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surviving the century

Facing Climate Chaos
& Other Global Challenges

Edited by Herbert Girardet

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World Future Council

Surviving the Century

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Facing Climate Chaos and Other Global Challenges

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Ross Gelbspan, an award-winning former editor at the *Boston Globe*, is author of *The Heat Is On* (1997) and *Boiling Point* (2004). *The Heat Is On* received attention when then-President Clinton told the press he was reading it. *Boiling Point* received the lead review in the *Sunday New York Times* Book Review, written by Al Gore. Both books document the scientific consensus on climate change and industry's vigorous campaigns to counter that consensus.

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Edward Goldsmith founded the *Ecologist Magazine* in 1969, which is now published in six other languages. He is (co-)author and editor of 12 books, including *Blueprint for Survival* (1972) and *The Way* (1992). He is a founder member of the International Forum on Globalization. In 1991 he received a Right Livelihood Award, and also became Chevalier de la Légion d'honneur.

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Foreword

During the last few years a small team has been working hard to create a new international organization – the World Future Council. In 2007 this has finally come to fruition, with the first meeting of the 50 councillors, the launch of our first major international campaign – on renewable energy and climate change – and the publication of this, our first major book. I am very pleased to write the foreword to this important work, to which eight eminent authors have contributed, and to have the opportunity to outline the purpose of creating the World Future Council (WFC).

Humanity finds itself in an extraordinary situation. Despite unprecedented knowledge, skills and resources, we are on a collision course with our own future. Decisions taken today will have longer-term impacts than ever before, yet short-term thinking has become dominant. All over the world resource depletion and pollution, growing inequalities between rich and poor, and the resulting potential for violent conflicts are causing fear and uncertainty. United Nations (UN) commissions and conferences have sought to address many of these issues, yet the *necessary* changes in policies are far from keeping pace in scale or scope with the problems facing us. This is causing a growing lack of trust in national and international organizations.

The WFC has been created to respond to these challenges. It is intended to be a reliable normative point of reference for decision makers, civil society and the global public, speaking up for an Earth Community based on the values of non-violence, sustainability, respect and justice. As a moral authority in the democratic arena, the WFC will initiate a new process to help change the rules and norms of global governance by raising key international challenges from the political-economic to the ethical level.

Institutions that defend the status quo are well established, yet until now the future has had no comparable voice. The WFC is being set up to fill this gap and to act as an international lobby for future generations. Its specific purpose is to help create a more secure and equitable world by accelerating major changes in the direction of positive progress – such as assuring a sustainable ecological base for human development, and fairness in the conduct of world affairs.

The WFC will aim to be a global conscience, speaking up for our shared interests as planetary citizens, counteracting short-term thinking, greed and complacency. It will help safeguard the need of future generations for a healthy planet. It will add value to existing initiatives by building an ongoing coordinated values-based framework and process focused on implementing urgently needed global reforms. It will not claim to speak for others but will be legitimized by the quality of its work and the composition of its members.

The WFC has not been set up in a vacuum. International opinion surveys clearly indicate that

shared-value priorities exist across cultural traditions all over the world: we all want a good life for our children, a healthy environment, mutual trust and respect, and a life free from violence. We now need to ensure that these values can assert themselves and that effective policies are developed from such shared principles.

From here to there

In the last four years, meetings have been held in many countries to draw attention to the need to create a World Future Council. Over 5000 organizations in 200 countries, as well as several thousand MPs and other interested persons have been consulted, asked to endorse the WFC and to propose Council members. These have now been chosen after this very extensive international consultation process.

The WFC consists of some 50 respected individuals from all over the world – wise elders, eminent persons, pioneers and youth leaders. It has started to hold regular meetings focused on closing action gaps and safeguarding the rights of children and future generations. These meetings will seek to identify what is *necessary* and not what is currently deemed to be politically *possible*. In this way we hope to create an atmosphere of empowerment and widely shared ownership in the solutions to the huge problems facing humanity.

The WFC is supported by a broad international range of individuals and organizations from a great variety of professional backgrounds. Its organizational structure is designed to be lean and efficient. We already have three offices in Europe and North America, and are about to set up offices in the Global South. An Executive Board with a multilingual secretariat, aided by a Board of Advisors, is coordinating the Council's activities. The WFC is a charitable foundation registered in several countries, and its activities and finances are subject to stringent legal accountability.

A key aspect of the work of the WFC will be its international campaigns and action alerts. Every year we intend to organize two major international campaigns – the first one, in mid-2007, is concerned with accelerating the introduction of renewable energy against the background of potentially catastrophic climate changes. In close cooperation with parliamentarians, civil society, governments and international organizations, the WFC will promote and help to implement 'best policies' worldwide. Our international campaign and media alerts will initiate activities and policy measures that prioritize a healthy planet and a culture of world citizenship.

The WFC has already attracted wide support. It has started to work with the eParliament, a global network of parliamentarians, and civil society to help spread effective policies and long-term solutions from country to country. We will also work closely with the media and the global Internet community to assure that the results of the Council's deliberations are spread across the world. In

addition, the WFC will encourage the creation of national, regional and local Future Councils to mobilize support for the proposed measures and policies.

You may ask what the WFC can achieve which others could not. The WFC will not seek to solve any global problems on its own, but will inject the missing ethical ingredient into global governance, to provide the necessary catalyst for action. It can be compared to past citizen initiatives which helped abolish slavery, gain the vote for women and spread civil rights.

The coming years

Over the coming years, the work of the WFC will cover up to 24 key global environmental, social and economic issues. This book covers the first eight of these. Supported by our own researchers and small expert commissions linked to established organizations, we will monitor global trends and distil existing research, and develop proposals for national legislation and international agreements to be submitted to the Council for deliberation and adoption.

The American psychologist Abraham Maslow remarked that it is difficult to promote and practise values such as love, generosity and solidarity in a society whose institutions, rules and information streams are promoting lesser human values. By speaking up for our common citizens' values, the WFC therefore aims to broaden and de-trivialize our public debate, and to raise key challenges from the political/economical to the ethical/moral level.

Today economic arguments are paramount (and supported by powerful institutions), and all too often democratic politicians are seen as either powerless or corrupt – or both. But if democracy is powerless to respond to global changes, the alternatives are dictatorship or anarchy. We face a crisis of (moral) leadership, also in mature democracies, and the less leaders are trusted, the less they dare to act. This vicious circle needs to be broken.

This threat cannot be countered only by promoting formal democratic structures. We also need to ensure that other societal institutions are supportive of democratic values and responsibilities and do not try to undermine them. In a democracy, markets are good servants – but very bad (and unacceptable) masters! Economists should be *on tap* – available to give advice as required – but never *on top*, setting the agenda. Just as democracy is incompatible with the Church or the State dominating all sectors of society, it is incompatible with an economic sector that is claiming dominance over all other institutions and areas of life. Market values and 'market discipline' belong to markets. Living democracy, in contrast, needs to be able to operate in an essentially commerce-free space.

If we embark on this, the most difficult journey humanity has ever undertaken, with the steering

wheel still in the hands of limited-liability corporations mandated to maximize profits, then we will never arrive. But we have more important goals in life than the largest possible selection of consumer goods. As the economist E. F. Schumacher wrote, 'the essence of civilisation is not in the multiplication of wants but in the purification of the human character.' To claim that we cannot afford to do everything humanly possible to protect our natural environment implies that we believe we cannot afford to live on this planet!

The Stern Report, published at the end of 2006, calls climate chaos the greatest market failure ever. It is also a huge failure of democratic politics and 'free' media. For 30 years the evidence has been growing but was largely ignored by our decision and opinion makers because this inconvenient truth conflicted with their ideological prejudices that markets and technology will solve all problems. Today the inherent assumptions about the exclusively materialist qualities of human nature – promoted under various political headings – are not only costing the Earth but are also deeply flawed: for instance, after a generation of consumerism, American mothers are today unhappier and their children unhealthier than 30 years ago.

We need to re-design our ways of producing and consuming. This is a huge challenge – but in times of crisis big steps are often easier than small ones, as they are seen as problem-realistic and can inspire and mobilize. We have the expertise, the labour and the tools required to build a global order worthy of our highest aspirations and visions. So why are we still living with problems that we can solve? Why are we waiting to take action until it may be too late?

Journeys need timetables and guidebooks. This book is designed to be such a tool, focusing specifically on key measures to counter climate change. Where others have described the huge costs of climate chaos from environmental, global justice, security and economic perspectives, this book indicates solutions that are within our grasp. But it also makes clear that, after many wasted years, only concerted efforts beginning NOW can still reduce this unprecedented crisis to manageable proportions.

I commend this book to readers from all walks of life and from all over the world. If it becomes a tool for accelerating meaningful change it will have fulfilled its purpose.

Jakob von Uexküll
Founder, World Future Council

List of Acronyms and Abbreviations

BRAC	Bangladesh Rural Advancement Committee
BUILD	Baltimoreans United in Leadership Development
C&C	Contraction and Convergence
CAP	Common Agricultural Policy
CDM	Clean Development Mechanism
CEO	chief executive officer
COPS	Communities Organized for Public Service
dbh	diameter breast height
EPEA	Environmental Protection Encouragement Agency
EU	European Union
EURATOM	European Atomic Energy Community
FAO	Food and Agriculture Organization (UN)
GATS	General Agreement on Trade and Services
GCC	Global Climate Coalition
GCI	Global Commons Institute
GCMs	general circulation models
GM	genetically modified
GMO	genetically modified organism
GtC	gigatonnes of carbon
HRVs	high response varieties
HYVs	high yielding varieties
IAEA	International Atomic Energy Authority
IAF	Industrial Areas Foundation
IEA	International Energy Agency
IIED	International Institute for Environment and Development
ILO	International Labour Organization
IMF	International Monetary Fund
IMP	Intelligent Materials Pooling
INPA	National Institute of Amazonian Research
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
LBA	Large-scale Biosphere-Atmosphere Program (Amazon Basin)
LGM	last glacial maximum
MBDC	McDonough Braungart Design Chemistry
MST	Movimento dos Trabalhadores Rurais Sem Terra (Landless Workers' Movement)

NAS	(US) National Academy of Sciences
nef	new economics foundation
NGO	non-governmental organizations
NOAA	(US) National Oceanic and Atmospheric Administration
PV	photovoltaic
RPS	renewable portfolio standard
STV	single transferable vote
TRIPS	Trade Related Property Rights
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
US	United States
WCRE	World Council for Renewable Energy
WEC	World Energy Council
WFC	World Future Council
WSFs	World Social Forums
WTO	World Trade Organization
WWF	World Wide Fund for Nature

introduction

Future – What Future?

Herbert Girardet

This is the first major book to be published by the World Future Council (WFC). As a new, international lobby for future generations, the WFC will, above all else, challenge decision makers everywhere to reflect on the huge costs of many of their decisions that future generations will be forced to pay. What is preventing us from adopting longer-term thinking? Why are we not implementing solutions to many of the world's major problems that are so clearly available to us? Why do we seem incapable of closing the yawning *action gaps* that separate humanity from a sustainable and peaceful future?

Until a couple of centuries ago, the future was essentially a continuation of the past, with the present as a brief moment in between. Change of all kinds was almost imperceptibly slow. People lived and died, they tended their fields and their flocks according to the dictates of the seasons. From time to time they rebuilt their homes, or they built new homes as their old ones started to crumble. Only when wars or epidemics swept through the land, or when earthquakes laid waste to villages or towns, did uncertainty about the future become a major concern. But for much of the pre-history and history of humanity, the future looked much like the past.

But the future is no longer what it used to be. Particularly as a result of the Industrial Revolution and the adoption of fossil-fuel-based technologies, humanity has profoundly changed its own future. All our activities are amplified by our uses of an ever greater array of technologies. We are no longer the rather humble *Homo sapiens*, we have become the *amplified man* – defined by our enormous new technological powers, our vast numbers and our unprecedented geographical spread.

In the 20th century change became the main constant to define the human predicament. Scientific and technological innovations shape all aspects of our lives. Human numbers quadrupled, urban populations grew as much as 16-fold, and so did global resource consumption. Our new powers to tap into the Earth's stores of subterranean resources have profoundly changed our relationship to planet Earth and to our fellow living beings. Humanity usurps ever more of the Earth's biological productivity and its stores of non-renewable resources for its own exclusive use. But whilst exponential growth curves are spiralling upwards everywhere, the planet's biodiversity and resource availability are on a dramatic downward trend. Are we fated to exist precariously on an utterly polluted and depleted planet?

Meanwhile it is not only the relationship between humans and nature that has suffered. Concentration of power and wealth has also profoundly affected human relationships. The huge wealth of a tiny minority is deeply resented by an ever-growing number of people living in dire poverty. Will the coming decades be an age of unprecedented conflict? Or is the implementation of *alternative futures* a realistic possibility?

The 20th century, as an age of rapid change, was also the age that gave birth to future studies or

futurology. This discipline investigates how the changes occurring in today's world may allow us to anticipate tomorrow's realities. Futurists are aiming to make sense of the enormous number of variables that shape the future of this modern world. In a sense, futurists have inherited the strange calling of soothsayers and clairvoyants, although crystal balls and chicken entrails have been replaced by high-tech computer modelling tools.

Futurism is about drawing maps of that strange, unexplored country, the future, when existing maps have been sketchy at best. But many futurists have adopted a rather narrow focus since most of their clients only pay to be informed about limited issues, such as the likely performance of a risky investment, or the viability of a particular new technology. More recently, however, some futurists have been encouraged to cast their nets more widely: insurance and reinsurance companies are increasingly seeking urgent answers to questions about the financial risks associated with the deteriorating environmental condition of planet Earth. This encourages futurism to fulfil its potential of becoming a more multidisciplinary and holistic endeavour.

The WFC

The World Future Council is not just concerned with observing and *predicting*, but above all else it is concerned with helping to *shape* the future – not some narrow segments of it, but the prospects for humanity's *future as a whole*. Above all else, we wish to emphasize that there is a new urgency to *care* about the prospects of future generations. It is becoming apparent as never before that theirs will be a *collective*, a *global* future.

Never before has humanity been as global a species as it is today, due to the very power of technology, of the global reach of communications, of travel and trade. At the start of the new millennium we urgently need a new balance between human power and responsibility. New ways have to be found to curb the excesses of human impact – against nature and against future generations. The roots of this concern are not new: the need for a new philosophy of balanced, sustainable development was first identified in the 1970s.

At that time people like Rachel Carson and E. F. Schumacher made a name for themselves by emphasizing that the continued operation of the biosphere as a viable and wholesome human habitat was a vital concern in human affairs. Later, in the 1990s, economist Herman Daly pointed out the enormous challenge of dealing with the transition from an 'empty Earth', where natural resources exceed human demand, to a 'full Earth', where demand has come to exceed resource availability.

It is becoming clearer all the time that we are at a critical moment in our history. For the first time humanity as a whole must be given a chance to consciously choose its collective future, in the knowledge that human action has assumed such unprecedented power. We may instinctively wish

to continue leading predominantly personal lives, determining our private futures through the daily decisions that we make. Yet it is our collective future that is now at stake – the future of the natural world and of generations of humans as yet unborn.

The Earth Charter states:

We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations.¹

The WFC is being set up to actively and directly respond to these kinds of challenges. Acknowledging the Earth Charter as one of the defining documents of our age, we are seeking plausible answers to the question of how such a transition might be accomplished. In this situation we are faced with many important tasks, such as the reassertion of shared ethical frameworks for human action, the design of environment- and climate-friendly production processes and products, the establishment of eco-balance sheets, the development of an ecological economics, of environment-friendly business models and of new, active forms of democracy.

In recent years we have often been encouraged to think that if we make a mess of planet Earth there are other planets for us to conquer and turn into our home. Well conquest, like the future, is not what it used to be. It has started to become apparent that building space colonies is not quite the same as discovering new continents. The efforts and costs of just building rather small structures such as the International Space Station are worth looking at. To keep half a dozen people alive there currently costs hundreds of millions of dollars a year. And even if these costs may come down in the coming decades due to newly developed technologies, the idea of colonizing other planets that are hostile to life as we conceive of it seems rather infantile. Will it ever be an option for the billions who now make up the human population?

This book

This book, then, is the first major publication of the WFC. It is focused primarily on environmental issues, more so than future books we will publish. Its eight chapters, are, above all else, concerned with making new choices about dealing with climate change. Its potential impact dwarfs that of any war, economic crisis, plague or famine that humanity has had to confront so far. It is probably the greatest ever collective challenge faced by humanity, and it also goes right to the heart of the growth philosophy underpinning modern urban industrial civilization. Climate change is particularly troubling when one considers the legacy we are leaving for future generations to deal with. Leading

researchers are now saying that we may have little more than ten years to stop *runaway* climate change from becoming irreversible. Not dealing with it decisively will be an intolerable *crime against the future*.

Climate change is the direct result of two major changes: the unprecedented combustion of fossil fuels and the reduction of the capacity of the biosphere to deal with the release of greenhouse gases. Both are long-term trends whose impacts are hard to discern in a world used to short-term thinking.

The fact is that in 300 years we will have burned 300 million years worth of fossil fuel deposits. Part of humanity may be having a jolly good time as a result, but in the process it is undoing much of the natural evolution of life on Earth: life over many millions of years has played a key role in removing carbon dioxide from the atmosphere, and tucking it away out of harm's way deep inside the Earth's crust. In the last 300 years we have been reversing this process. By putting carbon, from coal, oil and gas, back in the atmosphere in vast quantities, we are changing the very conditions that made life on Earth possible in the first place.

This has been the age of fire, and the more fires we light – in the boilers in our houses, in the engines of our cars, trucks and planes – the faster we change the conditions of life on planet Earth. Now we have to deal with the consequences and try to prevent the worst. This means taking urgent action – to wean ourselves off fossil fuels as soon as we possibly can, in order to stop the oceans from flooding the land, to stop hurricanes from devastating our homes, and to prevent the death of many of the Earth's forests and coral reefs. This book's eight chapters are seeking to provide a road map of how we might accomplish this urgent task.

Ross Gelbspan, author of the bestselling book *The Heat is On*, in the first of this book's main chapters, offers a profound insight into the strong resistance of a small elite in his own country, the United States (US), to face up to the challenges of climate change. Powerful interests are at work, particularly the fossil energy lobby and its close alliance with the mass media. Despite the ever-growing evidence that climate change is not just an issue for future generations, but an urgent problem in the here and now, we see very little evidence of the necessary action to deal with it.

And, this, of course, is not just an issue for the US but for all the other developed countries as well. The systemic dependence of our economies, of our transport systems and our predominantly urban lifestyles on the routine combustion of fossil fuels is at the heart of this problem. Coupled to this we can observe the fact that there are millions of people whose careers are wedded to the fossil fuel economy. Institutional inertia based on doing things in a certain well-established way is a further important factor.

Ross Gelbspan offers a fascinating perspective on climate change somewhere between despair and hope. He does not leave us helpless without advocating significant changes in taxation, subsidies

and other fiscal measures. He describes renewable energy as an important tool for reviving local economies in this age of rampant globalization. At the end of his chapter he shows the potential for the climate crisis to become a major transformative opportunity: 'The ultimate hope is that – especially given the centrality of energy to our modern lives – a meaningful solution to the climate crisis could potentially be the beginning of a much larger transformation of our social and economic dynamics.'

In the second chapter Hermann Scheer offers a detailed perspective of how such a transformation could be accomplished. As a member of the German Bundestag he has been instrumental in implementing a highly effective renewable energy policy that has been influential worldwide. The *renewable energy feed-in legislation* that he has helped to steer through the German parliament has had a tremendously positive impact in stimulating the development of renewables in his own country, creating some 170,000 new jobs, and has now been adopted in various forms in many other places.

Herman Scheer's vision is of a world that can wean itself off its dependence on both fossil fuel energy and of nuclear power. Like Ross Gelbspan, he is keenly aware of the resistance that stands in the way of creating a sustainable world free of the dictates of companies and politicians wedded to the exploitation of fossil fuels and nuclear energy.

Unlike these, renewable energy is inexhaustible as long as the solar system exists. The sun supplies our planet with 15,000 times more energy per day than we currently consume. The all-important thing is that a significant start has been made in the use of renewable energy and, as a result of appropriate legislation, its competitiveness is increasing dramatically. Whilst the cost of fossil fuels is going up, renewable energy is coming down in price. This bodes extremely well for the future. Scheer concludes his chapter by saying that 'due to the ongoing climate crisis and the global energy crisis it is already very late. But with renewable energies it is possible to reverse these frightening trends – for a better future for everybody. So, let us go along this road.'

Edward Goldsmith, founder of the pioneering *Ecologist Magazine*, is presenting the case for creating a sustainable food system against the background of a world suffering from accelerating climate change. For decades an increasingly unsustainable global food system has been created that overexploits the world's soils, reduces biodiversity and uses water supplies in entirely unsustainable ways.

Our current food system is totally dependent on a routine input of fossil fuels – for running farms, producing fertilizers, and for transporting food crops by sea, rail, road or air. Food processing, refrigeration and trade monopolies complete a picture of an utterly unsustainable food system that is spreading across the globe. The agricultural policies of an ever-growing number of countries and trade zones are continuing to encourage this trend towards the ever greater globalization of food. Recent studies have shown the irresponsibility of modern farming systems from the perspective of

energy use. To produce a ton of cereals or vegetables by means of modern agriculture requires six to ten times more energy than it does by using sustainable agricultural methods. If you add the energy used for transport and processing, the figures are much higher still.

In an age of climate change this trend is utterly unsustainable. 'What we must develop of course is an agricultural system that does not cause these terrible problems, and which on the contrary helps to revitalize and hence build-up our soil resources.' We could do worse than to learn from traditional agricultural practices for the farming systems of the future. Once again it is apparent that new forces in society are needed to reverse the current trends. The good news is that in many places consumers are encouraging a trend towards local food production for local need once again. But this needs to become mainstream to change the policies of countries as well as food companies.

Peter Bunyard, as science editor of *The Ecologist*, has concerned himself with many aspects of sustainable development. The future of forests is his primary concern and much of his time is spent on documenting what is happening to the Amazon forest. This, the world's largest rainforest area, has been the object of much environmental campaigning during the last 30 years. There have been great successes and great failures. Significant areas of the Amazon have now been set aside as indigenous reserves and biosphere reservations. But the onslaught continues, and more areas are being made accessible through new road construction schemes. Timber, gold, tin, iron ore and many other resources are being extracted, often for use in faraway places. Conversion of rainforest into cattle ranches, and increasingly into soybean fields, continues with a vengeance.

Peter Bunyard raises the key question of how the continued destruction of the Amazon forest increasingly undermines its environmental services to the planet. Deforestation reduces the capacity of the forests to absorb carbon and, as a result, the Amazon forest has been turned from a net absorber to a net contributor of carbon dioxide. Perhaps of even greater concern is the loss of the Amazon forest's capacity to produce moisture for the benefit of faraway places – in South America and beyond. A critical issue is how the functional integrity of the Amazon forests can best be assured despite the continued pressure on this vast region.

'The relationship between tropical forests and climate must be our first consideration when justifying the need for conservation.' An international process must be developed that values the forest as a natural carbon sink and for its climate services. Fortunately it is becoming clear that Amazon countries such as Brazil are beginning to realize that the further loss of this vast moisture reserve could cause damage to the regional economy. Let us trust that these considerations will now seriously influence the decision making of the countries concerned.

My own chapter on cities and sustainable development further develops these arguments. Large-scale urbanization defined the 20th century and there seems to be no let-up in this process. Large cities are the product of fossil fuel technology – the bulk of the world's fossil fuel energy is burned within or on behalf of cities. The ecological footprints of cities cover much of the globe: they stretch