

Making America Green and Safe

Making America Green and Safe:

*A History of Sustainable
Development and Climate
Change*

By

Alan D. Hecht

Cambridge
Scholars
Publishing



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This book first published 2018

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

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ISBN (10): 1-5275-1378-5

ISBN (13): 978-1-5275-1378-5

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AN ENVIRONMENTAL HISTORY DEDICATED TO THE CAREER CIVIL SERVICE

This book aims to give you both a historical perspective and an insider's view of the evolution of science and policy actions on climate change and steps toward building a resilient and sustainable society especially at the Environmental Protection Agency (EPA).

From a government perspective, I have found that achieving progress on these issues has not been easy. In the case of climate change, we have lost the ability to prevent climate change but instead must now adapt to it. Historians have long recognized that the American political system is not efficient or effective in organizing change, and that working in this environment, especially across administrations, is never easy and often frustrating. Civil servants often confront intense anti-government fervor and must remain innovative in providing the knowledge and energy essential for government operations.

For these reasons, I dedicate this book to all members of the federal workforce. I especially recognize and applaud the staff at the EPA who are devoted to protecting human health and the environment and who have dealt with intense and unjustified political attacks. They deserve the dedication of this book.

Throughout the book I also acknowledge and reference the work of many colleagues and innovative thinkers who have advanced the work on sustainability and climate change. These scientists and policy-makers have helped Make America Green and Safe.

About the Author



I have worked in government for over 42 years. My early career focused on climate change research, first as a teacher and researcher, then as a policy maker. While I was teaching geology from 1970 to 1976 at West Georgia College (now West Georgia University), a colleague in the History Department, Newt Gingrich and I undertook one of the earliest environmental study programs in Georgia. I came to Washington in 1976 and he came in 1978.

From 1976 to 1982, I worked at the National Science Foundation (NSF) as the first director of the Climate Dynamics Program with responsibility for funding research in atmospheric sciences, climate modeling, paleoclimatology, and the social impacts of climate change.

At NSF, I met some of the smartest people in science. Many grantees that I funded won all the prestigious awards in their fields, including the Nobel Prize. I also had the privilege of starting the careers of many productive and creative earth scientists. There were painful moments as well. Denying support to a young scientist vying for tenure is painful. I had more than one tearful and emotional conversation with young scientists about their work, and their future activities. On another occasion, I found it necessary to end the support to a scientist, who after a long and productive career was no longer competitive. It was uncomfortable for me as a young man in his thirties to tell a respected scientist in his seventies that, in effect, “you’ve had it.” NSF taught me that life in government is more than just shuffling paper, but was in effect a mixture of strategic planning, good management and behavior science.

In 1982, I moved to the National Oceanic and Atmospheric Administration (NOAA) at the Department of Commerce to become the Director of the National Climate Program Office (NCPO). In this position from 1982 to 1989, I led 15 federal agencies in developing US policy on climate research, negotiated the first climate change agreement, and proposed and helped to create the Intergovernmental Panel on Climate Change (IPCC).

The IPCC is an international science assessment body that was instrumental in fostering US government consensus on the need for an international treaty to reduce the impact of human-created climate change. Today, the US Global Change Research Program has replaced the NCPO.

While working at the NCPO, I learned another important lesson of life in Washington. When I first became the NCPO Director, I saw my role largely as a communicator and bridge-builder between the many federal agencies involved in climate change. In time, I saw my job differently, realizing that the role of a *coordinator* is more than a passive communicator among agencies, but rather an aggressive *synthesizer* of ideas. The coordinator's job is to make the whole more than the sum of its parts. Like some biologists, the coordinator must see the whole organism, and understand how each part interacts with the other. It does not take long to learn that each agency has their own individual traits, which dictate their behavior, but the coordinator must see the government function in an integrated manner. This lesson has guided me in everything I have done, especially in my work at EPA.

In 1989, William K. (Bill) Reilly, the newly appointed Administrator of the US Environmental Protection Agency (EPA) recognized that environmental problems are part of a much larger picture of trade policy and economic and social development. It was Administrator Reilly who hired me to help develop EPA's international program. As the Principal Deputy Assistant Administrator for the Office of International Activities, I expanded EPA's international programs to forge new directions for the agency in international policy and research, trade and the environment, capacity development, export promotion, environment and national security, and sustainable development.

To Alan, thanks
with my warm thanks
for your important contributions
to our success in these
years

EPA History Program
Oral History interview-4
U.S. Environmental Protection Agency
Administrator
William K. Reilly

Bill Reilly
5/20/95

September 1995

Working with Bill Reilly was a great honor and I respect his note to me in 1995 saying “with warm thanks for your important contributions for our success in these years.”

During the Clinton Administration, I led EPA’s negotiating team for the environmental side agreement to the North American Free Trade Agreement (NAFTA) and participated in negotiating for and setting up the North American Development Bank, the NAFTA-created Commission on Environmental Cooperation, and the US-Mexico Border Program. For over five years, I traveled extensively across the US-Mexico border and came to appreciate the hard work of the career workforce on the border.



A career civil servant doing his job on the US-Mexico border—photograph by Alan Hecht

During the administration of George W. Bush from 2001 to 2003, I was on detail from EPA to the National Security Council (NSC) and the Council on Environmental Quality (CEQ). I started my White House assignment one month after the terrorist attacks of September 11, 2001. In the White House, I helped coordinate preparations for the 2002 World Summit on Sustainable Development in Johannesburg.

After returning to EPA in 2003, I led the agency's research activities on sustainability. Making sustainability an EPA goal has been a difficult road to travel. It is, however, something that is essential to ensure a sound and stable national economy over the coming decades. The first chapters of this book capture EPA's long history making sustainability an agency-wide goal.

Over my 40 years in government and despite the drawbacks of working in Washington and my frustration with management, I remained in public service, believing I could do something good for society. I have had many successes in improving the global environment, developing new

environmental policies, launching new programs, enhancing national security, negotiating agreements, and training young people and seeing their careers develop. I was also honored in 1999 to get the President's Rank Award that honors high-performing senior career employees for "sustained extraordinary accomplishment."

In sum, I am indebted to many friends and colleagues who have both helped guide and rescue me over my long career. I am also grateful to many colleagues who have reviewed and helped to edit these chapters. These include Gordon Binder, Joseph Fiksel, Mike McCracken and Aaron Ferster who did a final editing of the book. Throughout the book I have included many photographs and cartoons downloaded from Google's images. Thank you Google.

PREFACE

WILLIAM K. REILLY
EPA ADMINISTRATOR 1989-2003

With this book, a grand summary of past, current, and future actions by business and government to address our environmental challenges, Alan Hecht has made a significant contribution. The world over, we confront challenges with serious consequences for our health, the environment, and the natural resources on which we depend, our economy and our quality of life included.

Topping the list is climate change, which increasingly is seen as affecting communities and natural resources across the globe. The demand for resources as population grows and more people achieve economic security is having profound impacts on water, on energy, on forests, soils, and other land uses, on estuaries and marine life, and more.

As other countries must do, we, too, as a nation must find ways to bolster community resiliency and plan for a sustainable future. Our children, our grandchildren, future generations of Americans deserve nothing less.

I met Alan Hecht during my tenure as EPA Administrator. We put a priority on integrating environmental protection and the economy, strengthening the role of science at EPA, and recognizing the centrality of place-based approaches to improving the environment. We also played a key role in advancing international cooperation, including on climate change.

It was this issue, the brewing concern over climate change that prompted my invitation to Alan to join the EPA team in our newly elevated Office of International Activities. In 1989, he was leading the National Climate Program Office and was a key player coordinating activities across many federal agencies. Late in my tenure, he proved especially helpful as I led the US delegation to the Earth Summit in Rio de Janeiro in June 1992. His critical climate research had helped pave the way for a treaty on climate change, which was unveiled at the Summit.

Alan also played a critical role with the Soviet Union in dealing with the disposal of nuclear waste. And after I left EPA, he became the chief negotiator for a critically needed environmental side agreement to support the passage of NAFTA, including extensive bilateral cooperation with Mexico to protect the border area. After his time in EPA's international office, he went to the White House for 2 years, returning to EPA to lead the Agency's endeavors on sustainable development.

In this book, Alan writes about the history of science and policy actions on climate change and on steps to advance sustainable development. The concluding chapter on megatrends underscores why progress on these issues is so essential.

The book is timely considering the pressures now on EPA. Now more than ever business and government must work together to achieve a resilient and sustainable society. Now more than ever, we must take actions to reduce the ongoing impacts of climate change which are a threat to our economic future.

Alan Hecht deserves great credit for his more than 40 years in government and his dedication to the career civil service. He clearly and cogently makes the case that EPA has the experience, knowledge, resources, and commitment to lead in research and technological applications supporting wise decisions and responsible stewardship.

A central theme of this book is that understanding history is critical in planning future activities. Read the book and ask yourself, are we on the right track? Are we adequately protecting public health and the environment for future generations, as well as for our own? Are we preparing, as we should, for what's coming? Are we ensuring that the agencies and institutions we rely on to set the course remain viable and productive? The answers will say a lot about the world future generations will inherit.



Bill Reilly and Alan Hecht at EPA

OFTEN CITED ACRONYMS

CEQ: Council on Environmental Quality
CIA: Central Intelligence Agency
CO₂: Carbon Dioxide
CSD: Commission on Sustainable Development
EPA: Environmental Protection Agency
GHS: Greenhouse gases
IPCC: Intergovernmental Panel on Climate Change
ICSU: International Council for Science
NAS: National Academy of Sciences
NCPO: National Climate Program Office
NEPA: National Environmental Protection Act
NIC: National Intelligence Council
NOAA: National Oceanic and Atmospheric Administration
NSC: National Security Council
NSF: National Science Foundation
ORD: Office of Research and Development
PCSD: Presidential Council on Sustainable Development
UNCED: The United Nations Conference on Environment and
Development
UNEP: The United Nations Environmental Program
UNFCCC: The United Nations Framework Convention on Climate
Change
USGCRP: United States Global Change Research Program
WBCSD: World Business Council for Sustainable Development
WCC: World Climate Conference
WCRP: World Climate Research Program
WMO: World Meteorological Organization
WSSD: World Summit on Sustainable Development

INTRODUCTION

HISTORY MATTERS AND WHAT IS SUSTAINABILITY?

“Once you stop learning, you start dying”
—Albert Einstein

Past, Present, Future: History Matters

I strongly believe that understanding history is a critical part of future planning. As noted by George Santayana (1863-1952) “Those who do not remember the past are condemned to repeat it.”

Hence this book explores the history of steps toward achieving sustainable development and dealing with climate change. The goal is to enhance insights about how best to deal with future needs.

Like Hillary Clinton, I thought I’d title my book “What Happened.” Except what happened in this book is real!

It reflects my history in the federal government and the global work to advance sustainable development and respond to climate change. While progress has been made, the future is not clear, given current politics, especially in the context of EPA.

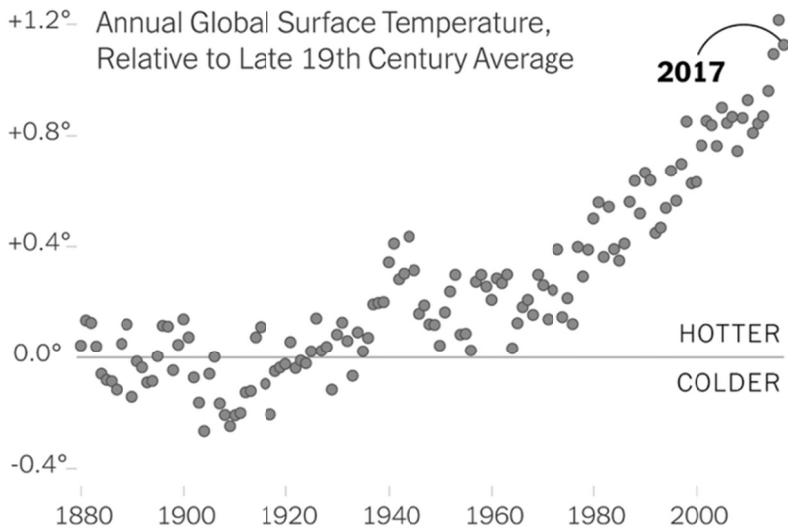
In dealing with the politics of today and the problems at EPA, I acknowledge the great quote from David Barry (March 22, 1999)

We live in troubled times, but I feel good about myself, about my homeland and about all nations, and yes, about the future of humanity. And I will tell you why; I am on painkillers.

Painkillers are not what we want for the future. Instead we must take actions to move toward a resilient and sustainable world by dealing with a great many stressors on society, not the least of which is climate change.

The first four chapters trace the history of the concept of sustainability and sustainable development beginning with the creation of the National Environmental Policy Act (NEPA) and EPA in 1970, and the first earth summit in Stockholm in 1972. Chapter 4 is an extensive history of the evolution of sustainability at EPA, moving the Agency from its classic role as a regulator and policeman to an effective communicator and science leader.

The second set of chapters (5-7), beginning with an extensive chronology of events over the past 50 years, deals with the history of the science and policy debate on climate change. The basic message here is that climate change is real! The diagram below is from the *New York Times*, January 21, 2018.



The last chapter is a crucial assessment of current challenges, called megatrends which we must face today to keep America green and safe.

The key goal of my book is to enhance academic and public understanding of the urgency and need for achieving sustainability and the decades-long debate on climate change policy and associated risks. Lessons learned

about the past, enhance our opportunity to protect the future.

As you read all that follows consider answering these questions:

Q: In the world today, how do we best deal with the complex interaction of environmental, social and economic problems?

Q: How do we ensure strong economic growth while protecting the environment?

Q: What factors are currently limiting the business world in terms of their sustained operations?

Q: What is the best model for business-government collaboration in the decades ahead?

Q: Why do some conservatives object to the concept of “sustainability” or a “green environment”? And

Q: Why do some extremists deny the reality of climate change?

No test at the end. But history may help you plan the next steps for the future.

Let’s begin with an understanding of what is sustainability.

What is Sustainability and Sustainable Development?

The idea of sustainability is to ensure growth and prosperity in a healthy environment that does not impede future development. In a classic definition, a sustainable society is “one that can persist over generations; one that is far seeing enough, flexible enough and wise enough not to undermine its physical or its social system of support.”¹

¹ Meadows, D. H., D. L. Meadows and J. Randers, 1992, *Beyond the Limits*. White River Junction, VTL Chelsea Green Publications.



Sustainability reflects the necessary and successful integration and advancement of economic growth, environmental protection, and social well-being. The often quoted three pillars of sustainability are:

1. Economic prosperity driven by production, manufacturing, trade and recycling.
2. Environmental protection of air, water, soils, mineral resources and biota.
3. Social justice including protecting human health and social equality.

In practice, sustainability is both a **goal** and a **process** for effective resource production and management. The goal is to maximize economic return, while protecting the environment and ensuring social well-being. To accomplish this requires integrated thinking since actions on one pillar strongly impact the others. It also requires moving beyond just risk reduction and single medium pollution control.

This point was emphasized in a report from the National Academy of Sciences (NAS) to EPA in 2011 saying: “Current approaches aimed at decreasing existing risks, however successful, are not capable of avoiding the complex problems in the United States and globally that threaten the planet’s critical natural resources and that put current and future human generations at risk.”²

²NAS, 2011, “Sustainability and the US,” EPA.

For your information, throughout this book I will refer to the NAS, and cite their many reports to Congress and Federal Agencies. The NAS was created by President Lincoln in 1863 and is a nonpartisan group of scientists who serve society by addressing the conflicts over critical issues such as climate change and by identifying potential new threats to society.

NAS was charged with "providing independent, objective advice to the nation on matters related to science and technology. ... to provide scientific advice to the government 'whenever called upon' by any government department." NAS Reports are unbiased, nonpolitical and scholarly.

The challenge today both for government and business is to get ready for the future. For the business world, sustainability goes beyond "business as usual" and is based on innovation in the design, production and reuse of products. As my colleagues David Lubin and Dan Esty (2010) noted, businesses must "do things in new ways and do new things in new ways."³

And for government, advancing sustainability is an essential element of a growing economy. As noted (in 1987) by the first administrator of the EPA William Ruckelshaus

"Sustainable development not only conserves resources (including land), but also reduces long-term costs associated with maintaining infrastructure and supplying essential services. Efficient development also maximizes the availability of human resources to businesses. That translates into long-term economic viability that is less subject to the volatility associated with fluctuating energy and raw material prices."

Urgency of Sustainability Today

In the world today, more than at any time in the past, achieving sustainability and sustainable development is critical in dealing with a suite of megatrends impacting our lives. These are discussed in detail in the last chapter. They include population growth, especially in cities and dealing with the impacts of climate change.

The many pressures impacting government and business and the need to deal with them in an integrated manner were made abundantly clear in a 2017 Report on "Global Trends" from the National Intelligence Council (NIC).

³ David Lubin and Dan Esty, "The Sustainability Imperative," *Harvard Business Review* 2010.

NIC, which advises the Central Intelligence Agency, conducts studies on assessing existing pressures and projected impacts on global society.

In this study on “Global Trends,” they noted that: “The Earth’s systems are undergoing natural and human-induced stresses **outpacing national and international environmental protection efforts.**”

Hence, we need to be more efficient and effective in managing our resources.

The NIC Report also said:

“Institutions **overseeing single sectors will increasingly struggle to address the complex interdependencies** of water, food, energy, land, health, infrastructure, and labor.”

The interdependencies among food, energy, water and land use are now a common theme in both business and government. It is often called the “nexus of food, energy and water.” This reflects the intricate links between food, energy, land, and water management where water supply is influenced by demands from the energy and food sectors; food production requires both water and energy; and energy requires water for a large fraction of its production and delivery.

Projected growth in populations will make this nexus even more of a priority in that it is estimated that with a population of 8.3 billion people by 2030, society will need 50% more energy, 40% more water, and 35% more food.

Hence integrated or systems thinking is a critical factor in achieving a sustainable society and action on the 3 pillars of sustainability must be advanced by business and government to generate a green and safe society. It is here that advances in science and technology and the development of what are called decision-support tools can make a big difference in advancing sustainability. More on this is in Chapter 4.

Resilience and Sustainability

A key element of sustainability today is an understanding of “resilience” which is the ability of systems to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions. While sustainability focuses on improving long-term conditions, resilience focuses on overcoming urgent short-term challenges

that may hinder progress toward long-term goals.

Resilience is more urgent today than ever because of the impacts of climate change and rising costs in dealing with extreme weather events. Resilience is thus a critical part of a safe and sustainable future. Again, more on this is in Chapter 4.

Over time, how has the concept of sustainability and resilience evolved and how has EPA made it part of its classic regulatory role? And given the politics of today, especially related to EPA, how can we create a green and safe society?

Political Attachment on Sustainability

One of my goals in this book is to enhance public understanding of what is sustainability, since it is often attacked politically. Some harsh critics look at sustainability, especially as advanced by environmental and social advocates as a push toward more regulation and intrusion on social rights. This is far from the reality.

Yet, in his book, *Green Hell*, Steve Milloy argued, “And what about the most ubiquitous of green terms, sustainable development? What does it mean? Does it mean we can’t use a natural resource unless there is an endless supply of it? Does it mean we can’t use a resource if getting at it or using it alters the environment, however trivially or transiently, in some way or shape? For the greens, the answer to these questions is yes.”

See: <http://www.simonandschuster.com/books/Green-Hell/Steven-Milloy/9781596985858>)

Sustainability is far from a “green hell” in which environmentalists plan to control your life.

It is instead a critical next step to advance economic growth, environmental protection and social well-being. The potential economic value of sustainability is not merely to decrease environmental risks but to optimize the social and economic benefits of environmental protection.

The Next Decades

By anticipating and responding to future challenges, we can disprove Benjamin Franklin's classic adage, "It is not until the well runs dry that we know the worth of water."

In looking ahead, my colleague Joseph Fiksel and I have advanced 8 critical steps for advancing sustainability:

1. **Take the long view:** *Sustainability requires long-term thinking, not only in natural resource management and urban development, but also in corporate strategic planning.*
2. **Understand the system dynamics:** Traditional industrial and engineering systems were not created with a systems view, and may therefore be vulnerable to unexpected disruptions, such as natural disasters, industrial accidents, sabotage, or terrorism. By understanding system vulnerabilities and leverage points, we can develop cost-effective and resilient management strategies.
3. **Define sustainability goals:** President Kennedy set a goal for the United States to land on the moon. This goal was achieved because it was fully supported with the needed resources and policies. Making sustainable development an explicit policy goal at all levels of government, as well as the private sector, can send a clear message about the need for breakthrough innovation and creative regulatory and compliance approaches that serve the collective interests of the public, business, and government.
4. **Use effective tools:** Science and technology are key underlying contributors, along with innovative environmental and economic policies. A growing body of economic and environmental assessment tools is available to support planners and decision-makers at all levels of government and industry.
5. **Find the right collaborators:** Collaboration and partnerships among stakeholders are crucial to achieving solutions that are less polarized, more economically viable, and focused on balancing short- and long-term goals. Collaboration has begun among government, industrial, and non-governmental organizations, and has already yielded many sustainable innovations.
6. **Lead by example:** The profound changes needed to achieve sustainability will require confidence and bold leadership. The most persuasive approach for overcoming uncertainty and hesitation is leading by example—demonstrating that these changes are both realistic and beneficial.

7. ***Measure and track progress:*** Indicators can help managers and policy makers anticipate and assess key trends, provide early warning of potential disruptions, quantify progress toward sustainability goals, and support decision-making about complex trade-offs.
8. ***Learn and adapt:*** The path to sustainability cannot be planned precisely due to the enormous complexity and uncertainty inherent in global political, economic, social, and natural systems. We must be prepared to learn from experience, rethink our assumptions, and continuously adapt to change. Taking a resilient approach in the short-term will enable sustainability in the long-term.

For our successful future, all sectors of society will need to work together to advance these principles which are essential to assuring continued American prosperity and competitiveness. The public must come to understand that sustainability provides both the vision and the approach to achieve outcomes that enhance the economy and protect health and the environment.

The history of steps toward achieving sustainability begins in the early days of pollution control, in the 1960s and 1970s. On the international scene, four major conferences, in 1972, 1992, 2002 and 2012, have advanced the concepts of sustainability. On the domestic front, the goal of sustainability has been advanced by both government and business. For EPA, it has been a major step forward in aligning problems and advancing science to deal with present and future problems.

Step 1 begins now.

DEALING WITH SUSTAINABLE DEVELOPMENT

