Inequality, Uncertainty, and Vulnerability:
Rethinking Governance from a Disaster Justice Perspective

D. Parthasarathy
Indian Institute of Technology Bombay
ben.dp@iitb.ac.in

Introduction

Is uncertainty a vulnerability and justice problem? Historically the conversion of uncertainty into risk through research and knowledge gathering has been a key mechanism to reduce vulnerability, minimize disaster risk, and enhance adaptation and resilience. Climate change, ineffective disaster governance, democracy deficits, inequality and discrimination, and inadequate research / knowledge, are among key factors which enhance uncertainty at individual, household, community, neighbourhood, regional, national, and planetary scales. A comprehensive understanding of uncertainty at multiple scales from multiple perspectives is a pre-requisite for resilience, coping, adaptation and long term transformation for disaster risk reduction. Urban and regional landscapes across the world increasingly face deep uncertainties – especially flood related ones – that require a thoroughgoing reconceptualization of our conceptual tools and organizational / institutional responses. An ongoing multi-location, multi-disciplinary and multi-partner research project on climate uncertainty seeks to identify actors at different levels - the above, middle and below – and how these understand and respond to (future) uncertainty both in long-term planning and everyday life. It seeks to uncover the ways in which uncertainty emerges as an obstacle or constraint, but also creates opportunities for long-term transformation. In doing so, we attempt to understand how urban and regional planning, and municipal / resource / disaster governance deal with the uncertain dynamics of climate change and flooding, and whether social and state actors are able to address the problem of long term resilience and transformation that is socially just and prioritizes the needs of the poor and the marginalized.

Disaster Governance and Disaster Justice as concepts, heuristics, and frames of reference for action, converge when sources of uncertainty are multiple and complex - deriving for example in the case of urban flooding from changing rainfall patterns (frequency, intensity, onset and withdrawal, extreme events, active spells and breaks), land use, built environment, hydrological (mis)management, and municipal governance (especially solid waste management). Scenarios worked out for different rainfall intensities combined with elevation, topography and inundation levels reveal uncertainties which are less understood and hence poorly strategized for disaster risk reduction (Inamdar, Gedam, and Parthasarathy 2015). Climate related uncertainty is refracted by multiple factors that include locational aspects, social marginality, institutional balkanization, and environmental degradation (Parthasarathy 2016). In times of actual floods, uncertainty is exacerbated by the absence of preparation and planning (from above and below), lack of effective communication, trust issues, and infrastructure problems. Transformation and adaptation strategies (from below and above) may help coping in the short term, but may also increase uncertainties in the short and long term. Citizenship status and unequal citizenship rights affect coping with uncertainties (Parthasarathy 2009). This paper seeks to argue that disaster justice is not a simple question of enhancing the efficiency of disaster governance, but rather an intractable problem of reconceptualizing both justice and governance from a compound disaster perspective (Douglass 2016), and reconfiguring institutional

mechanisms and organizational strategies that impact uncertainty positively or negatively. Uncertainty affects the quality of governance and the nature of (in)justice in complex, as yet little understood ways, and substantial empirical and theoretical work is needed to progress further in advancing disaster related justice concerns.

Uncertainty in this paper is problematized as a justice issue because it acts as a crucial obstacle or constraint to coping and transformation in dealing with disasters. Uncertainty prolongs the suffering and trauma of key events, converting them into sustained disasters for some households, communities, and locales. Uncertainty may be related to the implementation of disaster relief, rehabilitation, and resettlement programmes. The everyday strain of coping with uncertainties can prevent participation in larger social schemes for disaster mitigation, and decrease the scope of reflexive modernity (Beck, Giddens, and Lash 1984), democratic oversight, and planning for the future.

During a group field trip this July to an informal settlement affected by chronic flooding every monsoon season in Mumbai, several of these uncertainty related justice issues came to the fore. Residents brought out the uncertainty in resettlement to safer areas – arising out of narrow definitions of entitlements and citizenship rights. Certain sections of migrants were not eligible for such schemes; minority community households were discriminated against when it came to allotment; households did not have the documentary evidence to make claims. Poor solid waste management being a key contributing factor to urban flooding, residents pointed to uncertainties and vagueness in legal and governance definitions and rules that sustained inefficiencies in garbage disposal and collection: the informal settlements were classified as residential areas, hence waste generated by the very large and diversified livelihood activities, especially garment production in the local sweatshops were not picked up by the municipal agencies, leading to localized dumping along and in the Mithi river that flows beside the settlement. Uncertainty is exacerbated by ill-conceived adaptation strategies that are themselves the outcomes of unequal power relations. A nearby railway colony with power to influence the state for flood protection, was able to get a wall erected on the other side of the river separating it from the informal settlement, pushing the water back into the slum when flows in the river are heavy. Most informal settlements in Mumbai affected by flooding are witness to unique as well as overlapping uncertainties. Changes in temperature and rainfall as experienced by them locally are mentioned – attributed to climate change, and to divine causes. These affect life and livelihood on an everyday basis. Discrimination faced by lower caste, migrant and minority community households is influenced by political cycles, regime changes, and legal battles. Urbanization itself, with new real estate projects pushing up rents, causing evictions on a large scale, raising aspirations that can rarely be met through legitimate ways, and pushing up the general cost of living, is a constant source of multiple uncertainties. Each of them constitute a series of injustices, a failure on the part of the democratic state to fulfill citizenship claims before, during, and after a disaster, adversely affecting the resilience of households and communities, crippling their ability to cope, adapt and transform with or without the support of state agencies, and civil society actors.

The problems of disaster governance and disaster justice are framed conjointly in this paper by deploying the lens of uncertainty – observed to be a key constraint in social contexts of inequality, poorly functioning democracy, inefficient municipal administration and disaster management, lack of access to good quality infrastructure, and unstable livelihoods. Developed primarily as a theoretical and conceptual study, and based on long-term and ongoing empirical research in Mumbai, this paper presents its arguments in three sections. The first section makes a critical argument for

reconceptualizing resilience, governance, and justice, from a disaster perspective, keeping in mind deep-rooted uncertainties that constitute the new normal. The second section presents the actual uncertainties that populations exposed to disaster hazards constantly face in the Mumbai metropolitan region, and brings out the justice problems that such uncertainties give rise to. The final section of the paper draws implications of these uncertainty and justice problems for a better understanding and theorization of disaster governance.

Disaster Governance, Resilience, and Justice: Some conceptual and theoretical problems

Justice has been one of the most theorized concepts of the modern world, and one that is increasingly deployed by groups and collectivities that have been historically marginalized along gender, race, class, caste, ethnic, and regional cleavages. The expansion of the concept by scholars and activists in the form of climate justice and environmental justice brings together concerns related to inequality, power distribution and social discrimination and the human impact on the environment in the era of the anthropocene. However, mainstream applications of justice theories for better governance across different spheres have yet to seriously incorporate the critiques of traditional conceptualizations of justice that have emerged from feminist, environmental, race, minority and similar standpoints. This is true of the idea of disaster justice as well, which is still nascent in development, and influenced more by legal / juridical and governmental / administrative formulations even if it takes seriously problems of inequality and power (Verchick 2012).

Why and how should we re-conceptualize or re-theorize justice from a disaster governance perspective? The answers would depend on what kind of idea of justice we propose and make a demand for, and how we wish such an idea to be realized in practice through a specific set of governance arrangements. Take the notion of resilience. More often than not resilience is described in terms of the character of an individual or population, as a spirit, in terms of a habitus or disposition (Bourdieu 1990) of a social actor or entity that enables them to cope, adapt to and bounce back from disasters. Such a conceptualization can essentialize and positively / negatively racialize qualities and characteristics associated with resilience. For instance there is a tendency to describe the poor, African-American people, minorities, or lower castes, or people of the global south as being more vulnerable and resilient at the same time while the better off are seen as less resilient (Shapiro), owing to, among other factors, less exposure to experience of dealing with a multiplicity of hazards and risks. This tendency obfuscates the problem of resilience, does not tell us what social characteristics, structural aspects and forms of social relations engender resilience, and ignores the enormous effort, loss, and stress that underly what appears to be a spontaneous ability to bounce back from a disaster's aftermath (Parthasarathy 2015). This can lead to vague governmental strategies to 'enhance' resilience' at best, or completely neglect disaster risk reduction at worst, citing a population's high resilience. Resilience then becomes a justice question. Vague and generic descriptions of a population (eg. "spirit of Mumbai") can be unjust in themselves, failing to account for the information gathering, knowledge processing and strategizing abilities of a population against great odds with or without the support of external entities. Recognition of these abilities can bring justice back into the disaster governance discourse, as is happening for instance in the case of 'emergent groups' (Stallings and Quaranetlli 1985), and calls for the state to work closely with such groups in designing and implementing disaster management and prevention strategies. Understanding why and how certain groups are resilient and others are not, requires that we concretely describe their social context in terms of power, inequality, and capability, and we can then

build on dual strategies of addressing these problems of empowerment and re-designing of disaster governance by taking into consideration the problems of disempowerment.

Feminist critiques of justice show us how we can re-conceptualize resilience, and re-think governance from a justice perspective that goes beyond distributive justice. In terms of the classic work of Iris Marion Young (2011), disasters may be seen as one of the issues that elude the distributive models of justice, since existing fair and just models of distribution may not be equitable when it comes to disaster effects, and more significantly disasters themselves may result in unequal distribution of a public 'bad', or negative public goods. This can happen for instance due to differential dependence on diverse kinds of natural resources by populations for livelihood purposes, or differential social and physical location and capabilities. A critical and radical departure that Young makes is to move away from a rural to an urban paradigm of community focused justice, that does not valorize the self-sufficiency and coherence of a village community (the latter, a notion that is geographically specific and subject to questioning); instead she is cognizant of the fuzziness and messiness of urban communities, the contestations and conflicts, but also the technologies of dealing with everyday urban negotiations that inter-connect communities, and evolve norms, rules and regulations for dealing with common threats and problems. In this imagination, justice grows out of difference and inequality, and is not constrained by them. The best ideas of distributive justice are unable to effectively account for the diverse experiences, knowledge base, and skills of differently located social actors in dealing with public bads, and in providing access to public goods, including symbolic public goods (Rao 2005), which enable participatory governance of disasters.

The most radical concepts of justice are still rooted in a traditional idea of social justice that is rooted in particular Fordist social relations that may not reflect the actual reality in different contexts. This is a critique that has been laid against David Harvey's evolving work on justice and the city, even after his incorporation of environmental problems into the urban studies discourse. In an early review of Harvey's classic Social Justice and the City, Doreen Massey (1974) points to Harvey's initial failure in ignoring the wider social structure while critiquing capitalism's distribution problem. However both Harvey and Massey limit their critique by relating the problem of social and distributive justice to the mode of production, namely capitalism in its various stages. In post-Tsunami 2005 reflections, together with Greenhough and Jazeel (2005), Massey hints at the obligation and responsibility of academic scholars to rethink such questions by stating that "it is not enough to be politically accountable or ethically reflexive", and "we need to ask ourselves how and if indeed we can be not only theoretically insightful and empirically rigorous – but also generous, engaged, responsible, effective?" Can one think of disaster governance in terms of a "distributive *injustice*"? Given the disruption of our understanding of spatialities and temporalities caused by disasters such as the Tsunami, what kind of "justice gaps" (Finger 2014) do we need to identify such that our disaster governance can be substantially improved? Is it sufficient to blame the capitalist mode of production and neo-liberal forms of urbanization for the nature and size of human impact in the anthropocene? How does one account for natural variability, the specific interaction of natural hazards with human actions to result in particular disasters? Disasters do affect cross-sections of the population differentiated by gender, age, income, race, class, and geography. Populations across cleavages may be affected in similar ways, with differential resilience. When disaster outcomes are distributed unevenly, it is not a question of uneven distribution of welfare, but an unequal distribution of illfare. Bads are unequally concentrated. This requires a different conceptualization of justice, in which the ethic of care and the ethic of justice converge.

Rejecting the distinction between the ethic of care and the ethic of justice that gained some currency in feminist debates, Susan Okin (1989) argues that it has little utility in evolving an acceptable moral and political theory to reject modes of social organization that are indefensible. In thinking about justice, Okin makes reason and affect converge as a way of bringing suffering in a more central way into our discourse. In disaster contexts, uncertainty is experienced as a feeling, it is experienced, it constitutes an existential mode that creates deep anxieties and ill-being. If, as she states the gendered family itself can be just or unjust, in similar vein, a society in which disaster is the new normal itself can be termed as just or unjust depending on who is affected, how equitably the disaster outcomes are managed, and what kind of transformative governance ensues in disaster mitigation strategies. Okin further argues that in order to achieve a "well-ordered society", humans need to develop "capacities for empathy, care, and concern for others". Might not we argue in similar vein that for disaster justice to be achieved, not just individual human beings, but also institutions of governance need to develop such capacities? This, one might argue, would make institutions more flexible, incorporate justice concerns in their everyday, generic functions, as well as re-orienting these functions to mitigate disaster risk.

Contrarily, a lack of empathy, care, and concern would lead institutions to use 'expertise' and science to de-politicize inequality and marginalization problems in disaster governance. This can happen by opting for easy solutions which are 'visible', and which showcase efficiency of disaster governance by mitigating risk in areas where the rich, elites, and capital congregate, to the relative neglect of the dispossessed, the marginalized, the poor, and the disempowered. States usually find it easy to address problems affecting the vocal minority rather than the invisibilized majority which is more vulnerable and exposed to hazards. In effect this indicates that some justice solutions and adaptation interventions can lead to injustice for certain sections of the population. In such cases, disaster justice is useful as a pragmatic concept that helps us address problems of power and inequality, as it focuses on the kind of unjust society, which as Verchick (2012) states, "allows a "disaster underclass" to grow unnoticed in a nation committed to freedom and democracy". In his detailed and insightful note on disaster justice, Verchick stresses the imperative of understanding the 'social and political meaning' of both disaster and of justice, and, following the work of Shklar (1990), frames the disaster justice discourse in terms of *agency* and *perspective*. At every stage of the disaster governance cycle – planning, response, compensation, and recovery – one can find problems of injustice in its multiple facets, some universal, others singular to specific social, spatial, and temporal contexts. Scapegoating of the poor and the vulnerable is a key and universal aspect of disaster injustice, even though as studies have shown, they may be less to blame, more willing to help and contribute to disaster governance, and the dominant classes may be equally if not (frequently) more responsible for disasters, and less obliged to participate in planning and recovery operations (Parthasarathy 2015).

I would like to reframe the widespread inequality-discrimination-disaster impacts-injustice framework by questioning the equally widespread notion there is a large gap between the vulnerable and the resilient. Vulnerability in fact can be a contributor to resilience, but of a kind that is unjust in terms of the burdens that the vulnerable and at risk population have to bear. Vulnerability coupled with resilience in a society where the 'disaster underclass' is blamed constantly for putting the rest of society at risk constitutes a double injustice; larger factors of political economy, a dominant class that is socially and morally irresponsible, and a passive state contribute to "unwarranted social deprivation" (Verchick 2012) in disaster contexts as much as other spheres of life; the key insight is a deep injustice that underlies the phenomenon of inaction where possibility of risk mitigation and damage clearly exists. At an idealistic level democracy can offer solutions to this; however from a pragmatic perspective, what would work to reduce this "unjustified passivity in the face of disaster"

(Verchick 2012 citing Shklar 1990) is a fully and effectively functioning set of institutions and agents of governance, who frame clear rules and norms to deal with inequality and power while designing risk reduction strategies.

For disaster governance institutions and actors to actually incorporate justice concerns, they need to have an idea of justice that captures the ethic of consequentialism and the ethic of organizational and behavioural appropriateness. Amartya Sen captures this in the distinction he makes between two classical Indian notions of justice - *niti* and *nyaya* (2011). While the latter may be regarded as a narrow, principle based notion of justice, the latter is viewed as a broader notion that considers means and consequences of a course of action in achieving desired objectives. In reality however, especially in modern constitutional democracies, the two often overlap. However as Ghosh has shown in interpreting Sen's work, the idea of justice as *nyaya* is more flexible, is "attuned to actual institutions and experiences of human lives", and offers an ethically informed strategy to guide governmental disaster mitigation policies from a consequentialist perspective. For this notion of justice as *nyaya* to work however, democracy has to play a role by allowing and enabling moral claims for justice to be made by those affected by a disaster. This is something one constantly sees in the field, especially in informal settlements among people eking out livelihoods in the informal sector. Such populations have for long learnt to cope with state inaction in providing access to housing, sanitation, basic infrastructure and amenities, and stable sources of income. Disasters –whether or not these are blamed on anthropogenic factors – introduce new sources of stress, which despite their considerable resilience yet add another layer of vulnerability, and hence force them to make claims on the state, couched in justice terms. These claims ironically can be responded to in ways that generate more injustice for the most vulnerable. Grove (2014), in his study of disaster resilience in Jamaica, deploys the term 'adaptation machines' following Deleuze and Guattari. As disasters become a public spectacle and a symbol of the state's inefficiency in a neo-liberal world where the state has to ensure the safety and security of capital along with accumulation, the state begins to deploy adaptation machines, in association with international aid agencies, corporate sponsored NGOs and think tanks, and the corporate media. Settlements that are vulnerable get bulldozed in the name of disaster mitigation, compensation and rehabilitation are subjected to neo-liberal norms, and locations of capital accumulation, power and status get precedence in disaster mitigation plans and implementation.

The 'adaptation machine' of the state, aid agencies, media, and NGOs ride on the resilience of the at risk population. While Amartya Sen celebrates the benefits of democracy in mitigating disasters, there is also a downside. Democracy provides a freedom to the vulnerable to organize, mobilize, and recover from disasters in the short term, and hence reduces the scale of a disaster, especially in an urban context. The celebration of this resilience, even to the context of describing its immanence among a section of the population (Shapiro), allows the state to get away with half-hearted measures, or ignoring a large section of the vulnerable altogether in disaster governance. As researchers, we then have a responsibility in nuancing our descriptions and interpretations of resilience. As such, we need to be slightly wary of a capabilities approach to social justice that Martha Nussbaum advocates (2003), since the very presence of some capabilities may offer an excuse for state and society to be selectively passive and inactive in disaster situations. However Nussbaum herself offers a way out by suggesting that "we need to have an account, for *political purposes* (italicized for emphasis) of what the central human capabilities are", in order "to get a vision of social justice that will have the requisite critical force and definiteness to direct social policy". The state has to recognize that claims for disaster justice comes from a desperate need for help, that human beings are not just agents of production and consumption, that they start as both capable and needy – in need of a rich plurality

of life-activities,' to use Marx's phrase, whose availability will be the measure of well-being" (Nussbaum 2013). Stressing that there is a dignity to human need, Nussbaum attempts to conceptualize the human person beyond a producing agent, and argues for designing society and its institutions on that basis. Both disaster governance and disaster justice come together in such a perspective, offering a concrete idea of what kind of institutions need to be designed to ensure disaster justice.

This approach also enables us to go beyond neo-classical solutions to environmental problems – including proxy commodification methods that Harvey, among other Marxists, is critical of. Reducing ecologies to ecosystem services, as Noel Castree (2003) points out, allocates arbitrary values, leaving us "unable to deal with their 'real' ecological value".

Bringing together these diverse approaches and perspectives, and conceptual frameworks, one can begin to develop an epistemology for disaster justice that is strongly rooted in the idea of the human being as "in need of a rich plurality of life-activities". This means that the idea of a city, of its governance, of the anthropocene, and how we imagine solutions to mitigate anthropogenic climate change from a disaster justice lens need to integrate communities which we do not necessarily think of us urban (Eg.artisanal fishers). This means that we tolerate, accept, and encourage economic forms and livelihood options that are not necessarily modern and industrial, and that reflect a plurality of life-activities. These notions are reflected in the claims that coastal communities in India, and around the world are making in response to what has been termed "ocean grabbing". With climate change, coastal zones are vulnerable to sea level rise, coastal erosion and accretion, storms and cyclones, and other extreme weather events. At the same time communities and populations struggle to cope with new coastal claims for land and sea, threats from global capital, intense competition for resources amidst scarcity, and sheer surge of urbanization and population flows into coastal areas. Frameworks that address coastal livelihoods, rural-urban governance, and resource sustainability in an integrated manner (eg.Integrated Coastal Management approaches), need to work with alternative epistemologies of life and livelihood around which artisanal fishers for instance have launched struggles. New coastal claims in regions like Mumbai, in larger Asian urban agglomerations and around the world, deny possible and potential solutions to environmental, climate change and disaster conundrums, and disallow scope for alternative knowledge to become available for disaster governance. Hence, while disaster governance institutions need to pay attention to collective choice arrangements such as those proposed by Ostrom, which in fact do account for power and agency, they also need to go beyond problems of compliance and ineffective resource management to focus on contestation, conflicts, inequality, and their adverse impacts in the form of disaster risk and vulnerability. It is no coincidence that artisanal fishers in India's coasts have advanced beyond their livelihood arguments for protecting their coastal habitats to focus on disaster prevention and climate change / environmental degradation as outcomes of good coastal zone management practices and regulations. Increasingly, coastal inhabitants have begun to use rights based, legal, para-legal, alternate dispute redressal mechanisms, and justice arguments for environmental protection and conservation, and these have revolved around livelihoods and community / life needs - but also, in association with environmental NGOs and movements - around disaster risk reduction issues.

Disaster Justice debates can begin with problems of power, agency, and inequality, but to make a difference to the quality of disaster governance, they need to incorporate broader concerns of capabilities, knowledge sets, life and livelihood alternatives, and the moral claims that people are allowed to make on the state and its institutions. In the section that follows, some insights from field research on uncertainty in the context of chronic flooding in Mumbai are presented; the implications of our findings for expanding our understanding of disaster justice are briefly drawn, with respect to the debates and arguments presented above.

Justice and Uncertainty: Chronic flood induced disaster in Mumbai

The very idea of a disaster begins to be challenged when we use a justice lens. Scale is an important determinant in the definition of a disaster – the spatial extent, the scale of life and property loss, and the magnitude of the event. Hence major city or region wide events get classified as disasters and become the focal point of research, discourse, disaster mitigation efforts, and disaster governance. Localized events within a region, especially if these are rural, but also in urban areas, tend to be neglected in public and academic discourse, and governance strategy despite experiencing disasters on a regular basis. In metropolitan regions like Mumbai, where millions live in informal settlements, annual flooding can result in significant property loss, health effects, livelihood and income loss, and damage to public property, infrastructure, and common pool resources. The absence of more relevant criteria to declare a disaster, and the failure on the part of the state to take cognizance of such localized disasters, constitute acts of injustice in themselves. Such localities which are already marginal to the city, and are plagued by infrastructural inadequacies, risky environments, and high population densities tend to be left out of the entire gamut of disaster governance functions – including planning, mitigation, risk reduction, rehabilitation, and compensation. In the long run, health effects result in a large mortality rate that is not usually ascribed to a specific disaster, in Mumbai's case, its seasonal flooding event[1]. Geographic distribution of an event and vulnerability mapping need to be aligned with justice maps (Verchick 2012) so that vulnerabilities can be reduced for the most exposed to hazards (Sherly et al 2015).

In the absence of state responsibility for disaster risk reduction, communities begin to depend on local political leaders for whom they constitute the vote bank. Short term palliatives and surface measures are offered, which tend to dissipate over time. Identity politics can come into play, disallowing the flood victims to imagine an alternative politics around disaster mitigation, especially as most of the vulnerable in Mumbai are *dalits*, migrants, or minorities. The uncertainty of state action is further aggravated by shifts in political regimes; when rightwing, nativist, or anti-migrant parties are in power, disaster prone communities tend to be ignored as they are usually minorities, migrants, lower caste, or a combination of these. This emerges quite strongly in our field work, as in addition to uncertainties in disaster mitigation and compensation, rehabilitation, the flood victims also are denied access to urban amenities and livelihoods systematically. A third level of uncertainty overlaps with these, as informal settlements are under constant threat of eviction, demolition, and relocation. In addition, there are also threats of violence from the majority community, and uncertainties related to amenities and services including education, health, waste management, sanitation, water, and energy. There is hence a cumulation of injustices, a cascading effect of multiple deprivations and discriminations which translate into poor adaptation and coping, and exclusion

---

[1]   We have little statistical data for this, but it comes out very strongly in field work.

from transformative governance related to flood disaster mitigation. Adapting Douglass, one could term this as a case of compound disaster injustice.

Hence, we observe that the wider political economy, political ecology, and macro-economic and political changes can have effects that may be more drastic than climate change (e.g. land and water grabs, changes in technology, displacements etc.). These can often exacerbate uncertainty, risk, and climate change impacts or become barriers to coping and adaption. This integrated understanding of justice and the lived realities of local people (poor or rich, women and men, urban or rural especially in the global South) are not captured by models, diagrams, and regressions, simulations and scenario analysis. The voices and representations of those experiencing disasters on a regular and sustained basis do not make their way into the narratives and the discourses of "above" - the experts, modellers, climate scientists and the epistemic communities. A frequent observation from the field is the absence of localized hazard maps and predictions, based on micro-climate, topography, hydrology, and the nature of the built environment. This then relates back to how academics incorporate justice issues into their research and articulations, as Massey urges us to do. This also subverts the justice framework of the IPCC (IPCC, 2014:17), which advocates a move towards a robust decision making framework that recognizes the "importance of governance, ethical dimensions, equity, value judgments, economic assessments and diverse perceptions and responses to risk and uncertainty". Ontological differences exist in how climate change and disaster events are conceptualised and understood by diverse actors, and how uncertainties manifest themselves in discourse and practice. Theorizing about uncertainty from 'above' (by experts, natural scientists and modellers) may have very little to do with how men and women (poor or rich, urban or rural especially in the global South) live with, understand and cope with uncertainty in everyday settings from 'below'. The livelihood practices and human activities in the anthropocene of tens of thousands of fishers in the Mumbai region for example, that are threatened by urbanization, new coastal land and ocean grabbing, and climate change, are unrepresented in climate simulation models, discourse and policy. The narrow frame of uncertainty needs to be broadened and diversified to encompass varieties of uncertainties emanating from, and exacerbated by changing livelihood practices, social differentiation (of caste, class, region, religion and gender), and access to information and networks. We need to ask questions about what is the level of convergence or divergence of climate centered uncertainty with other contributors to uncertainty. Justice problems can be addressed when different perspectives from 'above' create enabling conditions for the most vulnerable section of the population to adapt to climate change challenges; on the other hand injustice can occur when they are, in fact barriers to transformation and coping, and expose those 'below' to more uncertainties which challenge the sustainability of their livelihood and resource base in the city. The latter can be caused by narrow technical solutions (flood walls), inadequate knowledge of the topography in informal and slum settlements (urban planning problems, eg. large gaps and missing information in Mumbai's development plans), or failure to design and implement disaster risk reduction strategies in sites where the poor and the disadvantaged live.

The issue of justice hence needs to be addressed frontally when communities who are affected by chronic disasters and compound disasters (Douglass 2016) lack the ability or are excluded from strategies of transformation at the city or regional level to mitigate flood risk. While sections of the population are vulnerable and exposed to large degrees of uncertainties on many fronts, they do not lack the ability to imagine a transformed future for themselves that is risk free. Fish workers in Mumbai have been among the most vocal in raising questions and offering suggestions for more sustainable coastal management regulations practices; they are also among the most exposed to

hazards and uncertainties. However they are unable to or are excluded from the larger discourse and strategizing about transformative adaptation because of two reasons:

a. Including them in the discourse and policy making would affect neoliberal urbanization and allocation of land to capital, affecting desired economic growth trajectories, and

b. In the larger process of disaster governance, certain questions remain unasked due to strategic reasons, lack of participation, and inadequate knowledge and skills in policy formulation and implementation. These include:

- Who are involved in processes and conceptualization of transformation?

- What is the history of transformation in specific sites, if any?

- How is transformation conceptualised at different scales, and how do different units relate to each other in the planning process?

- How do actors conceptualise the scale and the system at which transformation should occur? Are local communities able to take a larger, regional view, and do state actors and their associates consider localized impacts and outcomes?

- What are the obstacles (including social, cultural, political and economic) to transformation at different scales and spaces?

For the justice discourse to be embedded more strongly in the disaster governance framework, each of these questions need to be posed, and responded to in organizational, bureaucratic and strategic terms. These questions are also linked to the everyday experience of dealing with disasters, combined with a multitude of other uncertainties.

- In Mumbai, our field research showed daily or everyday uncertainties that surpass those stemming from climate change; these include economic, political and social uncertainties (inflation, education, access to basic services, job security, housing, communal conflicts). Amidst such intense and diverse uncertainties, more rational and 'scientific' understandings of disasters among the people tend to be substituted by blaming fate, undermining their existing knowledge and skills in dealing with disasters, and in turn increasing uncertainties.

- Long term planning as a whole is constrained by the complex political economy of Mumbai, with different state actors (urban, municipal, regional planning, coastal management, pollution control, forestry, hydrological) vying for authority and power; Institutional disarray relates to land ownership and governance, preventing flood mitigation strategies from being implemented, for eg, conflicts and disagreement between the railways and the municipal agencies constrain the construction of storm water drains.

- There is also considerable uncertainty surrounding evolving master plans and political directives as is seen in the ongoing controversy surrounding Mumbai's development plan till 2034, in which a large number of errors, omissions, and gaps have been pointed out by NGOs, activists, media, and citizens.

- Institutional and epistemological balkanization of functions related to flood mitigation reflects the evolution of institutions to provide diverse services, and not the need for disaster governance, much less disaster justice. Solid waste management, pollution control, urban planning, welfare housing, resources management, industrial zoning – none of these address

disaster management problems, even though they have a substantial contribution to make both to the occurrence of disasters and to their prevention.

- Large scale exclusions are observed in preventing impacts of impending disasters. A frequent complaint in disaster prone zones is about lack of effective warning, and the failure to conduct regular drills – both of which are more efficient in elite, less flood prone areas. An inequality problem worsens this inefficiency – since migrant households are frequently mobile, state agencies are unable / unwilling to design strategies that function around a mobile population not easily available for warnings and drills.

- Eligibility issues for rehabilitation and resettlement for flood victims reflect the arbitrary injustice that populations at risk are subjected to. The poor, the migrants, and the minorities find it difficult to prove long term residency or domicile in the state and city, lack documentary evidence, and are hence considered ineligible for rehabilitation, and compensation, despite having constitutional citizenship rights; absence of insurance is to cover disaster risk is now being recognized as a significant problem in countries around the world, and both the inadequate science of risk, and the unwillingness of insurance firms to provide cover impose layers of uncertainty on those exposed to disaster hazards.

- As is now well known through numerous studies, displacement arising from disaster induced voluntary and involuntary resettlement causes magnified changes in existing patterns of social organization. A pre- and post-study in Mumbai reveal that these changes occur at many levels of long-established residential communities, resulting in families getting scattered and informal social networks that provide mutual help becoming non-functional. Trade bases between producers and their customers are interrupted, and local labour markets are disrupted. Formal and informal associations are wiped out. Traditional management systems tend to lose their leaders. Material and cultural losses can be enormous. These cumulate the physical exclusion of the affected households from a geographic territory, along with economic and social exclusion from of a set of functioning social networks. This reflects the lack of attention to 'people as infrastructure' (Simone 2004) in disaster governance.

- Community facilities and amenities are not always retained in new locations, even if these are in some cases better in certain locations; Post resettlement, communities living in a single neighbourhood got scattered as households from the same locality were given flats in different places or buildings. This provided scope for greater privacy, individualism, and less interference from the community or ethnic group. But households were not happy with this situation as they tend to miss their old community ties which provided mutual support in times of need and crisis. Households felt that in earlier times despite insecurity and vulnerability to floods, they were more socially secure, and could obtain mutual support for addressing individual and shared problems. With segregation resulting from R&R, families were separated and a feeling of 'no one bothers about others' emerged. Justice is also about what kind of communities households wish to live in, and can rely upon given their socio-political and economic constraints and their own position in the social structure.

Uncertainty in our interviews with flood affected individuals and communities was usually expressed in the form of an inability, a feeling of impotence, a lack of agency to take charge of their lives. All the above issues drew on strong feelings of anguish, fear, pain, and torment reflecting their situation of structurally induced injustice they felt unable to deal with. Most individuals we spoke wished to get out of the kind of impasse they felt they were imprisoned in – a state of crisis every monsoon, but also constrained by other social and political factors, and unable to take charge of their lives. A

deep frustration was expressed in terms of injustice – the failure of the state to fulfil promises and address their rightful claims as citizens and as humans. Each of the above points also relate to the discussion of justice presented in the first section – critical issues relate to how we conceptualize and address problems of resilience, capabilities, agency, power, distribution of just and unjust effects of disasters, the ethics of care, the idea of a rich plurality of life activities, and above all the manifold dimensions of constant uncertainty. Each of these need to be understood and captured by institutions directly and indirectly related to disaster governance, incorporating in every instance a justice perspective, not in specific or narrow terms, but in more substantial ways. A few broad directions towards this are outlined in the final section below.

Disaster Governance for Justice: Some Suggestions

From a social justice perspective, Levy (2013) argues for a 'deep distribution' perspective in urban transport planning which can especially benefit socially marginalized groups. A similar argument can be made to state that disasters break old social relations and create new ones, and that, peoples' everyday lives are deeply intertwined with urban practices, locally available infrastructure, and neighbourhood, city, and regional level quasi-political and governance systems. Disasters and disaster related resettlement and rehabilitation can disrupt many of these, even as the latter hold promise for bettering these systems relative to the facilities, amenities, risk, and social support systems in their informal settlements. A justice based governance approach will seek to comprehend and address multiple vulnerabilities and risks as well as positive aspects of a functioning and dysfunctional social system, arising out of disasters, in disaster prone locations, and in resettled areas. Justice in disaster situations is both uneven distribution of injustice in an unequal society, and unequal impact of disaster governance. Deep distribution is about how governance institutions can make a different to address distribution of bads to compensate for problems of distributive justice in the classical sense, so that the risk and uncertainty effects can be mitigated to some extent when it comes to disasters. Governance institutions need to be distributed to address every aspect that impinges on disaster management, and every section of a population that is vulnerable.

A justice based governance framework will and should seek to revamp and recast municipal, development, welfare, infrastructure, planning, service provision, housing, resource management, and economic institutions such that they incorporate disaster related uncertainties and unequal impacts and resilience into their organizational, design, and functional aspects. This would ally well with the co-benefits approach recommended especially in developing countries for climate change adaptation and mitigation strategies. Tannert et al (2007) state that "carrying out research to diminish uncertainty and, consequentially, risks can become an ethical duty". While epistemological uncertainties related to the above can be addressed through more research, ontological uncertainties in the context of complex and evolving systems in the disaster prone anthropocene, require moral convictions and models to be incorporated into disaster governance in general and specific terms.

If specific communities are more vulnerable and at risk, experience justice issues, disasters have to be redefined in operational and policy terms to comprehend and include localized disasters which may yet encapsulate populations of tens and hundreds of thousands in the Asian anthropocene. While loss of lives continue to be significant in disasters in Asia and other parts of the world, there is a steady decline, which makes those with the capacity to mitigate disaster risk less troubled and perturbed. Justice for disaster victims gets strained as equal attention and action are not forthcoming

for property loss, loss of income and livelihoods, disease and health epidemics, and breakdown of communities – all having a deleterious effect for the long term on resilience and adaptation.

Legal mechanisms for decentralized management can clearly enhance both scientific and sociological contributions to more effective disaster governance. However, consistently there have been efforts to scuttle these laws, disabling communities and neighbourhoods from addressing disaster problems in more systematic ways as opposed to spontaneous resilience which work in the short term and impose enormous stress on their capabilities and capacities. Disaster justice can be used by activists and researchers to make a stronger case for decentralization in urban and rural areas.

As political subjects disaster victims rarely get a voice. Nussbaum's proposal to focus on capabilities, the dignity of human need, and the 'rich plurality of life-activities' that characterize most communities and groups, offer us a way of relooking at the vulnerable not as victims with immanent resilience but as capable agents in need of empowerment to make their own choices. While it is difficult to elide issues of inequality in discussions of justice, it is distributive injustice rather than a standard conceptualization of social justice that is useful in rearranging the institutional aspects of disaster governance. As both Iris Young and Martha Nussbaum propose, we need an approach to disaster governance that values difference, the capabilities and knowledge that are engendered in those who are marginalized, and the institutions that need to be built with great critical force on the basis of difference, need, empathy, and agency, for disaster justice to be truly realized. Uncertainty of various kinds arising from diverse sources, is a fundamental aspect of the 'feeling' of injustice, and hence of necessity needs to be discussed in terms of both an ethic of care and an ethic of justice, feelings, and moral reasoning (Okin, 1989). In building and designing disaster governance institutions and strategies, cherishing and appreciating the difference and capabilities of those vulnerable to disasters becomes a responsibility of both individuals and institutions equipped with the task of disaster risk reduction. Young asks deeply pertinent questions about how moral agents ought to "conceptualize their responsibilities in relation to global justice" (Young 2006, 102). Her social connection model takes account of structural processes that can produce injustice, and seeks to bring together agents who can act in responsible ways to provide redress through collective action. Reducing uncertainty related to disasters within a larger structural context of inequality, domination, and exclusion, and converting it into manageable risk, needs such a model of governance through collective institutional action in which agents across different divides can negotiate a common set of "parameters of reasoning" to ensure disaster justice.

References

Anjaria, Jonathan Shapiro. "Urban Calamities A View From Mumbai." *Space and Culture* 9.1 (2006): 80-82.

Beck, Ulrich, Anthony Giddens, and Scott Lash. *Reflexive modernization: Politics, tradition and aesthetics in the modern social order*. Stanford University Press, 1994.

Bourdieu, Pierre. *The logic of practice*. Stanford University Press, 1990.

Castree, Noel. "Commodifying what nature?." *Progress in human geography* 27.3 (2003): 273-297.

Douglass, Mike. "The Urban Transition of Disaster Governance in Asia." *Disaster Governance in Urbanising Asia*. Springer Singapore, 2016. 13-43.

Fabinyi, Michael, Louisa Evans, and Simon J. Foale. "Social-ecological systems, social diversity, and power: insights from anthropology and political ecology." (2014).

Featherstone, Dave. "Some Versions of Militant Particularism: A Review Article of DavidHarvey's Justice, Nature and the Geography of Difference." *Antipode* 30.1 (1998): 19-25.

Field, Christopher B., et al. "IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change." (2014): 1132.

Finger, Davida. "50 Years after the'War on Poverty': Evaluating the Justice Gap in the Post-Disaster Context." (2014).

Ghosh, Shubha. "Duty, Consequences, & Intellectual Property." *U. St. Thomas LJ* 10 (2012): 801.

Greenhough, Beth, Tariq Jazeel, and Doreen Massey. "Introduction: Geographical encounters with the Indian Ocean tsunami." *Geographical Journal* (2005): 369-371.

Grove, Kevin J. "Adaptation machines and the parasitic politics of life in Jamaican disaster resilience." *Antipode* 46.3 (2014): 611-628.

Inamdar, Arun B, Gedam, Shirish, and Parthasarathy, D. Integrated Impact Assessment of Mithi River and Vakola Nalla, Project Report submitted to the Mithi River Development and Protection Authority, Government of Maharashtra, 2015

Levy, Caren. "Travel choice reframed:"deep distribution" and gender in urban transport." *Environment and Urbanization* (2013): 0956247813477810.

Massey, D. (1974): Social justice and the city: A review, *Environment and Planning A* 6 (2): 229 -235.

Massey, Doreen. "Geographies of responsibility." *Geografiska Annaler: Series B, Human Geography* 86.1 (2004): 5-18.

Nussbaum, Martha. "Capabilities as fundamental entitlements: Sen and social justice." *Feminist economics* 9.2-3 (2003): 33-59.

Okin, Susan Moller. "Reason and feeling in thinking about justice." *Ethics* 99.2 (1989): 229-249.

Parthasarathy, D. "Social and environmental insecurities in Mumbai: towards a sociological perspective on vulnerability." *South African Review of Sociology* 40.1 (2009): 109-126.

Parthasarathy, D. "Informality, Resilience, and the Political Implications of Disaster Governance." *Pacific Affairs* 88.3 (2015): 551-575.

Parthasarathy, D. "Decentralization, pluralization, balkanization? Challenges for disaster mitigation and governance in Mumbai." *Habitat International* 52 (2016): 26-34.

Patel, S., d'Cruz, C., & Burra, S. (2002) Beyond evictions in a global city: people-managed resettlement in Mumbai. *Environment and Urbanization*, 14(1), 159-172.

Rao, Vijayendra. "Symbolic public goods and the coordination of collective action: A comparison of local development in india and indonesia." *World Bank Policy Research Working Paper* 3685 (2005).

Sen, Amartya. *The idea of justice*. Harvard University Press, 2011.

Sherly, Mazhuvanchery Avarachen, et al. "Disaster Vulnerability Mapping for a Densely Populated Coastal Urban Area: An Application to Mumbai, India." *Annals of the Association of American Geographers* 105.6 (2015): 1198-1220.

Shklar, Judith N. *The faces of injustice*. New Haven: Yale University Press, 1990.

Simone, AbdouMaliq. "People as infrastructure: intersecting fragments in Johannesburg." *Public culture* 16.3 (2004): 407-429.

Stallings, Robert A., and Enrico L. Quarantelli. "Emergent citizen groups and emergency management." *Public administration review* 45 (1985): 93-100.

Tannert, Christof, Horst-Dietrich Elvers, and Burkhard Jandrig. "The ethics of uncertainty." *EMBO reports* 8.10 (2007): 892-896.

Verchick, Robert RM. "Disaster Justice: The Geography of Human Capability." (2012).

Young, Iris Marion. "Responsibility and global justice: A social connection model." *Social Philosophy and Policy* 23.01 (2006): 102-130.

Young, Iris Marion. *Justice and the Politics of Difference*. Princeton University Press, 2011.