



## SUMMARY: CitiesIPCC Scientific Steering Committee *Nature* and *Nature Climate Change* Papers

*Note: These papers represent the views of the authors and do not represent the official position of CitiesIPCC.*

Summary of Comment published in March 1, 2018, issue of *Nature* ahead of the CitiesIPCC conference:

### [Six Research Priorities for Cities and Climate Change](#)

*Authors: Xuemei Bai, Richard J. Dawson, Diana Ürge-Vorsatz, Gian C. Delgado, Aliyu Salisu Barau, Shobhakar Dhakal, David Dodman, Lykke Leonardsen, Valérie Masson-Delmotte, Debra Roberts, Seth Schultz*

- More than half the world's population lives in urban areas. Cities are responsible for up to 75% of energy related CO<sub>2</sub> emissions. By 2050, the infrastructure needs from growing cities in the developing countries will release more than 4 times the total carbon needed to achieve today's infrastructure level in industrialized countries.
- Cities are increasingly feeling the effect of climate change and extreme weather. By 2030, millions of lives and millions of people and US\$4 trillion of assets will be at risk from such events.
- Science needs to have a stronger role in urban policy and practice. Long-term, cross-disciplinary studies are needed to reduce carbon emissions and urban risks from global warming. The article presents six research priorities for cities and climate change, identified by the members of Scientific Steering Committee of the CitiesIPCC conference, to provide a foundation for discussion at the conference.
- The six research priorities are:
  - Expand observations,
  - Understand climate interactions,
  - Study informal settlements,
  - Harness disruptive technologies,
  - Support transformation, and
  - Recognize the global sustainability context.
- Researchers, policymakers, practitioners and other city stakeholders need to strengthen partnerships and produce knowledge together. This research and innovation for mitigating urban climate change and adapting to it must be supported at a scale commensurate with the magnitude of the problem.
- In particular, the authors conclude:

- Universities should support data platforms and long-term research programmes in their cities, while sharing knowledge nationally and internationally;
- Cities should establish scientific advisory boards chaired by a chief science adviser, which can enhance the profile of science, build capacity and leadership, and provide a point of contact;
- Funding agencies should provide grants for cross-disciplinary research and comparative studies, especially in the global south; and
- Online platforms should go beyond data sharing to help researchers, policymakers, practitioners and citizens diagnose problems, generate solutions, and trial and evaluate their effectiveness and embed learning.

Summary of Comment published in February 27, 2018, issue of *Nature Climate Change* ahead of the CitiesIPCC conference:

### [Locking in Positive Climate Responses in Cities](#)

*Authors: Diana Ürge-Vorsatz, Cynthia Rosenzweig, Richard J. Dawson, Roberto Sanchez Rodriguez, Xuemei Bai, Aliyu Salisu Barau, Karen C. Seto & Shobhakar Dhakal*

- As cities increasingly engage in climate action, some of these actions turn out to reinforce each other, while others work in a synergistic way. This is because they often take place in different organizational silos.
- The paper proposes a framework for how cities can map and identify how different mitigation and adaptation actions compromise or reinforce each other, and identifies areas where synergies take more frequently place.
- Furthermore, the paper points out that many urban climate responses are subject to lock-in risks, meaning that decisions in the near term will determine emissions or development in the long run, without the possibility, or only very difficult possibilities, to correct course.
- The paper identifies the various urban mitigation and adaptation response types that are particularly prone to lock-in risks.
- The paper concludes that these can also be turned into major opportunities – locking in positive climate responses can ensure long-term stability of effective climate action.

Summary of Comment published in February 27, 2018, issue of *Nature Climate Change* ahead of the CitiesIPCC conference:

### [Sustainable Development Goals and Climate Change Adaptation in Cities](#)

*Authors: Roberto Sanchez Rodriguez, Diana Ürge-Vorsatz & Aliyu Salisu Barau*

- This paper looks at how and why the SDGs provide a window of opportunity for creating multidimensional operational approaches for climate change adaptation in cities. Indeed, standalone SDG 11 on cities and SDG 13 climate in particular highlight the urgent need to explore opportunities that urbanization could give in addressing climate change and other wicked challenges that SDGs were designed to address.
- This paper highlights the fact that variant that state of the art concepts such as smart cities and green cities are often confusing not only to decision-makers, planners, practitioners and member of the public when we talk about climate change adaptation.

- However, based on their scope SDGs play an important role in creating a more inclusive narrative that cover social, economic political, and institutional dimensions of development. The paper stresses the need for the following: 1) **Constructing multidimensional approaches** in order to redirect urban planning to reflect SDGs paradigm for an integrated, multidisciplinary and inclusive urbanization and climate change adaptation– this is very important for developing countries. 2) **bridge gaps between planning and adaptation implementation**: in many developing countries there is fragmentation, confusion, and siloed thinking in implementing climate change adaptation strategies between stakeholders and agencies. Finally, the paper calls for **fast action** in implementation of climate change adaptation and SDGs in developing countries. This is necessary in order to avoid lock-in and delays.

Summary of Comment published in February 27, 2018, issue of *Nature Climate Change* ahead of the CitiesIPCC conference:

### [City Transformation in a 1.5°C Warmer World](#)

*Authors: William Solecki, Cynthia Rosenzweig, Shobhakar Dhakal, Debra Roberts, Aliyu Salisu Barau, Seth Schultz & Diana Ürge-Vorsatz*

- Fulfilling the ambition of the Paris Agreement to hold warming to 1.5°C will require rapid ‘mega’ decarbonization and transformation.
- At the same time, city residents and the infrastructure on which they depend will face more frequent flooding, droughts, heatwaves, and intense rain events, even though there is only 0.6°C additional warming required to reach 1.5°C. Transformations are defined here as a shift or transition resulting in a management, policy, technology or governance system and the underpinning norms and cultural values that results in a paradigm shift and the emergence of new management protocols and strategies.
- Achieving a 1.5°C world presents different challenges for cities of the Global South and Global North. Cities in the Global South will be more exposed to climate hazards and engage in micro-adaptation, while cities in the Global North may be able to afford larger scale marco-adaptation projects.
- Rapid conversion to low-carbon or zero-carbon building and urban designs, mobility, economics, and lifestyles – a change that will be difficult for cities that require retrofitting and for those being built now.
- The pathways to this type of urban transformation differ significantly in the Global North and the Global South. Within and between countries and cities there are stark inequalities between the emission levels of the rich and the poor. The disproportionate effect of climate change hits hardest the poorer urban population. Local governments most often will need to serve as principal agents of transformation.
- With significant encouragement from global city networks such as C40, ICLEI, Mayors Alliance and UCCRN (Urban Climate Change Research Network), some cities around the world – some with provincial/state partners – have begun to develop integrated climate adaptation efforts and greenhouse gas reduction strategies. Conventional urban planning approaches and capacity-building strategies to tackle increasing vulnerability to extreme events and growing demands for a transition to a low carbon economy are

proving inadequate as the need for large-scale transformation to achieve a 1.5C warmer world becomes evident. These efforts must now transition to hyper-speed, especially in the Global South where rapid urbanization, climate change vulnerability, and environmental justice collide.

**Notes:**

**For Information about the CitiesIPCC Cities and Climate Change Science Conference visit:**  
<https://citiesipcc.org/>