

Facing Reality
Surviving for a Better World

Facing Reality
Surviving for a Better World

Leonard Joy
2022

FACING REALITY
Surviving For a Better World

Introduction.

Chapter I The Reality We Face

Chapter II What if We Don't Face Reality?

Chapter III It Doesn't Have to be Like This

Chapter IV Facing the Immediate Need to Act for Survival

Chapter V Addressing the Roots

Chapter VI A Vision Beyond Survival

Chapter VII Overcoming Constraints

Chapter VIII A Path to Action

Chapter IX Reason for hope

Appendix Greenhouse Gases and Their Impacts

Introduction

I wrote this booklet in response to my concerns that COP26 would be unable to address the key issue underlying climate change. My concerns were fully justified. While the COPs continue their process of negotiating commitments to a fossil-free future, the key issue remains unaddressed.

The issue is this: climate change is driven by our level of consumption¹, itself driven by our economies, themselves driven by the pursuit of maximizing Gross National Product, which is in turn driven by the goals of maximizing consumption and returns to shareholders' investments. Yes, climate change is driven by the use of fossil fuels, but if we stopped using them today, we would not stop climate change. We would continue to crash through the COP's 1.5°C target, beyond which it will become increasingly difficult to curb increasingly severe consequences. This is the message I want to bring to public awareness.

Our human race is aggressively pursuing a path to end modern human society as we know it on planet Earth within short order. We are committing collective suicide.

If we are to curb climate change and prevent Earth becoming unlivable, we will need to repurpose our economies for survival. We know how to do this without changing our economic systems, instead using them for survival as was done in World War II, with full support of their citizens. This is not simply a matter of creating a fossil-free energy economy. Not least, though not all, we need to change our food system, shift to regenerative agriculture, localize, and minimize processing. As the sixth IPCC report finds, prospects for limiting warming to 1.5°C by 2100 after require deployment of carbon dioxide removal measures (negative greenhouse gas emissions), energy efficiency, and low demand in addition to eliminating greenhouse gas emissions.

Action on all this is needed now even as it will take us years to complete these shifts. Going as we are, we face the threat of global warming irreversibility, massive human suffering, and the dystopic collapse of our civilization.

I want further to contribute to public understanding of the sorts of future scenarios we are heading for if we do not take this seriously, and to offer an introduction and agenda for public discernment about the future we might aspire to, and what all this means for how we act now.

I offer the sources of my understanding. I am clear that it calls for critical evaluation. It is what I hope for. We need to come together to fully understand the reality facing us and to respond effectively.

The time to face this issue and take bold corrective action is now!

¹ For brevity, I use “we” and “our” throughout. “Our consumption” refers to a global total, understanding that some people consume too much and others too little, see, e.g., <https://www.bloomberg.com/graphics/2022-wealth-carbon-emissions-inequality-powers-world-climate/#xj4y7vzkg>

CHAPTER I

The Reality We Face

For the past half century, we humans—yes, that includes you and me—have been collecting crises, each one lingering with us, piling up on one another, compounding one another, building into a formidable complex of crises threatening our very existence.

The past half century is a story of our collective global failure to come face to face with any one of these at its root. And we have not been very good at treating their symptoms.

We entered the 21st century still under the shadow of the atomic bomb; a continuing growth in income inequality, and an unconscionable exponential growth of wealth; an ongoing series of trade cycles, and the seemingly everlasting challenge of poverty; a mounting awareness of our growing, globally unsustainable, eco-footprint; and of climate change, with its impact on sea-level rise and climate change, and the threat of a painful path to human extinction.

We are experiencing the physical impacts of climate change: the frequency and severity of extreme weathers, droughts and floods, and the displacement of populations, massive migrations accompanied by authoritarian attempts at suppression of societal tensions, leading, at least in one country, Syria, to civil war with international repercussions. Now we are further challenged by a pandemic, one that might not have been human caused or prevented, but an event foreseen as an expected consequence of climate change. As I write, this pandemic is likely triggering the downturn, and aggravating, an economic depression that was threatening anyway, now characterized by supply chain disruptions and inflation. It is not likely to be the last pandemic. Nor will it be the last trade cycle unless we survive to do something about it.

As a reader, you might well have been spared, as yet, from the direct experience of tragedy and extreme hardship that has been the fate of millions from these unchecked crises. But, even if you have missed out on fire, tempest and tornado, you are surely aware, from television and the media, how the news has shown, day by day, how millions are suffering. Surely, too, that, even without the commercial's drum roll, you have felt the sense that, someday soon, this could be *Coming to you...* and it would not be good. Well, there is every reason why you should be concerned that it is coming to you all too soon.²

² The most recent “Climate Change in the American Mind” survey shows that 76% of all Americans think that climate change is happening now and over half said that they had personally experienced its harmful effects (<https://climatecommunication.yale.edu/publications/climate-change-in-the-american-mind-september-2021/>). According to new analysis from the Center for American Progress, there are still (March 30 2021) 139 elected officials in the 117th Congress, including 109 representatives and 30 senators, who refuse to acknowledge the scientific evidence of human-caused climate change. All 139 of these climate-denying elected officials have made recent statements casting doubt on the clear, [established scientific consensus](#) that the world is warming—and that

The reality presented in recent research³ is that moving above 1.5°C of climate change could mean that a continued temperature increase would be all but irreversible, and that, on our present path, irreversibility would face us sometime between 2027 and 2042!

Johan Rockström, the director of the Potsdam Institute for Climate Impact Research and one of the world's foremost climate scientists, warned that the 1.5°C target was not like other political negotiations, which can be haggled over or compromised on. "A rise of 1.5°C is not an arbitrary number, it is not a political number. It is a planetary boundary," he told the Guardian in an interview. "Every fraction of a degree more is dangerous."

Allowing temperatures to rise by more than 1.5°C would vastly increase the risk of irreversible changes to the climate, according to the IPCC. It would raise the risk of the Arctic completely losing its summer ice, with dire knock-on effects on the rest of the climate as the loss of reflective ice increases the amount of heat the water absorbs, in a feedback loop that could rapidly raise temperatures further. Not least of the irreversible decline impacts would be that on the Greenland ice sheet, the melting of which would raise sea levels. It, too, could be tipped into irreversibility by temperature growth beyond 1.5°C. Melting of the Antarctic ice would have a major impact on sea level, causing potentially rapid rise of several feet with much coastal flooding around the world and submersions of populated islands.

A rise of more than 1.5°C would also threaten changes to the Gulf Stream, which could become irreversible. It could result in catastrophe for biodiversity hotspots, damage agriculture across swathes of the globe, and could also inundate small islands and low-lying coastal areas.

Above all, is the threat of melting Arctic permafrost releasing methane in exponentially increasing amounts as it powerfully boosts climate change to crash through the 1.5°C target, proceeding to irreversibility.

All this within the first half of the 21st century.

BEING CLEAR ABOUT THE DRIVERS OF CLIMATE CHANGE

While we focus on eliminating fossil fuels as the cause of climate change, we do so while failing to acknowledge that *even without them* we will still crash the 1.5°C target without additional efforts (see Appendix). Reductions of greenhouse gas emissions are needed from all economic sectors. Such reductions are particularly challenging for some sectors and may require dramatic changes in present practices. New approaches are especially needed for agriculture, for example. Here are citations from an acknowledged science research team:

human activity is to blame. These same 139 climate-denying members have received more than \$61 million in lifetime contributions from the coal, oil, and gas industries.

³ Kammen et al. 2021. <https://arxiv.org/abs/2103.07801>, see also Lenton et al. 2019. <https://www.nature.com/articles/d41586-019-03595-0>

‘NewScientist (November 2020): ‘Greenhouse gas emissions from global food production will be enough to push Earth beyond an internationally agreed goal of limiting climate change to 1.5°C, **even if we halted all other emissions** ... if we do nothing to reform global food production ...’⁴

We show that **even if fossil fuel emissions were immediately halted**, current trends in global food systems would prevent the achievement of the 1.5°C target and, by the end of the century, threaten the achievement of the 2°C target. Meeting the 1.5°C target requires rapid and ambitious changes to food systems as well as to all nonfood sectors. A 2°C target could be achieved with less-ambitious changes to food systems, but only if fossil fuel and other nonfood emissions are eliminated soon.’⁵

There was apparently little support by the governments participating in COP26 to address the critical role of consumption, especially of food consumption, in driving climate change. Governments have ignored their role in constraining consumption, no doubt it could mean taking political risks while lacking informed, massive, public support.

Climate change is creating even more climate change. It is this, especially, that makes the 1.5°C target so critical. Once the permafrost starts to melt⁶, it will complete the feedback loop of methane and carbon dioxide emissions creating more methane emissions. This is how breach of the target gives rise to the fear that the challenge to stop it is one that humanity might be unable to meet.

The sixth IPCC report discusses the threat of climate change releasing massive emissions of methane currently trapped in the Arctic permafrost. In addition, there was recognition in COP26 of the importance of methane and agreement to cut global anthropogenic methane emissions by 30% before 2030. Those attending the COP, including representatives of the countries who are making the agreements as well as tens of thousands from NGOs and other organizations, are aware of the current and potential impacts of climate change. Otherwise, they would not have been there. Yet, the agreements reached are incommensurate with the serious risk of collapse of human civilization. What could be more important than giving priority attention to these risks?

Meanwhile, we are already being materially distressed by climate change. But our hardships are not simply material. They are also relational. We are as we relate—societally, interpersonally. Tracing through the years we see our relationships breaking down.

⁴ <https://www.newscientist.com/article/2259164-food-production-alone-is-set-to-push-earth-past-1-5c-of-warming/>

⁵ Michael A. Clark <https://orcid.org/0000-0001-7161-7751> Nina G. G. Domingo <https://orcid.org/0000-0002-9104-0192> Kimberly Colgan <https://orcid.org/0000-0002-8142-0861> Sumil K. Thakrar <https://orcid.org/0000-0003-2205-3333> David Tilman <https://orcid.org/0000-0001-6395-7676> John Lynch <https://orcid.org/0000-0001-7863-1767> Inês L. Azevedo <https://orcid.org/0000-0002-4755-8656> and Jason D. Hill <https://www.science.org/doi/10.1126/science.aba7357#pill-con1>

⁶ See, e.g., <https://weather.com/news/climate/video/melting-permafrost-causing-homes-buildings-to-collapse-in-russia>

We can trace the breakdown of trust: the rise of surveillance; the persistence of discrimination by color, sex, religion, ...; the rise of 'me-think' and the loss of 'we-think'; aggressive competition for scarce resources; loss of commons to private exploitation; a rise in the politics of fear, hate, nationalism; loss of mutual care; failure to come together to care for displaced migrants; the erosion of democracy; violent extremism; and splitting—internationally and intra-nationally. Add to that, key nations, seeing potential threats from one another, building their military capacity to respond to one another, reducing trust and justifying further military expansions and creating increasing likelihood of confrontation. Concern for defense is increasing the potential for war.

The good news is that there are counter examples where the response to crisis is in coming to community to address it. Humans are indeed biologically social animals with strong capacities for empathy, generosity and compassion, collaboration, integrity, interdependence, and so many other values that can manifest in mature, healthy, evolving human communities. It is that potential that offers the possibility of a shift from our current potentially dystopic path to a healthy fulfilling human future. But a shift in our path remains more potential than actual. And the further we regress, the more challenging will be the recovery. Feedback is witnessed in social systems in both progress and regression—progress supports progress, regress provokes further regress.

Together with changing our human-to-human relationships, we now need to change our relationships to Earth. Most importantly, we need not only to take no more than Earth can sustainably provide, we must protect Earth from excessive heating and disturbance of the balance of air, land, and sea forces that has nurtured the emergence and health of life.

CHAPTER II

What If We Don't Face Reality?

The living system that is Humanity on Earth is a highly complex natural system that has expressed itself in an evolutionary pattern. In the past, there were traumatic shocks, especially from extreme volcanic activity and from asteroids in collision with Earth, that shook and changed the path of evolution. But Earth survived and humanity evolved out of it.

But humanity itself has become a traumatic shock to Earth, a shock that has disturbed the balance of forces sustaining the path of Earth's evolution, triggering interdependent impacts into chaotic change with unpredictable outcomes. Human activities have exceeded four of nine planetary boundaries.⁷ Most particularly, humanity has created and strengthened the cloak around the earth so that the heat from the Sun is increasingly retained, heating Earth to levels that do not sustain the global ecology as it had been distributed around the earth.

Not least, climate change is warming the oceans and raising sea-level. But it has also disturbed air flow and cloud patterns around the earth, bringing increasingly extreme weathers with hurricanes and typhoons, drought, fire and flood, that in turn cause human displacement and migration with major social impact. No life is exempt from these impacts and there is already a high rate of species extinctions.⁸

The impact on society, on human civilization, on politics and the operation of common services that make society work, is increasingly noticeable. It is not certain that the corona virus pandemic was a consequence of climate change, but there is every reason to suppose that pandemics will be a feature of climate change.⁹ And it has been very revealing about how we might, in different countries, be expected to respond to such stress.

Politically, claims to protect from immigrants, greatly appeals to many, as does the fear of losing control, hence the appeal to regaining sovereignty—as in Brexit. We are not doing very well in getting together to respond to the flood of displaced migrants.

Governments are unlikely to be seen as in control of the turmoil facing us all. Yet disappointment with government will exacerbate the division between libertarians and progressives and there will be a loss of trust which, feeding back upon itself, could become pervasive and a threat to the possibility of coming to community for common purpose and action. Should this happen and drive the regression from 'we-think' to 'me-think', we could be on the path to dystopia with the breakdown of society and the common services that make society work—garbage, sanitation, banking, energy, water, education, transport...¹⁰

⁷ Steffen, W. et al., Planetary boundaries: Guiding human development on a changing planet, Science, dx.doi.org/10.1126/science.1259855

⁸ <https://news.brown.edu/articles/2014/09/extinctions>

⁹ <https://www.hsph.harvard.edu/c-change/subtopics/coronavirus-and-climate-change/>; <https://www.wfyi.org/news/articles/how-climate-change-increases-our-risk-for-pandemics>

¹⁰ Credible scenarios of alternative dystopic paths—*Fortress World* and *Barbarization*—are to be found in Paul Raskin et al. *Great Transition: The Promise and Lure of the Times Ahead*

CHAPTER III

It Doesn't Have to Be Like This

This is not nature harming us. It is we who are harming both nature and ourselves.

We are the cause, and it is for us to change our ways, to stop doing what is killing us.

So, how are we driven to such harm?

The harm comes from what and how much we consume, and from our disregard of nature as we do so. We are becoming all too aware that our production and consumption of fossil fuels generates the greenhouse gasses that now mask the earth with so much of the heat from the sun being captured without radiating back into space. Hence, climate change, its disturbance of our atmosphere experienced as climate change, warming of the oceans, and rising ocean levels.

What we must recognize is that our level of total consumption *even without fossil fuels* is sufficient to drive climate change crashing through our 1.5°C target unless dramatic changes are made to agriculture, land use, and exploitation of natural systems. Yet governments pursue growth even as growth is killing the economy as it is killing us. Surely, this should be a very prominent and universal concern, with attempts to find and agree on action to address it, with truly serious consideration given to alternatives such as those raised by the degrowth movement.

What might make this difficult is awareness that the major force that is driving all this is the way that the economy is funded by shareholders, and driven to profit maximization, maximizing consumption and production. Refunding the economy is certainly a major challenge for governments. But if this is reality, how should we feel about a failure to address it, and about the willingness to allow the prospect of Earth nearly becoming another Venus?

But the reality we need to face **now** is that we are driving the economy for growth, that growth is driving climate change, and that climate change is driving us, with our economy, potentially to extinction. We are driving ourselves to extinction.

Awareness that it is the profit maximization and consumerist economy that is driving climate change does not, however, mean that we need to immediately change the economy. This would not be an effective strategy to address the urgency of our challenge. What it leaves us with is a strategy for using the profit-driven economy to change and constrain the pattern of production and consumption.

Experience shows this to be eminently possible. It was how the economy was used to respond to the existential threat of Nazism in World War II. It called for government regulation. But the aim of the economy was survival. The GNP was secondary. It no longer reflected consumer income and wealth levels. It reflected massive military expenditures.

Today's economy necessarily promotes consumerism. Businesses aim to raise demand for the goods and services produced, and thus to raise net revenue. They are dependent on attracting shareholders to fund their business. Their ability to do so depends on being able to offer the prospect of high and reliable dividends, which, in turn, depends on the net return from sales after costs of production are met—profit. Thus, profit maximization becomes the priority goal of business, and attracting customers with inducements to buy becomes the principle means to this end.

One consequence of this is that it reinforces customers' self-centered concern for status from material display. Success, achievement, of both individuals and society is measured in quantitative and monetary measures—in what, and how much, we buy. Ranking one another by income and wealth, we become a 'me-think' class-conscious society. We also become a dominantly left-brain, materialist society where costs and benefits, even lives, are measured in cash.

In the last chapter of his book *The Master and His Emissary*, which examines the workings of the left and right brains, Iaian McGilchrist considers what society would look like if it were living predominantly from the material left brain. He concludes that today's rich countries are already there.

At the national level, we measure the economy's progress by the cash value of the Gross National Product, which means that progress is measured by our level of consumption, which, in turn, means that we are purposefully acting in ways that boost climate change.

It doesn't have to be like this.

Addressing climate change requires repurposing our economies. Immediately, our purpose is, surely, survival. We know how to do that. We have done it before, and *by regulating rather than changing our capitalist economies, directing economic output toward responding to an existential threat*. Should we succeed in surviving by doing this, we might find opportunity, reason, and means to more fundamentally change the nature of the economy. Indeed, as we act for survival, we should do so in ways that start us on the road to where we want to go. Knowing where we want to go is something we should address even as we focus on survival.

But if present and future doesn't need to be this way, we will need to know the way we want it to be, and the means we use to survive must steer us in the direction to the future that we aspire to. There must be congruence between means and end if we are to achieve that end.

CHAPTER IV

Facing the Immediate Need to Act for Survival

Yes, if we are to survive we will need to take immediate and effective action. We need to have significant impact on our greenhouse gas emissions if we are to avoid moving from our present 1.1°C above preindustrial global average temperature past our 1.5°C target, beyond which the release of Arctic permafrost methane will further harm us with its irreversibility. As noted, at our present rate of warming, significant methane release may have already begun (<https://www.ipcc.ch/srocc/>).

The actions needed from governments require abandoning growth of the economy as the national goal and making survival our goal. In doing this, our governments would be using the economy to shift its pattern, level, and output to bring our consumption to a sustainable level that would avoid breaking the 1.5°C target. And they would aim to do this equitably.

Among the challenges faced would be stopping all fossil fuel production. This would call for the re-employment of coal miners and gas and oil industry workers, with full social support as needed, most particularly into the sustainable energy sector. It would be seen as mobilization to meet a critical national emergency and using the economy to do it.

But governments would need popular support for such measures using the media and novel events such as Town Hall meetings on the air. Clearly, too, this is not about past political differences. It is about a critical life and death emergency facing all parties, with everybody, civil and commercial, blue-collared and white collared, carrying responsibility—a matter that government would need to make convincingly clear.

While government's role is central, adaptation is required by us all, individually and in families. There are so many ways we might personally minimize our greenhouse gas impact by the way we live, dress, eat, play, move around and travel. There are many sources addressing this, not least, Wikipedia, I need not dwell on this here.

Even as we do all what we what we can, it is essential that it is done with the principles and values we aspire to as we survive and live them into the future. Here again, means must be congruent with ends.

CHAPTER V

Addressing the Root Cause

The immediate pressures driving climate change are the level of global consumption and greenhouse gas emissions from fossil-fuel energy. While we must reduce gas and oil consumption, this will not be enough. We must also cut our global production and consumption—our GNP—and boost CO₂ sequestration using reforestation and regenerative agriculture. These are measures that we can use immediately. But they will not fully address the forces that are driving the level, pattern and methods of production and distribution that are inherent in the nature of our economy.

Fully addressing the root cause calls ultimately for moving to an economy that is driven by forces other than those that cause the sickness of overconsumption and the abuse of nature, as many writers have observed. This is not something we can do, or even need to do, in the short run. What we can do in the short run is to design our immediate actions so that, to the extent possible, they apply values and practices that we aspire to in the longer run—inclusion, equity, and community, most particularly, together with abandoning the use of monetized cost-benefit analysis for decision-making.

The systemic cause of climate change now is an economy that drives, and is driven by, for-profit fueled consumerism.

The economy necessarily promotes consumerism. Businesses aim to raise demand for the goods and services produced, and thus to raise net revenue. One consequence of this is that it reinforces self-centered concern for status from material display. Success, achievement, of both individuals and society, is measured in quantitative and monetary measures. It produces a dominantly left-brain and ‘me-think’ society.

Even without climate change, the economy’s drive for growth is giving us an unsustainable environmental footprint. Measuring the performance of the economy by its increase in material goods and services is driving us deliberately to a rate of extraction from the earth’s soils, forests, oceans, and mines that is far greater than Earth can sustainably provide—now approaching twice that amount. This alone, if pursued, will result in economic and societal collapse. Failure to stay within the sustainable demands of nature has been the cause of historical collapse of several civilizations.

To all this should be added the social and environmental costs—externalities—that are incurred and not accounted for. This covers not only the amounts taken from forests, oceans, and mines, but also the harm done by methods used to do so.

We have forest destruction with displacement of indigenous people, loss of biodiversity, greenhouse gas emissions related to machinery production and use, and from forest burning and pollution.

And we have farming practices that reduce soil fertility as they also contribute to climate change.

The oceans now are in a shocking state of bio-loss from whales to phytoplankton through shameless ground trawling and uninhibited whale hunting. And overfishing brings critical reduction of fish populations and loss of livelihood and food source for those living on seashores. Opencast coal mining, and river polluting mineral mining harm both nature and people.

These are but some of the externalities affecting our environment and people. The operations of the economy generate social and environmental concerns that can be seen as detrimental to the health of humans and nature. Among these, pollution is a major cause of air-borne and water-borne sickness to humans and nature.

Maps drawn of the incidence of cancer, asthma, lead poisoning and other human diseases show direct connection to polluted air and water, from an economy that has higher priorities than public health. To which we should add obesity and other consequences from unhealthy processed foods, and the promotion of medications leading to drug addictions and discounted side-effects.

Climate change is but one of the symptoms of global sickness threatening environmental and societal decline and death attributable to our economy.

But changing our economy is not a strategy for making the urgently needed changes that confront us.

We do not need to change the economy to move to carbon-zero energy sources. We can, and should, stop subsidizing, and allowing, fossil fuel production and support its replacement by renewable energy sources.

And we can increase sequestration, especially by regenerative agriculture and boosting green cover.

Moreover, we can reduce and redirect consumption, and do so equitably with overall health improvement, as we learned in World War II.

Right now, we need to use the economy—directed, not at growth, but at survival, and, eventually, thriving and flourishing.

CHAPTER VI

A Vision Beyond Survival

Looking far ahead seems a distraction from urgent concerns. But the thought process that leads to action, which starts from awareness and concern to acceptance of responsibility, then needs to be driven by a vision, a goal, an aspiration. The aspiration needed here is, indeed, survival. But it is survival for our progeny in an attractive fulfilling world. This is the case for exploring a vision of an aspired-to future.

The table below is one starting framework for discerning just how we see where we are, where we want to go, and how we get there. The statements are offered not as universally true, but as a basis for questioning and discernment.

AS WE ARE NOW	OUR FUTURE VISION	HOW TO GET THERE
The economy driven by profit and consumerism.	The economy driven by advancing the common good and cultural maturation.	Replacing shareholding for profit maximization with funding by loans from non-profit banking.
The workforce taking jobs for survival.	The workforce vocationally driven.	Not-for-profit community business.
Education for earning a living.	Education for finding a vocation.	Change education.
Undesirable public service jobs taken out of necessity.	Undesirable public service jobs by periods of public service by all.	From military service to public service.
The economy generating exponential wealth inequality and income inequality.	The economy without gross income inequality or exponential wealth inequality.	Shareholding and bondholding abolished. Economic democracy.
The economy generating social and ecological externalities, and unsustainable growth.	The economy regulated to minimize social and ecological externalities, and stop unsustainable growth.	Government regulation, producer and consumer sensibility, growth-driven not-for-profit business no longer drives unsustainability.
The economy generating boom-and-bust trade cycle with unemployment and foreclosure.	Government use of public sector spending to minimize trade cycle, and measures to minimize unemployment and foreclosure.	Net business returns go to earned incomes and communities. Absence of trade cycle. But economy still needs management.
Government by what money can buy to serve vested interests.	Elections publicly funded. Lobbying constrained.	Government by inclusive discernment of popular, fully informed public with access to vote.
Government by majority rule but affected by powerful to use law and media to influence who votes and how.	Government expresses common good interests; elections publicly funded.	Public inclusion in government policy-decision-making by fully informed public with access to vote.

<p>Progress measured by growth of GNP.</p> <p>The law governed by the letter of the law.</p> <p>Government by political parties based on conflicting views of economy and society with limited compromise. Wealth having power over government and elections.</p> <p>The commons privatized.</p> <p>Social norms: what we are told is right and wrong.</p> <p>Discrimination is rife.</p> <p>Sovereignty and libertarian freedom of choice key aspirations.</p> <p>Police role: maximum criminal apprehension.</p> <p>Major addiction problems drugs, drink, tobacco.</p>	<p>Progress measured by degree of satisfaction of basic needs.</p> <p>The law guided by the spirit of the law.</p> <p>Effective democracy. Public funding of elections.</p> <p>The commons returned.</p> <p>Social norms guided by what we all know in our hearts to be right. (+ understanding values development)</p> <p>Differences valued as richness. Discrimination eliminated.</p> <p>Beloved community coming to full realization.</p> <p>Police performance judged by role in community in community self-care.</p> <p>Roots of many of these problems eliminated. Remaining addictions non-toxic.</p>	<p>Progress measured by degree of maturation of culture, basic needs met, personal and societal fulfilment.</p> <p>The law guided by the spirit of the law.</p> <p>Non-party govt. Inclusive government. decision-making processes.</p> <p>Land now treated as commons.</p> <p>Norms evolving. Application of H-T analysis and qualitative commentary. Public awareness of, response to progressive/regressive actions.</p> <p>Global community of communities—Earthland.</p> <p>Beloved community as key international and local aspiration.</p> <p>Police of , by, and for community & its self-care.</p> <p>Roots of these problems addressed.</p>
---	---	---

CHAPTER VII

Overcoming Constraints

The shared myth that has justified capitalism is that when we each seek the most for ourselves, it will secure the greater good for us all, even as when we do so we are parasites on others. This belief is supported by the understanding that, in nature, parasitism removes the weaker elements of the system that would otherwise weaken the system itself. This is the belief that resists the expansion of social security, and other programs for mutual care and the common good.

This myth challenges the idea that the common good should be the goal and criteria for government policies. It would argue that government action should not constrain individual liberty, and that actions that constrain individual liberties actually detract from the common good. It is currently expressed as opposition to mandates for wearing masks and vaccination to counter the exponential spread of the covid-19 pandemic.

This is the myth that supports the Washington Consensus that promotes privatization of commons such as water, power, coastline beaches, radio and television media, railways, and national parks management. Not the least of so many examples, it is expressed in the deforestation of the Amazon for the production of cattle and soybeans, with the displacement of native populations, and critical loss of greenhouse gas sequestration. It was promoted by private business interests securing support of both the World Bank and the UN Food and Agriculture Organization. It was justified as being for the common good on the grounds of increasing food supply.

This is the context in which governments at all COP meetings including our latest, COP26, have been unable to face the reality that it is economic growth itself that is driving climate change. They have not seen, or been able to contemplate, the possibility of finding the political will even to redirect the current growth-driven economy to the purpose of securing survival. And the leadership that it will take to mobilize public awareness, concern and support for this, nationally and internationally, has not emerged.

Setting targets for reducing carbon energy emissions, using technology advances as the core strategy is not enough. It is not even the priority in an overall strategy for curbing climate change fast enough to avoid the 1.5°C target. Reducing overall consumption is.

The constraint on facing this reality—and immediately doing what is needed—is primarily political. The challenge is in addressing this constraint.

Removing this constraint requires the rise of a movement, one that both demands and supports the repurposing of the economy. This in turn requires the emergence of leaders giving effective voice to this message.

But this will not happen without awareness of the critical role of overconsumption—that this is what is killing us. We might hope that, with awareness, there would be considerable concern for the prospect of civilization collapse along a dystopic path to humanity being added to the growing

list of species succumbing to climate change. We might hope that survival itself would be a vision worth aspiration with motivation enough and effort to realize.

It is not clear that we, collectively, politically, are on this critical path of epiphany to effective action.

There are still those whose past and current efforts at denial, so graphically documented by Naomi Klein, still have influence. There were 139 elected officials in the 117th Congress who in March 2021 still denied the scientific consensus of human-caused climate change. Clearly, we are not yet at even the first stage of shared awareness needed to propel us to fundamental action. It is no surprise that COP26 showed no such awareness.

This is the situation considered by Paul Raskin et al. in *Journey to Earthland* in one of the six scenarios explored, one that has a happy ending:

This cultural and political awakening—often referred to as the “Global Citizen’s Movement (GCM)—played a crucial role. With its genesis in civil society activism, the movement channeled the public’s growing impatience with leaders unwilling or unable to act forcefully. In the 2020’s, networks of NGOs, local activist, and people’s movements spread and strengthened, creatively using the Internet as a forum and coordinating space, and as a commons to foster a sense of global community. Riding a wave of global discontent and reawakened hope, a growing chorus clamored for action. The GCM sprang up in ubiquitous nodes tailored to local places and specific issues, yet attuned to planetary concerns and opportunities. The Global Spring had sprung.

In the context of this popular ferment, the reformist coalition strengthened, enlisting forward-looking governments, corporations and NGOs. The resistance from the old guard and special interest and political reactionaries grew fierce. This motley band branded the reformers as planetary socialists, while the extreme left disparaged them as corporate lackeys, but the centrist faction gained traction nevertheless. As the crisis intensified, its slogan—“Modernize or Barbarize”—came to seem less alarmist hyperbole and more a stark choice. The surging GCM signed on, aiding the rapid ascent of progressive leaders and political parties (*Journey to Earthland* page 40)

We have made but little progress on such a trajectory. Yet it portrays the sort of trajectory needed for us to get beyond our unawareness of our overconsumption reality, and see what really matters. What we do have is the elements that are the basis for moving forward. Our citizens movement needs to come together globally becoming focused on the core issue.

One important point here: action will need to be taken at national levels to be effective.

Policies dependent on individuals and households voluntarily changing their levels and patterns of consumption are likely to be unable to affect consumption at the national level to the required degree. Adding voluntary changes by industry, commerce and agriculture is unlikely to do it either. Certainly, not at the speed required to avoid the present rate of climate change from crashing through the 1.5°C target beyond which climate change will be boosted from the loss of polar ice and the release of increasingly heavy doses of methane from Arctic permafrost.

Constraining regulations and subsidies to support technological developments and regenerative agriculture, and the pattern consumption—of food particularly—will be need to be taken by governments. It is this that COP26 failed to face.

COP27 must not fail yet again. Nor should unawareness be any excuse for failing to face reality.

It is very much up to the forming of the Global Citizens Movement to press this case. And it is up to us, readers, to press for the formation of a Global Citizens Movement. The elements are all there. They need to come together for the specific goal of demanding and supporting governments to do what is necessary in each country.

Chapter VIII

A Path to Action

The path to action starts by bringing together activists with shared concern about climate change to become a coherent voice with shared awareness of the reality of consumption as critical driver to climate change; of the reality that governments need to take key roles in repurposing economies for survival—for constraint of climate change before it crashes through 1.5°C target, an event currently projected to happen within the next 5 to 15 years, beyond which climate change will have substantially melted polar ice and Arctic permafrost with the release of massive amounts of methane and sea level rising many feet of coastal and small island flooding.

Above all, an effective strategy for securing needed action calls for the mobilization of you dear reader with the very many activist agencies and communities, and of concerned businesses in industry and agriculture, into a single community of voice of demand from, and support of, governments to spring into action to guide economies to curb the level and content of consumption to reduce climate change.

It needs to be made clear that governments can do what is needed using regulation and subsidy. The economy needs to be *repurposed, not changed*, to do what is needed. That the economy is causal of climate change does not mean that changing the nature of the economy is an appropriate or effective strategy for countering the immediate threats to survival—of our civilization and the economy itself.

Awareness of, deep concern for, the reality we are facing needs to be fully and publicly shared. It is the prerequisite for securing government action. The message needs to be broadcast loud and clear from credible voices. And the message should make clear what needs to be done.

It should also be made clear that, while fossil fuels are proximate drivers of climate change, they are not the principal driver. That, even if we stopped using them, our overall consumption—our growth-driven economy—is the principal driver and that, unless curbed, the dystopic scenarios considered above are all too likely outcomes.

Governments will need to create the capacity to define the content of their action plans and their implementation, especially in ways that provide for inclusion and ownership of proposed action, and its monitoring and management in ways that are congruent with aspirations beyond survival—community-based; caring, inclusive, non-discriminative, egalitarian....

Our energy now needs to be focused to bringing together scientists, faith communities, environmentalists, and climate change activists—not least the youth—into a global community of communities bringing awareness and concern for the reality we face and what it calls us to, making informed demands on governments, offering support to governments to act as now urgently needed.

CHAPTER IX

Reason for Hope

Let us repeat what was noted earlier:

Humans are indeed biologically social animals with strong capacities for empathy, generosity and compassion, collaboration, integrity, interdependence, and so many other values that can manifest in mature, healthy, evolving human communities. It is that potential that offers the possibility of a shift from our current potentially dystopic path to a healthy fulfilling human future. But it has not yet been expressed in key ways that are needed to shift our path. And the further we regress, the more challenging will be the recovery. Feedback is witnessed in social systems in both progress and regression—progress supports progress, regress provokes further regress.

The hope is, indeed the only hope is, that enough people like you will together find a voice powerful enough to allow rich country governments to face the reality before us, to see that it is consumption that is killing us, to see that it will take government leadership, with your support, to bring us all to community to save ourselves and Earth.

Appendix: Greenhouse Gases and Their Impacts

Prepared by Charles L. Blanchard

Greenhouse Gas Emissions

Carbon dioxide (CO₂) accounts for over three-quarters of global anthropogenic greenhouse gas (GHG) emissions, based on greenhouse warming potentials (GWP):

GHG and anthropogenic sources	Share
CO ₂ from fossil fuel use and industrial processes	65%
CO ₂ from forestry and other land use practices	11%
Methane (CH ₄) from agriculture, waste management, energy use, and biomass burning	16%
Nitrous oxide (N ₂ O) from agriculture, including fertilizer use, and fossil fuels	6%
Fluorinated gases from industrial processes, refrigeration, and consumer products	2%

Source: U.S. EPA, Global Greenhouse Gas Emissions Data, <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data> (last access, January 19, 2022)

Non-CO₂ GHGs are present in the atmosphere at lower concentrations than CO₂ but have higher GWPs and usually shorter atmospheric lifetimes. Reductions of short-lived non-CO₂ GHG emissions can lower overall short-term GHG warming, though not enough to fully offset long-term warming due to CO₂.

GHG	anthropogenic emissions ¹	2019 atmospheric concentration ²	atmospheric lifetime ¹	100-yr GWP ¹
CO ₂	additional ³	411 ppm	up to thousands of years	1
CH ₄	50 – 65%	1883 ppb	12 years	25
N ₂ O	50%	332 ppb	115 years	298
HFC ⁴	100%	7 – 242 ppt	up to 270 years	up to 14,800
PFC ⁴	100%	4 – 84 ppt	2600 – 50,000 years	up to 12,200
NF ₃ ⁴	100%	1.8 ppt	740 years	17,200
SF ₆ ⁴	100%	9.5 ppt	3200 years	22,800

1. Anthropogenic emissions as fraction of total; lifetime as average residence time. Source: U.S. EPA, Overview of Greenhouse Gases, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases> (last access, January 19, 2022)
2. Measured at Mauna Loa, Hawaii, or Point Barrow, Alaska. Source: U.S. EPA, Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases, <https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases> (last access, January 19, 2022). As of December 2021, the Mauna Loa average was 417 ppm (NOAA Global Monitoring Laboratory, Monthly Average Mauna Loa CO₂, <https://gml.noaa.gov/ccgg/trends/>, last access, January 19, 2022).
3. Natural processes (produced and absorbed by organisms, exchanged among organisms, atmosphere, and oceans) are balanced and human activities have resulted in net additions
4. HFC = hydrofluorocarbons, PFC = perfluorocarbons, NF₃ = nitrogen trifluoride, SF₆ = sulfur hexafluoride

Current and Historical Impacts of GHGs on Global Average Temperatures

Because CO₂ dominates GHGs and because excess CO₂ remains in the atmosphere for hundreds to thousands of years, global average surface temperature is a nearly linear function of cumulative anthropogenic CO₂ emissions released since 1850 (every addition of CO₂ adds to global warming) (IPCC, Sixth Assessment Report, AR6 Climate Change 2021: The Physical Science Basis, <https://www.ipcc.ch/report/ar6/wg1/#SPM>, last access, January 19, 2022).

The observed global average warming between 1850 – 1900 and 2010 – 2019 is 1.07° C (IPCC, Sixth Assessment Report). This value is the net effect of anthropogenic GHGs partly offset by other human activities that have had a net cooling effect. The principal cause of cooling is aerosols (particles in the atmosphere), primarily sulfate that originated as anthropogenic emissions of sulfur dioxide (SO₂). GHGs contributed +1.5° C and other human activities contributed -0.4° C (-0.5° C due to sulfate aerosols and +0.1° C from other human influences). Part of the warming effect of GHGs to date has therefore been masked by cooling due to anthropogenic aerosols.

The atmospheric lifetimes of SO₂ and sulfate aerosol are generally considered to be several days. Changes in SO₂ emissions therefore have a rapid effect on global cooling or heating.

Projected 21st-century Impacts of GHGs on Global Average Temperatures

The IPCC Sixth Assessment Report considered five illustrative scenarios for 21st-century GHG emissions, labelled “shared socioeconomic pathways” (SSP). Each SSP assumes that emission reductions are shared across nations and economic sectors; no scenario examines non-shared pathways (e.g., eliminating only fossil-fuel combustion from electricity generation). The emission changes that are needed to minimize 21st-century warming are large and require efforts from all emission sectors, so more limited scenarios provide little useful policy guidance. Two high-emission scenarios roughly double current CO₂ emissions by 2100 or 2050 (SSP3-7.0 and SSP5-8.5, respectively). Two low-emission SSPs have low (SSP1-2.6) or very low (SSP1-1.9) CO₂ emissions that decline to zero by 2050 and become negative after that (e.g., through actions that draw down atmospheric CO₂). One intermediate SSP (SSP2-4.5) has GHG emissions that rise slowly to a peak in about 2040, then decline to about one-fourth of current rates by 2100.

Under all scenarios, global temperatures are predicted to increase until mid-century or later with warming exceeding target values of 1.5° C or 2.0° C unless major reductions of all GHG emissions occur (IPCC, Sixth Assessment Report). IPCC predictions are summarized for three periods in the table below, which lists best estimates and very likely ranges of global average surface temperature increases relative to 1850 – 1900. Differences among scenarios emerge by mid-century (2041 – 2060). In the low-emission SSPs, non-CO₂ GHGs contribute less than 0.5° C to the total end-of-century warming; they contribute 1.2° to 1.3° C in the high-emission SSPs.

Scenario	Near term (2021 – 2040)	Mid-term (2041 – 2060)	Late (2081 – 2100)
SSP1-1.9	1.5° C (1.2 – 1.7)	1.6° C (1.2 – 2.0)	1.4° C (1.0 – 1.8)
SSP1-2.6	1.5° C (1.2 – 1.8)	1.7° C (1.3 – 2.2)	1.8° C (1.3 – 2.4)
SSP2-4.5	1.5° C (1.2 – 1.8)	2.0° C (1.6 – 2.5)	2.7° C (2.1 – 3.5)
SSP3-7.0	1.5° C (1.2 – 1.8)	2.1° C (1.7 – 2.6)	3.6° C (2.8 – 4.6)
SSP5-8.5	1.6° C (1.3 – 1.9)	2.4° C (1.9 – 3.0)	4.4° C (3.3 – 5.7)

Source: (IPCC, Sixth Assessment Report, AR6 Climate Change 2021: The Physical Science Basis, <https://www.ipcc.ch/report/ar6/wg1/#SPM>, last access, January 19, 2022)

Transient Climate Response and Equilibrium Climate Sensitivity

For relevance to current public policy choices, climate predictions generally focus on 21st-century transient climate response (TCR). TCR is defined as the climate response at the end of 70 years to 1% per year increases in atmospheric CO₂ concentrations (or to the time of a doubling of atmospheric CO₂ concentrations). The IPCC best estimate of TCR is 1.8° C, with a likely range of 1.4 – 2.2° C (very likely range of 1.2 – 2.4° C). The IPCC Sixth Assessment Report also assesses TCR to emissions as 1.0 – 2.3° C per 1000 metric gigatons cumulative carbon (C) emissions.

The current average CO₂ concentration of 417 ppm is approximately 50% greater than the best estimate of preindustrial global CO₂ concentration of 280 ppm. As noted, the historical increase in global average temperature to date is 1.1° C.

Long-term (centuries) equilibrium climate sensitivity (ECS) is also of interest. ECS differs from TCR because CO₂ remains in the atmosphere for centuries, about half the anthropogenic CO₂ released to date has been absorbed by the oceans and some forests (e.g., in North America), and absorbed heat and CO₂ will continue to be released to the atmosphere as it equilibrates with the oceans over many centuries. The IPCC best estimate of ECS is 3° C, with a likely range of 2.5 – 4° C (very likely range of 2 – 5° C).

ECS is greater than TCR; the predicted late 21st-century temperature increases do not represent final equilibrium. For example, SSP1-2.6 predicts a 1.8° C temperature increase relative to pre-industrial temperature by 2081 – 2100, which will likely correspond with a long-term (multiple centuries) 3° C temperature rise. Because societies will have more time to adapt, a 3° C temperature rise by, e.g., 2300, is typically considered less problematic than a similar increase by 2100. However, impacts should not be ignored. According to the IPCC report, “Many changes due to past and future greenhouse gas emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea level.” The IPCC predicted global mean sea level changes in 2300 relative to 1900 are about 0.5 – 3.3 m for SSP1-2.6 (2nd lowest SSP) and about 1.8 – 7 m for SSP5-8.5 (highest SSP; IPCC notes that rises exceeding 15 m cannot be ruled out). These sea-level increases are much greater than predicted 2100 rises of about 0.5 – 1 m (which do not include possible 21st-century ice-sheet collapses).