Disaster risk at the margins: Homelessness, vulnerability and hazards

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ABSTRACT

Many marginalised groups have received significant attention in disaster literature and disaster risk reduction policy, however others, such as the urban homeless, have stirred much less academic and policy interest. There has also been limited consideration among disaster specialists, who tend to concentrate on large-scale disaster risk, on the significance of everyday hazards and small-scale disasters for those living at the margins. Drawing on a scoping study that explored homelessness and hazards in Delhi, India, this paper contributes to closing these gaps as well as emerging discussions on disaster risk at the margins. The study focuses on the linkages between the multi-faceted marginalisation of homeless people and their various vulnerabilities to disaster associated with both everyday small-scale hazards and large-scale natural hazards. Highlighting the complexity and acute vulnerability of homeless people to disaster from a multitude of man-made and natural hazards at different scales, it argues for more attention and integration of homeless people's needs and everyday hazards in disaster research and policy. Some specific areas for future research are provided.

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Introduction

Hazards, in their many diverse forms are variously experienced (Hewitt, 2007; Wisner, Blaikie, Cannon, & Davis, 2004) with the possibility of a hazard culminating into a disaster more pronounced for some individuals and groups over others. Marginalisation and destitution leads to high vulnerability (Edgington, 2009; Sturgis, Sirgany, Stoops, & Donovan, 2010; Wisner, 1998), with those who are at the margins suffering the most when faced with natural and other hazards (Wisner, Gaillard, & Kelman, 2012). Homelessness is one of the uttermost states of marginalisation and reflects an advanced level of destitution and denial of basic rights (Tipple & Speak, 2009). The fate of homeless people in facing natural hazards has been put forward by a few scholars (Settembrino, 2013; Wisner, 1998). However, the homeless have not been adequately differentiated or considered within the disaster literature and the work of disaster risk reduction and management agencies (Wisner et al., 2012). They have also been totally overlooked in policy geared towards reducing the risk of disasters (e.g. United Nations International Strategy for Disaster Reduction 2011a, b).

This paper raises issues regarding disaster risk at the margins and the linkages between homelessness, vulnerability and hazards. It draws on a scoping study conducted in Delhi, India in 2013. Field research entailed focus group discussions and interviews with homeless people across eleven locations in the city, site observations as well as discussions with the Delhi Disaster Management Authority (DDMA). The field research was jointly conducted with the Indo-Global Social Service Society[2] — a Delhi-based Non Government Organisation (NGO) that works with homeless people in the city. The eleven locations included six homeless shelters and three locations where people sleep in the open. The shelters were a mix of women's, men's and shared shelters as well as both permanent and semi-permanent. The selection of the locations was made to reflect the diversity of living and sleeping arrangements and gender differences. The locations were also selected because of the NGO's existing relationships with the homeless in these areas and the ability to recruit participants. The study differentiated homeless people from other groups of urban poor such as slum dwellers who have their own distinctive array of vulnerabilities and are, at least to some extent, considered in disaster risk reduction literature, practice and policy (e.g. Pelling & Wisner, 2009; The World Bank, 2011).

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Cities have been described as 'crucibles of hazards' (Mitchell, 1999), and Delhi, like other large cities in Asia, faces a wide diversity of hazards ranging from the everyday and small-scale to the large-scale and low-frequency. These hazards have tended to be regarded separately, with urban specialists focussing on routine risks to urban populations and disaster specialists concentrated on large-scale disaster risks (Bull-Kamanga et al., 2013: 193). In this paper we aim to bridge this divide by examining the vulnerability of homeless people to both everyday and large-scale hazards and disaster risk. This is essential to better understand the needs of homeless people in facing natural and other hazards, and hence to design disaster risk reduction and management policies which address those concerns.

Marginality, vulnerability and disaster

Marginality is a controversial concept (Perlman, 1976). In its social acceptance, it broadly reflects unequal relationships between one or several groups with power, whether economic, political, social or all together, and a minority or non-members of the said group (Cullen & Pretes, 2000). The latter thus lack access to all kinds of resources available to the most powerful. In everyday life, limited and fragile access to resources is often materialised by weak livelihoods, poverty, social exclusion, discrimination, and the absence of political voice (Blaikie & Brookfield, 1987).

When faced with natural and other hazards, people who lack access to resources, lack means of protection are hence, are vulnerable. In fact, those who are affected by the harmful effects of hazards are disproportionately drawn from the segments of society which are chronically marginalised in daily life (Wisner, 1993; Wisner et al., 2004). They are marginalised geographically and physically because they live in hazardous places and spaces (e.g. informal settlers); socially and culturally because they are members of minority groups (e.g. ethnic or caste minorities, people with disabilities, prisoners, and refugees); economically because they are poor (e.g. homeless and jobless); and politically because their voice is disregarded by those with political power (e.g. women, gender minorities, children, and elderly) (Gaillard, 2010).

People's incapacity to safely face natural hazards therefore results from their inability to control their daily life and to choose the location of their home and their livelihoods (Blaikie, 1985). In that context, disasters highlight or amplify people's daily hardship and everyday emergencies (Baird, O'Keefe, Westgate, & Wisner, 1975; Maskrey, 1989). Disastrous events can thus not be considered as accidents beyond the usual functioning of the society (Hewitt, 1983; Wisner, 1993). Instead, disasters reflect development failure where the root causes of vulnerability merge with the origins of other development-related crises. In that sense, the most marginalised are particularly vulnerable not only to large-scale events but also to small-scale, high-frequency hazards which easily impair their fragile livelihoods and hence their ability to sustain their daily needs (Collins, 2009; Wisner et al., 2012). These events are often neglected by disaster risk reduction academics, policy makers and practitioners all together (Wisner & Gaillard, 2009). In fact, a recent campaign by the International Federation of Red Cross and Red Cross Crescent Societies (2013) make reference to silent disasters. Nonetheless, these events are suspected to have a larger cumulated impact than that of rarer large-scale disasters (Lavell, 2000; Lewis, 1984).

Pre-disaster vulnerability and the extent of resources available to individuals and groups to recover after a disaster mean that marginalisation, and the structures that create and sustain marginalisation, will continue to exist after a disaster. People who were rich before will still be the most well-off after the event while the poor are likely to remain poor (Blaikie, Cannon, Davis, & Wisner, 1994; Quarantelli & Dynes, 1972). In other words, marginalisation does not stop with disasters as disasters do not have equalising impacts or outcomes (Gaillard & Cadag, 2009). Furthermore, post-disaster aid and relief is often unfairly distributed to the benefit of the most affluent segments of the society (Cuny, 1983; Middleton & O'Keefe, 1998). Therefore, disasters frequently lead to the marginalised remaining marginalised, as well as more marginalised people whose livelihoods have been affected and who are often unable to recover (Winchester, 1992; Wisner, 1993).

If many marginalised groups have received significant attention in the disaster literature and disaster risk reduction policy, e.g. women in some societies (e.g. Enarson & Morrow, 1998; Phillips & Morrow, 2008), children (e.g. Anderson, 2005; Peek, 2008), elderly (e.g. Ngo, 2001; Wells, 2005), people with disabilities (e.g. Alexander, Gaillard, & Wisner, 2012; Kailes & Enders, 2007), ethnic minorities (e.g. Bolin & Bolton, 1986; Perry & Mushkatel, 1986), lower castes (e.g. Bosher, Penning-Rowsell, & Tapsell, 2007; Ray-Bennett, 2009), others such as prisoners, gender minorities and homeless people have stirred much less academic and policy interest.

Hazards and disasters in Delhi

Urban hazards and vulnerability to hazards are not natural but constructed and shaped by the character of development, governance and management structures as well as complex social, economic and political processes (Jha, Bloch, & Lamond, 2012; Mansilla, 2000; Pelling, 2003). Delhi is the fastest growing city in India (Singh & Shukla, 2005). Since 1951 the population has increased from just over 1.7 million to over 16 million (National Informatics Centre, n.d.), and the city's land area has expanded from 201 to 792 km^2 (Ahmad & Choi, 2011). Delhi is also the most densely populated city in India with 11,297 persons/km^2 compared to the national level of 382 (Government of NCT of Delhi, 2012). Accompanying this growth has been a proliferation of illegal and unauthorised colonies and informal settlements with some 76% of the population living in unplanned settlements which do not comply with government building standards (Ahmad & Choi, 2011).

Delhi's growth trajectory has created a wide range of everyday small-scale hazards. Illegal or substandard building is a significant cause of fires and building hazards. From 1995–2000 there were more than 75,000 fire incidents in Delhi with the largest number of fires occurring in slums and residential areas. Approximately 17% were caused by carelessness and 70% by short circuiting due to illegal connections, substandard wiring and overloading (Delhi Government, n.d.). Growth in the city's population and economy has contributed to the presence of 7.5 million vehicles in Delhi in 2012 which represents a 135.6% increase in just over ten years (Delhi Government, 2013). Delhi has more fatalities from traffic accidents than any other city in the country (Mohan, 2009). Furthermore, it estimated that every year 10,000 people die prematurely as a result of air pollution and that respiratory illnesses from poor air quality number in the hundreds of thousands (Anand, 1998 cited in Faiz & Sturm, 2002: 242). Lack of universal access to water and sanitation in the city also presents a multitude of everyday hazards. Only 75.2% of households in Delhi use treated water through a piped water supply system (Delhi Government, 2013) and 10.2% of urban households in the NCT of Delhi have no latrines.

A complete inventory of everyday hazards in Delhi is beyond the scope of this paper and we have mentioned just some. However, it is clear that while everyday hazards may have a low impact on a city they can be the cause of premature death and serious injury for many urban inhabitants, cumulatively killing or injuring more people than a large-scale low-frequency event (Bull-Kamanga et al.,

2013). Indeed, everyday hazards create small-scale disasters on an ongoing basis for many city residents (United Nations International Strategy for Disaster Reduction, 2009).

Delhi is also prone to a variety of natural and man-made large-scale hazards (e.g. Mohanty, Walling, Nath, & Pal, 2007; Shaw, Dhar Chakrabarti, & Gupta, 2010) such as building collapse, fires, floods and earthquakes. For example, in 2012 poor construction combined with water logging from the Yamuna River resulted in a building collapse which killed 67 people (BBC News South Asia, 2010), and between the years 2003 and 2011, there were 111 medium and 23 serious fires in the city which injured 14,078 and killed 2881 people (Delhi Fire Service, 2012).[3] In the last three decades the Yamuna River crossed its danger level 25 and since 1977 Delhi has experienced 4 major floods resulting in thousands of evacuations (Delhi Disaster Management Authority, 2010c). Delhi is also susceptible to flash floods caused by chocked drains, impervious surfaces, and back flow in the city's drain network from water level rises in the Yamuna. The geological setting of the city exposes it to seismic activity and earthquakes. On India's *Earthquake Hazard Map*, the city has been categorised as a zone IV which is the second highest earthquake hazard zone in India (National Disaster Management Authority, 2013). Within this zone 'the general occurrence of earthquakes is of 5–6 magnitude, a few of magnitude 6–7 and occasionally of 7–8 magnitude' (Delhi Disaster Management Authority, 2010a para. 4).[4] Population density, old and deteriorating buildings, and settlement and construction trends mean that the risk of serious earthquake damage is very high. However, to date there has been no vulnerability analysis on the extent of potential damages, nor is there any legal requirement for construction in Delhi to comply with the seismic code provisions set out in the Bureau of Indian Standards (Delhi Disaster Management Authority, 2010a). There are however calls for "a strong legal and enforcement framework with appropriate incentives and punitive measures" (Delhi Disaster Management Authority, 2010a, para 23).

Governance in Delhi has 'traditionally nurtured [a] multiplicity of command, control and co-ordination structures' which has hindered integrated and harmonized disaster risk reduction and management among relevant agencies (Delhi Disaster Management Authority, 2010d). To overcome this, in 2008 the Government of NCT of Delhi constituted the DDMA – a legally sanctioned nodal agency responsible for assessing, planning and implementing disaster risk reduction and management in Delhi. An important feature of the DDMA is its authority to command and co-ordinate partner departments and agencies to achieve disaster management needs of the city. The DDMA has supported a number of initiatives including a comprehensive seismic microzonation study, a pilot project retro-fitting five government buildings, and a mega mock drill on earthquake preparedness. While establishment of the DDMA demonstrates a governance commitment to disaster risk reduction and management, as we discuss later the extent to which this initiative is likely to reduce disaster risk and vulnerability for Delhi's most marginalised is questionable.

Homelessness and marginalisation in India's capital city

Homelessness is not a universally agreed concept or phenomena (e.g. Speak, 2004; Tipple & Speak, 2009). It can be considered along a spectrum of hardship and access to secure and safe housing, thus it can range from informal settlers under threat of eviction to pavement dwellers and people sleeping rough (Amster, 2004; Springer, 2000; Wasserman & Clair, 2010). In this scoping study, we refer to homeless people as those who live without roofed shelter in places such as the roadside, pavements, or other open spaces, or who stay temporary shelters. We however recognise that some pavement dwellers in India have permanent homes on the roadside and have thus managed to secure legal residency and associated ration cards and other forms of social protection from the government (Tribhuvan & Andreassen, 2003). In this section we outline four interconnecting dimensions of homeless people's marginalisation before examining how their marginalisation links with vulnerability to everyday and large-scale hazards in the following sections.

Political marginalisation

Political marginalisation comprises a lack of recognition, political voice, representation, and access to social security. Definitions of homelessness are politically sensitive as they determine who is counted as homeless and who receives targeted support (Springer, 2000; Tipple & Speak, 2009). The Census of India narrowly defines homeless people as those who do not live in census housing (a structure with a roof). This definition has been challenged for failing to adequately recognise and acknowledge who is homeless (Supreme Court Commissioners, 2012). The 2001 Census enumerated homeless people in Delhi at 24,966, whereas other estimates are as high as 150,000 (Indo-Global Social Service Society, 2012).[5] Over 95% of the homeless do not have voter identification or ration cards (Indo-Global Social Service Society, 2012). Without voter identification a person cannot vote and has no influence over local politicians. Homeless people's lack of political voice is reflected in the gross deficiency of state resources allocated for their needs as notable in the absence of any national level policies, programmes or projects that directly address homelessness in India. It is also a significant factor in the denial of homeless peoples' right to the city which takes many shapes from police brutality to inequitable and intolerant urban development and land policies.

Economic marginalisation

Homeless people are economically marginalised. Many are migrants from 'backward' states who have come to Delhi to escape cultural atrocities and discrimination, family problems, natural hazards such as drought and flood, and poverty and unemployment (Indo-Global Social Service Society, 2012).[6] Around 65 per cent of homeless migrants maintain contact with their family and send remittances home (Indo-Global Social Service Society, 2012). Approximately three-quarters of Delhi's homeless population is illiterate or only has primary level education. Thus, they have limited livelihood options and work predominately in the unorganised sector forging out meagre incomes. Over 80% of Delhi's homeless earn less than 100 rupees per day or US $1.60 (Indo-Global Social Service Society, 2012).[7] Their economic

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[3] The Delhi Fire Service provides year by year statistics for medium, serious and major fires although how these are categorised are not explained. There were no major fires recorded over the years 2003–2011. For a breakdown on the causes of fires in Delhi see the Delhi Disaster Management Authority (2010b).

[4] For an historical record of earthquakes that have caused damage in Delhi see the Delhi Disaster Management Authority website: http://delhi.gov.in/wps/wcm/connect/doit_dm/DM/Home/Vulnerabilities/.

[5] In 2001 the number of homeless people in India was enumerated in the national Census at 1.94 million, with just .77 million of those living in towns and cities. These figures are considered to be 'gross underestimates' by the Supreme Court Commissioners on homelessness who suggests a more realistic figure would be around three million.

[6] This survey covered 1096 homeless people including 737 men, 140 women and 219 children.

[7] This figure is based on the Indian rupee/US dollar exchange rate as of 24th November 2013.

marginalisation is characterised by insecure work, dangerous work, and incomes which hold them in extreme poverty.

Physical and geographical marginalisation

Economic marginalisation, coupled with political marginalisation, forces the homeless to stay in physically and geographically marginal and hazardous places and spaces. There are currently 66 permanent shelters and 84 temporary shelters in Delhi.[8] This is significantly less than the number needed which at a conservative estimate would be at least 1000. Furthermore, many shelters lack basic facilities such as sanitation and some are thoughtlessly located in remote locations or on culturally inappropriate sites such as cremation grounds (Supreme Court Commissioners, 2012). There are also insufficient shelters specifically for women and children. In 2010 the Supreme Court of India ordered state governments to provide one well-equipped homeless shelter that can accommodate 100 people per 100,000 of a city's population. The Municipal Corporation of Delhi has only shown average compliance with this order and is under par in establishing new permanent shelters and upgrading non-functioning ones (Supreme Court Commissioners, 2012). Thus, the vast majority of homeless in Delhi continue to sleep in hazardous environments.

Socio-cultural marginalisation

Delhi's homeless population is disproportionately drawn from some of the most socially and culturally marginalised and underprivileged sections of Indian society. Lower caste Hindus and Muslims are over-represented and around 70% are *Dalits* (Indo-Global Social Service Society, 2012), even though the Dalit community in India constitutes just 17% of the country's population (National Campaign on Dalit Rights, n.d.)Around 15% are women and children. The reasons for women's homelessness reflect entrenched gender disempowerment and discrimination and include ill-treatment at home, abandonment by their husband, and being thrown out of their home for mental illness (National Campaign on Dalit Rights, n.d.). Homeless women face multiple forms of violence, with some women such as those with "disabilities and mental health problems; single women and single homeless mothers; women living with HIV/AIDS; chemically dependent women and victims of substance abuse; pregnant and lactating women; and girls and adolescents" most at risk (Chaudhry, Joseph, & Singh, n.d.: 8–9). Social stigmas around mental illness and inadequate public health funding means there is little social and state support for those suffering from mental illness. It is estimated that more than 70 million people in India experience some kind of mental illness and that around a quarter of these people are homeless (Indian Council of Medical Research cited in Firstpost India, 2012). People with HIV and AIDS also face stigma and discrimination (AVERT, n.d.). For example, studies have shown that people living with HIV have been denied medical treatment, castoff by family and community, and been subject of violent assault (AVERT, n.d.). Individuals who are vulnerable to HIV and AIDS include migrant workers and injecting drug users (AVERT, n.d.). While it is unknown how many of Delhi's homeless live with HIV and AIDS, many are migrant workers and drug use is rampant among all groups and sexes (Indo-Global Social Service Society, 2012). Being homeless can be socially isolating. For example, over half the people surveyed by the Indo-Global Social Service Society (2012) replied that they did not have any friends and two thirds slept alone rather than in groups.

Homelessness, everyday hazards and small-scale disasters in Delhi

In preparation for the XIX Commonwealth Games, in the winter of 2009 the Municipal Corporation of Delhi ordered the demolition of a temporary shelter for the homeless. Delhi's winters can be extremely cold and within just days of the demolition two people who had been evicted were found dead.[9] From January 2007 to January 2013 there were unclaimed bodies of 330 children, 985 women, and 13,517 men who died on the streets of Delhi.[10] This is more than the total number of people killed (12,350) throughout India by large-scale natural and technological hazards over the same period as listed by the authoritative EMDAT database (Centre for Research on the Epidemiology of Disasters, 2013). Their deaths, unacknowledged in any so-called 'disaster databases', were not caused by any single event or large-scale disaster but from the small events and common hazards homeless people face on a day-to-day basis. Any serious harm or loss to a person's life, health or property as a result of a hazard is a disaster scenario for those affected, and for homeless people the likelihood of an everyday hazard resulting in a small-scale disaster is very high. In this section we use a descriptive narrative based on conversations with homeless people in Delhi to illustrate how homeless peoples' marginalisation exposes them to many intersecting everyday hazards, creates vulnerability with multiple connecting elements, and how the combination of these produces complex small-scale disaster scenarios.

Ajay is in his early 40s. He migrated to Delhi from Bihar in search of work after heavy floods destroyed his home and livelihood as an agricultural worker. As a daily labourer in the construction sector he has a no employment security and most of what he earns he sends home to his family. He cannot afford accommodation in Delhi so he stays in a homeless shelter in the Nigambodh Ghat area of the Yamuna River. Within a 1 km radius of the Ghat there are 20 shelters that can accommodate around 1000 people. However, with approximately 5000–6000 homeless people staying in this area there is a severe shortage of shelter accommodation.

The homeless are particularly vulnerable to climate-related hazards. Ajay and others talked of how there is frequent flooding in the area and recalled how during a heavy storm trees fell over causing damage to the shelters and injuring some of the residents. The homeless, and particularly those who sleep in the open, are highly vulnerable to temperature related hazards. People who are poor are at more risk of being undernourished (Kanjalil et al., 2010) and because a person needs more calories to keep their body warm when the weather is cold the homeless are more susceptible to cold-related illness and death. A survey study showed that 30% of Delhi homeless did not have breakfast and over 60% did not take lunch (Indo-Global Social Service Society, 2012). Substance addiction, which can alter or increase nutritional needs, is also common among the homeless where Ajay stays. Children who are homeless are also at extreme risk. In a study on the nutritional status of children in India it was found that chronic malnutrition was concentrated among the urban poor (Kanjilal, Mazumdar, Mukherjee, & Rahman, 2010). In the winter of 2010 several

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[8] Temporary shelters can be either porta-cabins constructed from tin sheets which can sleep around 100 people or canvas tents which sleep around 50–60.

[9] Temperature statistics provided by the India Meteorological Department (n.d.) indicate that the 2009 winter in Delhi was not abnormally cold.

[10] This information was acquired through a Right to Information request that was submitted to the Government of Delhi by local civil society organisations who shared it with the authors.

homeless people died in the Nigambodh Ghat area. To combat such cold-related illness and death an NGO has initiated a 'one meal a day' program, where they supply a nutritious hot meal every day to over 300 people who are homeless. However, there is a lack of critical social infrastructure such as de-addiction centres, counselling services and community health centres.

The homeless are also vulnerable to many everyday hazards that arise from a lack of basic services such safe water sources and sanitation facilities. The public water utility, the Delhi Jal Board, supplies drinking water to temporary and semi-permanent shelters throughout the city every two-to-three days but there are either poor or no sanitation facilities provided. For those who do not stay in shelters and who lack access to a safe drinking water source they have to buy water from vendors at exorbitant prices, use un-safe and un-potable water, limit their daily water intake, or collect water from public taps. Sanitation facilities are seldom provided at shelters, and when they are they can be in very poor condition. In the Nigambodh Ghat where Ajay stays there is chronic shortage of clean water for bathing and washing clothes. The Yamuna River is highly polluted and the water cannot even be used for washing clothes. There is a ground water hand pump in the area but thousands of people use this and according to Ajay the water from this tap is only suitable for washing clothes and not personal bathing. While this is anecdotal, it is also scientifically evidenced that industrial and domestic effluents have contaminated much of the ground water in Delhi (Singh, 1999).

Because of degradation of water sources and the lack of infrastructure and services where Ajay stays, he walks twice a week to bathe and wash his clothes in a public sanitation block which is located 2 km away. The High Court of Delhi has instructed the Municipal Corporation of Delhi that public sanitation blocks within the vicinity of homeless shelters must remain open 24 h and be free of charge for the homeless, however this is not practised or enforced. User charges and limited opening hours of public sanitation blocks mean many homeless bathe and wash clothes in public spaces and practice open defecation. This is particularly dangerous for women and adolescent girls.[11] Inadequate access to safe water and sanitation makes people vulnerable to water-borne diseases, diarrhoea and dehydration, as well as dog attacks, sexual abuse, accidents on rough or dangerous terrain including banks and garbage areas, police harassment and assault, and traffic hazards. Many of these hazards are also faced by the homeless through hazardous livelihood activities such as rickshaw pulling, rag-picking and begging.

This description has covered just some of the of the everyday hazards homeless people face. It has shown however, that their marginalisation exposes them to a large and diverse range of everyday hazards. These hazards are associated with climate (e.g. extreme temperatures, floods and water scarcity); inadequate access to safe and secure infrastructure and services (e.g. shelter, primary health care, water, sanitation); environmental degradation (e.g. water, air and land pollution) and; personal safety (e.g. police brutality, road traffic, sex-related attacks). Homeless people's marginality also parallels with characteristics that make individuals and groups more vulnerable to everyday hazards such as living and working in unsafe and congested areas, migrants with no local social ties, under-educated and illiterate, poor with fragile and often hazardous livelihoods, ill-health, and being individually and collectively politically weak.

However, homeless people are not homogenous and although they are among the most vulnerable of urban residents, there are some who are more vulnerable than others such as homeless children, women, the elderly, people with physical disabilities, and those with mental illness or substance addictions. The depth and breadth as well as the mix and synergy of marginalisation and vulnerability that characterises homelessness, compounds the likelihood of everyday hazards escalating into a complex small-scale disaster scenario: complex because they usually consist of multiple different and connecting vulnerabilities and hazards, and small-scale because they occur at the level of the individual or household.

Large-scale disasters and mega-mock drills: is there any 'civil' defence for the homeless?

From December 2011 to February 2012, the DDMA conducted a major and comprehensive earthquake preparedness exercise in collaboration with the National Disaster Management Authority. It included workshops, mock-drills, awareness-raising programmes, public lectures and media campaigns, and culminated in a state-wide mega-mock drill. The drill was conducted with the participation of numerous public, private and civil society stakeholders and took place in 399 locations covering 24 types of urban sites such as schools and colleges, hospitals, cinemas, government buildings, petrol stations, malls, metro stations, flyovers, high-rise buildings, resident welfare associations, hotels, slums and the airport. Among the objectives of the mega-mock drill were: ensuring the safety and security of Delhi's residents; creating awareness about earthquake disasters and possible preventative actions among various stakeholders including NGOs and communities, and; for developing mitigation strategies based on the outcomes (Delhi Disaster Management Authority, 2012). Considering these objectives in relation to homeless people it is evident that the drill did not achieve what it set out to do.

According to a senior bureaucrat of the DDMA the selection of sites and the specific locations for the drill were decided at the district level in coordination with emergency support departments and agencies. The chosen settings did not however explicitly or intentionally include any areas where there are high concentrations of homeless people and hence they were effectively overlooked and excluded despite their high vulnerability to disaster risk. Furthermore, the comprehensive media campaign was conducted using print, radio and outdoor activities such as street plays in market places. Many homeless are illiterate and don't have access to radio, and no-one who participated in this study recalled coming in contact with any street plays or were aware the drill had taken place. Following on from the mega-mock drill, District Level Disaster Management Plans are being prepared. However, given that the homeless were not included in the drill it is questionable if preparedness and mitigation strategies for their safety and security will be included in these plans.

The homeless who participated in this study had never had any contact with state agencies or government officials regarding large-scale disasters although some explained how they felt it was the government's responsibility to consult and educate. As a male participant from a men's shelter explained:

> The government should try to spread awareness regarding natural hazards. They should provide training on what to do at the time of natural hazards. Government officials should come and meet with us about natural hazards and in the preparation of the District Level Disaster Management Plans. The government should come and consult with us and provide us with counselling because we are alone.

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[11] For a detailed discussion on the vulnerabilities homeless people face in accessing water and sanitation, and in particular women and children, see Walters (2014, in press).

In addition to consultation, education and training people also suggested the state should provide more permanent hazard-safe shelters, and prevent large-scale hazards through initiatives such as raising the banks of the Yamuna River. Furthermore, while the majority of participants felt that the government is responsible for their safety before, during and after a large natural event, they had no expectation that they would fulfil this responsibility. They explained how the government does not care about the poor, had not provided compensation for disasters that had occurred in their home place, and how politicians had visited their shelters but no improvements had ever materialised.

Given the void left by the state, people reflected on their safety and 'civil' defence in the face of a large natural hazard. Many considered NGOs would look after them. However, much of what NGOs do with the urban homeless on a day-to-day basis such as advocacy, vocational training, and provide shelter management, is aimed at reducing vulnerability to the everyday rather than large-scale hazards and disaster risks. This emphasise signals homeless people's permanent state of emergency and the necessary prioritization of NGOs limited resources. Beyond the NGOs a small number of the homeless felt that in the event of large-event such as an earthquake they could only depend on themselves for their survival, while others explained they would go outside, stand in a clear open space and wait for it to stop. Others pinpointed God as an alternative to the Government and the NGOs, as a comment from one participant illustrates: "We have never experienced a natural hazard in Delhi. If there was a natural hazard we would leave our well-being up to God. We would go outside and wait for God only."

Homelessness, vulnerability and the significance of everyday hazards for disaster risk reduction

The vulnerability of homeless people in dealing with natural and other hazards reflects their marginal position in society, as exemplified in the foregoing discussion of homeless people in Delhi. As Wisner (1998: 29) puts it "*homelessness bundles together most of the challenges and opportunities associated with vulnerability: lack of access, isolation, lack of resources.*" Homelessness is in fact one of the ultimate stages of destitution where access to basic resources, such as shelter, appropriate diet, education, health care, is obstructed. These resources often constitute means of protection in the face of natural and other hazards as in the case of safe and resistant shelters, sustainable incomes and social protection. Lack of access to means of protection in facing natural hazards does not mean that these resources are not available locally. In fact, they most often are but access is limited to those with stronger economic, political and social position in society, thus reflecting an unequal distribution of power and opportunities which is grounded in an array of structural socio-cultural heritages and political-economy processes (Hartmann & Boyce, 1983; Wisner, 1993). Scarce prior studies of homeless people in disaster in the US (Sturgis et al., 2010), New York in particular (Settembrino, 2013), and Tokyo (Wisner, 1998) have come to the same conclusion.

Access has been long been identified as a key driver of vulnerability to hazards (e.g. Watts & Bohle, 1993; Wisner et al., 2004), which explains why those at the margin of society are most affected by disasters (Gaillard, 2010; Wisner et al., 2012). In many countries, including India, most poor communities, children, women and other marginalised social groups, whose existence and social identity are recognised by the larger society and/or the state, struggle to access resources and means of protection although they are legally and/or socially entitled to do so. The homeless, like migrants, travelling communities, squatters, gender minorities, *Dalit* castes, and other social groups whose citizenship and identity

are legally and/or socially illegitimate, or at least not properly acknowledged through state identification systems, cannot even claim such access, which constitutes a further obstacle to protection and driver of vulnerability. In that sense, homeless people, as shown in the case of Delhi, are marginalised amongst the marginalised, or particularly vulnerable amongst the vulnerable.

Homeless people's legal and social invisibility leads to their non-existence in databases compiling major disasters. Although evidence from Delhi and elsewhere in the world (Settembrino, 2013; Sturgis et al., 2010; Wisner, 1998) suggests that homeless people are likely to suffer significantly in major disasters associated with large-scale natural hazards, there are, however, no consolidated data to confirm this claim. Indeed, in most countries where homeless people are not properly accounted for in everyday life, they are obviously further overlooked in time of disasters. In consequence, the homeless and other invisible social groups are further neglected in policies geared towards reducing the risk of disaster, which are most often associated with extreme and rare events (Gaillard, 2010; Hewitt, 1983). The mega-mock earthquake drill conducted in Delhi and elsewhere in India, a country considered one of the most progressive countries in the world for disaster risk reduction (Wisner et al., 2012), shows how such policies ignore those who are most vulnerable in facing natural hazards. It is very probable too that both their legal and social invisibility further prevents them to claim and access any support in the aftermath of disasters.

The vulnerability of homeless people in facing everyday small-scale hazards such as fires, traffic accidents, physical harassment and assaults, respiratory illnesses associated with air pollution, and diseases linked to poor access to water and sanitation facilities is evident. In Delhi and elsewhere in the world, the life of homeless people is one of permanent emergency. The cumulated impact of these everyday events is in fact likely to be higher than that of large-scale disasters as suggested for the homeless in Delhi and India. They constitute extensive or everyday risks (Global Network for Disaster Reduction, 2013; United Nations International Strategy for Disaster Reduction, 2009). These risks are of uttermost importance in understanding marginal social groups' behaviour in facing natural and other large-scale hazards. Indeed, people's behaviour is most often dictated by immediate and tangible needs, such as those to secure shelter, food and water, at the detriment of long-term and uncertain extreme hazards.

Major disasters constitute no less and no more than the extension of the state of permanent emergency experienced by those at the margin of society like homeless people (Baird et al., 1975; Maskrey, 1989). However, disaster risk reduction policies often neglect the most marginalized and their needs reflecting the way in which marginality is cumulative and leads to further marginalisation and neglect. Furthermore, despite the significance of everyday small-scale hazards they are often not fully addressed within development policies and seldom, if ever, included in disaster risk reduction policies. For those living at the margins, this lack of attention further removes their needs and rights from policy consideration and inclusion.

Ways forward: disaster risk reduction for the homeless

The importance and non-recognition of how many homeless people die due to everyday and larger natural and other hazards is alarming, while the lack of interest stirred amongst those in charge of reducing the risk of disaster is puzzling. In fact, from the foregoing study of the homeless of Delhi it is evident that a good deal more research is needed to better understand homeless people's vulnerability in different contexts. First, research is needed on the impact of seasonality on the homeless, especially in the context of

climate related changes. This is relevant not just in Delhi which experiences heat waves and cold snaps but also in cities with other climatic and seasonal conditions. Second, further research on the nexus between climate change, cities, vulnerability and homelessness is required more broadly. For example, how is climate change impacting other forms of everyday hazards such as water logging which can create environments for malaria and other vector borne diseases, flooding and building collapse, and in turn how is this affecting the vulnerability of the homeless. This requires research of the present situation as was as likely future scenarios. Third, homeless women face unique hazards such as sexual abuse and trafficking. Scholarship, but also disaster risk reduction policy and practice would benefit from more gendered analyses on homelessness and hazards and again, not just in Delhi but in other cities around the world. Fourth, connected and yet distinct to this, there is the need for research that examines degrees of vulnerability among the vulnerable. In other words, who are the most at risk groups, how does their risk manifest, and how is it experienced? It is also essential that we explore spaces of progressive change to homeless people's vulnerability. For example, homeless people's social organisation, social networks, knowledge, skills, and overall capacities in facing hazards may show that even the most marginalised are not helpless 'victims' in time of disaster (Gaillard, 2010).

In addition to the need for more research and in wide range of topical areas, this study highlighted the need for better integration of homeless people's needs in disaster risk reduction policies. Homelessness-sensitive disaster risk reduction policies should be embedded in everyday life and development. This is essential to bridge the gap between existing policies geared towards reducing the risk associated with large and rare hazards and daily development initiatives, both of which fail to fully address everyday hazards which matter most for the homeless. An agenda for disaster risk reduction should therefore also be inclusive of both exceptional measures required to face major events and daily actions to reduce the vulnerability of homeless people to everyday threats. This agenda thus requires actions from the bottom up as well as initiatives from the top down and the participation of a large array of stakeholders (Gaillard & Mercer, 2013; Wisner et al., 2012), including homeless people themselves. The direct and meaningful participation of the homeless is likely to be the greatest challenge given their invisibility. Nonetheless, their contribution is essential not only because they are the first concerned but also because of the lack of existing research with regards to their vulnerability to natural and other hazards. Only the homeless fully know what their needs and vulnerability actually are and no one else is likely to be more interested in reducing the risk of small-scale or major disasters than themselves.

The participation of homeless people to disaster risk reduction may go beyond voicing their own needs to contributing to activities which cater for these needs. Settembrino (2013) emphasises that when Hurricane Sandy battered New York in late 2012, many homeless people spontaneously volunteered for the Red Cross and other organisations involved in the relief operations, thus highlighting that even the most marginalised social groups may display significant capacities in facing natural hazards. Capacities here refer to the set of endogenous knowledge, skills and resources people resort to in dealing with natural hazards and disasters (Cadag & Gaillard, 2012). These endogenous capacities often serve as buffer when access to exogenous resources and means of protection in facing hazards is obstructed as in the case of homeless people. They do not however, replace the responsibility of the state in ensuring the safety and security of the population.

Indeed, like development and human rights, the safety and security of an individual or group from natural and other hazards, whether these are everyday and small-scale or low-frequency large-scale events, cannot be left to be determined by social status, access to resources and endogenous capacities if we are serious about universal and sustainable disaster risk reduction. Inclusion of marginalised groups in disaster risk reduction policies and better integration between these policies and development interventions is important for reducing the vulnerability of those at the margins of society. However, as vulnerability is embedded in factors that produce and sustain marginalisation, a long-term and sustainable approach to disaster risk reduction will ultimately necessitate addressing multifaceted and entrenched structures of marginalisation.

Acknowledgements

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