



## 5<sup>th</sup> Urban Research Symposium

### Cities and Climate Change: Responding to an Urgent Agenda

Marseille, France  
June 28-30, 2009

#### Call for Papers

##### Context

*Cities and Climate Change: Responding to an Urgent Agenda* has been selected as the focal topic for the 5<sup>th</sup> Urban Research Symposium to be held in Marseille, France from June 28-30, 2009. The Symposium is being organized by the World Bank in conjunction with some key partners.

The Symposium is looking for papers based on identified research clusters (illustrated below). The overall objectives of these papers are:

- (1) To examine the current applied urban research and practices on cities and climate change, in developing and transition economies as well as developed countries.
- (2) To identify knowledge gaps in current research; and
- (3) To contribute to a focused urban research agenda to guide collaborative efforts in this area.

The Symposium is aimed at presenting current and steering future research on topics that address city-specific questions by taking into account the complexity of urban systems. The research questions under each cluster should be approached in an inter-disciplinary manner to include: (a) Climate change science, that is the expected changes in temperature, precipitation and the incidence of extreme events, downscaling climate scenarios, impact of cities emissions on GHG and the impact of climate change on cities; (b) Social and economic impacts of climate change, that is the interactions between urban expansion, vulnerability and resilience to climate change, including urban forms and sprawl, impact on public health, urban poverty, and human settlements; and (c) Urban policies and practices, that is land use and planning, housing policies, building codes, transportation policies, participation, and governance.

Papers on each of the five clusters will include contributions on (a) diagnosis of specific issues and their components; (b) analysis and approaches; (c) experiences and concrete cases of current policies and practices in cities and the reasons for success; (d) extracting lessons, analyzing conditions for scaling-up, and creating action plans to deal with climate change-related issues. It is expected that the lessons associated with each cluster will provide the basis for a multi-donor coordination/effort to deal systematically with cities and climate change and to mainstream these concerns in their national and regional assistance strategies.

Researchers are encouraged to look at cities and urban areas as integrated systems and to mention how their proposals, while focused on a given cluster, would interact with themes in other clusters. Please refer to the Concept Note of the 5th Urban Research Symposium (available at [www.urs2009.net](http://www.urs2009.net)) for further background.

## The Research Clusters

### **Cluster 1: *Science and Indicators of Climate Change and Related Impacts: Understanding and measuring how cities impact, and are impacted by, climate change***

According to the Fourth Assessment of the Intergovernmental Panel on Climate Change (IPCC) in 2007, average global temperatures have increased by 0.74°C in the last 100 years, and the rate of sea level rise has increased in the last decade to 3.1 mm/year compared to 1.8 mm/year for previous years.<sup>1</sup> The past thirty-five years have seen an increase in the frequency and severity of extreme events. By 2015 there will be 33 megacities with populations over 8 million; 28 are in developing countries, and 21 are in coastal locations.<sup>2</sup> While these statistics are useful to indicate the importance of climate change, local policy makers and constituencies need more localized information and projections, including the effects of urban heat island, erosion of coastal zones, and flooding of low-lying areas, so as to be able to create policies to minimize infrastructure and human risks. In addition, the problem of uncertainty is an important one to consider especially in the context of adaptation in urban and peri-urban areas.

This cluster includes topics related to climate change science (to condense the most important findings and inform local policy makers), downscaling and uncertainty of climate scenarios at the local level, indicators to measure climate change impacts and emissions of greenhouse gases, disaster risk management, first-order and indirect impacts of climate change, and public health risks associated with changes in temperature and precipitation such as incidence of asthma, malaria and other water-borne diseases due to flooding and lack of proper drainage and sanitation facilities.

Examples of questions to be addressed include: What are the main sources of greenhouse gas emissions in cities? What are the most likely consequences of climate change and global warming on coastal and inland cities? How can global climate models and other applications such as GIS be used to predict climate change impacts at the local level? How do city officials respond to higher levels of uncertainty as climate scenarios are downscaled to the city level? Is the best strategy to “wait and see” or is a more proactive and preemptive position needed? Which indicators should be used to measure performance and define long-term scenarios? How can populations in deltaic regions and coastal areas cope with increased vulnerability to natural disasters? What climate change models and scenarios should be used to develop city adaptation plans? How should adaptation assessment plans for cities in developing countries be created and implemented?

### **Cluster 2: *Infrastructure, Built Environment, and Energy Supply: Planning efficiently and effectively to increase the resilience and energy efficiency of cities***

While recent projections indicate that cities are expected to grow 2.5 times in area by 2030, consuming approximately 1 million square kilometers, cities would still occupy less than 2.5% of global land area.<sup>3</sup> However, cities offer humanity the best way to efficiently provide critical services and allocate increasingly scarce resources. This increasing population density requires matching increases in resilience. Climate change, in the form of increased variability in temperature and precipitation and in the incidence of extreme events, will exacerbate the strain on local infrastructure. Cities are vulnerable to flooding, drought, sea level rise, and other impacts because of the number of people they serve and their proximity to coasts or rivers. Infrastructure and public services such as roads, bridges, water, waste water, and solid waste management treatment facilities will need to adapt to a changing climate. For cities in developing countries that currently lack these services, climate change effects must be considered

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<sup>1</sup> Climate Change 2007: The Physical Science Basis, Working Group I Report, Intergovernmental Panel on Climate Change.

<sup>2</sup> Building Safer; Cities: The Future of Disaster Risk; Disaster Risk Management Series No. 3; A. Kreimer, M. Arnold, and A. Carlin, eds.; The World Bank, 2003; Table 8.1, p. 103.

<sup>3</sup> Shlomo Angel, et al. The Dynamics of Global Urban Expansion. Transport and Urban Development Department, The World Bank. Washington D.C. September 2005. p. 1.

before any new infrastructure projects are initiated. Residential and commercial buildings are also included in this research cluster.

Increasing the amount of energy from alternative and renewable energy sources and improving energy efficiency within households and in buildings will be key to reducing greenhouse gas emissions from cities. Existing buildings are responsible for over 40% of the world's total primary energy consumption.<sup>4</sup> Fast-growing cities offer enormous opportunities for investments in new energy efficiency technologies. There is a lot of potential in countries like China and India, which are building new coal-power plants at a rapid pace and where urban residential building stock is expected to rapidly increase in the next 20 years. Development and dissemination of new technologies are vital in climate change mitigation. In order to decrease greenhouse gas emissions, there needs to be a shift from traditional fossil-fuel based technologies to renewable and low-carbon products. In addition, delivery of urban services which may be at risk from climate change also needs to be considered. Cities can play an important role in this regard by mandating a certain percentage of the electricity consumption to come from renewable energy sources, providing subsidies or tax benefits for renewable energy producers, and creating stronger environmental regulations.

Examples of questions to be addressed include: What are the economic costs of technological and engineering solutions, such as building coastal barriers, to increase the resilience of cities to climate change impacts? What are low-carbon growth opportunities for urban areas in the housing, transportation, and energy sectors? What building codes and green design & materials should cities adopt?

**Cluster 3: *Role of Institutions, Governance, and Urban Planning: Improving management, coordination, and planning of cities to meet climate change challenges***

Institutions, governance, and urban planning play a key role in addressing climate change issues in urban areas because policy decisions may be made by local, state, national ministries, or a combination of them. Public officials not only need the willingness but the capacity to act on various issues. "The quality of government has a very large influence on the level of risk from climate change faced by those with limited incomes or assets."<sup>5</sup>

It is projected that the urban populations worldwide will double between 2005 and 2050.<sup>6</sup> However, many regions have weak local governments and institutions. This cluster will consider how shortcomings such as the absence of appropriate legislation and supporting agencies, will exacerbate the climate change crisis in cities and how capacity building and reforms can improve the management and coordination of cities to meet climate change challenges. An important issue to consider is the complex processes by which local governance frameworks can change fast enough to cope with climate change impacts.

Examples of questions to be addressed include: How can government policies enable local communities to increase their resilience to climate change and reduce emissions? What inter-agency coordination is necessary to introduce and improve mitigation and adaptation strategies at the city level?<sup>7</sup> How should jurisdictional overlaps or conflicts between multiple municipalities be tackled with regard to climate change policies? How can this coordination benefit the day-to-day management of cities as well? How should local institutions be strengthened to meet the challenges of climate change? What tools do urban planners need to plan effectively against climate change? How is urban expansion and urban form related

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<sup>4</sup> Promoting energy efficiency investments. Agence Francaise de Développement, 2008.

<sup>5</sup> Huq, S, et al. Editorial: Editorial: Reducing risks to cities from disasters and climate change. *Environment & Urbanization*. 19(1):3-15. April 2007.

<sup>6</sup> World Urbanization Prospects: The 2007 Revision Population Database, <http://esa.un.org/unup/>

<sup>7</sup> Hurricane, Heat waves, droughts, cold spells, increases in natural and man-made pollution, resurgence of diseases like malaria and dengue fever, epidemics of cholera, erosion, floods, cyclones and typhoons, landslides, rising sea level, salinization, wildfires, windstorms.

to mitigation and adaptation priorities? How do these relate to land use, housing, and urban development policies?

**Cluster 4: *Incentive policies, economics and finance: Understanding how and why cities respond to climate change***

One of the most contentious questions in the climate change debate is the cost of climate change impacts will be and who should pay for mitigation and adaptation. The Stern Review estimates the overall costs and risks of climate change from 5 to 20% of the world's GDP each year into perpetuity if no action is taken soon.<sup>8</sup> Small island states and most developing countries will increasingly bear the brunt of climate change impacts while having a marginal role in the creation of these impacts.

Cities will be required to participate in carbon finance, cap-and-trade mechanisms, and global reporting initiatives as the world moves towards carbon-constrained economies. Large cities have a responsibility to mitigate climate change and report their actions, but they should also have a share in the revenues generated from carbon finance opportunities. This is easier said than done. Experiences on successful cases will be discussed. Examples of questions to be addressed include: How can incentives be created for cities to adopt mitigation strategies? How can one publicize preparedness and encourage compliance? How do you increase the capacity of developing country cities to adapt to climate change? How should cities prioritize climate change investments within the context of limited natural and economic resources? What changes are required in financial policies, institutional capacities, technology availability, and education? How can funds be more efficiently applied to mitigation projects in developing countries through carbon finance? Which incentives work at the individual and firm level? Would it be appropriate to have the private sector finance the costs of adaptation, especially in the form of improvements in infrastructure? What are the market and public sector incentives that can be efficient in reducing greenhouse gas emissions and for the relocation of resident populations and economic activities to less vulnerable parts of urban areas? How can cities increase their self-sufficiency with regard to food production, energy use, and so on.

**Cluster 5: *Social aspects of climate change: Understanding and reducing the impacts of climate change on the most vulnerable populations***

As the scientific consensus on climate change deepens, the debate on the impacts of climate change on social welfare and development is beginning to gain momentum. Many people in the growing cities of Africa and Asia will be poor, and hence will be more vulnerable to climate change impacts. Today 72% of the urban population in Sub-Saharan Africa lives in slums. Slightly more than half the population of Mumbai, which is the financial capital of India and its richest city, lives in slums.<sup>9</sup> Because of the important vulnerability of these populations, Anna Tibaijuka, the Executive Director of UN Habitat, said that “The urban poor have to be part of the equation” to solve the climate change crisis.<sup>10</sup>

Climate change will affect the poorest populations most severely. This brings up a number of questions regarding equity and financing for adaptation. Emerging literature suggests that social capital in poor communities promotes climate resilience in two ways: by enhancing local government accountability and through higher levels of community cooperation. This cluster will contribute to creating a greater understanding and awareness of the socio-economic impacts of climate change and a sensitization strategy for key groups of urban residents, particularly those who are most vulnerable to local impacts such as freshwater availability, health, human interactions, migration, conflicts and refugees over the growing resource scarcity.

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<sup>8</sup> Nicholas Stern. The Stern Review: The Economics of Climate Change.

<sup>9</sup> Mehta, B. and A. Dastur. Approaches to Urban Slums – A Multimedia Sourcebook on Adaptive and Proactive Strategies. The World Bank. 2008.

<sup>10</sup> [http://www.breitbart.com/article.php?id=070509220813.v3dan5yr&show\\_article=1&cat=0](http://www.breitbart.com/article.php?id=070509220813.v3dan5yr&show_article=1&cat=0)

Examples of questions to be addressed include: How much do the urban poor contribute to greenhouse gas emissions through burning traditional fuels and other sources? What are the viable alternatives in the short and long-term? What is the likelihood that armed conflict or similar stresses will occur within or between cities as a result of climate change impacts? What grassroots-level responses have been successful in dealing with climate change impacts? How can these initiatives be scaled-up across cities? What impact will climate change have on rural-to-urban migration as well as and inter-city and international migration?

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### **Procedures for Participation**

- Interested researchers should submit a one-page abstract of their proposed paper in either English or French, along with the [submittal form](#), by September 30, 2008. The abstract should indicate the Cluster (see above) in which the paper is submitted. It should outline the objective of the paper, methodology, integration with and/or connection to other clusters, data sources (if applicable), and state what the author(s) asserts to be the contribution of the paper to the body of literature on the subject. The submission should also be accompanied by a CV of each author/co-author. Submittal forms, abstracts, and CVs should be sent by email to: [urbansymposium@worldbank.org](mailto:urbansymposium@worldbank.org). Comments and suggestions are also welcome at this email address. We recommend that you read the Concept Note prior to submitting a proposal (available at [www.urs2009.net](http://www.urs2009.net)).
- Selections will be made in October 2008. The authors of accepted papers or recommended posters will be notified by October 20 (where proposals list multiple authors, the first author listed on the submittal form will be notified). A full draft of each paper is due by March 30, 2009. The final version is due May 1, 2009 to enable translation and distribution to discussants.
- Researchers from emerging economies whose papers are selected for presentation will be given priority in the allocation of funding for travel to Marseille (where proposals list multiple authors, the first author listed on the submittal form will be allocated funding, unless otherwise specified by the authors). Researchers who are selected for poster presentations only are welcome to attend the Symposium but will not receive funding for travel to Marseille.
- Simultaneous interpretations will be available in French and English, and in other languages if possible.
- A subset of the papers accepted for presentation will be published following the Symposium, and all papers accepted will be posted on the World Bank's website. Other publication outlets are encouraged, with attribution.
- Upon acceptance of submitted proposals, researchers will receive instructions on the format suggested for the papers.
- For further information visit <http://www.urs2009.net>