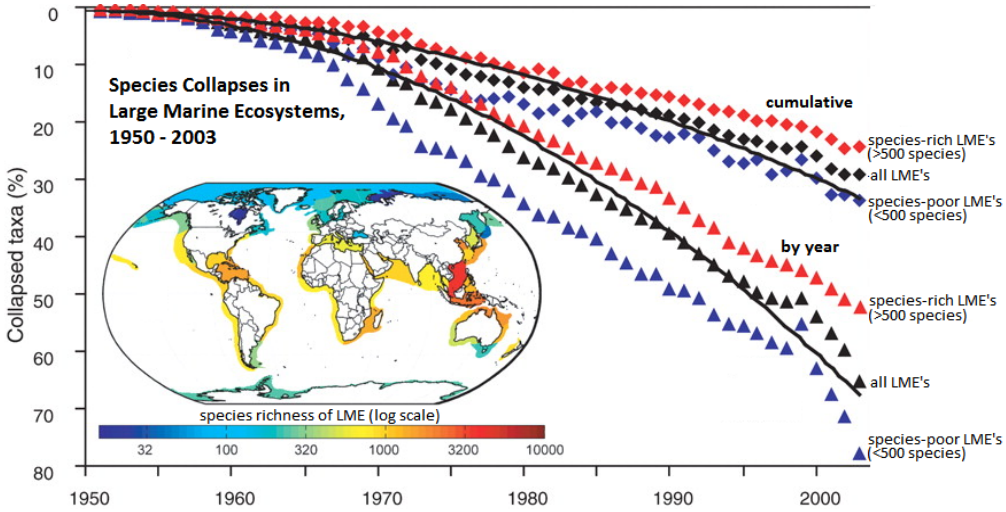
Courtesy: The Global Footprint Network

As Dana Meadows had pointed out in *Beyond the Limits,* turning resources into waste faster than waste could be turned back into resources was driving global ecological 'overshoot', depleting the resources on which human life and biodiversity depended. The impacts of overshoot were well documented, especially the build-up of carbon dioxide and greenhouse gases in the atmosphere; the acidification of oceans, together with coral reef destruction; collapsing fisheries; the risk to pollination systems; and the depletion of fresh water. Ground water tables in many parts of the world fell meters a year, much more rapidly than they could be regenerated.



Disappearance of the world's drinking water supplies

In 100 years of industrial agriculture we had consumed and dissipated 50 to 70 percent of the organic material and natural nutrients that required 10,000 years of post-glacial building to accumulate.[75] These losses exemplified the warnings in the HANDY study.



Loss of global fisheries – fish supply most of the animal protein for a billion people in developing countries[76]

Moderate UN scenarios suggested that if current population and consumption trends continued, by the 2050s, we would have needed the equivalent of three earths to support us.[77] Of course, we only have one.[78]
Now, today in 2050, we use far fewer resources, leaving enough to enable the natural world to flourish.[79] But it took humanity a rather severe learning curve to realize the value of intact nature.

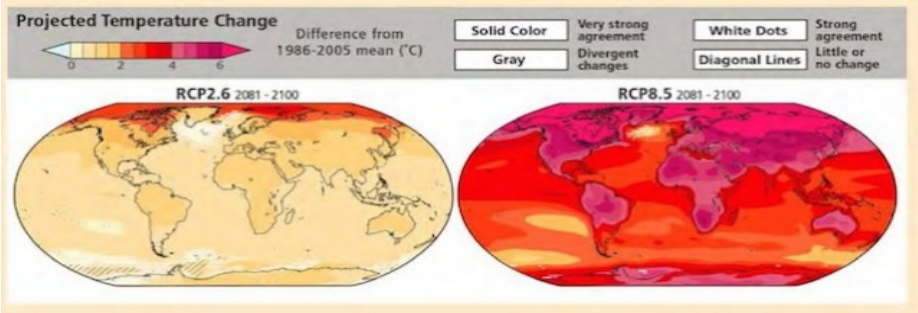
So Many Problems: Where Did We Start?

Virtually every scientist who looked at the deteriorating state of the earth's environment sounded the alarm. The Smithsonian Institution's massive Global Biodiversity Three (GBO3)[80] analysis by hundreds of scientists warned, "We continue to lose biodiversity at a rate never before seen in history—extinction rates may be up to 1,000 times higher than the historical background rate."

There were many factors driving this loss, but GBO3 warned that climate change was forcing ecosystems to "tipping points" where they rapidly become less useful to humanity. Three ecosystems were at particular risk: coral reefs—sorry scuba divers, business as usual, warming oceans would mean that there would be no living coral reefs on planet earth by perhaps as early as 2030. Second, the Amazon was drying out and burning. And third, the emissions of CO2 in the atmosphere were accumulating in the oceans acidifying them and risking global devastation.[81]

Recognizing the risk, the 2016 annual survey of CEOs at the World Economic Forum at Davos agreed that climate change was the greatest challenge facing humanity.[82] Bishop Desmond Tutu said, climate change has become "the human rights challenge

of our time," responsible for many of the challenges that the impoverished face, including loss of life, lack of fresh water, the spread of disease and rising food prices.[83]



This graph makes clear humanity's choice: early and aggressive action (left) to hold global warming to what is already inevitable, or business (right) as usual, which results in roasted earth—catastrophic levels of warming, 6°C over much of the world (via the world's leading scientists and governments)

IPCC WGII AR5 Summary for Policymakers

The U.S. National Academy of Science stated that every degree of warming would drive five to 15 percent reductions in crop yields; three to 10 percent increases in rainfall in some regions and increased flooding. Conversely, it would also cause five to 10 percent decreases in streamflow, leading to decreases in potable water; 200 to 400 percent increases in the acreage burned in wildfires, 15 percent loss in Arctic sea ice and 25 percent decreases in the annual minimum extent of ice in September.[84] Even if all CO2 emissions stopped, the report stated:

> "Climate would continue to warm for several more centuries. Over thousands of years this could unleash amplifying feedbacks leading to the disappearance of the polar ice sheets and other dramatic changes. In the meantime, the risk of catastrophic wild cards 'such as the potential large-scale release of methane from deep-sea sediments' or permafrost, is impossible to quantify."

Scientists showed that shifting monsoons might have caused the 2015 Himalayan earthquake that killed 9,000 people, and the Sendai earthquake that unleashed the Fukushima disaster. They predicted that the world would suffer more and more violent quakes. "Climate change may play a critical role in triggering certain faults in certain places where they could kill a hell of a lot of people," said University College London's Professor McGuire in 2015.[85]

That same year Pope Francis, in his Encyclical, *Laudato Si,*[86] called on all humanity to respond to the climate crisis. More, however, he called on all people to address the failure of the current economic system to care for humans or the earth. The Holy Father stated, "In the face of the emergencies of human-induced climate change, social exclusion and extreme poverty, we join together to declare that: Human induced climate change is a scientific reality, and its decisive mitigation is a moral and religious imperative for humanity."

Religious leaders of essentially all of the world's great faiths joined the UN in acknowledging that climate change hurts the poorest first and worst[87] as Typhoon Haiyan left 10,000 dead in the Philippines, mostly from rural villages. Periodic flooding in India displaced millions of poor villagers.

Climate chaos was recognized as a likely trigger for collapse. In a 2015 speech in Alaska, then President Obama observed:

> "Climate change is no longer some far-off problem. It is happening here. It is happening now. Climate change is already disrupting our agriculture and ecosystems, our water and food supplies, our energy, our infrastructure, human health, human safety—now. Today. And climate change is a trend that affects all trends—economic trends, security trends. Everything will be impacted.... few things will disrupt our lives as profoundly as climate change. Few things can have as negative an impact on our economy as climate change."[88]

Climate change dramatically worsened food shortages. Lester Brown's *Full Planet, Empty Plates: The New Geopolitics of Food Scarcity* warned that "grain stocks have dropped to a dangerously low level, while the World Food Price Index has doubled in a decade....We are only one poor harvest away from chaos in the world grain markets."[89]

A food riot in Tunisia touched off the Arab Spring, and drought fueled conflict in Syria and across North Africa that triggered the flow of millions of refugees. Research published in the British medical journal, Lancet, warned that unchecked climate change would lead to half a million deaths a year by 2050 from food shortages.[90]

In November 2017, 15,000 scientists reissued a warning to humanity of

> "widespread misery and catastrophic biodiversity loss" unless business-as-usual is changed.[91] By failing to adequately limit population growth, reassess the role of an economy rooted in growth, reduce greenhouse gases, incentivize renewable energy, protect habitat, restore ecosystems, curb pollution, halt defaunation, and constrain invasive alien species, humanity is not taking the urgent steps needed to safeguard our imperiled biosphere."

Former UN climate chief Christiana Figueres and physicist Stefan Rahmstorf warned[92] that the world had approximately three years before the worst effects of climate change become inevitable. In an open letter they urged companies, communities, countries and citizens to cut carbon emissions now, arguing that failure means fires, floods, droughts, rising sea levels, extreme weather, agricultural losses and massive insurance costs.

Back then, climate change seemed an existential threat.

But close your eyes again. Relax back into the world of 2050.

We solved it.

We live better lives, abundant lives supplied by local food and renewable energy. Chapters Nine and Ten spell out how we did this. Given that whatever exists is possible, it's time to start believing we can win this one.

Inequality

It was harder to reduce inequality. The HANDY study was clear: throughout history collapse has been driven not only by civilizations overrunning their resource base and but also by rising inequality.[93]

The study laid out the ways past civilizations collapsed:

> It:".... appears to be on a sustainable path for quite a long time, but even using an optimal depletion rate and starting with a very small number of Elites, the Elites eventually consume too much, resulting in a famine among Commoners that eventually causes the collapse of society."
> Or, "with a larger depletion rate, the decline of the Commoners occurs faster, while the Elites are still thriving, but eventually the Commoners collapse completely, followed by the Elites."

Either way, geopolitical chaos ensues. In 2018, inequality was at crisis levels. In 2016, Oxfam estimated that eight people had as much wealth as the poorest 3.5 billion people on the planet.[94] This number replaced Oxfam's estimate just a year before of 62 people being richer than the bottom half.

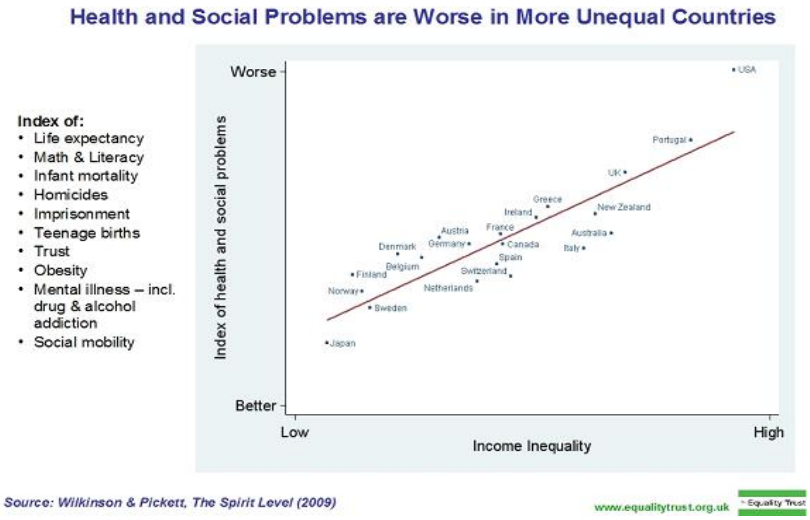
By 2017, the number had shrunk to eight men who had the same wealth as the bottom half of the world:[95] Bill Gates ($75 billion, source of wealth, Microsoft); Amancio Ortega ($67 billion, Zara); Warren Buffett ($60.8 billion, Berkshire Hathaway); Carlos Slim Helu ($50 billion, Telecom); Jeff Bezos ($45.2 billion, Amazon); Mark Zuckerberg ($44.6 billion, Facebook); Larry Ellison ($43.6 billion, Oracle); and Michael Bloomberg ($40 billion, Bloomberg LP).[96]

Such inequality was a relatively recent phenomenon, as Chapter Two, below describes, dating only from 1980. After the 2008 financial collapse, however, it began to attract attention. In 2011, thousands of young people occupied Zucotti Park, a block away from Wall Street in New York to fight the power of the major banks that had driven the financial system, and thus the rest of the world into collapse.[97] Calling themselves Occupy Wall St,[98] the movement rose from nowhere to 70 percent brand recognition in three months. It spread to a thousand cities around the world, durably framing the concept that one percent have as much wealth as the other 99 percent. This was not strictly true in 2011 but became so by 2016.[99]

The book, *The Spirit Level*,[100] by epidemiologists, Dr. Richard Wilkinson and Dr. Kate Pickett showed that people in more equal societies lived longer and had better

mental health and more chances for a good education, regardless of background. Community life was stronger where the income gap was narrower. Children did better at school and were less likely to become teenage parents. When inequality was reduced, people trusted each other more, there was less violence and rates of imprisonment were lower.

High levels of inequality were recognized to be not only immoral, but to threaten social stability. Inequality worsened all social problems we wished to redress. Health and social problems were worse in more unequal countries.[101] Inequality eroded trust, increased anxiety and illness, and encouraged excessive consumption. Pickett and Wilkinson showed that outcomes were significantly worse in more unequal rich countries for each of 11 different health and social problems: physical health, mental health, drug abuse, education, imprisonment, obesity, social mobility, trust and community life, violence, teenage pregnancies, and child well-being. Their 2014 paper, "A Convenient Truth," laid out a business case for reducing inequality: Companies that pay a living wage enjoy such increased productivity that it more than pays for giving their workers a life of dignity.[102]



In 2017, governments seemed incapable of acting. Tens of millions of people lacked a job or an income, while a small number of people had more money than they know what to do with. The $25 billion in bonuses paid to Wall St Bankers in 2015 would have been enough, if distributed to every minimum wage worker in the U.S, to double their pay to a living wage.[103]

Companies began to respond. 31-year-old Dan Price, CEO of Gravity, a payment processing company in Seattle, cut his own salary by $1.3 million, to $70,000 a year, so that everyone in the company could get that same salary. Outraged critics predicted collapse, but the company prospered so well that it had to add staff.[104]

As societies around the globe recognized that inequality was as critical a threat to their existence as climate change, they began to implement the sorts of policies that the New Economics Foundation in the UK had been setting forth for years, that are

described in Chapters Eleven and Twelve below. With the implementation, first, of minimum wages,[105] inequality began to lessen. In 2017, Finland initiated an experiment in Universal Basic Income.[106] In the ensuing years, most European nations implemented a variant of this program, as it turned out to cost far less than administering other forms of social support. Now almost all nations provide their citizens with basic support as a human right, and inequality is no longer a driver of collapse. [107]Section Four describes the policy measures that led to this outcome.

All Roads Did Not Lead to Collapse

HANDY warned: under conditions "closely reflecting the reality of the world today... We find that collapse is difficult to avoid."

But it observed:
"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."[108]
In 2018, much of the world seemed poised for systemic collapse. 2016 had been the hottest ever, the third such year in a row.[109] The 35 megacities were growing uncontrollably.[110] More than a billion people lived in shantytowns, projected to be two billion by 2030. This included 90 percent of the populations of Uganda, Malawi and Ethiopia. In 1950, Lagos was a village of 300,000. By 2016 it struggled to serve 21 million.[111] The world's cities required enormous resources to keep them running. They also emitted almost 70 percent of the world's greenhouse gasses.[112]

National governments, unable to deal with rising demand for resources (energy, metals, fish stocks, etc.), competition for capital, unrepayable debt, and falling oil prices, created a situation in which their economies began to fail one by one. They followed the path of Egypt, Syria, Iraq and Greece into political and economic chaos. Damages from storms, flooding, and heat waves cost their economies billions of dollars. Accelerating climate change and ecological degradation were recognized to be creating uneconomic growth—damages caused by growth exceeded the benefits and ecological turmoil began to take national economies down. Unable to cope, they forced local governments to take matters into their own hands.

But cities turned out to be key to the answer. Recognizing that roughly 80 percent of the world's economic activity came from cities, mayors around the world joined together to supplant the increasingly incapable national governments.[113] By 2025 Asia reached 29 megacities, but because of a combination of renewable energy and local food production, they succeeded in becoming regionally self-reliant.

Mayors took seriously the numbers set forth in such reports as Risky Business,[114] put forth by American business leaders Tom Steyer, Hank Paulsen and Michael Bloomberg. This showed that solving the climate crisis would unleash billions of dollars in investment and create millions of jobs.

Globally, the Stern report showed that significant investment to solve the crisis would be only one to five percent global GDP annually, compared to global costs of up to 20 percent if humanity did nothing.

Business leaders from across the political spectrum joined mayors to use actionable data at geographically granular levels.[115] They invested in climate protection,[116] renewable energy,[117] and local food production in their companies,[118] and in their communities.[119]

Belatedly countries began to realize that what the mayors of the world were doing made better sense than the austerity the nations had pursued. Costa Rica became the first nation to be entirely powered by renewable energy, followed by Greece.[120] Yes, things looked grim in 2018, but trend is not destiny.

Even in that old book, *Limits To Growth*, that sounded the alarm that we had to change course, Dr. Meadows and her colleagues set forth one scenario in which humanity did not collapse. Since then Dana, as she was known to her friends focused on this outcome, tirelessly devoting herself to organizing from her community to the global level. In 2000, the effort killed her.[121] But her writing about solutions, and the devoted following who carried on her work gave us the Finer Future we are crafting today.

Dana believed that we can avoid collapse. She observed,

> "People don't need enormous cars; they need respect. They don't need closetsful of clothes; they need to feel attractive and they need excitement, variety, and beauty. People need identity, community, challenge, acknowledgement, love, joy. To try to fill these needs with material things is to set up an unquenchable appetite for false solutions to real and never-satisfied problems. The resulting psychological emptiness is one of the major forces behind the desire for material growth. A society that can admit and articulate its nonmaterial needs and find nonmaterial ways to satisfy them would require much lower material and energy throughputs and would provide much higher levels of human fulfillment."[122]

Dana believed that a sustainable world is possible. The sustainability vision[123] she outlined looked very like what the world has now adopted.

Dana's belief in human potential, and the power of telling optimistic stories are the basis for a Finer Future.

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