

Transformational resilience thinking: putting people, power and politics at the heart of urban climate resilience



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ABSTRACT Resilience is receiving substantial traction as a concept to inform climate change and development policies and programmes. At the same time, a number of critiques have emerged that question its use as a framing concept for tackling urban climate change. This paper reflects on climate resilience and its critiques through an examination of the Asian Cities Climate Change Resilience Network (ACCCRN) initiative in two cities in India. We illustrate aspects of the resilience critique and, using evidence of transformational aspects of the initiative, we argue that resilience thinking must be coupled with the concept of transformation in order to bring issues of people, politics and power to the fore. In the process, the conceptual strength of resilience can be combined with a more radical agenda that engages with underlying political structures and trade-offs that determine risk and vulnerability.

KEYWORDS adaptation / Asian Cities Climate Change Resilience Network (ACCCRN) / resilience / transformation / urban

I. INTRODUCTION: THE RISE OF “RESILIENCE THINKING” AND THE URBAN CONTEXT

Resilience is receiving substantial traction as a concept to inform climate change and development policies. The number of articles on resilience has increased by more than 400 per cent in 10 years⁽¹⁾ and a significant number of development organizations are attempting to employ the concept in their programmes.⁽²⁾ At the same time, a number of critiques of resilience thinking have emerged, calling into question its use as a framing concept for tackling urban climate change. This paper reflects on urban climate resilience and its critiques through an examination of the Asian Cities Climate Change Resilience Network (ACCCRN) initiative in two cities in India. It also examines the potential for transformation within the initiative to suggest that transformational thinking can help address some of the gaps in resilience approaches by focusing attention on people, politics and power.

Even though it is growing in popularity and is employed by a number of disciplines,⁽³⁾ resilience is a contested concept. The field of ecology has had the most significant influence on resilience thinking in the context of climate change, disasters and development.⁽⁴⁾ The concept has been applied in particular to the functioning of coupled social and ecological systems (SES), in which resilience is defined as the ability of systems to

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1. According to the Social Science Citation Index (from 80 in 1997 to more than 380 in 2007); Swanstrom, Todd (2008), *Regional Resilience: A Critical Examination of the Ecological Framework*, Institute of Urban and Regional Development, USA, 33 pages. This is also reflected in the papers in this issue and in the previous issue of the Journal (Vol 25, No 2 (2013)).

2. Rockefeller Foundation (2010), *Asian Cities Climate Change Resilience Network*, Rockefeller Foundation, New York, 36 pages.

3. Including psychology, engineering, mechanics, computer science and corporate strategy; see Bahadur, Aditya, Maggie Ibrahim and Thomas Tanner

"... absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks."⁽⁵⁾ This understanding of resilience has led to substantial interest in the social sciences, where the concept is applied to describe responses at different scales, for instance communities, institutions and economies.⁽⁶⁾

This SES strain of thinking has increasingly been applied to "urban resilience" as a response to a potential range of disturbances, including climate change in towns and cities.⁽⁷⁾ A growing number of researchers are considering what urban climate change resilience is, why it is important and how it is achieved. Urban resilience has been defined by Leichenko as *"... the ability of a city or urban system to absorb disturbance while retaining identity, structure and key processes."*⁽⁸⁾ The interest in urban resilience is growing because more than half the world's population now lives in urban areas, and most cities *"... concentrate people and their homes, physical capital, industries and wastes..."*⁽⁹⁾ while also being disproportionately located along exposed coasts and rivers. At the same time, city authorities in middle-income and low-income countries usually do not have the finances or the technical knowledge to appropriately engage with these impacts. Also, urbanization often physically makes cities more vulnerable to the impacts of a changing climate as it negatively impacts natural systems and increases the exposure of urban residents.

Resilience is seen by some as a function of balancing ecological services and human services. Some analysts have also stressed the importance of the relationship between urban and provincial governments to achieving resilience, along with qualities such as *"... polycentricity, transparency and accountability, flexibility and inclusiveness."*⁽¹⁰⁾ Others have linked the ability of cities to deal with climate change impacts with the ability of urban governments to meet the "everyday needs" of their citizens.⁽¹¹⁾ Some also stress the role of citizen action and local politics in achieving "accumulated resilience" in urban areas to strengthen resilience to climate change.⁽¹²⁾ Still others stress spatial diversity in the supply of urban services and diversified economic activities as important to urban resilience.⁽¹³⁾

While resilience is rapidly becoming the new catch-all term for adaptation,⁽¹⁴⁾ there remain some critical gaps in the thinking that are relevant to the urban and wider contexts. In Section III, we review critiques of resilience thinking before providing empirical examples of these gaps through an examination of an urban resilience-building programme – the Asian Cities Climate Change Resilience Network (ACCCRN) initiative – in two cities in India. The discussion in Section V considers the insights provided by this initiative into the concept of transformation, how it can draw attention to the human dimensions of resilience-building initiatives, and how politics and power mediate the roles of different actors involved.

We refer to politics in this paper as the exercise of power to control agendas, decisions and outcomes around resilience-building, and the processes that support or obstruct different individuals, groups or organizations in exercising this control.⁽¹⁵⁾ We call for a greater appreciation of these dynamics within policy processes governing urban resilience,⁽¹⁶⁾ arguing that an appreciation of "people" as well as systems should be central to understanding resilience-building.

II. EMPIRICAL RESEARCH METHODS

Data were collected using qualitative methods from July 2010 to August 2011. The semi-structured format was used to interview respondents at different governance levels of the ACCCRN initiative (local, city, national and international). The views of volunteers and user groups helping link communities to the ACCCRN were garnered through focus group discussions. These were analyzed for content and observed interactions between individuals. A variety of documents on the ACCCRN were analyzed for essential information on the initiative. This analysis was cross-referenced against data collected through the other methods. Participant observation saw the researcher being embedded with the initiative for more than a year and allowed insight into operationalizing resilience and transformation. Exponential discriminatory snowball sampling was employed for interviews, focus groups and document analysis. This sampling process starts with a small, core set of data sources and uses these to uncover new sources, rejecting those that are not centrally aligned to the research design.⁽¹⁷⁾ Data analysis was undertaken through the use of inductive approaches and manual coding techniques.

III. CRITICAL GAPS IN RESILIENCE THINKING

While the popularity of resilience as a framing concept for tackling climate change has grown in academic, policy and practice contexts, there is also a burgeoning body of thought on the gaps in and potential pitfalls of resilience thinking.⁽¹⁸⁾ These critiques highlight the lack of normativity and direction given to resilience thinking, a failure to address trade-offs, and its epistemological bias towards technical responses. We interpret these critiques here through the lenses of people, politics and power, calling attention to the ways in which different actors and groups exert control and influence over others.

The concept of resilience is not inherently invested with a direction or goal, and is often employed without reference to its subjects.⁽¹⁹⁾ Injecting a normative dimension is crucial if resilience is to provide a basis for successful and equitable adaptation to climate change. In common with theory on the "anatomy" of climate change adaptation,⁽²⁰⁾ there is therefore a need to "... reflect on what precisely it is that is being made resilient, in the face of which specific dynamics, for whom and by what criteria this is good or bad, and whether such resilience is consequently problematic or not."⁽²¹⁾ The uncritical assumption of positive outcomes from resilience-building may fail to address different winners and losers and the political processes mediating trade-offs between actors. Resilience thinking therefore needs to focus on the ways in which different groups of actors construct ideas of "resilience" in order to pursue their interests⁽²²⁾ – one way of enhancing the place that "people" have within this concept.

Trade-offs in building resilience may be both spatial and temporal.⁽²³⁾ Building resilience at one scale within a system could have a negative impact on resilience at other scales, for example through diverting resources away from other systems or by exploiting other groups of people.⁽²⁴⁾ Indeed, as Berkhout points out, resilience may not be a desirable characteristic and "... there may be good reasons for wanting to destroy or transform a system

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4. Schoon, Michael (2005), "A short historical overview of the concepts of resilience, vulnerability and adaptation", Workshop in Political Theory and Policy Analysis, Working Paper W05-4, 29 January, Indiana University, Bloomington IN.

5. Folke, Carl (2006), "Resilience: the emergence of a perspective for social-ecological systems analyses", *Global Environmental Change* Vol 16, No 3, page 259.

6. Klein, Richard, Robert Nicholls and Frank Thomalla (2003), "Resilience to natural hazards: how useful is this concept?", *Environmental Hazards* Vol 5, Issue 1–2, pages 35–45.

7. See papers in *Environment and Urbanization* Vol 25, No 2 (2013).

8. Leichenko, Robin (2011), "Climate change and urban resilience", *Current Opinion in Environmental Sustainability* Vol 3, Issue 3, page 164.

9. Dodman, David and David Satterthwaite (2008), "Institutional capacity, climate change adaptation and the urban poor", *IDS Bulletin* Vol 39, No 4, page 68; also see Chelleri, Lorenzo (2012), "From the resilient city to urban resilience. A review essay on understanding and integrating the resilience perspective for urban systems", *Documents d'Anàlisi Geogràfica* Vol 58, No 2, pages 287–306; Dodman, David (2008), "Building resilience: how the urban poor can drive climate adaptation", *IIED Opinion*, November; and Gasper, Rebecca, Andrew Blohm and Matthias Ruth (2011), "Social and economic impacts of climate change on the urban environment", *Current Opinion in Environmental Sustainability* Vol 3, No 3, pages 150–157.

10. See reference 8, page 164.

11. See reference 9, Dodman and Satterthwaite (2008).

12. Satterthwaite, David (2013), "The political underpinnings of cities' accumulated resilience to climate change", *Environment and Urbanization* Vol 25, No 2, pages 381–391.

13. See reference 9, Chelleri (2012); also Foster, Kathryn (2007), "Snapping back: what makes regions resilient?", *National Civic Review* Vol 96, No 3, pages 27–29.

14. Tanner, Thomas and Leo Horn-Phanthanothai (2014), *Climate Change and Development*, Perspectives in Development Series, Routledge, London, 368 pages.

15. Gaventa, J (2005), "Reflections on the uses of the 'power cube' approach for analyzing the spaces, places and dynamics of civil society participation and engagement", CFP evaluation series 2003–2006 No 4, Mfp Breed Network, The Netherlands, 46 pages.

16. Keeley, J and I C Scoones (2003), *Understanding Environmental Policy Processes: Cases from Africa*, Earthscan Publications, London, 240 pages; also Hall, S (1997), "Foucault: power, knowledge and discourse", in M Wetherell, S Taylor and S J Yates (editors), *Discourse Theory and Practice: A Reader*, Sage, London, pages 72–81.

17. Denzin, Norman and Yvonna Lincoln (2011), *The Sage Handbook of Qualitative Research*, fourth edition, Sage Publications, Thousand Oaks CA, 784 pages.

18. Cannon, Terry and Detlef Muller-Mahn (2010), "Vulnerability, resilience and development discourses in context of climate change", *Natural Hazards* Vol 55, No 3, pages 621–635; also Duit, Andreas, Victor Galaz and Katarina Eckerberg (2010), "Governance, complexity and resilience", *Global Environmental Change* Vol 20, Issue 3, pages 363–368; and Béné, Chris, Rachel Wood, Andrew Newsham and Mark Davies (2012), *Resilience: New Utopia or New Tyranny? Reflection About the Potentials and Limits of the Concept of Resilience in Relation to Vulnerability Reduction*

– as, for instance, with slavery, fascism, Al Qaeda and fossil fuel-based energy systems."⁽²⁵⁾ Trade-offs also exist between resilience in the short term and in the long term. According to Smith and Stirling, for instance, "... the focus on building resilience to shocks and ignoring long-term stress may lead to robustness which inhibits adaptability and transformability."⁽²⁶⁾ Trade-offs may also exist between different objectives or between human well-being and environmental services, with improved human development conditions historically often coming at the cost of the degradation of ecosystems.⁽²⁷⁾

A key critique therefore argues that resilience stresses the scientific, the technical and the rational while paying inadequate attention to the human and the social.⁽²⁸⁾ Underemphasizing "people" in resilience thinking results in blindness to the inherent political complexity in issues of managing risk.⁽²⁹⁾ Limited attention is then paid to the structures and forces that shape these challenges. As Swanstrom explains: "Resilience tends to treat stressors as generated by basically unpredictable forces in nature, such as storms, climate change or forest fires. A forest cannot prevent fires or stop climate change. Humans can."⁽³⁰⁾

The emphasis on systems (within resilience thinking) for understanding interlocked social–ecological–technological processes across multiple scales can also be critiqued for failing to populate these systems with individuals. Different people and groups frame or seek systems that are resilient in order to realize their particular needs or the persistence of their institutions,⁽³¹⁾ mediated by the ways through which different framings of resilience acquire "... credibility, legitimacy, authority and power."⁽³²⁾ The existence of different framings means that resilience as a term and narrative can be hijacked by particular interests to marginalize particular actors in a particular setting.⁽³³⁾ There can be trade-offs among different groups seeking resilience where resilience for one could lead to heightened vulnerability for another.⁽³⁴⁾

This failure of resilience thinking to engage with the political nature of social systems may also be due to the difficulties of translating concepts developed in ecological systems, such as creative destruction, the adaptive cycle or panarchy⁽³⁵⁾ into social systems.⁽³⁶⁾ Ernston and colleagues argue from an urban systems perspective that while environmental systems are functional and "... take the form of food webs that transfer energy and genetic information", social systems are "... self-constructed by society allowing different people to understand each other, share values and beliefs" and therefore the two systems have structurally different compositions and dynamics.⁽³⁷⁾

The tendency to focus on perturbations in natural systems may also be at the expense of other risks and crises that affect people linked to the ecosystem, imposing a rationality that is incongruent with the complex reality of how socioeconomic issues combine with ecological systems.⁽³⁸⁾ In the urban context, Leichenko says, "... climate change is one of many types of shocks that cities face ... promotion of urban resilience will thus require that cities become resilient to a wider range of overlapping and interacting shocks and stresses".⁽³⁹⁾

Examining the resilience of metropolitan areas, Swanstrom argues that in analyzing governance through the lens of ecology, resilience thinking ignores the role that political authority plays in designing institutions and structures within which resilience-building interventions take place. Risks, disturbance and responses are socially constructed and "... we do

not start from a state of nature but from a civil society in which resilience is shaped by laws, policies and very human institutions ... when applied to human systems, ecological resilience overlooks the crucial role of authorities in both nurturing and undermining resilience."⁽⁴⁰⁾ By contrast, Satterthwaite emphasizes the importance of civil society and citizen mobilization in creating the pressure and partnerships for enhanced urban resilience.⁽⁴¹⁾ The lack of attention to the role of politics and the government has also led to critiques of resilience as a neo-liberal concept that charges populations living in poverty with using their own resources to support themselves through crises.⁽⁴²⁾

In common with much climate change policy, there remains limited understanding of how resilience thinking relates to prevailing politics, policy processes and how these factors play out in different institutional environments.⁽⁴³⁾ Garschagen⁽⁴⁴⁾ and Bahadur and Tanner⁽⁴⁵⁾ present case studies from Vietnam and India, respectively, demonstrating that resilience, with its emphasis on foresight, flexible systems and the acknowledgement of uncertainties, is incongruent in policy environments that are dominated by centralized command and control strategies, short-termism and preservation of the status quo, manageable steady states and predictability. Despite robust empirical evidence of organizations and institutions changing to enhance resilience following shocks, there is little empirical study of how radical institutional change can be induced prospectively, based on foresight or minor creeping changes before disaster events occur.⁽⁴⁶⁾

Although it has a pragmatic appeal as an intuitively understood term with potential for integrating different actors and narratives,⁽⁴⁷⁾ resilience as a technical concept remains difficult to communicate and operationalize despite the growing efforts of international practitioners in the urban sphere.⁽⁴⁸⁾ Complex concepts such as multiple stable states or panarchy can be difficult to translate into concrete guidance for decision-making, a difficulty further compounded by an absence of a common resilience metrics.⁽⁴⁹⁾ For urban areas, Chelleri concludes that there is therefore a need for "... tools to bridge and put urban resilience analysis findings into urban planning, economy, and policy realms and practices."⁽⁵⁰⁾

A number of these gaps in resilience thinking become even more problematic in urban contexts. Trade-offs between different groups seeking resilience become particularly accentuated in densely populated urban contexts where an increase in one household's resilience can lead, very quickly, to the enhanced vulnerability of another.⁽⁵¹⁾ Within the Indian urban context, trade-offs between the scales at which resilience is being built are also particularly important. This is because limited processes of decentralization have left Indian provincial (state) governments with substantial control of governance processes at the city level. Any effective initiative to build city resilience must necessarily therefore also engage with politics and policy at higher levels of governance.⁽⁵²⁾ Moreover, urban political governance contexts in India are particularly complex and fragmented for a number of reasons, including the problematic role of para-statal agencies. These agencies have a powerful remit in particular urban sectors (with a direct link to the "resilience" of the city) but do not effectively come under the control of city governments.⁽⁵³⁾ As a result, urban Indian contexts pose particular challenges for operationalizing systems thinking and collaboration that characterize resilience approaches. Finally, community involvement has been widely

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19. See reference 1, Swanstrom (2008).

20. Smit, Barry, Ian Burton, Richard Klein and Johanna Wandel (2001), "An anatomy of adaptation to climate change and variability", *Climatic Change* Vol 45, No 1, pages 223–251.

21. Smith, Adrian and Andy Stirling (2010), "The politics of social-ecological resilience and sustainable socio-technical transitions", *Ecology and Society* Vol 15, No 1, Art 11, page 11.

22. See reference 21, page 10.

23. Adger, Neil, Nigel Arnell and Emma Tompkins (2005), "Successful adaptation to climate change across scales", *Global Environmental Change* Vol 15, Issue 2, pages 77–86.

24. Berkhout, Frans (2008), "Order in socio-technical systems: the dark side of resilience", in Melissa Leach (editor), *Re-framing Resilience: A Symposium Report*, STEPS Working Paper 13, STEPS Centre, IDS, Brighton, pages 11–13.

25. See reference 24, page 11.

26. See reference 21, page 4.

27. Turner, Billie (2008), "A skeptic's comments on resilience and alternative approaches to coupled human-environment systems", in Melissa Leach (editor), *Re-framing Resilience: a Symposium Report*, STEPS Working Paper 13, STEPS Centre, IDS, Brighton, pages 9–11.

28. See reference 18, Cannon and Muller-Mahn (2010).

29. Kuhlicke, Christian (2013), "Resilience: a capacity and a myth: findings from an in-depth case study in disaster management research", *Natural Hazards* Vol 67, Issue 1, pages 61–76.

30. See reference 1, Swanstrom (2008), page 18.

31. See reference 27; also Jasonoff, Sheila (2008), "Survival of the fittest", in Melissa Leach (editor), *Re-framing Resilience: a Symposium Report*, STEPS Working Paper 13, STEPS

Centre, IDS, Brighton, pages 13–14.

32. See reference 24, page 12.

33. See reference 29.

34. Leach, Melissa (editor) (2008), *Re-framing Resilience: a Symposium Report*, STEPS Working Paper 13, STEPS Centre, IDS, Brighton, 22 pages.

35. The adaptive cycle describes how ecosystems go through cycles of growth, conservation, release and renewal. The concept of panarchy draws attention to how such cycles of creative destruction take place non-synchronously at various levels within a system; see Gunderson, L H and C S Holling (2001), *Panarchy: Understanding Transformations in Human and Natural Systems*, Island Press, Washington DC, 448 pages.

36. See reference 27.

37. Ernston, H, S Leeuw, C Redman, D Meffert, G Davis, C Alfsen and T Elmquist (2010), "Urban transitions: on urban resilience and human-dominated ecosystems", *AMBIO* Vol 39, No 8, page 537, available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3357675/>.

38. See reference 18, Cannon and Muller-Mahn (2010).

39. See reference 8, page 165.

40. See reference 1, Swanstrom (2008), page 16.

41. See reference 12.

42. Boyden, Jo and Elizabeth Cooper (2006), "Questioning the power of resilience: are children up to the task of disrupting the transmission of poverty?", CPCR Working Paper 73, UK, 20 pages.

43. Tanner, Thomas and Jeremy Allouche (2011), "Towards a new political economy of climate change", *IDS Bulletin* Vol 42, No 3, pages 1–14.

44. Garschagen, Matthias (2013), "Resilience and organizational institutionalism from a cross-cultural perspective: an exploration based on urban climate change adaptation in Vietnam", *Natural Hazards* Vol 67, No 1, pages 25–46.

understood to be vital to processes of building resilience.⁽⁵⁴⁾ Yet engaging communities through established participatory methods is notoriously difficult in urban areas as the community is dynamic and heterogeneous, with people from different castes and regional backgrounds residing in the same neighbourhoods.⁽⁵⁵⁾ The next section will explore the manner in which a number of these issues were evident in a programme to build urban climate change resilience.

IV. EMPIRICAL LESSONS ON RESILIENCE GAPS: THE ACCCRN IN INDIA

How are these critiques reflected in operational attempts to enhance urban resilience? In this section, we reflect on these challenges, drawing on case study research carried out with the Asian Cities Climate Change Resilience Network (ACCCRN). Funded by the Rockefeller Foundation, its goal is "... to measurably enhance the resilience of ACCCRN cities' institutions, systems and structures to current and future climate risks, and through this, measurably [to] improve the lives of poor and vulnerable people."⁽⁵⁶⁾ The network operates across 10 cities in four countries to build the resilience of city systems. This paper draws on two case studies (one from Gorakhpur in north India and one from Indore in central India) based on a single resilience initiative and, as such, attempts to draw generalizable results on resilience thinking from a specific empirical context.

In Gorakhpur, the Gorakhpur Environmental Action Group (GEAG) is a local NGO implementing resilience-building activities funded by the ACCCRN. In Indore, TARU, an Indian consultancy company, is charged with the same task. A city advisory group has been established in both cities, and this is a steering group of experts from different fields charged with overseeing the plans and activities of the project. Each city has seen the development of a vulnerability assessment and city resilience strategy, which have formed the basis of a number of resilience-building interventions being implemented in these cities. In Gorakhpur, this includes building climate change resilience in the Maheva neighbourhood, an informal settlement where GEAG is working closely with the community to reduce water-logging, water stagnation, prolonged flooding and consequent impacts on health, livelihood and infrastructure. In Indore, the main intervention analyzed in this paper is the pilot project on conjunctive water management. This is an initiative in four neighbourhoods of the city that aims to reduce water scarcity through water-harvesting, waste management and judicious use. Increased flooding and stress on water resources are well-recorded urban problems that are likely to worsen with climate change.⁽⁵⁷⁾

Limited conceptual engagement with the trade-offs involved in the processes of building resilience,⁽⁵⁸⁾ as discussed in the previous section, was reflected in the ACCCRN programme. In Gorakhpur, the intervention targeted one slum community, representing just one of 70 municipal wards in the city. Even within this tightly defined geographical space, increased resilience for one section of the population living in this area often meant reduced resilience for another section. This was because some wealthier households had built boundary walls around their homes to prevent floodwaters from entering. This led to greater risks to those more vulnerable adjacent households who could not afford boundary walls.

Those charged with building resilience within Maheva were therefore faced with finding pathways of resilience that negotiated these social and economic fault lines at the community level. The ways in which different people and groups frame resilience and the need to negotiate trade-offs between groups is a factor in any programme of building resilience.⁽⁵⁹⁾ While issues of trade-offs receive inadequate consideration within resilience thinking in general, this problem is particularly important when building resilience in densely populated urban areas.

The cross-scalar trade-offs from resilience-building⁽⁶⁰⁾ discussed in the previous section were also illustrated in the ACCCRN interventions. Substantial progress was observed with resilience thinking gaining traction at the city level, but far less at higher scales of governance, particularly at the national level, where policies and programmes frame and determine city conditions. The mid-term evaluation of the ACCCRN noted "... there was little attention paid to the national level governance and policy context. National policy was not prioritized, as the ACCCRN theory of change emphasized building a body of credible practice in cities as a driver for urban climate change resilience."⁽⁶¹⁾ While this may be an inevitable trade-off for interventions with scarce resources, concentrating time and resources on effecting change at one level left the ACCCRN less able to foster resilience-building actions at higher scales. As mentioned at the end of Section III, this is particularly problematic in urban areas; due to inadequate political and administrative decentralization in India, the resilience of cities is dependent on governance decisions taken by state governments at the sub-national level.⁽⁶²⁾ For this reason, resilience thinking here needs especially to take into account contextual political dynamics and power relations.

The importance of considering issues of people, power and politics was visible within the processes of the ACCCRN in their attempt to secure the participation of the most marginalized social groups in Maheva. Volunteers who conducted the household survey (the primary data-gathering exercise in Maheva) reported that they had not included any individuals from the Harijan *basti* – the locality where the lowest castes lived. As a consequence, their concerns were not adequately recorded and they did not form part of the participatory exercises. At the same time, ACCCRN staff noted that securing the participation of those belonging to the Brahmin caste (the highest caste) had also been difficult, as many of them were uneasy about being physically seated at the same level as the rest of the community in project meetings, and participating as "equals" within decision-making processes. In part, this relates to operational problems common to many development initiatives, but it also stems from the under-emphasis on local level aspects of power within the apolitical systems view adopted by resilience thinking (as discussed in Section III). This reflects the notion that resilience, based on a technocratic idea of change, relates to changing practices rather than addressing the structural causes of risk and vulnerability.⁽⁶³⁾ Even though the ACCCRN attempted to introduce practices around participatory decision-making on issues of managing climate impacts, it faced significant challenges in engaging with the deep-rooted political structures that impeded full and fair participation. This issue also resonates with an existing body of literature around the manner in which heterogeneity of urban communities makes meaningful community participation difficult to achieve.⁽⁶⁴⁾

Collaborative engagement across the system was also problematic at higher levels of governance. While the resilience initiative brought

45. Bahadur, Aditya and Thomas Tanner (available online October 2013), "Policy climates and climate policies: analyzing the politics of building urban climate change resilience", forthcoming in *Urban Climate*.

46. See reference 44; also Pelling, Mark (2010), *Adaptation to Climate Change: From Resilience to Transformation*, Routledge, London, 224 pages.

47. See reference 18, Béné et al. (2012).

48. Wardemaker, J Arjan, Arie de Jong, Joost Knoop and Jeroen van der Sluijs (2010), "Operationalizing a resilience approach to adapting an urban delta to uncertain climate changes", *Technological Forecasting and Social Change* No 77, pages 987–998; also Brown, Anna, Ashvin Dayal and Cristina Rumbaitis del Rio (2012), "From practice to theory: emerging lessons from Asia for building urban climate change resilience", *Environment and Urbanization* Vol 24, No 2, pages 531–556; and Tyler, Stephen and Marcus Moench (2012), "A framework for urban climate resilience", *Climate and Development* Vol 4, No 4, pages 311–326.

49. Boyd, Emily, Henry Osbahr, Polly Ericksen, Emma Tompkins, Maria Lemos and Fiona Miller (2008), "Resilience and 'climatizing' development: examples and policy implications", *Development* Vol 51, No 3, pages 390–396.

50. See reference 9, Chelleri (2012), page 300.

51. See reference 34.

52. Chamaraj, Kathyayini (2009), "Parastatals and task forces: the new decision makers", accessed 23 March 2013 at <http://www.indiatogether.org/2009/feb/gov-parastate.htm>.

53. Mukhopadhyay, Amitabh, Niraja Jayal, Shivani Meenakshisundaram, Solomon Benjamin and Vinod Vyasulu (2000), "Decentralization in India: challenges and opportunities", HDRC Discussion Paper Series 1, UNDP, 93 pages; also see reference 52.

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and R Pfefferbaum (2008), "Community resilience as a metaphor, theory, set of capacities and strategy for disaster readiness", *American Journal of Community Psychology* Vol 41, No 1–2, pages 127–150; also see reference 3, Bahadur et al. (2013).

55. Korf, B (2002), "Does PRA make sense in democratic societies?", *PLA Notes* No 44, International Institute for Environment and Development (IIED), London, 5 pages.

56. See reference 2, page 3.

57. Satterthwaite, David, Saleemul Huq, Mark Pelling, Hannah Reid and Patricia Romero Lankao (2007), "Adapting to climate change in urban areas", *Human Settlements Discussion Paper Series, Climate Change and Cities 1*, IIED, London, 124 pages; also Wilbanks, T J, P Romero Lankao, M Bao, F Berkhout, S Cairncross, J-P Ceron, M Kapshe, R Muir-Wood and R Zapata-Marti (2007), "Industry, settlement and society", Chapter 7 in *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M L Parry, O F Canziani, J P Palutikof, P J van der Linden and C E Hanson (editors), Cambridge University Press, Cambridge, pages 357–390.

58. See reference 24; also see reference 21; and see reference 27.

59. See reference 31, Jasonoff (2008); also see reference 29.

60. See reference 23; also see reference 24; and see reference 34.

61. Barr, Julian and Christopher Albertyn (2011), *Asian Cities Climate Change Resilience Network Mid-term Evaluation*, Verulam Associates Ltd., UK, page 21.

62. See reference 52.

63. See reference 18, Cannon and Muller-Mahn (2010); also see reference 29.

64. See reference 55.

an emphasis on systems thinking, complexity and cross-sectoral collaboration, this clashed with the prevailing compartmentalized policy-making and weak cross-sectoral collaboration within elements of the city government.⁽⁶⁵⁾ This clash was made clear by the evident acrimony in collaborative meetings arranged by the project team at the city level. Never before had systems thinking been employed in policy processes within Gorakhpur to bring together representatives of different government bodies and ordinary citizens – each with their own agendas and interests. This resulted in disagreements between the different parties involved, which then had to be managed by reducing the diversity of participants. This, in turn, negatively impacted the diversity of opinions garnered in policy-making. Ideas of complexity and systems thinking embodied within resilience thinking make for an elegant heuristic, but this experience provides insights into how difficult they are to operationalize in real policy contexts imbued with individuals and their values.⁽⁶⁶⁾ As noted at the end of Section III, this issue is markedly important in urban areas in India, which have particularly fragmented policy environments.⁽⁶⁷⁾

The engagement of local politicians in the resilience initiative also created conflicts with existing clientelist relationships at the community level. These explain the negative attitude of the *pradhan* (the locally elected political leader) towards the ACCCRN in one of the four neighbourhoods in Indore in which the pilot project on conjunctive water management (PPCWM) was being rolled out to help alleviate the problem of water scarcity. Local residents who were members of a "water user group" formed as part of the project reported that the *pradhan* had no interest in solving the water issue, as during times of shortage he supplied water via mobile tankers to his "near and dear ones". Thus, maintaining the status quo, rather than solving water scarcity, was in the interests of the *pradhan*, as this provided him with an effective currency with which to secure voter loyalty and election funds.

A few kilometres down the road, in another neighbourhood where the PPCWM was being implemented, networks of patronage were again evident. Members of the water user group felt no need for an external project to reduce water scarcity as their political patron was providing them with the services that they needed. Attempts to operationalize resilience therefore need to look beyond procedures and practices for community engagement on tackling climate impacts towards an understanding of urban politics and its complex networks of clientelism and vested interests.⁽⁶⁸⁾ This empirical evidence supports the conceptual critique, noted in the previous section, around the inadequate engagement of resilience thinking with the political nature of risk and resilience.

Section III also discussed the manner in which resilience thinking is at odds with organizational and institutional culture. This too was evidenced within the ACCCRN initiative,⁽⁶⁹⁾ mainly through the limited engagement of urban local bodies (ULBs). There was only limited interest in the initiative on the part of the municipal corporations of Gorakhpur and Indore and their participation in the project was piecemeal at best. This too was due to a fundamental divergence between the assumptions of resilience thinking and the reality of how these bodies were run. For instance, resilience is concerned with preparing for a range of disturbances that may occur, tantamount to the ability of systems to deal with uncertainty.⁽⁷⁰⁾ This principle was embedded within the ACCCRN in a number of different ways. The ACCCRN aimed to spread awareness among city level actors

(governments, civil society organizations, citizens and businesses) about the nature of climate change and the surprises that the future holds that could combine with present-day problems to exacerbate vulnerabilities. Those running the ACCCRN did this by developing and employing "climate scenarios" within the policy contexts in which it was unfolding. This future orientation of the ACCCRN initiative was also evident from the fact that the project team engaged local communities in iterative learning sessions that, among many topics, focused on "trends" in rainfall, temperature and other climatic patterns, and that fostered an understanding of how changing patterns were impacting their lives and livelihoods.

However, these activities were in stark contrast to the prevailing discourse in the local policy context that focused on dealing with present contingencies. In both Gorakhpur and Indore, a multitude of cascading civic problems unfolded every day on which the local governance machinery was sharply focused. The dominant narrative circulating among those charged with running the two cities lacked a strong future orientation. Climate change is not understood to be a pressing priority for key political actors and civil servants. The reasons for this were steeped in local political dynamics; action to help vulnerable communities become more resilient is seen as mitigating future adverse events, usually beyond the next election or civil service transfer and, hence, not politically expedient. Conversely, these actors in the rapidly expanding cities such as Gorakhpur and Indore are faced with a multitude of immediate problems, and not attending to them can have tangible negative consequences for their careers. To have traction, operational approaches to resilience thinking therefore need to work within and transform the institutional incentive structures underpinning urban governance. This requires those designing and executing urban resilience initiatives to engage more rigorously with power and politics within institutions.

V. DISCUSSION: CAN TRANSFORMATION BRIDGE GAPS IN RESILIENCE THINKING?

Recognition of these gaps and critiques has led to calls for resilience thinking to be used in conjunction with other concepts.⁽⁷¹⁾ Evidence from the ACCCRN supports the proposition that transformation as a concept could help fill some of these gaps by putting issues of people, power and politics centre stage. This section reviews the contribution from the burgeoning field of "deliberate transformation" and shows how the ACCCRN also started to demonstrate early signs of embodying and operationalizing transformational change.⁽⁷²⁾

Drawing on the field of social protection, Devereux and Wheeler⁽⁷³⁾ argue that programmes become transformative if they move beyond a focus on targeted income and consumption transfers to also enhance equity and rights in protecting the lives and livelihoods of the marginalized. Transformation is thereby equated with "... the need to pursue policies that relate to power imbalances in society that encourage, create and sustain vulnerabilities."⁽⁷⁴⁾ This conceptualization is reflected by most writers on transformation in a climate change context, with transformational adaptation typically requiring fundamental changes in institutional arrangements, priorities and norms⁽⁷⁵⁾ and, in O'Brien's words, "... changes to entrenched systems maintained and protected by powerful interests."⁽⁷⁶⁾ These facets of transformation can help

65. See reference 45.

66. See reference 49; also see reference 9, Chelleri (2012).

67. See reference 53; also see reference 52.

68. See reference 18, Cannon and Muller-Mahn (2010); also Landé, Carl (1977), "Networks and groups in Southeast Asia: some observations on the group theory of politics", in Steffen Schmidt, Laura Guasti, Carl Landé and James Scott (editors), *Friends, Followers and Factions: A Reader in Political Clientelism*, University of California Press, Berkeley, pages 103–107.

69. See reference 44; also see reference 45.

70. See reference 5; also see reference 54, Norris et al. (2008).

71. Adger, Neil (2008), "Resilience and vulnerability", in Melissa Leach (editor), *Re-framing Resilience: a Symposium Report*, STEPS Working Paper 13, STEPS Centre, IDS, Brighton, pages 5–7.

72. O'Brien, Karen (2011), "Global environmental change II: from adaptation to deliberate transformation", *Progress in Human Geography* (online before print), pages 1–10; also Kates, R W, W R Travis and T J Wilbanks (2012), "Transformational adaptation when incremental adaptations to climate change are insufficient", *Proceedings of the National Academy of Sciences* Vol 109, No 19, pages 7156–7161; Park, S, N Marshall, E Jakkur, A Dowd, S Howden, E Mendham and A Fleming (2012), "Informing adaptation responses to climate change through theories of transformation", *Global Environmental Change* Vol 22, Issue 1, pages 115–126; Tanner, Thomas and Aditya Bahadur (2013), "Distilling the characteristics of transformational change in a changing climate", Paper presented at the conference on Transformation in a Changing Climate, 19–21 June, University of Oslo; and see reference 14.

73. Devereux, Stephen and Rachel Sabates-Wheeler (2004), "Transformative social

protection", IDS Working Paper 232, Brighton, 36 pages.

74. See reference 73, page 9.

75. See reference 72, Kates et al. (2012).

76. See reference 72, O'Brien (2011), pages 4–5; also see reference 46, Pelling (2010); and see reference 18, Béné et al. (2012).

77. See reference 18, Cannon and Muller-Mahn (2010); also see reference 29.

78. See reference 1, Swanstrom (2008); also see reference 42; and see reference 72, Tanner and Bahadur (2013).

79. See reference 46, Pelling (2010), page 10.

80. See reference 46, Pelling (2010), page 9.

81. See reference 46, Pelling (2010), page 10.

82. See reference 31, Jasonoff (2008); also see reference 24; and see reference 29.

83. See reference 46, Pelling (2010); also see reference 44; and see reference 45.

84. Kapoor, Rakesh (2007), "Introduction", *Futures* Vol 39, Issue 5, pages 475–486.

85. See reference 46, Pelling (2010).

86. See reference 27; also see reference 37.

87. See reference 73; also see reference 72, O'Brien (2011).

address the rational and technocratic understanding of change implicit within resilience thinking, and foreground the political complexity in issues of managing risk.⁽⁷⁷⁾ Also, through its focus on equity, rights and entrenched power, transformation draws attention to the importance of political authority and leadership in reducing vulnerability – another gap in resilience thinking identified in Section III.⁽⁷⁸⁾

Pelling extends these insights into managing risk from climate change.⁽⁷⁹⁾ He observes that "conscientization", or critical awareness, is important for a transformational approach to dealing with climate change, breaking away from malignant institutionalized positions such as the "... *dominant preference for maximizing personal economic wealth beyond aspirations for social or environmental aspects of well-being or sustainability ... The result is a sense of lock-in with the institutionalized status quo generating feedback loops that support further entrenchment.*"⁽⁸⁰⁾ He also argues that for climate risk management to be transformative, it must be a tool for "... *opening dialogue and contributing to wider, inclusive forms of governance.*"⁽⁸¹⁾ The author makes a distinction between "transitional" and "transformational" adaptation, observing that the latter carries the potential for climate change adaptation to be a mechanism for shifting the balance of political and cultural power in society. This centrality of dialogue and inclusiveness to transformation addresses the problems of resilience thinking in considering how different individuals within this system frame and conceptualize issues of vulnerability, itself an issue that needs to be negotiated and mediated.⁽⁸²⁾ As a concept hinged on shifting political and cultural balance, transformation also argues for a rigorous engagement with institutional cultures that are, in turn, underpinned by political interests.⁽⁸³⁾

The vision of transformation as "political enterprise" is closely linked to Kapoor's definition of transformation.⁽⁸⁴⁾ On the one hand, he sees it as a process of engagement with issues of power in effecting changes in the social structure; and on the other, as changes in individual values, capabilities and choices. This definition can help to add the "people" currently missing from much resilience thinking. Alterations in consciousness at the individual level are therefore also important in bringing about wider transformation, consistent with Pelling's calls for "conscientization".⁽⁸⁵⁾ These insights into the nature of transformation reflect the challenge of transplanting resilience from natural systems to engagement with the social, integrating an understanding of the way in which individual values, meanings and beliefs play a critical role in any programme of managing risk.⁽⁸⁶⁾

The ACCCRN began to embody some of these tenets of transformation as political change by initiating processes that started to reconfigure imbalances in power at the local level. Volunteers helping deliver the ACCCRN in localities such as Maheva in Gorakhpur started to challenge the coercive grip on power that local politicians enjoyed. One of the key roles of the volunteers was to spread awareness of climate change resilience issues among residents of local neighbourhoods. As part of this, they talked about a wide range of topics, ranging from sanitation to agriculture, as well as the role that urban local bodies (ULBs) were to play in helping solve related problems. This process of awareness-raising with residents resulted in increased demands and greater pressure on the "corporator", their representative in the ULB, helping to enhance accountability and address power imbalances considered essential to transformational change.⁽⁸⁷⁾

As part of their actions to raise awareness, volunteers helped convene large “community meetings” where they discussed problems that the community was facing, with a view to finding solutions to a range of civic problems and thereby contributing to “conscientization”.⁽⁸⁸⁾ These meetings also helped challenge the dominance of local politicians. Before the ACCCRN was initiated and this cadre of volunteers was consolidated, the corporator was the sole port of call for residents of Maheva facing such problems. Moreover, the volunteers also started to harm the corporator’s material interests. For instance, Maheva’s lack of adequate solid waste management was addressed by ACCCRN volunteers through new arrangements for collection and disposal, in order to protect drains from blockage and to help get rid of stormwater. These arrangements threatened the existing, malfunctioning system of waste management that was allegedly a source of kickbacks for the corporator. In this way, the ACCCRN started in a tangible way to challenge political power in the local communities and to embody adaptation as transformation through the generation of new rights claims.⁽⁸⁹⁾

Moving away from the community level, it is also possible to see that the ACCCRN began to address power imbalances in the broader public policy environment through the formation of city advisory committees (CACs) in Gorakhpur and Indore. These brought together prominent citizens, including eminent lawyers, architects, businessmen and civil society leaders, as advocates of the ACCCRN and guides for individual resilience-building initiatives. Prior to the ACCCRN, policy environments in Indore and Gorakhpur were largely closed to public participation in any substantial way and were dominated by policy elites such as civil servants and politicians. While there remained major deficits in the involvement of ULB in the ACCCRN, the CAC started, in a small way, to claim spaces for citizen’s voices in these erstwhile closed policy processes. The claiming of such a space was evident when the Municipal Commissioner of Gorakhpur (a key functionary in the governance of the city) acted to help conserve a local water body after outreach by the GEAG and its CAC. Similarly, members of the ULB in Indore noted that the collective weight of credible voices on the CAC had started to make inroads into the town’s urban planning process. In this way, the ACCCRN started to open dialogues and contribute to wider and more inclusive forms of governance, thus widening policy spaces and participation in line with characteristics of transformation.⁽⁹⁰⁾

ACCCRN’s transformative potential was also evident in the greater collective sense of community and social bonds in the neighbourhoods where it was operating, the result of building stronger associative spaces. For example, Mahalaxmi Nagar neighbourhood in Indore has houses with walled compounds and few spaces for public gatherings. All the members of the PPCWM water user group in this neighbourhood agreed that the project had provided them with a unique space in which to discuss and share issues as a springboard for action. The user group secretary noted that the group allowed them to learn from each other, and in these meetings he had understood that collective rather than individual action would help raise the depleted water table in their neighbourhood. They felt that such a space was unique and had never really been attempted before in their neighbourhood. This sentiment was also mirrored in Rahul Gandhi Nagar, Indore, where the community underlined that their involvement in the user group had helped consolidate a shared identity and a collective conscience.

88. See reference 46, Pelling (2010).

89. See reference 46, Pelling (2010).

90. See reference 72, Tanner and Bahadur (2013).

91. See reference 84.

The ACCCRN thus started to change not only social structures but also individual values and belief (around the value of community association) – the two elements of transformation as identified by Kapoor.⁽⁹¹⁾

Overall, our findings suggest that climate change initiatives that “transform” must understand resilience from the perspective of the marginalized sections of the community. In doing so, they must identify root causes of vulnerability and barriers to resilience, and actively challenge the institutions, vested interests and power relations that create these conditions. They must therefore challenge entrenched ways of thinking and working. These findings provide a snapshot over a 13-month period, so any longer-term transformational impact, once external support has ended, will be hard to gauge. Nevertheless, there is initial evidence here of the potential for transformation, through the challenges posed by community members to the coercive grip on power by local politicians, through the beginning of citizen participation in urban planning processes and through coalescing of a collective “community conscience” in the areas of the initiative’s operation.

VI. CONCLUSIONS

This paper began by exploring the rapid ascent of resilience thinking as the dominant lens for analyzing and responding to climate change across both rural and urban contexts. It then went on to explore an emerging body of work critiquing resilience thinking, arguing that the concept, as generally presented, has an inadequate engagement with people, power and politics, and putting these critiques in the context of urban challenges. These gaps were explored further by drawing on the empirical example of the ACCCRN initiative to build the resilience of the urban poor. The paper then suggested that greater attention be paid to “transformation” as a concept coupled with resilience thinking to bridge the gaps identified, demonstrating aspects of transformation evident in approaches adopted by the ACCCRN. In so doing, the paper calls for embedding such features in other initiatives to enhance the resilience of vulnerable communities.

This paper employs empirical data to further support arguments that resilience and transformation be treated as concepts that lie along the same continuum.⁽⁹²⁾ The fact that an initiative to operationalize resilience such as the ACCCRN not only embodies the features and gaps of resilience thinking but also integrates aspects of transformation within it supports the practicality of consciously coupling these concepts to effectively reduce vulnerability. This is critical particularly in light of the growing likelihood of future dangerous levels of climate change and associated large-scale step changes.⁽⁹³⁾ Resilience, with its emphasis on preparing for an ever-shifting range of uncertainties in a complex world, provides unique tools for engaging with a protracted crisis such as climate change. At the same time, transformation, with its sharp focus on addressing the structures that drive vulnerability and risk, helps identify pathways of deep and sustainable change.

Therefore, this paper does not argue for discarding one concept and promoting another, but for reimagining resilience as a concept that includes useful tenets from the body of knowledge on transformation. Doing so can yield valuable tools to be deployed in the battle against climate change in some of the world’s most marginalized contexts.

92. See reference 46, Pelling (2010); also see reference 72, O’Brien (2011).

93. See reference 72, Kates et al. (2012).

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