

**IPCC Sixth Assessment Report  
Working Group III  
Outline with Chapter Headings and Indicative Bullets**

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## Chapter 1: Introduction and Framing

- Recent developments (Paris Agreement: NDCs, global stock-take, markets and finance, below 2°C goal; SDGs; technology and other developments; multiple entry points to climate mitigation)
- Sustainable development (including SDGs)
- Policy (multiple goal setting)
- Regional breakdown as relevant — local institutions, cultures, circumstances
- Solution orientation: Are we on track?/How can we realise ambition? How do we accelerate progress?
- Sectors, services and systems
- Methods and framings (models, analysis, top-down/bottom-up, scenario framework, cost-benefit, treatment of uncertainty, risk assessment, data, including social science framings)
- Strong link with Chapter 17
- Robust findings so far: AR5, SR1.5, SRLCC and SROCC

## Chapter 2: Recent trends and drivers

- Past and present trends of cumulative emissions and flows (per region, sector, GHG, GDP, etc.)
- Trends of consumption-based emissions
- Socio-economic and demographic drivers (GDP and population) and their trends
- Bird's eye view of sectoral emission drivers and their trends
- Policies and measures, related to NDCs, sustainable development perspectives and other policy goals
- Production and consumption patterns, international trade
- Technological choices and changes and impacts of technological breakthroughs
- Infrastructural lock-in and committed emissions
- Behavioral choices and lifestyles at individual and societal levels

### Chapter 3: Long term mitigation goals and pathways

- Methods of assessment, including approaches to analysis of mitigation and development pathways
- Socio-cultural-techno-economic assumptions and projections, including regional differences (referring to baseline and mitigation scenarios, shared socio-economic pathways, etc.)
- Emission pathways compatible with long term goals and reaching higher warming levels, taking into account CO<sub>2</sub>, non CO<sub>2</sub> and short-lived climate pollutants (including peaking, rates of change and balancing sources and sinks)
- Role of changing climate on emissions
- Systems transformations compatible with long term goals, including supply and demand and [integrating] sectoral information
- Economics of mitigation and development pathways, including mitigation costs, investment needs, employment effects etc.
- Technological and behavioural aspects of mitigation pathways and socio-technical transitions
- Interaction between short to medium-term action, including NDCs, and long-term mitigation pathways and goals
- International cooperation in mitigation pathways in the context of international mechanisms, including financial contributions
- Links to sustainable development (including co-benefits, synergies and trade-offs)
- Risk analysis of emission pathways considering uncertainty about climate response
- Benefits of mitigation, including information from WG2

## Chapter 4: Mitigation and development pathways in the near- to mid-term

- Accelerating mitigation in the context of SD at the national scale
- Aggregate effects of NDCs in the context of long-term goals, including methodologies and gap analysis
- NDC implementation in the context of national and subnational action plans and policies
- Regional and national modeling of mitigation and development pathways, including scenarios consistent with Paris goals, NDCs and mid-century strategies, and transformative changes in sectors
- Implications of mitigation for national development objectives, including employment, competitiveness, GDP, poverty, etc. ; and contributions of sustainable development pathways to mitigation, e.g., green growth
- Enabling conditions for mitigation, including technology development and transfer, capacity building, finance, and private and public sector participation
- Interactions between national actions across countries, e.g., transboundary infrastructure, trade
- Uncertainties and risks to the achievement of mitigation goals

## Chapter 5: Demand, services and social aspects of transformation

- Mitigation, SD and SDGs: Human needs and access to services, affordability
- Patterns of Growth and welfare indicators
- Sustainable consumption and production
- Linking services with demand, sectors, systems - implications for mitigation
- Culture, social norms, practices and behaviour changes for lower resource requirements
- Sharing economy, collaborative consumption, community energy
- Implications of ICT for mitigation opportunities taking account of social change
- Insights from lifecycle analysis and material flow analysis, dematerialisation
- Social acceptability of supply and demand solutions
- Leapfrogging, capacity for and feasible rates of change, lock-in
- Identifying actors and their roles and relationships
- Impacts of non-mitigation policies (welfare, housing, land use, employment etc.)
- Policies facilitating behavioural and lifestyle change
- Case studies and regional specificities

## Chapter 6: Energy systems

- Key conclusions from AR5. Do we have progress with filling gaps in knowledge after AR5?
- Energy services, energy systems and energy sector, integrations with other systems (including food supply system, buildings, transportation, industrial systems)
- Energy resources (fossil and non-fossil) and their regional distribution
- Global and regional new trends, drivers and policies, fossil fuel prices and supply systems (natural gas, coal, petroleum etc.)
- Emissions trends (including fugitive emissions and non-CO<sub>2</sub>).
- Global and regional new trends for electricity and low carbon energy supply systems, including renewables deployment and costs.
- Smart energy systems, decentralized systems and the integration of the supply and demand
- Mitigation options (including CCS), practices and behavioural aspects (including public perception and social acceptance)
- Interconnection, storage, infrastructure and lock-in
- Role of energy systems in the transformation pathways
- Bridging long-term targets with short and medium-term policies.
- Sectoral policies and goals (including feed-in tariffs, renewables obligations and others)
- Mainstreaming climate into energy policy
- Case studies
- Adaptation-mitigation co-benefits, synergies and tradeoffs
- Links to sustainable development: co-benefits, synergies and tradeoffs (e.g. air quality, energy access)
- Gaps in knowledge and data

## Chapter 7: AFOLU

- Robust findings from the SRCCL and other SRs, and update since AR5
- Trends in emissions and drivers
- Emerging Technologies
- Mitigation measures – supply and demand - effectiveness, costs, economics
- Impacts of climate on emissions and mitigation potentials
- Adaptation-mitigation co-benefits, synergies and trade-offs
- Links to sustainable development (including co-benefits, synergies and trade-offs)
- Mitigation potentials – supply and demand - global and regional
- Constraints and opportunities across different contexts and regions
- Provision of food, feed, fibre, fuel, and ecosystem services from land
- Effectiveness of social and policy responses (public and private)
- Accounting for emissions and stocks in AFOLU and non- managed land for GST
- Case Studies



## Chapter 8: Urban systems and other settlements

- Links to climate change impacts and adaptation
- Links to sustainable development (including co-benefits such as air quality and livelihood, synergies, and trade-offs)
- Demographic perspectives, migration, and urbanization trends
- Consumption, lifestyle, and linkages between urban and rural areas
- Urbanisation wedge in future emissions and mitigation at global and national levels
- City emissions and drivers analysis, including waste and wastewater, city typologies
- Urban emissions and infrastructure lock-in
- Low-carbon city scenarios, options and costs, deep decarbonization
- Urban form, design, and role of spatial planning
- Urban disruptive technologies and big data
- Innovative strategies and climate actions, urban experimentation, city networks and coalitions
- Urban mitigation governance – levels, barriers, and opportunities
- Policy instruments and infrastructure investments
- Rural settlements: leapfrogging opportunities
- Case studies

## Chapter 9: Buildings

- Summary of key messages from AR5
- Components (building shell, appliances, lighting), system boundaries
- Links to SD
- Access to sector specific services (e.g. affordability, energy poverty )
- Services (including confort, nutricion, iluminacion, comunicacion )
- Mitigation options and strategies towards zero carbon buildings: developments since AR5 and emerging solutions
- Trends and Drivers (regional specificities)
- Systemic interactions,insights from LCA,MFA
- Scenarios, costs and potentials, links with targets ( incl.sectoral targets)
- Sector specific policies and policy packages,financing. Enabling conditions
- Links to sustainable development (including co-benefits, synergies and trade-offs)
- Links to climate change impacts and adaptation options and its synergies and trade-offs with mitigation
- Regional specificities
- Case studies

## Chapter 10: Transport

- Summary of key messages from AR5
- Components and system boundaries
- Links to SD
- Access to mobility services, affordability
- Aviation and Shipping (including the treatment of aviation and maritime inventories)
- Mobility Services ( passengers and goods)
- Mitigation options and strategies towards zero carbon transport: developments since AR5 and emerging solutions
- Mobility trends and drivers ( regional specificities )
- Systemic interactions ( e.g energy sector, urban... ,insights from LCA,MFA
- Scenarios, costs and potentials, links with targets ( incl.sectoral targets)
- Sector specific policies and policy packages,financing. Enabling conditions
- Links to sustainable development (including co-benefits, synergies and trade-offs)
- Links to climate change impacts and adaptation options and its synergies and trade-offs with mitigation
- Regional Specificities
- Case studies

## Chapter 11: Industry

- What is new for AR6 based on knowledge gaps in AR5?
- Boundary and scope of the chapter.
- Changing context: Paris Agreement, Kigali Agreement, SDGs, etc.
- Emission drivers, policies and trends
- Industrial development patterns and supply chains
- Circular economy
- Evolving demand for industrial products in the context of cross sectoral demand and supply developments
- Mitigation technologies, efficient system options and potential costs, including industrial waste and carbon capture and utilisation
- Scenarios and mitigation options for deep decarbonisation, potential costs and cross system implications
- Assessment of the effectiveness of policies
- Implications of ambitious climate targets and SD for future policy
- Knowledge gaps and FAQs

## Chapter 12: Responses across and beyond sectors

- Scope of the chapter
- Competition for finite resources from large-scale land-based mitigation: land, water; management and governance
- Food systems including aquaculture and fisheries, regional aspects
- Interaction of food supply chains including food waste and human waste and leverages for mitigation, including emerging food technologies
- Links to adaptation and sustainable development (including co-benefits, synergies and trade-offs)
- Mitigation opportunities in diet changes
- Policies related to food system and food security including food waste and food demand
- Ocean based GHG removal techniques, potentials and spill-over effects, costs and governance
- Techniques for direct air capture of CO<sub>2</sub> and other GHGs, potentials and limitations, costs and governance
- Summary of sectoral costs and potentials
- Summary of sectoral co-benefits and trade-offs
- Ethics and governance of land, water and space based solar radiation management

## Chapter 13: National and sub-national policies and institutions

- Cross-country lessons from NDC implementation, including national and sub-national plans and strategies
- Trends in national climate legislation, strategies and institutions, in the context of sustainable development
- Building public agreement - public opinion formation, media roles, policy frames and normative change
- Political systems and climate action – comparative case analysis
- Policy instruments and regimes -- effectiveness, links to multiple objectives of sustainable development (including co-benefits synergies and trade-offs)
- Integrated analysis of sectoral policies -- integration with national policy, interactions across sectors, policy packages, enabling conditions, and infrastructure planning and investment
- Institutions for climate governance - lessons from cross country experience, including for capacity building, coordination, implementation, and monitoring
- Subnational climate action, including cities and states/provinces - prevalence, effectiveness, and lessons from comparative cases
- Partnerships for climate governance – multi-sectoral networks of government, civil society and private sector, private governance, and community-led governance
- Metrics to monitor climate action in the context of sustainable development (including co-benefits, synergies and trade-offs) – national, sub-national, and local
- Mitigation and adaptation linkages

## Chapter 14: International cooperation

- Recap of AR5 and what is new since AR5
- International cooperation and institutions
- Paris Agreement and UNFCCC- efficacy, implementation and enhancement.
- International Civil Aviation Organization and International Maritime Organization
- International sectorial agreements and approaches
- Linkages with International Organizations and processes (eg WTO, World Bank, G20, IRENA and others)
- Implementing the energy transition and mitigation pathways (3)
- Enabling institutions for finance and investment
- Capacity Building Institutions and Approaches
- International Partnerships, including business partnerships (Eg. Oil and gas Climate Initiative)
- International co-operation at the regional, sub-national and city level
- Transparency and accountability frameworks
- Lessons of implementation from Relevant International Agreements outside the climate arena
- Links to non-climate development policy (SDGs) (4)
- International climate policy and international emissions trading system

## Chapter 15: Mobilising finance

- Recap of AR5 and what is new since AR5
- Need for finance-- the Paris temperature targets and the NDCs
- Public climate finance flows, including multilateral and bilateral, and taking into account effectiveness and scaling up of such flows
- International private flows of climate finance
- National and sub-national climate finance mobilization and flows, including link to climate policy
- Links between national and international finance: Moving the Trillions, including innovative financial mechanisms and public-private partnerships
- Successful case studies
- The difference in climate-resilient financing consistent with 2, well-below 2 and 1.5 degrees scenarios or pathways
- Links to adaptation and sustainable development (including co-benefits, synergies and trade-offs)
- Financial accountability, including disclosure of climate risks to assets
- Emerging trends; e.g. community involvement in climate finance, sustainable investment criteria by institutional investors



## Chapter 16: Innovation, technology development and transfer

- Relevant findings in AR5 and what is new since AR5
- Role of innovation, technology development, diffusion and transfer in sustainable development and the Paris temperature targets
- Innovation and technology as systemic issues, evaluating literature on cases of technological innovation systems and innovation policy
- Assessment of international institutions relevant to technology and innovation, including the Paris Agreement, UNFCCC Technology Mechanism
- Non-UNFCCC partnerships and cooperative approaches on R&D cooperation, such as Mission Innovation, Breakthrough Coalition and the Cement Sustainability Initiative.
- Capacity for transformative change, including, e.g., capabilities for innovation, governance, R&D cooperation and engineering capacity
- Assessment of experiences with accelerating technological change through innovation policy for climate change at the national level, including successful case studies
- Specific challenges in emerging economies and least-developed countries, e.g. SIDS and land-locked countries
- Acceptability and social inclusion in decision-making, communication and information diffusion
- Implications of new disruptive technologies
- Links to adaptation and sustainable development (including co-benefits, synergies and trade-offs)

## **Chapter 17: Accelerating the transition in the context of sustainable development**

- Learning from integrative perspectives on sustainable development and climate change responses (synergies and tradeoffs).
- Pathways for joint responses to climate change and sustainable development challenges.
- Climate change mitigation responses in the context of multi-objective policies across scales.
- Climate change mitigation response capacities and enabling conditions, including technology, finance & cooperation for sustainable development.
- Mitigation-adaptation interlinkages, including potential synergies & conflicts.
- Regional perspectives on climate change mitigation, including regional case-studies on mitigation-adaptation interactions.
- Other emerging issues dealing with climate change responses and sustainable development in relation to the Agenda for Development 2030 and beyond.

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