

# **IPCC Special Report on Climate Change and Cities**

## **Summary for Policymakers**

### **Technical Summary**

#### **Chapter 1: Cities in the context of climate change: framing of the report**

- Integrated storyline of the report, chapter narrative, sequence, and linkages to other relevant processes and assessments
- Framing and defining urban systems and settlements, and their regional and climatic characteristics (including complex, cascading, compounding, and repeating risks)
- Sustainable development and climate resilience, acknowledging the diversity of development status of cities and countries
- Cities as hotspots of effects of hazards and emissions, losses and damages, vulnerabilities, exposure, and impacts, while also being key climate actors
- Framing of multi-dimensional urban characteristics, including physical, socioeconomic and environmental features
- Treatment of urban vulnerabilities, marginalized areas and people, gender, equity, informality and justice
- Psychology, perception, behaviour and attitudes toward climate change and cities
- Interconnection between local context and global context (governance, science, and climate change), and between urban and rural systems
- Assessment methodologies, including following a regional approach, diverse knowledge systems (including Indigenous Knowledge), practitioner expertise, city networks, and considered time frames and spatial scales

#### **Chapter 2: Cities in a changing climate: trends, challenges and opportunities**

- Understanding and learning from the past (global climate, hazards, crises, socioeconomic developments); past, current and future global and city-specific climate (trends, means, extremes)
- Urbanization, urban service, common and different urban development trends (population, demographics, informality and inequity, development stage, land use, geography, minorities and intersectionality, urban extent, form, path dependencies, lock-in, retreat, reconstruction, growth and decline, resource and carbon footprint, health and wellbeing, waste management, ecosystems, economy, finance and insurance, work, artificial intelligence and digitalization)
- Urban emissions trends including consumption-based emissions; the role of cities in emissions and mitigation; future global and city-level scenarios, considering local options, equity, sustainable development, infrastructure, and informal settlements
- City-specific risks and their global and regional climatic impact-drivers (extremes and their attribution, slow-onset events, e.g., sea level rise); compounding and cascading risks; scenarios with and without risk reduction, adaptation, resilience building, changes in vulnerability and

exposure across systems and sectors, including eco-systems and biodiversity, food, health and housing, innovative technologies/methods (measurements and models)

- Current mitigation and adaptation, planned and unplanned relocation, losses and damages experienced, and the socio-economic trends that shape them, including policy, governance, colonization
- Understanding the two-way interaction/feedback between cities, regions and countries, science behind the interactions (understanding the biophysical mechanisms); social interactions; climate and air quality, and other environmental changes, multi-hazard components (compounding and cascading hazards)
- Data, information, tools accessibility/availability/usability/transparency
- Uncertainties, implementation gaps, unprecedented situations
- Complexity and the need to contextualized climate change within broader societal trends (geopolitical, polarizing societal trends) and goals (Sustainable Development Goals), justice, cascading effects on critical infrastructure

### **Chapter 3: Actions and solutions to reduce urban risks and emissions**

- Common and context specific urban mitigation options for spatial planning, energy (heating, cooling, electricity), existing and new buildings and infrastructure, mobility and transport, water, land, food, demand-side measures and behavioral change and cross-sectoral, integrated approaches in urban systems such as circularity
- Common and context specific urban adaptation and disaster risk reduction options for managing risks in natural, ecological and human systems (including but not limited to physical infrastructure, urban nature-based solutions and ecosystem-based adaptation, and planning and social policies such as relocation, health systems, early warning systems)
- Evaluation of city actions across mitigation and adaptation, and responding to losses and damages such as reconstruction and rehabilitation, including lessons-learned, effectiveness and feasibility, mitigation measures with baseline emissions inventories and targets adopted by cities
- Urban observation and modelling tools for monitoring and evaluation for sectors and unaccounted sources
- Local risk assessments using scientific information, Indigenous Knowledge, and local knowledge of impacts, types and scales of adaptation responses (including positive experiences and outcomes, and aspects of maladaptive practices) and adaptation cycles in various regions and contexts
- Integrating mitigation and adaptation into sustainable development and just transitions, planning approaches under and for uncertainty, synergies and trade-offs, nexus approaches, social innovation, climate resilient development, adaptation targets and the role of cities in net-zero targets
- Metrics for assessing mitigation and adaptation options in the context of sustainable development and the characteristics of and within cities, including service provisioning that delivers health and well-being for all
- Case studies/best practices/stories related to climate resilient development, adaptation, decarbonization and low-carbon development in a diverse range of cities

## **Chapter 4: How to facilitate and accelerate change**

- New ways of planning under and for uncertainty; the likelihood of tipping points
- Providing climate and information services to enable action, including evaluation of mitigation, adaptation, responses to losses and damages, and the cost and benefits of action and inaction, and sustainable development
- Innovation in governance, urban planning policies, decision-making, technology, urban service provision, energy access and shelter, infrastructure, social systems, and finance, including adoption of innovation, facilitation of societal trends, acknowledging the diverse capacities
- Institutional capacities, competencies, inclusive multi-level governance
- Indigenous Knowledge, local knowledge, diverse knowledge systems and values
- Policies for behavioural and lifestyle changes including demand-side mitigation measures, education for empowerment, community engagement, social movements and communications
- Finance, financial instruments, legal frameworks, economic and policy instruments
- Holistic planning and systems thinking approach towards decarbonized and climate resilient cities
- Structural inequity, gender, colonialism, and justice
- Enabling conditions for poverty eradication, equity in just transitions
- Political will and leadership
- Conflicting goals and trade-offs

## **Chapter 5: Solutions by city types and regions**

This chapter contains a synthesis of solution-relevant information and a collection of case studies by city types in the context of urban sustainable development, distinguished by multi-dimensional characteristics such as:

- Geographical location (regions)
- Development stage
- Informality
- City climate and projections
- Climatic impact-drivers
- Adaptation and mitigation options
- Sectoral contributions to the economy
- Migration, urbanization and demographic trends
- Fragility and conflict situations

- Losses and damages, vulnerability, impacts and risks
- Early warning systems
- Capacities
- Inclusiveness, equity and justice
- Governance
- Climate finance

## **Annex I: Glossary**