

Table of Contents

Preface	ix
On the occasion of publication	x
PART 1: SYNTHESIS REPORT	
The Blue Planet Prize Laureates	1
Key Messages	3
1. The Problem	9
1.1 Introduction	9
1.2 Underlying Drivers of Change	11
1.2.1 Demographic	12
1.2.2 Economics	13
1.2.3 Technology	15
1.2.4 Socio-Political	16
1.2.5 Cultural	16
1.3 Current and Projected State of Global and Regional Environment: Implications of climate change and loss of biodiversity and ecosystem services for environmental, economic, and social sustainability	17
1.3.1 Climate Change	17
1.3.2 Biodiversity, Ecosystems, and Their Services	20
1.3.3 Food Security	22
1.3.4 Water Security	23
1.3.5 Human Security	23
2. The Way Forward	25
2.1 Our Vision	25
2.2 The Need to Act	26

2.3	Technology Options for Transition to a Low-Carbon Economy	27
2.4	Adapting to Climate Change	30
2.5	Approaches to Conserve and Sustainably Use Biodiversity	30
2.6	Food Security	33
2.7	Water Security	33
2.8	Competence in Leadership	34
2.9	The Importance of Good Governance	36
2.10	Regional Cooperation	40
2.11	Innovation and Grassroots Action	41
2.12	Knowledge Generation and Assessment	44
3.	Conclusion	46

PART 2: INDIVIDUAL CONTRIBUTIONS

Resilient People, Resilient Planet

A Future Worth Choosing

Gro Harlem Brundtland

51

Our Unrecognized Emergency

Paul R. Ehrlich and Anne H. Ehrlich

59

Emergence of BRICS and Climate Change

José Goldemberg

69

Environment and Development Challenges

Imperative of a Carbon Fee and Dividend

James E. Hansen

79

The Global Transition beyond Fossil Fuels

Amory B. Lovins and José Goldemberg

89

The Ecosystem Approach for Understanding and Resolving Environmental Problems

Gene E. Likens

103

Global Warming and Water Resources

Syukuro Manabe

111

Underlying Drivers of Change and their Inter-relationships

Demographic Changes

Robert May

115

Ecosystem Services

Protecting our Heritage and Life Support System: Key Issues and
Ways Forward

Harold Mooney 121

The Policy-Science Nexus

An Area for Improved Competence in Leadership

Karl-Henrik Robèrt 129

In Search of a Green Equitable Economy

Emil Salim 149

Seawater-based Carbon Sequestration

The Key to Climate Change Mitigation and Adaptation

Gordon H. Sato and Samuel N. Welderufael 159

**Irreversibility of Climate Change because of
Anthropogenic Carbon Dioxide Increases**

Susan Solomon 161

**Climate Change, Economics, and
a New Energy-Industrial Revolution**

Nicholas Stern 165

Rio+20

Green Economy with Inclusive Growth

M. S. Swaminathan 175

Agriculture and Food Security

Robert Watson 207

**Current and Projected State of the Global and
Regional Environment**

Implications for Environmental, Economic, and Social Sustainability

Robert Watson 211

Innovation and Grassroots Action

Bunker Roy 219

Adapting to Climate Change

Saleemul Huq 225

The Importance of Good Governance

Camilla Toulmin 229

Biodiversity

Conserving the Foundation of Sustainable Development

Will R. Turner, Russell A. Mittermeier, Julia Marton-Lefèvre,
Simon N. Stuart, Jane Smart, Josephine M. Langley,

Frank W. Larsen, and Elizabeth R. Selig	233
Climate Change	
Protecting Biodiversity and Harnessing Nature's Climate Solutions	
Will R. Turner, Russell A. Mittermeier, Julia Marton-Lefèvre, Simon N. Stuart, Jane Smart, David G. Hole, Elizabeth R. Selig	247
Ecosystem Services	
Accounting for the Benefits that Nature Provides to Humanity	
Will R. Turner, Russell A. Mittermeier, Rachel Neugarten, Julia Marton-Lefèvre, Simon N. Stuart, Jane Smart	261
Annex I	277
Annex II	284