

**THIRTY-FIRST SESSION OF THE IPCC  
Bali, 26-29 October 2009**

IPCC-XXXI/Doc. 21  
(28.X.2009)  
Agenda Item: 3  
ENGLISH ONLY

**CHAPTER OUTLINE OF THE WORKING GROUP III CONTRIBUTION  
TO THE IPCC FIFTH ASSESSMENT REPORT (AR5)**

**Revised version of WG-III: 10<sup>th</sup>/Doc.2 adopted by the Tenth Session  
of Working Group III**

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

**Working Group III:  
AR5 Outline Agreed by WG III Plenary**

**Table of Contents**

**Summary for Policy Makers**

**Technical Summary**

**Frequently Asked Questions (extracted from the chapters below)**

**I. INTRODUCTION**

**1. Introductory Chapter**

- Lessons learned from AR4
- New challenges for the AR5
- Historical, current and future trends
- The mitigation challenges

**II. FRAMING ISSUES**

**2. Integrated Risk and Uncertainty Assessment of Climate Change Response Policies**

- Risk perception
- Risk and uncertainty in climate change
- Metrics of uncertainty and risk
- Managing uncertainty, risk and learning
- Tools for analyzing uncertainty and risk
- Frequently asked questions

**3. Social, Economic and Ethical Concepts and Methods**

- Assessing methods of policy choice
- Ethical and socio-economic principles
- Metrics of costs and benefits
- Economics, rights and duties
- Justice, equity and responsibility
- Behavioural economics and culture
- Policy instruments and regulation
- Technological change
- Frequently asked questions

**4. Sustainable Development and Equity**

- Determinants, drivers and barriers
- Mitigative capacity and mitigation
- Links to adaptive capacity and adaptation
- Development pathways
- Consumption patterns and carbon accounting
- Integration of framing issues in the context of sustainable development
- Implications for subsequent chapters
- Frequently asked questions

### **III. PATHWAYS FOR MITIGATING CLIMATE CHANGE**

#### **5. Drivers, Trends and Mitigation**

- Global trends in stocks and flows of greenhouse gases and short-lived species
- Key drivers of global change
- Production, consumption and trade patterns
- Contribution of technological change to mitigation
- Contribution of behavioural change to mitigation
- Co-benefits and tradeoffs of mitigation including air pollution
- Carbon and radiation management and other geoengineering options including environmental risks
- The system perspective: linking sectors, technologies and consumption patterns
- Frequently asked questions

#### **6. Assessing Transformation Pathways**

- Tools of analysis
- Climate stabilization: Concepts, costs and implications for the macroeconomy, sectors and technology portfolios, taking into account differences across regions
- Integrating long- and short-term perspectives
- Integrating technological and societal change
- Sustainable development and transformation pathways, taking into account differences across regions
- Risks of transformation pathways
- Integrating sector analyses and transformation scenarios
- Frequently asked questions

#### **7. Energy Systems**

[Note: All sections should consider regional specificities including as appropriate to developed and developing countries and economies in transition.]

- Energy production, conversion, transmission and distribution
- New developments in emission trends and drivers
- Resources and resource availability
- Mitigation technology options and practices (including energy efficiency)
- Infrastructure and systemic perspectives
- Climate change feedback and interaction with adaptation
- Technological, environmental and other risks and uncertainties; and social acceptability
- Co-benefits, tradeoffs, spill-over effects
- Barriers and opportunities (technological, physical, financial, institutional, cultural, legal, etc.)
- Sustainable development and behavioural aspects
- Costs and potentials
- Gaps in knowledge and data
- Frequently asked questions

## **8. Transport**

[Note: All sections should consider regional specificities including as appropriate to developed and developing countries and economies in transition.]

- Freight and passenger transport (land, air, sea and water)
- New developments in emission trends and drivers
- Mitigation technology options and practices (including energy efficiency)
- Infrastructure and systemic perspectives
- Climate change feedback and interaction with adaptation
- Technological, environmental and other risks and uncertainties; and social acceptability
- Co-benefits, tradeoffs, spill-over effects
- Barriers and opportunities (technological, physical, financial, institutional, cultural, legal, etc.)
- Sustainable development and behavioural aspects
- Costs and potentials
- Gaps in knowledge and data
- Frequently asked questions

## **9. Buildings**

[Note: All sections should consider regional specificities including as appropriate to developed and developing countries and economies in transition.]

- Commercial, residential and public buildings
- New developments in emission trends and drivers
- Mitigation technology options and practices (including energy efficiency)
- Infrastructure and systemic perspectives
- Climate change feedback and interaction with adaptation
- Technological, environmental and other risks and uncertainties; and social acceptability
- Co-benefits, tradeoffs, spill-over effects
- Barriers and opportunities (technological, physical, financial, institutional, cultural, legal, etc.)
- Sustainable development and behavioural aspects
- Costs and potentials
- Gaps in knowledge and data
- Frequently asked questions

## **10. Industry**

[Note: All sections should consider regional specificities including as appropriate to developed and developing countries and economies in transition.]

- New developments in extractive industries, manufacturing and services (including tourism)
- New developments in emission trends and drivers
- Material substitution, material reuse and waste
- Mitigation technology options and practices (including efficiency improvements, household and industry waste)
- Infrastructure and systemic perspectives
- Climate change feedback and interaction with adaptation
- Technological, environmental and other risks and uncertainties; and social acceptability
- Co-benefits, tradeoffs, spill-over effects
- Barriers and opportunities (technological, physical, financial, institutional, cultural, legal, etc.)
- Sustainable development and behavioural aspects
- Costs and potentials
- Gaps in knowledge and data
- Frequently asked questions

## **11. Agriculture, Forestry and Other Land Use (AFOLU)**

[Note: All sections should consider regional specificities including as appropriate to developed and developing countries and economies in transition.]

- Introduction to integrated assessment of AFOLU
- Emission trends (including agricultural productivity) and drivers
- Competition and opportunities for land-use (energy, food, feed and timber production; housing, nature conservation, biodiversity and other land uses)
- Mitigation technologies and practices in forestry, agriculture (e.g. biochar) and livestock farming
- Mitigation effectiveness (non-permanence: human and natural impacts; displacement; saturation)
- Systemic perspectives (including integrated land-use assessment)
- Synergies, tradeoffs and interactions with adaptation and other mitigation options
- Climate change feedback, natural disturbance and extreme events
- Environmental and other risks and uncertainties
- Co-benefits, tradeoffs, spill-over effects
- Opportunities and barriers (technological, physical, financial, institutional, cultural, legal, etc.)
- Sustainable development and behavioural aspects
- Costs and potentials
- Gaps in knowledge and data
- Frequently asked questions

## **12. Human Settlements, Infrastructure and Spatial Planning**

[Note: All sections should consider regional specificities including as appropriate to developed and developing countries and economies in transition.]

[Note: Working Group III Plenary suggests that the WG III Bureau and the authors have the mandate to revisit the structure and the title of the bullets in this chapter based on the outcome of the Expert Meeting on “Human Settlements and Infrastructure” to be held in 2010.]

- Urbanisation challenges and opportunities for climate change mitigation
- Settlement structures, density, forms and lifecycle assessments
- Infrastructure, spatial planning and mitigation
- Lifestyle changes and efficiency
- Waste
- Water/energy nexus
- Human settlements and climate change: Experiences across countries
- Frequently asked questions

## **IV. ASSESSMENT OF POLICIES, INSTITUTIONS AND FINANCE**

### **13. International Cooperation: Agreements and Instruments**

- Introduction
- Framing concepts and an assessment of means for international cooperation
- International agreements: Examples and lessons for climate policy
- Multilateral and bilateral agreements across different scales
- Climate policy architectures
- Mechanisms for technology and knowledge development, transfer, diffusion
- Capacity building
- Linkages between international and national policies
- Linkages between international and regional cooperation
- Interactions between climate change mitigation policy and trade
- Performance assessment on policies and institutions including market mechanisms
- Investment and finance
- The role of public and private sectors and public-private partnership
- Frequently asked questions

#### **14. Regional Development and Cooperation**

- Introduction
- Opportunities and barriers of regional cooperation
- Current development patterns and goals
- Energy and development
- Urbanisation and development
- Consumption and production patterns in the context of development
- Low carbon development: Opportunities and barriers
- Links between mitigation, adaptation and development
- Investment and finance
- The role of public and private sectors and public-private partnership
- Frequently asked questions

#### **15. National and Sub-national Policies and Institutions**

- Introduction
- Characteristics and classification of policy instruments and packages
- Approaches and tools used to evaluate policies and institutions
- Research and development policy
- Assessment of the performance of policies and measures in developed and developing countries taking into account development level and capacity
- Framework: Role of institutions and governance
- Capacity building
- National, state and local linkages
- Links to adaptation
- Synergies and tradeoffs among policies
- Assessing policy design options
- Investment and finance
- The role of public and private sectors and public-private partnership
- The role of stakeholders including NGOs
- Frequently asked questions

#### **16. Cross-cutting Investment and Finance Issues**

- Financing low-carbon investments, opportunities, key-drivers and barriers
- Financing developed countries' mitigation activities
- Financing mitigation activities in and for developing countries including for technology development, transfer and diffusion
- Financing infrastructure and institutional arrangements
- Synergies and tradeoffs between financing mitigation and adaptation
- Directing and leveraging private financing
- Innovative financing
- Approaches and scale of financing at national, regional and international level in short-, mid- and long-term
- Enabling environments
- Frequently asked questions

#### **Glossary**

#### **List of Authors and Reviewers**

#### **Index**