

Global Biodiversity Assessment

Summary for Policy-Makers

R.T. Watson (Chair), V.H. Heywood (Executive Editor), I. Baste, B. Dias, R. Gámez, T. Janetos, W. Reid, G. Ruark



Published for the United Nations Environment Programme





CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paulo, Delhi, Tokyo, Mexico City

Cambridge University Press
The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9780521564809

© United Nations Environment Programme 1995

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 1995 Re-issued 2011

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

The contents of the Summary for Policy-Makers do not necessarily reflect the view of UNEP or of the Global Environment Facility (GEF), nor are they an official record.

Co-ordinators of the Global Biodiversity Assessment

Professor Vernon H. Heywood and Mr Ivar Baste (Section 1)

Dr Frank A. Bisby (Section 2)

Professor David L. Hawksworth and Professor Mary T. Kalin-Arroyo (Section 3)

Professor Robert Barbault and Dr Setijati D. Sastrapradja (Section 4)

Professor Harold A. Mooney, Dr Jane Lubchenco, Dr Rodolfo Dirzo and Dr Osvaldo E. Sala (Sections 5 and 6)

Dr Nigel E. Stork and Professor Michael J. Samways (Section 7)

Professor David L. Hawksworth (Section 8)

Dr Silvio Olivieri, Mr Jerry Harrison and Dr John R. Busby (Section 9)

Dr Bryan A. Barlow and Dr George T. Tzotzos (Section 10)

Mr Jeffrey A. McNeely, Dr Madhav Gadgil, Professor Christian Levèque, Dr Christine Padoch and Dr Kent Redford (*Section 11*)

Professor Charles Perrings (Section 12)

Dr Kenton Miller, Dr Mary H. Allegretti, Mr Nels Johnson and Professor Bror Jonsson (Section 13)

ISBN 978-0-521-56480-9 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.



Contents

| Foreword | iv |
|---------------------------|-----|
| Editors' Preface | vii |
| Executive Summary | 1 |
| Summary for Policy-Makers | 6 |



Foreword

Biodiversity represents the very foundation of human existence. Yet by our heedless actions we are eroding this biological capital at an alarming rate. Even today, despite the destruction that we have inflicted on the environment and its natural bounty, its resilience is taken for granted. But the more we learn of the workings of the natural world, the clearer it becomes that there is a limit to the disruption that environment can endure.

Besides the profound ethical and aesthetic implications, it is clear that the loss of biodiversity has serious economic and social costs. The genes, species, ecosystems and human knowledge that are being lost represent a living library of options available for adapting to local and global change. Biodiversity is part of our daily lives and livelihoods and constitutes the resources upon which families, communities, nations and future generations depend.

The basis of any discipline is not the answers it gets, but the questions it asks. As an exercise in biodiversity conservation, a number of questions can be asked: What are the values associated with biodiversity? How can benefits be generated from this resource? How can these benefits be shared in a fair and equitable manner? How do humans influence biodiversity? What are the underlying causes for this influence and what are their ecological consequences? How do the natural dynamics of biodiversity and the human-induced changes in biodiversity affect the values and goods and services provided by biodiversity to society?

Taken together, these questions bring out the multi-dimensional challenge that the issue of biodiversity conservation poses to policy-makers and scientists alike.

Fortunately, the international community has recognized this challenge. The entry into force of the Convention on Biological Diversity, in December 1993, is illustrative not only of this recognition but also of a change in the overall strategy in conserving biodiversity. It signals a move to a more proactive position that simultaneously seeks to meet people's needs from biological resources while ensuring the long-term sustainability of Earth's biological capital.

The United Nations Environment Programme has played a key role in the development of the issues relating to biodiversity. Our efforts have included the forging of the Convention on Biological Diversity its follow-up, and have included efforts to strengthen the national and global base of knowledge on biodiversity.

This endeavour lies at the very core of UNEP's three-fold mandate:

- to catalyse awareness on global environmental problems;
- to build consensus on action to address those problems;



> to promote and support successful programmes and activities of a catalytic nature.

An essential element is the collection and dissemination of knowledge generated by scientific research. In this regard the scientific community has been and shall continue to be UNEP's key partner in carrying out our mandate.

It was in this spirit that UNEP commissioned the Global Biodiversity Assessment (GBA) project. Underlying this endeavour was an attempt to mobilize the global scientific community to analyse the present state-of-the-art knowledge and understanding of biodiversity and the nature of our interactions with it: in other words, to provide the scientific information to answer some of the questions posed above.

It must be noted here that unlike the global agreements on Climate Change and Ozone Depletion, no formal scientific assessment was carried out prior to the final negotiation of the Convention on Biological Diversity. The Parties to the Convention clearly recognize the lack of knowledge regarding biodiversity, and the urgent need to develop our knowledge base in this area. However, let me hasten to add, there have been no formal links between the Assessment and the Convention.

Nevertheless, governments were regularly informed of the progress made in the development of this document. UNEP was gratified when we received written submissions from experts from more than 50 countries, who peer-reviewed various parts of the Assessment in their personal capacity.

The document produced is the result of an ambitious scientific endeavour, the outcome of the invaluable contributions of more than a thousand experts worldwide. It reflects a broad spectrum of views.

The GBA is an independent critical, peer-reviewed scientific analysis of the current issues, theories and views regarding the main aspects of biodiversity. The Assessment does not concern itself with the assessment of the state of country-level or regional biodiversity. This was the fear expressed by some constituencies when this project was initiated. Its perspective is global with a focus on general concepts and principles. It does not present any policy recommendations, although it does draw attention to possible policy implications of its major findings and to existing gaps in knowledge and capacity.

Although the GBA does provide an analysis of a wide range of biological and social science issues pertaining to biodiversity, its range is by no means exhaustive. Issues such as fair and equitable sharing of benefits, financial mechanisms and technology transfer have not been treated as extensively as the more scientific issues.

The emergence of new issues – scientific, economic and social – relating to biodiversity in the near future is a distinct possibility. In this context GBA should be regarded as a timely assessment of the subject as perceived by the global scientific community.

UNEP believes that the GBA will provide a compendium of knowledge for the benefit of those involved in the implementation of the Convention on Biological Diversity and it will also serve as a useful tool for the scientific body of the Convention to begin its work. I also hope that the Assessment will provide a significant conceptual input in the implementation of the relevant chapters of Agenda 21



and some initiatives put forth by the Commission on Sustainable Development (CSD).

Clearly the aim of the Assessment was not to present a consensus document. It is, however, an important step in building scientific consensus and creating the foundation for implementing political consensus. It is my fond hope that the GBA will succeed on both these counts. This Summary for Policy-Makers presents the main conclusions drawn by the Assessment, with an emphasis on those aspects that will be of interest to policy-makers.

Elizabeth Dowdeswell Executive Director, UNEP



Editors' Preface

This Summary for Policy-Makers has been prepared by an editorial group, and is based largely on the information provided in the Executive Summaries of the different Sections that make up the Global Biodiversity Assessment (GBA). The contributions of the Section Co-ordinators of the GBA to this process constituted a major input and are gratefully acknowledged here. This Summary has been extensively peer-reviewed and an earlier draft was discussed at a GBA workshop held in Panama, 12–16 June 1995.

In preparing this Summary we have attempted to present the main conclusions that have been reached by the Assessment and particular emphasis has been placed on those that will be of most interest to policy-makers.

We are grateful to T. Lovejoy and P.H. Raven for their comments on earlier drafts which have helped add clarity to certain aspects of the Summary. Inès Verleye (UNEP) has assisted with the selection of illustrations and the World Conservation Monitoring Centre has also helped in providing figures.

R.T. Watson

V.H. Heywood

I. Baste

B. Dias

R. Gámez

A. Janetos

W. Reid

G. Ruark