



WMO

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WORKING GROUP III CONTRIBUTION TO THE IPCC FOURTH ASSESSMENT REPORT (AR4)

Background Information

(Submitted by the Co-chairs of Working Group III)

MITIGATION OF CLIMATE CHANGE

BACKGROUND

to the

PROPOSED OUTLINE FOR THE WG III CONTRIBUTION TO THE AR4

The proposed outline for the WGIII contribution to the AR4 was prepared during two scoping meetings in Marrakech (14-16 April 2003) and Potsdam (1-4 September 2003). This cover note describes the rationale behind the outline and provides additional information as put forward by the experts that participated in both meetings.

In the Third Assessment Report, the description of mitigation options was organized around themes that describe the various implementation aspects of climate change mitigation: technological and biological mitigation options, barriers and opportunities, policies and measures, and costs. This structure was complemented by chapters that covered long-term atmospheric stabilization, costing methodologies, and decision-making frameworks.

To improve the usefulness of the report to decision makers and responding to the governments' comments relating to the scoping of the AR4, the proposed outline for the WGIII contribution to the AR4 has a different structure:

Part A – Introduction and framing issues (ch. 1 and 2)

Part B – Long-term atmospheric stabilization and emission paths (ch. 3)

Part C – Specific mitigation options in the short and medium term (ch. 4-12)

Part D – International co-operation (ch. 13)

The core of the report is part C, which describes mitigation options in the short and medium term, structured according to emission sectors. The implementation aspects that formed the basic structure of the TAR, are now reflected in various sections of each sectoral chapter. Part B covers the relevant mitigation aspects of long-term atmospheric stabilization, whereas part D assesses the literature on international co-operation. In part A the issue of climate change mitigation will be introduced as well as most of the cross-cutting themes that will be reflected in all AR4 reports. As suggested by government comments on the scope of AR4, the relationship between climate change and sustainable development as well as the link between mitigation and adaptation receive particular attention.

In order to keep the report as concise as possible, the findings of SAR, TAR and previous Special Reports will be summarized in the beginning of each chapter, where possible. The chapters themselves will then focus on the new literature since TAR and previous Special Reports.

Part A - Introduction and framing issues (ch. 1 and 2)

Part A will describe climate change mitigation and its specific characteristics (connection between short and long-term, relation between mitigation, adaptation and climate change impacts, context of article 2 UNFCCC, etc.). This part will also cover a number of issues that play an important role throughout the rest of the report (cross-cutting themes and framing issues), indicating the general notions and how these themes and issues will be treated in the subsequent parts (e.g. the mutual linkages between climate change mitigation and sustainable development). Methodological issues will be discussed where appropriate.

Part B - Long-term atmospheric stabilization and emission paths (ch. 3)

Part B will assess the stabilization and long-term mitigation scenarios, showing the “mitigation gap” between achieving certain stabilization levels and various scenarios (SRES and others). Key issues covered in this part are: How could stabilization at various levels be achieved by what combination of mitigation options and at what costs? What driving forces are relevant (including the role of technology)? What is the role of the various greenhouse gases and other climate forcing agents? It will discuss the relation between adaptation and mitigation, in the light of decision making on the levels of stabilization of GHG concentrations (art 2 UNFCCC) and uncertainties. Finally it will discuss the implication of stabilization levels for short and medium term technology improvement and emission reductions in the light of social and technical inertia.

The literature assessed in this part would contain insights in short and medium term prospects for technological change and effectiveness of mitigation (covered in depth in Part C) as this forms an important element in long-term studies. Regional dimensions of long-term stabilization assessments will be covered in as far as the literature allows.

Part C - Specific mitigation options in the short and medium term (ch. 4-12)

Part C will assess the literature on specific mitigation options for the short and medium term. It will be organized by sectoral, intersectoral and thematic chapters. Each sector will include emissions and removals of all greenhouse gases. Regional differentiation will be emphasized across part C as far as literature is available. However, this regional disaggregation may differ by sector and could be along different characteristics, such as level of development, national circumstances or geographical location. The focus will be on key issues that differ from region to region.

The sectoral chapters (4-10) will follow one template, which covers all relevant aspects, including mitigation options, costs and potentials, effectiveness of policy instruments for implementation (including experience obtained from both governmental as well as private sector perspectives and overcoming social and behavioral barriers), technology development and transfer issues, system changes. For each sector the interactions of mitigation options with adaptation and vulnerability will be assessed (on a regionally differentiated basis). The influence of non-climate policies on emissions and the potential synergies and trade-offs with climate policy in the respective sector, will be assessed as well (non-climate policies can vary from energy security to energy access, air quality, mobility, land-use, food security, biodiversity and other sustainable development policies). An outlook towards the long-term options (to provide a connection to Part B) will be given. Template issues will only be incorporated when relevant and when literature is available. This approach will provide an integrated picture, that was absent in TAR.

Chapter 11 will cover a number of inter- or cross-sectoral aspects of short and medium term mitigation, that cannot be captured adequately in sector-oriented chapters. Key issues are: overall mitigation potential, macro-economic impacts, economic instruments, technology development and transfer, synergies and trade-offs with other policy areas (such as air pollution abatement), and influences from actions in countries on other countries (spill-over effects).

This part would conclude with a thematic chapter (12) that summarizes and synthesizes information at the macro-economic level on synergies and trade-offs between climate mitigation policies and sustainable development. This chapter will assess how climate change mitigation affects the pursuance of sustainable development goals as well as how greenhouse gas emissions are influenced by pursuing development goals for WEHAB themes, Millennium Development Goals, Agenda 21, poverty reduction and national development plans. This would allow presenting climate

mitigation information according to the perspectives relevant to key decision makers in areas other than climate change.

Part D - International co-operation

Part D will cover all aspects of international co-operation that are a key to addressing climate change, at government, private sector as well as non-governmental level. It will provide a scientific assessment of the rich literature regarding international co-operation on climate change mitigation, looking at stability, effectiveness, efficiency and equity aspects. It will also look into literature on international co-operation in other fields (other environmental areas, trade, and economic co-operation) to see what can be learned. It will cover the interactions of international co-operation in different fields. The interaction of national and regional policies and processes with international co-operation and institutions will be assessed as well.