

FOREWORD

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“The future cannot be predicted, but futures can be invented.”

Dennis Gabor, 1963 (inventor of holography, winner of Nobel Prize in Physics, 1971)



Our climate future is invented through human action, though not by an ingenious stroke of any single inventor. What we experience as climate and climate disruption is the product of many decades of human invention, mainly in the name of economic progress—to extract materials, generate power, multiply the harvest, and market new products. Mastery of

chemistry and electricity, refinement of fossil fuels, advent of more precise tools and measurement, industrial-scale manufacturing methods, and technological advances all contributed to where we are today, and all play a part in the invention of our climate future.

A measure of climate disruption is baked into the coming decades. The UN Intergovernmental Panel on Climate Change estimates that global temperatures have warmed by 1.1°C since the 19th Century and are on track to rise to 1.5°C over the next couple of decades. Global warming has already begun to take its toll in worsened floods, droughts, heat waves, and wildfires; in intensified cyclones, melted glaciers, and lost sea ice. And these are mere harbingers of what may be in store beyond 2050 in the absence of steep, sustained reduction in greenhouse gas emissions.

The climate crisis is the centerpiece of a triad of troubles that beset humanity and the planet: climate disruption, degradation of the natural world, and global inequality. Engineers teach us that every system is perfectly designed to produce the results it obtains. Extreme poverty is not a flaw in the world’s economic system; it is the product of that system. To eliminate poverty, the economic system must be changed. Commercial fishing to the brink of species extinction can be averted, if we are willing to change the rules that govern fishing and enforce ocean protected areas. The triad of troubles in climate, nature, and inequality and the systems that create them—all the result of human invention—form the backdrop for the compelling essays in this issue of FACTS.

The essays raise many provocative questions and pose some promising elements. Is a long-term solution possible without abandoning increased material acquisition as the measure of social progress? Will re-framing global warming and inequality as matters of human security make these problems more salient and their solutions more politically palatable? Will the public demand action when climate

change can be seen to pose direct threats to human health? Can the technologic prowess that got us into this mess hold the key to working our way out? And can technologies that reduce greenhouse gas emissions or reduce poverty come on-line and at scale quickly enough to make a difference? Enlightened companies and civic leaders are showing how to reduce waste, rely on renewable energy, and increase efficiency. Can such examples of attainable success cumulate to the massive transformation needed?

Many realities of history, the global political order, economic self-interest, and human psychology impede progress against the triad of troubles. The drive to enlarge economies while polluting land and sea benefits some and shifts burdens onto others. Human psychology does not readily link remote causes to future consequences; hence, scientific understanding of fields such as evolutionary biology or geo-physics are not readily apprehended by the public. Few prove willing to diminish their personal standard of living for an uncertain and distant public benefit. Independent nation states may negotiate agreements despite ideological rivalries and global tensions, yet no senior authority can legally require sovereign nations to act for the common good against their perceived national interests. The needed solutions for climate, nature, and equity are poorly matched to the global capacity for urgent, substantial, and sustained change.

If there is hope, it rests on the human capacity to choose to invent a better future and on leadership at every level that shows the way. When the late Dr. Bernard Lown accepted the Nobel Peace Prize in 1985 on behalf of International Physicians for the Prevention of Nuclear War, he was asked whether he was an optimist or a pessimist about the nuclear age. “I am a pessimist,” Dr. Lown replied, “about the past, because there is nothing to be done about it. But I am an optimist about the future, because that is ours to make.”

As illustrated in this issue of FACTS, immediate and concerted action can enable society to mitigate and adapt to climate change, to sustain vital ecosystems, and to reduce global inequity. As individuals and as citizens, as farmers and as city dwellers, as corporations and civic organizations, as scientists and as teachers, as celebrities and as political leaders, all can do our part for the future of the planet and humanity’s place on it. With leadership and will, humans can invent the future posterity deserves.

