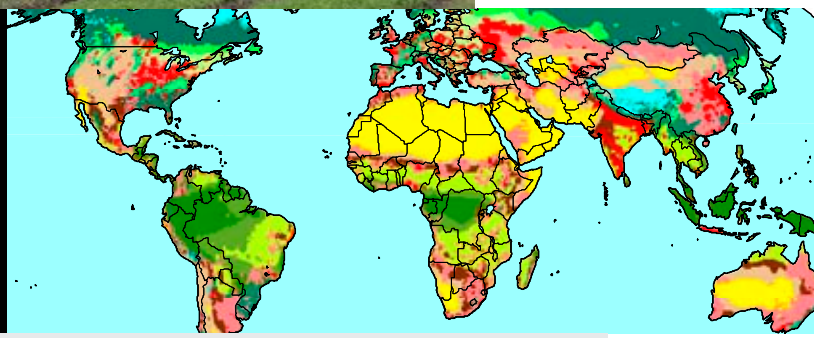
Secretariat of the Convention on Biological Diversity

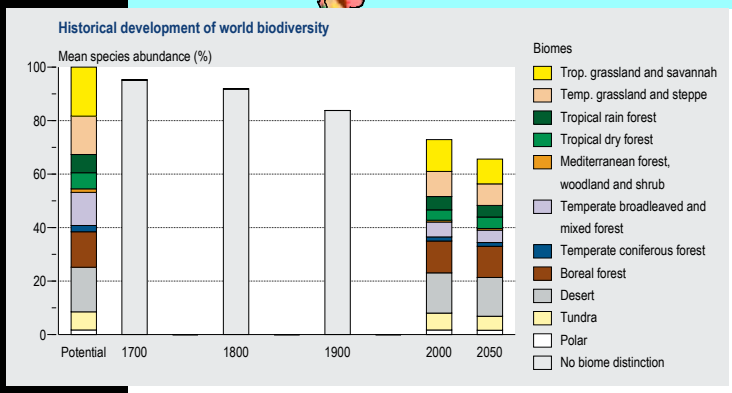
CBD Technical Series No. 31

CROSS-ROADS OF LIFE ON EARTH

Exploring means to meet the 2010 Biodiversity Target

Solution-oriented scenarios for Global Biodiversity Outlook 2





Convention on Biological Diversity

Netherlands Environmental Assessment Agency

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Environmental Knowledge for Change

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This study has been performed by assignment of the Secretariat of the Convention on Biological Diversity within the framework of MNP project E/555050, International Biodiversity and S/550027, Modelling Biodiversity.

Published jointly by the Secretariat of the Convention on Biological Diversity and the Netherlands Environmental Assessment Agency. ISBN: 92-9225-071-X

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Citation
Secretariat of the Convention on Biological Diversity and Netherlands Environmental Assessment Agency (2007). Cross-roads of Life on Earth — Exploring means to meet the 2010 Biodiversity Target. Solution-oriented scenarios for Global Biodiversity Outlook 2. Secretariat of the Convention on Biological Diversity, Montreal, Technical Series no. 31, 90 pages

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Typesetting: Em Dash Design

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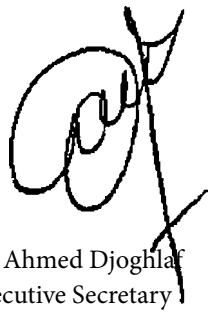
FOREWORD

Travellers need to make a decision when they reach a junction. They can proceed in the same direction, turn, or even go back to where they came from. The situation is much more complicated when it comes to making policy decisions that aim at maximizing benefits for all aspects of sustainable development—including safeguarding the biodiversity that surrounds us. There is no way to turn around and go back to an earlier development stage, and no possibility to undo irreparable damage we have done to our natural environment. More importantly, there is no established road ahead of us and no map we can consult. Each step—planned or unplanned—has implications and repercussions—immediate and long-term—on our economic and social wellbeing and on the wellbeing of our living environment. Moreover, the steps we collectively make as a world community are not well coordinated. Even where as a global community we have a clear vision and common understanding of the goal we want to reach together, we need to carefully analyse and agree on the best way to get there.

Over the past years, important common goals have indeed been set—most importantly the Millennium Development Goals and, as part of these and focusing on biodiversity, the target of a significant reduction of the rate of biodiversity loss by 2010. This target needs to be achieved at all levels, from local to global, with national governments through their biodiversity strategies providing essential frameworks for action. But how do we decide on the "best actions" to take? What tools do we have to forecast the consequences of what we believe to be the "best actions" on biodiversity?

This document analyses six plausible "best actions" and forecasts their impact on biodiversity. It was originally prepared for Global Biodiversity Outlook 2, published in 2006, and the main findings are summarized there. The original version was then peer-reviewed by scientists and Parties to the Convention on Biological Diversity and has been revised on the basis of the comments received. Some valid comments could not be taken on board because they would have either implied a different scope for the study or required methodologies and analyses that we are only beginning to develop.

Beyond the interesting and sometimes surprising results, the document shows the potential and limitations of biodiversity scenarios. This will assist Parties in the development of appropriate regionally-based response scenarios within the framework of the Convention's programmes of work—as requested by the Conference of the Parties to the Convention at its eighth meeting. I believe that it will also encourage the development of tailor-made national, sub-regional and regional scenarios on specific issues of interest at relevant scales. And it is my hope that an improved capacity will emerge to develop and calculate such response scenarios and will enable us to conserve and sustainably use the biodiversity we all depend on. Increasingly, meaningful response scenarios will enhance our ability to weigh options and decide on the path we wish to take towards a sustainable future.



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ABSTRACT

The aim of this study is to explore policy options that could have major *positive* or *negative* impacts on biodiversity. The main question is whether the 2010 Biodiversity Target can be met at global and regional levels. Effects up to 2050 are taken into account.

According to a business as usual scenario (baseline), and six individual options, it is unlikely that the 2010 target will be met at either global level or regional level. The loss of biodiversity is expected to continue at an unchanged pace in the coming decades. Key drivers, global population and economic activity are expected to keep on growing. Between 2000 and 2050, the global population is projected to grow by 50% and the global economy to quadruple. The need for food, fodder, energy and wood will unavoidably lead to a decrease in the global natural stocks. The negative impact of climate change, nitrogen deposition, fragmentation, infrastructure and unchecked human settlement on biodiversity will further expand. As a result, global biodiversity[2] is projected to decrease from about 70% in 2000 to about 63% by 2050. According to this baseline scenario, the rate of biodiversity loss over the coming decades will increase instead of decrease. Some options for reducing the rate of loss in the longer term may lead to an increase in the rate of loss in the short term.

Increase of protected areas to 20% of all ecological regions and *sustainable meat production* contribute to bringing the 2010 target closer, and may potentially reduce the rate of loss before 2050. Measures for *limiting climate change* by, amongst others, large-scale production of bioenergy seem to inevitably lead to additional loss of biodiversity in the medium term (2010-2050). By 2050 the biodiversity gain from avoided climate change does not compensate for the biodiversity loss due to additional land use, although this may be reversed in the long term (>2100). Large-scale *plantation forestry* also leads initially to additional biodiversity loss through increased land use. However, when plantations gradually take over global production (> 2040 in this option) the total biodiversity loss becomes less than that from ongoing exploitation of mostly (semi-)natural forests. *Full trade liberalization in agriculture* (WTO) will lead to further loss of biodiversity through ongoing agricultural expansion and large-scale land conversion in low-cost areas, where agricultural productivity is less efficient. Major loss results from a production shift by abandoning agricultural areas in developed regions and converting large natural areas in developing regions, concentrated in Latin America and Southern Africa. The shift results in higher net land requirements at the global level, since current crop yields are higher in the developed regions. Full trade liberalization in agriculture in combination with *poverty alleviation in Sub-Saharan Africa* leads to additional loss of biodiversity through agricultural expansion. Over the next 50 years much of the world's remaining natural capital will consist of mountainous, boreal, tundra, ice and (semi-) arid ecosystems, generally considered less suitable for human settlement.

The reader should be aware that this study is not meant to predict the future but to explore the major contributions of various currently debated policy options. Not all the possible measures or their combinations were assessed, and inland waters and marine ecosystems have not been considered. In all calculations agricultural productivity has been optimistically estimated. Less optimistic trends would correspond to an

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