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Response to UNFCCC Call for Submission on Human Settlements and Adaptation – September 2017

Submitted by the Human Settlements Group,
International Institute for Environment and Development (IIED)

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Assessing sensitivity and vulnerability to climate change

Grassroots data-collection and vulnerability assessments
Understanding the sensitivity and vulnerability of low-income urban residents in cities in the Global South requires close engagement with these residents. Evidence collected by community organizations is a rich source of information on the drivers of vulnerability: both physical (quality of infrastructure and housing), social (capacity to organise and adapt), and individual (age, gender and health). There are many examples of this type of data collected – often with a focus on settlement upgrading – that are highly relevant for understanding the nature of vulnerability in 'slums' and other marginalised neighbourhoods, as well as for providing a basis to build resilience. Relevant tools and methods include community profiles and enumerations – documented extensively at www.knowyourcity.info. See "Why enumeration counts; documenting by the undocumented" (*Environment and Urbanization* Brief 24, http://pubs.iied.org/10616IIED/).

For a methodological discussion of participatory climate adaptation appraisals, with examples from Mombasa (Kenya) and Estelí (Nicaragua), see Moser, C., & Stein, A. (2011). Implementing urban participatory climate change adaptation appraisals: a methodological guideline. *Environment and Urbanization*, 23(2), 463-485. https://doi.org/10.1177/0956247811418739

Additionally, Douglas *et al.* (2008) conducted a participatory vulnerability analysis in 5 African cities (Accra, Kampala, Lagos, Maputo, Nairobi), which uncovered overlapping causes of vulnerability to flooding. Residents in informal settlements were especially vulnerable to floods resulting from poorly-maintained drainage; unregulated development; changing weather patterns; and transformations along the shoreline. (Douglas, I., *et al.* (2008). Unjust waters: climate change, flooding and the urban poor in Africa. *Environment and Urbanization*, 20(1), 187-205. https://doi.org/10.1177/0956247808089156

Gender and climate vulnerability
Heatwaves, flooding, landslides, and even mitigation and adaptation measures may affect specific population groups more than others. Regarding underlying sensitivity factors, past literature has

consistently identified *gender* and *socioeconomic status*. They offer solutions for avoiding increased equity and justice concerns due to climate change impacts, adaptation and mitigation (see especially tables pp. 172-173) See Reckien, D., *et al* (2017). Climate change, equity and the Sustainable Development Goals: an urban perspective. *Environment and Urbanization*, 29(1), 159-182. https://doi.org/10.1177/0956247816677778

In Da Nang, Vietnam, women and men's gendered roles and responsibilities before, during, and after disasters may create different forms of vulnerabilities and impacts (see pp. 37-38). Although housing damages imposed greater burdens upon men after disasters, women's care burdens increased as well as exacerbating women and girls' challenges linked to inadequate water. Furthermore, Da Nang's action plans for climate change had limited consideration of gender; in these strategies, women were only viewed as passive victims and missed opportunities for gender-transformative responses to climate change. Anh, T. T. et al (2016). Gender analysis in building climate resilience in Da Nang: challenges and solutions. IIED Working Paper, http://pubs.iied.org/10784IIED/

For discussion of gendered and spatial vulnerabilities in Dhaka's informal settlements, see Jabeen, H. (2014). Adapting the built environment: the role of gender in shaping vulnerability and resilience to climate extremes in Dhaka. *Environment and Urbanization*, *26*(1), 147-165. https://doi.org/10.1177/0956247813517851

Urban- and Community-Level Vulnerabilities For a detailed, comparative analysis of 4 informal settlements in Karachi and the city's underlying drivers of vulnerabilities–including 1) migration, 2) poor governance, and 3) urban densification—see Hasan, A., *et al.* (2017). Drivers of Climate Change vulnerability at different scales in Karachi, IIED Working Paper, http://pubs.iied.org/10805IIED/

For working papers and briefs from the Asian Cities Climate Change Resilience Network (ACCCRN), see www.iied.org/aggregator/sources/61

Integrating both short-term and long-term climate considerations (including both extreme and slow onset events) into planning

Effective and sustainable adaptation to climate change impacts requires that cities take into account both the short and longer-term impacts of climate change when planning and implementing their adaptation measures, and in doing so consider also both acute shocks as well as slower onset crises. Such foresight in planning can help to avoid maladaptation by implementing measures to adapt to one threat which can increase exposure to other shocks. It can also help to contribute to other goals – such as increasing GHG absorption and providing 'green jobs', hence strengthening the resilience of low-income populations – see for example Durban's 'tree-preneurs' project:

- Prioritising climate change adaptation and local level resilience in Durban, South Africa

As cities see their populations grow, they must also plan for appropriate urban expansion which doesn't exacerbate the impact of future climate change. Urban planning policies and their enforcement is required to prevent destruction of existing natural resources which can help reduce the impact of future climate change – such as wetlands. Options for eco-system based adaptation should be considered:

- Wheezing ecosystems, livelihood services and climate change resilience in Uttar Pradesh
- Exploring ecosystem-based adaptation in Durban, South Africa: "learning-by-doing" at the local government coal face

Taking a long-term view to urban adaptation planning is particularly important when considering adaptation measures for low-income or otherwise marginalised population groups who are often located in the most exposed areas (such as riverbanks or hillsides). If resettlement is applied as an adaptation measure, it needs to be done so in a way which does not increase the vulnerability of households in other ways – such as by hampering their ability to access their workplace, or breaking up existing social networks and community groups which can be an important component of resilience.

- A tale of two cities: comparing alternative approaches to reducing the vulnerability of riverbank communities in two Indonesian cities

Planning for long-term impacts should also consider how to support local households to move beyond coping capacity towards developing longer-term adaptive capacity:

- Moving beyond short-term coping and adaptation.

In order for cities to be able to adequately plan for both short and long-term risks, there is a need for better and more accessible downscaled data about climate impacts. It is also important to build the capacity of municipalities to interpret and make use of this data, and to collect their own data. Data on disasters rarely include disasters too small to be classified as a disaster, yet this kind of data should be collected in order to facilitate planning for both extreme and slower-onset events, which might otherwise not be recognised as disasters.

- From everyday hazards to disasters: the accumulation of risk in urban areas

Each urban centre also needs to gather data to develop a complete picture of the full spectrum of risks it faces, who is most at risk and why, in order to prioritise and target risk-reduction measures accordingly.

- Editorial: The full spectrum of risk in urban centres: changing perceptions, changing priorities

Involving local communities in participatory processes of risk mapping can be an important part of this, building both their awareness of risks and fostering relationships with local government. See for example:

- [Addressing disaster risk reduction through community-rooted interventions in the Philippines: experience of the Homeless People's Federation of the Philippines](#)

Processes of collecting data for risk and vulnerability assessments should facilitate the involvement of local communities, and should also consider other variables which may define vulnerability, such as gender, age or (dis)ability:

- [Climate change vulnerability assessments in Indonesia: Where are the women's perspectives?](#)

The role of national governments in supporting adaptation at the local level

A huge amount of adaptation planning and implementation necessarily takes place at the local level. This is in part because the most efficient scale for key adaptation activities will often be the household, neighbourhood or city scale. It is also because – when done well – devolution of resources and powers can increase responsiveness to local needs, and the adaptive capacity of local actors. For instance:

- Local governments are often responsible for risk-reducing infrastructure and services, such as drains, all-weather roads, emergency services, healthcare and solid waste collection. Local governments are additionally responsible for designing and enforcing regulatory frameworks that contribute to public health and safety, such as building regulations, traffic control, zoning and pollution control. These powers mean that local governments have unique opportunities to enhance climate resilience.
- Local civil society groups, particularly community-based organisations, can contribute to adaptation by implementing development projects which reduce exposure to hazards or enhance adaptive capacity: for example, the construction of sanitation systems. Local civil society can also enhance resilience by engaging with social and political issues that drive vulnerability. For example, grassroots organisations may facilitate collective action and provide a conduit for information between local government and residents, strengthening accountabilities between citizens and the state.

National governments can support adaptation at the local level in a number of ways:

1. Create an enabling policy, legal and regulatory environment for local organisations to effectively act on adaptation. Central governments should aim to grant sufficient powers to local authorities for them to be able to act effectively, and sufficient rights to local civil society for them to be able to meaningfully influence decision-making.

2. Strengthen the capacities of sub-national governments, so that they can effectively fulfil their mandates. Central governments should invest in the capacities of local governments, particularly to improve operating processes and systems such as project planning, procurement, budgeting, and monitoring. This can ensure that local authorities have the institutional capacities to deliver adaptation programmes effectively.

3. Devolve sufficient resources to the local level. Central governments can do this by committing to reliable and sufficient fiscal transfers to local authorities, or permitting local authorities to take responsibility for collecting particular taxes, fees and charges. They can also provide financial or in-kind resources to community-based organisations to support their adaptation programmes, often in partnership with local authorities.

4. Experiment with or expand mechanisms for community participation and oversight in order to improve accountability, transparency, and public buy-in. This might include measures such as participatory budgeting, monitoring and evaluation, citizen forums and scorecards, and e-governance through mobile platforms.

Key bodies of evidence include:
- Central governments can build the capacities of local governments, utilities, community-based organisations and other local actors, particularly to develop new skill sets relevant to climate change adaptation.

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- - - o From practice to theory: emerging lessons from Asia for building urban climate change resilience
        o From theory to practice: building more resilient communities in flood-prone areas
        o Responding to Climate Change in Asian Cities
- Where local actors have sufficient capacities, decentralisation of power and devolution of resources can enable them to respond effectively to local priorities and needs – including climate risks. This can help to simultaneously meet adaptation and development objectives.
    o The political underpinnings of cities' accumulated resilience to climate change
    o Transformational resilience thinking: putting people, power and politics at the heart of urban climate resilience
    o Incorporating climate change adaptation into planning for a liveable city in Rosario, Argentina
- Central governments can support the participation of community-based organisations in risk mapping and adaptation planning. This can help to generate a robust, locally-relevant evidence base on key risks and development challenges, while amplifying the voice of potentially vulnerable groups.
    o Participatory integrated assessment of flood protection measures for climate adaptation in Dhaka
    o Implementing urban participatory climate change adaptation appraisals: a methodological guideline
- It can be difficult to determine the appropriate scale for adaptation measures, so central governments can play a key role coordinating local organisations operating at different scales and in different areas.
    o Resilience trade-offs: addressing multiple scales and temporal aspects of urban resilience
    o Unjust waters: climate change, flooding and the urban poor in Africa

Cross-cutting issues and linkages to the process to formulate and implement national adaptation plans (NAPs)

We are aware of very little evidence on this theme. Our direct experience with NAPs is that these often fail to treat urban issues in a coherent or systematic manner – and we would strongly encourage future NAPs to engage more fully with the themes raised elsewhere in this submission.

City-to-city partnerships on climate change adaptation

City-to-city partnerships have shown great potential for building the capacity of cities to face the challenges of climate change. This is part of a broader trend of networks of cities working together on economic, political and environmental issues, supported by increasingly strong arguments that are made about the role of Mayors and municipal authorities not only in driving urban development, but also in responding to broader global challenges. See, for example:

> Barber B (2013). 'If Mayors Ruled the World: Dysfunctional Nations, Rising Cities' [from book summary: "Barber cites the unique qualities cities worldwide share: pragmatism, civic trust, participation, indifference to borders and sovereignty, and a democratic penchant for networking, creativity, innovation and cooperation. He demonstrates how city mayors, singly and jointly, are responding to transnational problems more effectively than nation-states mired in ideological infighting and sovereign rivalries."

> Katz B, Bradley J (2013). 'The Metropolitan Revolution: How Cities and Metros Are Fixing Our Broken Politics and Fragile Economy' [primarily with a US focus]

> Environment and Urbanization (2009). 'What role for Mayors in good city governance'. Environment and Urbanization Brief 18. [from summary: "Successful mayors have balanced the need to attract new investment and support business expansion with good social and environmental policies; many have made government agencies more responsive and accountable to citizens, with particular attention to allowing more voice and influence to low-income groups or other groups that generally have little influence. But many mayors remain hostile to the informal enterprises and settlements that provide the homes and livelihoods for much of their population; indeed they may view these as constraints on development."

Formal networks such as the Durban Adaptation Charter (www.durbanadaptationcharter.org/) provide a mechanism for shared commitments and the exchange of information between local and municipal authorities about climate change adaptation. Less formal interactions have also demonstrated the value of direct interaction between city officials with similar responsibilities. See, for example: Carmin J, Dodman D, Chu E (2013). 'Urban Climate Adaptation and Leadership: From Conceptual Understanding to Practical Action'. OECD Working Paper.

Networks of adaptation practice have shown how cities can learn from and inspire each other, and have proven influential in encouraging other cities to act on climate change as well. A significant example of this is the Asian Cities Climate Change Resilience Network (ACCCRN) (https://www.acccrn.net), which initially focused on 10 cities in four countries, but which has since expanded to more than 40 additional cities. A thorough description of this process is provided by Brown *et al.* (2012) [Brown A, Dayal A, Rubaitis del Rio C (2012) 'From practice to theory: emerging lessons from Asia for building urban climate change resilience' *Environment and Urbanization* 24(2): 531-556]. Reed *et al.* (2013) look explicitly at the 'shared learning' process, how this was applied across 10 different cities, and the value that it contributes toward moving away from a solely 'technical' approach to urban climate change adaptation [Reed S, Friend R, Toan V, Thinphanga P, Sutarto R, Singh D (2013). 'Shared learning for building urban climate resilience – experiences from Asian Cities' *Environment and Urbanization* 25(2): 393-412]. Bahadur and Tanner (2014) analyse

ACCCRN activities to make the case for 'transformation' that goes beyond resilience and encompasses underlying political structures and trade-offs that determine risk and vulnerability [Bahadur A, Tanner T 'Transformational resilience thinking: putting people, power and politics at the heart of urban climate resilience' *Environment and Urbanization* 26(1): 200-214].

A later analysis of this process (Archer *et al.* 2017) suggests that the network process has helped to ensure engagement and inclusion, the achievement of scale, and greater embeddedness and transformation in the cities involved. [Archer D, Monteith W, Scott H, Gawler S (2017). 'Developing city resilience strategies: lessons from ICLEI and ACCCRN']. The experiences of ACCCRN are well documented, including through Archer D, Colenbrander S, Dodman D (2017) 'Responding to climate change in Asian cities: governance for a more resilient urban future', and through a collection of papers published by researchers in the participating countries.

Research partnerships across different cities have also contributed greatly to understanding of climate-related risks and responses. The Urban Africa: Risk and Knowledge (Urban ARK) programme primarily focuses on partnerships between researchers from eight different African cities, but this research is linked into policy and practice in each location. Indirectly, therefore, the network of researchers strengthens the ability of different city authorities to strengthen climate change adaptation responses.

What is missing from these thematic areas?

There are two very important climate change adaptation issues that are not adequately represented in the list from the UNFCCC human settlement submission:
City governments innovating on climate change adaptation
Community-based adaptation and community-local government partnerships

Many papers on these two themes cover several of these sub-headings:
- Description of relevant activities/processes or research
- Key outcomes of the activities undertaken
- Description of lessons learned and good practices identified
- Description of key challenges identified
- Relevant hyperlinks

Some also cover:
- Description of relevant tools/methods
- Planned next steps (as appropriate)

For "City governments innovating on climate change adaptation" see, for instance:
Rosario, Argentina (Hardoy and Ruete 2013): incorporating climate change adaptation into city planning
Manizales, Colombia (Hardoy and Velásquez Barrero 2014): bringing climate change adaptation into a long-established environmental policy
New York, USA (Solecki 2012): How the city government began to define and implement responses to climate change
Bergrivier, South Africa (Ziervogel et al 2016): Coproducing an adaptation plan
Bandar Lampung, Indonesia (Lassa and Nugraha 2015): incorporating climate change adaptation into the city's budget and plan
Durban (South Africa): The city government was among the first to develop a locally rooted climate change adaptation strategy and to explore links with mitigation. It also committed to documenting this process so there are many papers on Durban including Roberts 2008, Roberts 2010, Roberts et al 2012, Roberts and Donoghue 2013 and Cartwright et al 2013

For community-based adaptation and community-local government partnerships, see, for instance:
Warri, Nigeria (Odemerho 2015): developing a grassroots adaptation policy for flood risks
Chittagong, Bangladesh (Ahammad 2011): the limits of current responses to climate change
Kampala, Uganda (Bosco Isunju et al 2016): Developing an adaptation strategy involving all stakeholders
Dhaka, Bangladesh (Jabeen et al 2010): Experiences with household and community coping strategies in an informal settlement

Other issues that need more attention: Resilience at household, community, city and city-region scales – see Chelleri et al 2015
Disaster risk reduction's integration into climate change adaptation – see Satterthwaite 2011
Climate change adaptation and health in urban areas – see Scovronick et al 2015
Climate change adaptation, urban poverty and risk – see Hardoy and Pandiella 2009
A city-region focus for climate change adaptation including eco-system based adaptation and water resource management that addresses flood risks – see Hordijk et al 2014

Integrating pro-poor goals into cities' climate change mitigation policies – see case study of Kolkata in Colenbrander et al 2017