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Disasters and Large-Scale Population Dislocations: International and National Responses

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Summary and Keywords

Large-scale displacement takes place in the context of disaster because the threat or occurrence of hazard onset makes the region of residence of a population uninhabitable, either temporarily or permanently. Contributing to that outcome, the wide array of disaster events is invariably complicated by human institutions and practices that can contribute to large-scale population displacements. Growing trends of socially driven exposure and vulnerability around the world as well as the global intensification and frequency of climate-related hazards have increased both the incidence and the likelihood of large-scale population dislocations in the near future. However, legally binding international and national accords and conventions have not yet been put in place to deal with the serious impacts, and material, health-related, and sociocultural losses and human rights violations that are experienced by the millions of people being swept up in the events and processes of disasters and mass population displacements. Effective policy development is challenged by the increasing complexity of disaster risk and occurrence as well as issues of causation, adequate information, lack of capacity, and legal responsibility. States, international organizations, state and international development and aid agencies must frame, define, and categorize appropriately disaster forced displacement and resettlement to influence effective institutional responses in emergency humanitarian assistance, transitional shelter and care, and durable solutions in managing migration and resettlement if return is not possible. The forms that disaster-associated forced displacements are projected to take and corresponding national responses are explored in the Indian Ocean tsunami of 2004 in Sri Lanka, a massive disaster in a nation riven by civil conflict; Hurricane Katrina of 2005 in the United States, where the scale and nature of displacement bore little relation to hazard intensity; and the 2011 Great East Japan Earthquake, Tsunami, and nuclear exposure incident exemplifying the emerging trend of complex, concatenating, multihazard disasters that bring about large-scale population displacements.

Keywords: natural hazards, climate change, population displacements, vulnerability, exposure, dislocation, data gathering, international organizations, resettlement policy, resettlement, human rights

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Introduction

Dislocations of massive numbers of people by widely disparate causes are not a new problem. There are numerous examples from archaeology and ancient and modern history documenting the forced migration of whole populations due to disasters, conflicts, or state-level development initiatives (e.g., Mumford, 2012; Ur & Osborne, 2016).

Dislocations or displacements of large populations by disasters are afflicting ever larger numbers of people and constitute a major challenge to states and international organizations to develop adequate responses to this increasing need. Moreover, given the findings of climate change research, particularly regarding the growing frequency and intensification of climate hazards, the future promises an expansion of the problem. Globally, there were 24.2 million newly displaced people because of disasters in 2016. Further, the widespread destruction of the 2017 hurricane season in the Caribbean and the inadequate recovery efforts were key drivers in the displacement of a preliminary estimate of 2,934,000 people (IDMC personal communication).

Before proceeding further, however, the question of terminology should be addressed. In this discussion the terms dislocation and displacement will be used interchangeably to refer to the involuntary movement of populations from a home ground, site or, in the case of transhumant or nomadic populations, territory. However, the recognition that disasters and climate change will increasingly uproot people is leading to the development of new terminology. For example, greater understanding of disaster causation has increased participation by the state in disaster prevention by increasing regulatory constraints, as well as active interventions, such as moving people out of harm’s way. Disaster risk management, in effect, has become a feature of governance through which the state establishes and maintains authority and legitimacy (Zeiderman, 2016). Thus policy options are being developed in many states and cities to relocate or resettle populations that are living in zones in which the risk of hazard impact cannot be mitigated or reduced to acceptable levels. In Latin America, for example, research is distinguishing between relocation and resettlement. A population displacement for disaster risk reduction that does not alter the basic structural characteristics of livelihoods; access to resources; and social, organizational, and environmental relations is being termed relocation. A population displacement that alters those structural characteristics permanently is referred to as resettlement (Lavell, 2016). While this distinction is yet not widely used, it is taking on increasing salience as governments, particularly in large urban environments, recognize the obligation of safeguarding citizens from environmental risks.

Large-scale displacement takes place in the context of disaster because of the occurrence of a hazard onset that makes the original environment uninhabitable, either temporarily or permanently. However, there is a wide array of disaster events that are invariably complicated by human institutions and practices that can fuel large-scale population displacements. A number of fundamental questions will prove important for developing mitigation and response policies and practices. Emergent trends or patterns of both potential events as well as increases in exposure and vulnerability that will contribute to

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mass displacement must be identified. The ways that the policy discourse and practice of states, international organizations, state and international development, and aid agencies understand, define, and categorize disaster-forced displacement and resettlement will influence formal institutional responses. In addition, the links between rights and entitlements (or lack thereof) and vulnerability to both disasters and large-scale population dislocations must also be clearly established (Morvaridi & Chatelard, 2004).

This article will present an overview of the challenges facing global and national societies from large-scale population dislocations caused by disasters triggered by natural and technological hazard onset, exploring conceptual questions regarding causality, risk, vulnerability, exposure, issues of scale, and responses from responsible authorities. Emphasis will be placed on understanding the factors that generate both the short and long-term risks and consequences in major dislocations. Attention will also be given to the difficulties of data gathering and determining actual numbers of the displaced as well as policy and practice problems in the various forms of dislocations associated with disaster events. The article will consider the wide range of losses and needs of the displaced over time and how those needs are met (or not) by international and national forms of policy and practice. The forms that disaster-associated forced displacement are projected to take and corresponding national responses will also be considered through an examination of three case studies: the Indian Ocean tsunami of 2004, a widespread catastrophe in a conflict plagued society, Hurricane Katrina of 2005 in the United States, in which social factors played a greater role in the scale of displacement than the intensity of the hazard, and the 2011 Great East Japan Earthquake and Tsunami, including the damage ensuing from impacts on the Fukushima Nuclear Facility, an example of the kind of complex, concatenating, multi-hazard disasters that bring about large-scale population displacements that are projected for the future.

Defining Disaster: Risk, Vulnerability, Exposure and Population Displacement

While defining disaster might seem to be a relatively straightforward task, the term has elicited a long-standing debate regarding its definition due to questions of causation, temporal and spatial frames, impacts and differences between conceptual and operational definitions (Quarantelli, 1998) However, the complexity and the variety of the events encompassed by the term actually present important questions for the issue of large-scale population dislocations. For present purposes, a disaster is defined as a process or event in which a potentially destructive agent(s) from the natural, modified or constructed environment or both coincides with a population in a socially and economically produced condition of exposure and vulnerability, producing a perceived disruption of the normal relative satisfactions of individual and social needs for physical survival and social order and meaning (Oliver-Smith, 1998). Exposure is the degree to which people, infrastructure, housing, production capacities and other tangible human assets are situated in hazard-prone areas (Preventionweb, 2017). Vulnerability refers to the

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characteristics of a person or group that either enable or impede their abilities to anticipate, cope with, resist, and recover from the impact of a natural hazard. It involves the interaction of factors that are a measure of the degree to which life and livelihood are put at risk by a hazard event from the natural or technological environment (Wisner et al., 2004).

Consequently, the conjunction of an exposed and vulnerable population and the existing hazards of its location creates the risk of disaster. Risk refers to variable processes with degrees of probability of probable dangers of harms (Tucker & Nelson, 2017). Risk from rapid onset hazards is referred to as intensive. Risk from slow onset hazards, often framed as environmental change, is referred to as extensive. Extensive risk potentially increases intensive risk, in which the chronic becomes the acute (Lavell & Maskrey, 2014). In either case, the risk of a disaster and a disaster itself are processual in nature rather than phenomena that are isolated and temporally demarcated in exact time frames. It bears mention here that the confluence and interactions of natural hazard onset, environmental degradation, and climate change often compound the effects of each, exacerbating the intensity, frequency, and range of impacts on vulnerable populations and their potential displacement (Kellman & Galliard, 2010; Laczko & Aghazarm, 2009; Lonergan, 1998).

A fundamental task that all societies must address is some kind of adjustment to the hazardous features of the environment in which they live. The impacts of such hazards will be socially, politically, and economically mediated, distributed, and interpreted. The measures taken to mitigate and respond will be similarly influenced by those same factors. Thus the patterns of inequality that influence the distribution of both risk and vulnerability in contemporary societies produce a differential endangerment that constitutes a violation of human rights. In point of fact, then, in terms of population dislocations, who and how many will be displaced are not determined solely by the nature, magnitude, or intensity of a natural or technological hazard onset.

Disasters and Population Dislocations: The Question of Causality

In the 1980s researchers began to link the issue of severe or radical environmental change with migration, designating temporarily or permanently uprooted people by the threat, impact, or effects of a hazard or environmental change variously as “environmental migrants” or the more debated term “environmental refugees” (El-Hinnawi, 1985). This assertion was soon contested in part because clear and direct relationships of causality are actually quite rare. In the strictest sense of the word, if A causes B, then A must always be followed by B. In the case of disasters, it is more accurate to state that A, disaster, increases the risk of B, displacement or forced migration.

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Those who questioned the construction of environmental migrants or refugees attributed the displacement of people to a more complex pattern of factors including political, social, economic as well as environmental forces (Wood, 2001; Black, 2001; Castles, 2002). For example, Black's critique that focusing on environmental factors as drivers of migration obscures the role of political and economic factors reflects the importance of vulnerability in disaster outcomes and any population dislocation that might ensue. By the same token, political and economic factors are themselves drivers of risk and vulnerability. In effect, many environmental impacts that uproot people are often shown to be far from naturally generated, but rather have their origins in human policies and practices, such as the destruction and displacement in New Orleans following Hurricane Katrina (see case study).

The United Nations High Commission on Refugees (UNHCR) forecasts that five displacement scenarios will emerge in the near future: hydrometeorological disasters, population removal from high risk areas, environmental degradation, the submergence of small island states, and violent conflict (2009, p. 4). In addition, the United Nations Framework Convention on Climate Change (UNFCCC) Article 4.8 urges national governments to address the needs that developing nations will face in climate change, specifically from (1) Rapid Onset Drivers and Evacuation, resulting in evacuation and displacement, (2) Slow Onset Drivers and Forced Migration, including drought, desertification, sea level rise, salinization, deglaciation, (3) Climate Change Mitigation Projects and Displacement, and (4) Relocation as Mitigation. In regard to the fourth driver, it is projected that such projects as dams, coastal defenses, water transfer schemes, and renewable energy projects potentially will displace large numbers of people (De Sherbenin et al., 2011). Climate change, thus, both intensifies hazards and may also add to the array of hazards to which peoples are exposed and vulnerable (UNISDR, 2011).

Defining Large-Scale Dislocation

The question of defining large-scale population dislocation at first glance would appear to be as deceptively straightforward as did defining disaster. However, before addressing the question of scale, it should be recognized that, as with disasters, population dislocation is a complex process with multiple trajectories, each with serious operational implications. When people are forced to alter their location in space, the resulting movement takes a number of different forms such as flight, evacuation, displacement, resettlement, or migration, which vary according to characteristics relating to the social and environmental relations of specific contexts. The following set of paired responses is useful in understanding the types of demographic movement that occur in dislocations at any scale but also underscore the difficulties in data gathering and analysis:

- Proactive—Reactive Voluntary-Involuntary
- Temporary-Permanent
- Physical danger-Economic danger

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- Administrated-Nonadministrated
- Internal-cross border

These six pairs are best seen as continua rather than closed or opposing categories. In effect, the reality of specific occurrences of dislocations tends to be too complex to nail down within rigid categories: for example, evacuation, always a response to physical danger, can have similar outcomes to flight, can be proactive or reactive, but is administered to a greater or lesser degree (Oliver-Smith, 2013).

In terms of initial responses, some population dislocations will occur in the context of sudden onset events that elicit at initial stages elements of emergency management strategies such as evacuation and temporary shelters. Other approaches to deal with dislocations may be similar to the resettlement of refugees that integrate the displaced into existing communities. Other forms of dislocation will be the result of planned mitigation projects and resemble development-forced resettlement, community development, and urban planning. Greater attention is being paid to resettlement to reduce exposure to natural hazards (Correa, 2011A; Correa, 2011B). Some dislocations over time may involve several of these forms of displacement and resettlement. Finally, some dislocations will result in migrations, internally or eventually in some cases across international borders, frequently eliciting very little formal institutional response. The challenge of large-scale dislocations, therefore, will draw on all of the phases of emergency management, and many social scientific, engineering, and administrative and management disciplines (Oliver-Smith, 2013).

Very large-scale disasters, also known as catastrophes, because they involve different time-and-space scales (lasting longer, encompassing wider areas); crossing ecological, jurisdictional, and national boundaries; and impacting heterogeneous populations, will require multiple strategies and inter- and multinational efforts and cooperation (Bissell, 2013; Esnard & Sapat, 2014). In a catastrophe, the number of people involved may be so large that targeted and specifically designed resettlement programs will be particularly challenging. A major issue to address in large-scale dislocations is what changes with scale. Large-scale dislocations may involve many thousands, even millions, of people, from wide and diverse regions. But basic human needs remain largely the same within the range of cultural variation and hazard type (floods versus earthquakes). Apart from emergency rescue operations of the uprooted and their stabilization in terms of immediate needs, an enormous task in itself, the organizational and logistical challenges of planning and coordinating the longer-term needs for a large and likely diverse population facing displacement that may last from days and weeks to years becomes paramount. In cases of long-term displacement, and eventual resettlement, the lessons learned from development-forced displacement of large populations will be germane (Cernea, 1997; Scudder, 2009).

Difficult as it may be, to enhance chances of success, responses will need to address culturally and socially defined constituent population groups to whatever extent possible, particularly for assisting people in transitional shelter schemes in culturally appropriate

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ways before reconstruction or resettlement. In terms of scale, in development-forced displacement and resettlement, the Chinese, for example, actually built cities for populations of several hundred thousand people, but they were not working under emergency time pressures. In the case of large-scale population dislocations by disasters, there may be little advance notice and the time, political will, and resources will not exist for the planning and construction of cities for hundreds of thousands of disaster-displaced people. For this reason, legislation and policies that address this potential must be in place prior to hazard events. Identifying both the deeper causes and risk drivers of displacement as well as high-risk zones for specific hazards will aid in developing scenarios that may guide proactive planning (Oliver-Smith et al., 2016). The city of Bogota, for example, has engaged in a series of initiatives to establish appropriate policy and implementation options in the event of earthquake, including the necessity of resettlement of impacted populations (FOPAE, 2014; Zeiderman, 2016).

While most large-scale disasters will involve a diversity of populations, some catastrophes —because of the multiplicity of political, administrative, jurisdictional, environmental, economic, social, and cultural contexts— will differ not only quantitatively, but qualitatively in terms of the mobilization and coordination required among the diversity of agencies responding to the needs of affected people (Bissell, 2013; Ruback et al., 2013). The great potential for intensified coastal storms, such as Hurricane Sandy, carries with it the high probability that the presence of large populations in enormous coastal cities around the world will result in the need to resettle populations that may not be easy to disaggregate into constituent social groups or communities (McGranahan et al., 2007). However, in the United States, for example, resettlement after disasters follows the refugee resettlement model of relocating individuals and families, often using a buy-out strategy, rather than reconstituting pre-disaster communities.

One of the most significant challenges for developing effective strategies for assisting populations displaced by disasters and other environmentally linked events and processes is acquiring better data on which to base policy to improve national and international capacity to respond. For example, data on mortality and displacement in each of the three case studies used in this article varied widely by sources. There has also been a large disparity in estimates of people who have been or will be displaced by the effects of disasters and environmental change. Estimates are at least in part contingent on how environmental migration is defined, who will fall under a given definition, and who will actually be counted. For example, in the decade between 1997 and 2007 estimates ranged from 24 million (Myers, 1997) to 250 million (Christian Aid, 2007), but many doubted the empirical basis for such claims, leading one researcher to title an article “Why the Numbers Don’t Add Up” (Gemenne, 2011).

There are significant obstacles to the collection of accurate information on displacements. There are wide variations in data-gathering methods and bases by different entities—whether nations, international organizations, or NGOs—that collect data according to different definitions and categories. Some nations, for example, restrict data collection to certain regions, which may not be where most displacement has

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occurred. Others do not distinguish between droughts and rapid onset disasters. Others do not indicate whether displacement has occurred multiple times over a given time period. In many cases the number of displaced people is not disaggregated by age, gender, location, and emergency shelter (IDMC, 2017A).

In effect, simply knowing the number of displaced people is insufficient for developing sound policymaking and program development. One of the most significant gaps is the lack of data on the duration of displacement. For example, appropriate policy responses cannot be developed if the data does not permit analysis of whether people displaced by a disaster have been able to return to their homes to rebuild or whether they have been resettled or have simply migrated in search of a new home. Without such longitudinal data, knowing how many displaced people there are at a given point in time is impossible (IDMC, 2017A). In researching the case studies for this article, estimates for the number of displaced people in each case varied considerably across different sources, sometimes even for the same time frame or region.

Since 2009 the Internal Displacement Monitoring Centre has proved to be a useful source for data on population dislocation, with full explanations of methodological strategies and their limitations. The IDMC uses an event-based methodology to estimate the number of people who have been displaced by disasters, drawing on data supplied by an array of partners such as the International Organization for Migration (IOM), the United Nations High Commission on Refugees (UNHCR), the International Federation of Red Cross societies, and multiple NGOs. Where possible the IDMC draws on competing reports on the same event to avoid double-counting and other inaccuracies such as a failure to distinguish between displaced individuals and displaced households (IDMC, 2017A). They further acknowledge fully that problems with data gathering leave an incomplete picture of displacement by disasters.

Although “large scale” refers to large numbers, there are few specific metrics employed in the use of the term. In the following figure, the IDMC has set a rough metric of what “large scale” might include in terms of a scale of events according to magnitude. The mega category they employ is set at greater than three million people displaced. The medium to small category with fewer than 100,000 displaced is still quite a large number, particularly when the human suffering is considered. However, simply considering the numbers encompassed in that scale is revealing of the scope of the problem. Therefore, we should not fail to recognize that future potential displacements of enormous size are projected for the near future. That said, although difficult to quantify, the small- and medium-size disasters occurring almost daily around the world should not be overlooked as a cause of significant displacement.

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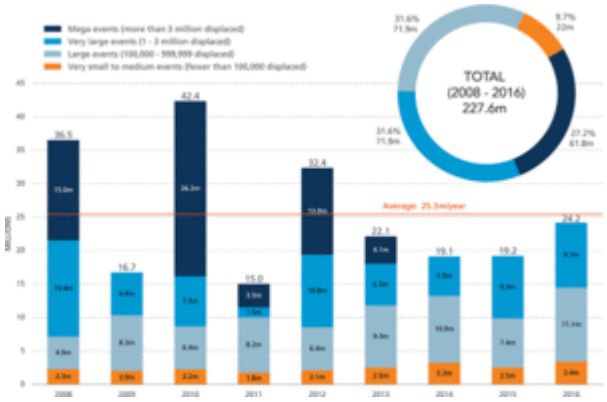

Figure 1. New displacements by disasters by scale of event.

Source: IDMC (2017A, p. 31).

The data supplied by the IDMC further helps to apprehend the geography of displacement.

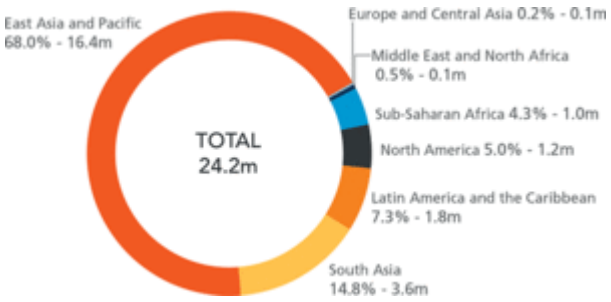

Figure 2. Countries with most new displacements association with disasters in 2016.

Source: IDMC (2017B, p. 37).

It will be noted that of the list of countries with most new displacements by disasters in 2016, all but two of the top ten are in Asia.

Table 1. Countries With Most New Displacements Associated With Disasters in 2016

	Country	**Displacements**
1.	China	7,434,000
2.	Philippines	5,930,000
3.	India	2,400,000
4.	Indonesia	1,246,000
5.	United States	1,107,000
6.	Cuba	1,079,000
7.	Japan	864,000

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8.	Bangladesh	614,000
9.	Myanmar	509,000
10.	Sri Lanka	500,000

Source: IDMC, 2017B.

The Consequences of Large-Scale Population Dislocations

Displacement may compound the trauma and losses experienced in disaster. Uprooted people generally have to rebuild personal lives, including those relationships, networks, and structures that constitute communities. In disasters survivors may lose everything material in their lives; in displacement, they risk losing identity, social relations, and culture. The social destruction wrought by these phenomena takes place at both individual and community levels. Addressing those losses thus becomes the major challenge for states and international agencies, particularly in resettlement. Solutions to these challenges must be durable. While for many experiencing large-scale dislocation there is hope of return, for others the displacement will be permanent. Those who can return and reconstruct, even in the face of major destruction, generally stand a better chance at recovery. People who are permanently uprooted face far greater challenges because of the loss of social networks that can become fragmented in displacement (Aldrich & Meyer, 2015)

Disaster-displaced people must cope with the stresses of temporary shelter, nutrition, safety, and health risks, as well as the challenge to adapt to new or radically changed environments. Privation, loss of homes, jobs, and the breakup of families and communities all may be suffered. All may experience the endangerment of structures of meaning and identity. However, based on systemic differences in vulnerabilities, some groups, such as women, children, the elderly and disparaged minorities, may suffer significantly different and more severe losses (Enarson & Chakrabarti, 2009; Mehta, 2009). And finally, all must mobilize social and cultural resources to reestablish social groups and communities and to restore adequate levels of material and cultural life. For people uprooted by disasters and other environmental changes, forced migration or displacement constitutes a secondary disaster. Displacement often makes permanent many of the losses incurred in disaster.

When disasters damage or destroy communities, uprooting people, and displacing them far from homes and jobs, the process of recovery is made doubly complex. Most large-scale displacement very frequently involves whole regions. With large-scale uprooting, it is difficult to maintain the coherence of group or community (Johnson & Olshansky, 2017).

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This becomes significant because the community networks enabled people to access important material resources, but also meaningful social and emotional support that in stressful times in displacement becomes all the more significant.

The process of recovery will be both material and social. Material and social losses compound each other. Material elements such housing; the possessions of a lifetime; infrastructure; services like education, electricity and potable water; health care; and transportation and communication and nutrition can all be endangered, damaged, or destroyed in disasters or lost in displacement. In addition to physical damage, material losses resonate profoundly as well in the social world, exacerbating the serious losses also inflicted in the economic, social, and cultural life of survivors.

The dispersal, displacement, or death of family members may destroy not only a household, but also rends the social fabric of a community. Disaster-caused deaths tear those networks of relationships that form the context of personal and social identity, setting people adrift, without those anchors that link the self to the social world. Survivors of disasters who find themselves swept up in mass dislocations may also suffer a loss of personal identity, the partial loss of the self. The loss of meaningful others, whether through death or displacement, is also a loss of the self in that the part of the self that was invested in the lost relationship is also lost (Oliver-Smith, 2005).

Cultural identity is also put at risk in uprooted communities. The loss and destruction of important cultural sites, shrines, natural environmental features, religious objects, and the interruption of important sacred and secular events and rituals undermines community identity. The loss of a sense of place, embodied in specific land, undermines cultural identity as well (Altman & Low, 1992). Displacement for any group can be a serious blow, but for indigenous peoples it can be mortal. Place attachment and land tenure are considered to be essential elements in the survival of indigenous societies and distinctive cultural identities (Maldonado et al., 2013).

Health is an issue of major concern in displacement (Hasegawa et al., 2016; Kedia, 2009; Lim et al., 2005). Public health emergency workers generally arrive very early in the aftermath of disasters to control outbreaks of diseases from exposure to biohazards from the breakdown of infrastructure, particularly of water and sanitation. However, conditions in evacuation centers and temporary or transitional camps are often less than ideal and may provide environments in which communicable diseases may spread rapidly. Children and the elderly are particularly at risk in such contexts. The emotional impact of displacement also takes its toll on people, leading to mental health issues, such as family stress, gender-based violence, drug and alcohol abuse, and potential for suicide ideation (Willox et al., 2013). The “dying of a broken heart” and the “solitary death” syndromes are well documented in the resettlement literature (Fried, 1963; Iuchi, 2014). In addition, if displacement is prolonged over extended periods of time (years), the consequences for mental health and social well-being may be exacerbated (IDMC, 2017A).

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These losses of community, family, health, and personal identity compound each other to create another form of loss, the loss of meaning. Major disasters and mass dislocation deprive people of the sociocultural context in which their lives were meaningful and valued by others. Giddens refers to an “environment of trust” to evoke the blend of a sense of space, kin relations, local communities, cosmology, and tradition (Giddens, 1990). The loss of personal relationships and the social context in which they were enacted and in which the individual was affirmed may rob people of a sense of meaning, a sense of purpose in life. Religious belief can also be endangered in the aftermath of disasters. In effect, removal from the social context can be a removal from life. Disasters, both small and large, undermine the basic grounding of culture, confronting people with the challenge of reconstructing a lifeworld that can clearly articulate their continuity and identity as individuals and as a community again (Rodman, 1992).

Trajectories of Large-Scale Displacement by Disasters

There has been much speculation regarding the number of people who may be forced to migrate by disasters or other radical environmental changes, but attention to where they will go and what they will do when they get there is relatively recent. From other forms of forced migration and displacement, we can project that there will be at least four options, all of which will occasion significant stresses, challenges, and varying degrees of assistance or neglect.

Return and rebuild: If the original site of residence is deemed safe for occupation after disasters, many people will opt to return and rebuild. For example, most of the 500,000 people who were uprooted by 2010 floods in Pakistan, although they experienced multiple subsequent displacements, were finally able to return (Kirsch et al., 2012). However, even when authorities have prohibited reoccupation because of continued unacceptable risk, the tendency for people to rebuild in or return to live in locations that continue to be dangerous after disasters is far from rare, both today and in history in widely disparate cultures (Tobriner, 1980).

Camps: Evacuation centers and transitional camps are temporary solutions for immediate needs for displaced people, but sometimes they will last up to several years. In camps, shelters, often tents or prefabricated structures, are not meant to be permanently occupied, but frequently are used for years at a time. In longer-term contexts, there is little provision for employment; and services tend to be adequate at best to meet physiological needs. Camps are established as temporary emergency facilities, often with minimum infrastructure that over time will deteriorate despite lasting up to several years or longer while reconstruction proceeds.

Migration: When a formal response to displacement is not forthcoming, people tend to migrate on their own. In some cases the displaced will seek shelter with relatives or co-ethnics in less or unaffected areas, but many migrate to cities (Wilkerson et al., 2016).

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Disasters of every stripe have initiated migration to cities. The disaster for some will provide the opportunity for a long desired goal of migrating, but for others, particularly the poor, such migration leads to urban people disappearing into those vast populations of resident poor and vulnerable people that strain the capacities of environments, administrations, and infrastructures to meet urban needs. Given the high potential for ever-larger dislocations, there is an urgent need to develop policies and resources to assist cities to absorb the massive numbers of people displaced by disasters (Kirbyshire et al., 2017; Koenig, 2009).

Relocation or Resettlement: Although relocation or resettlement has long been part of reconstruction efforts at the community level, such projects were done on an ad hoc basis, with little policy input, few responsible agencies, and minimal to poor capacities and resources. As such, the outcomes of the vast majority of planned resettlement projects for disaster victims, in particular, as well as those displaced by other causes, have been very poor, resulting in the impoverishment of the affected populations (Cernea, 2000). Such projects are frequently poorly planned, underfunded and badly implemented leaving affected populations destitute and disempowered. Such projects perpetuate the losses experienced in displacement and can constitute severe violations of human rights (de Wet, 2009; Scudder, 2009). Resettlement may be undertaken individually or in small groups, but in larger contexts of communities, resettlement involves the planned reestablishment of displaced peoples in a new location with appropriate settlement design, housing, services and an economic base to enable the community to reconstitute itself and achieve adequate levels of resilience to normal social, economic, political, and environmental variation. That such satisfactory outcomes have not been common constitutes a major human rights crisis.

International Policy Responses

Concern over the enormous violations of human rights, including the massive displacement of many populations during World War II, formed the basis on which the international community in establishing the United Nations began the effort to create international human rights standards and norms. A global normative framework of principles and organizations pertinent to displacement is currently taking shape on the issues of displacement by environmental forces.

United Nations covenants and conventions establish the human rights to health, a decent existence, work and occupational safety, an adequate standard of living, freedom from hunger, an adequate and wholesome diet, decent housing, education, culture, equality and non-discrimination, dignity, harmonious development of the personality, the right to security of person and of the family, the right to peace, and the right to development. These rights are considered the ideal that all governments should strive for. They are the basic life requirements that all human beings are entitled to. Disasters and displacement challenge all of these human rights. Human rights therefore are a central issue in both disasters and any dislocation that may result. In effect, in disasters, the social

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vulnerability of those most affected is often the result of a compendium of denials of fundamental human rights (Adger et al., 2006).

However, despite the attention that the issues of disasters climate change and environmental degradation have garnered in recent years, there are no legally binding internationally recognized instruments that pertain to the needs of people displaced by environmental causes, in part due to difficulties in establishing direct causality and a failure to agree on appropriate legal instruments as well as evolving and sometimes inconsistent terminology (Esnard & Sapat, 2014; Lyster & Burkett, 2017). As a result, many international disaster response operations in specific contexts are subject to ad hoc practices and the lack of directly responsible agencies, which vary dramatically from country to country and impede the provision of fast and effective assistance (IFRC, 2004, p. 1). Recognition of this lack has prompted proposals for appropriate forms of governance pertaining to environmentally displaced peoples (Biermann & Boas, 2010; Koivurova, 2007).

In the emergency stage of rapid onset disasters, international disaster management performance standards have been established in various institutional contexts, such as The Sphere Project to address acute needs during the immediate aftermath. The operational guidelines of the Inter-Agency Standing Committee (IASC), the primary mechanism for interagency coordination of humanitarian assistance in the Protection of Persons in Situations of Natural Disasters (2006, 2010), also adopt a human rights–based approach to help protect populations threatened or impacted by disasters, which is intended to complement existing guidelines on humanitarian standards in disasters. The guidelines are organized by thematic grouping—that is, protection of life; protection of rights related to food, health, etc.; protection of rights related to housing and livelihoods; protection of rights related to freedom of movement; and protection of religion throughout the time phases of the disaster. In addition, the UN Guiding Principles on Internal Displacement, although widely recognized as an international standard, and certainly helpful in guiding NGOs and other aid organizations in assisting internally displaced persons (IDPs), have not been agreed upon in a binding covenant or treaty and have no legal standing, although some legal scholars consider them as customary international law. The UN Framework Convention on Climate Change has also encouraged “measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration, and planned relocations” (UNFCCC, 2010). The International Federation of Red Cross and Red Crescent Societies (IFRC) has also focused on the development of legal measures to protect people displaced by disasters (IFRC, 2016). Today disasters also trigger the participation of the principal United Nations organizations, multilateral development banks, large numbers of international and national nongovernmental organizations (NGO), private corporations, and private individuals that, even as all parties contribute significant assistance, often creates serious problems of coordination, distribution bottlenecks, duplication, and corruption (Esnard & Sapat, 2014; Goldschmidt & Kumar, 2016).

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In addition to the scientific debate, there has been a vigorous discussion about how to categorize environmentally, disaster-related, and climate change displaced peoples—as refugees, IDPs, forced migrants, or migrants—and what protections to afford them, if any (Bakewell, 2011; Esnard & Sapat, 2014; Leighton, 2011; McAdam, 2011). While most of the uprooted will remain within national borders, there has also been attention to those who might migrate internationally, a particularly acute situation for the Small Island Developing States, which may in fact virtually disappear from either rapid onset storms made more far reaching by sea level rise or sea level rise itself. Over the last four years, in addition to an increase of attention in policy-oriented research (Bronen, 2009; Ferris, 2012; Martin et al., 2014), significant steps have been taken toward developing policy initiatives to protect the rights of people displaced by climate change and disasters. In addition, the Brookings Institution, Georgetown University, and the UNHCR have developed guidelines for planned relocation for populations displaced by disasters and environmental change (2015). In 2013, a nonprofit organization called Displacement Solutions developed the Peninsula Principles as the first comprehensive normative framework for protection and assistance provisions, consistent with the UN Guiding Principles on Internal Displacement to be applied to climate-displaced persons (Displacement Solutions, 2013).

Between 2012 and 2015, the Nansen Initiative, a state-led (Switzerland and Norway) consultative process, based on subregional consultation processes and civil society meetings, developed a protection agenda for people displaced across borders (Nansen Initiative, 2015A, 2015B). The Nansen Initiative focused on pre-displacement preparedness, protection and assistance during displacement, and solutions after displacement. At the end of the Nansen Initiative’s tenure, its final product was the Agenda for Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change, a nonbinding agreement endorsed by 109 states, which is a comprehensive approach to displacement by disasters, including best practices and calls for cooperation between states to deal with displacement by disasters. The Nansen Initiative, originally designed to be a two-year process, has been succeeded by the Platform on Disaster Displacement in order to continue the mission. Despite these important initiatives, there is still no single instrument that guarantees protection to the environmentally displaced, whether by disaster, climate change, or degradation.

The year 2015 saw a number of other processes from the international policy community as well. The Sendai Framework for Disaster Risk Reduction also addressed displacement as one of the most devastating consequences of disaster, calling for steps to be taken to reduce displacement risk, including development of public policies on preemptive displacement and resettlement of populations living in high-risk zones. Building on talks that began in 2010 with the Cancun Adaptation Framework, the Conference of the Parties (COP) process began to consider displacement as a major impact of climate change; in 2013 the COP talks in Warsaw produced the Warsaw International Mechanism (WIM), to be guided by the Executive Committee, that was charged with developing initiatives regarding losses and damages occasioned by displacement; and in 2015 the COP talks in Paris requested the Executive Committee requested that WIM develop recommendations

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“to avert, minimize and address displacement related to the adverse impacts of climate change” (UNHCR, 2016). In general, these and other proposals and policy initiatives predominantly focus on the protection of the rights of people displaced by disasters and climate change effects (McAdam, 2017).

National Policy Responses

While most disasters and environmental disruptions are defined nationally, there are very few major disasters that do not receive significant international direction and assistance. International aid for major disasters has long been the rule, often impacting national budgets and redefining national development priorities. Actual national policies and practices to deal with population displacement are generally constructed in the institutional, legislative, and legal contexts and agendas of the state, although other interests may sometimes impinge on the process as to how such policies, practices, and projects are implemented. Traditionally, and in many cases still, the tasks of managing disasters and displacement are handled by the military or civil defense agencies.

However, we are at a very interesting moment in the evolution of the state, particularly as regards the relationship between the state and its citizenry and the relationship between the state and the world system. Various fundamental dimensions in both relationships are undergoing significant change, altering rights and responsibilities of the parties, in ways that will probably have profound implications for displaced and resettled peoples. On the one hand, over the last three to four decades under neoliberal capitalism, the state’s contract regarding the security of the citizenry is seen most efficiently achieved through the functions of the market and individual solutions to structural problems (Lampis, 2016; Zeiderman, 2016). On the other hand, the shift from seeing disasters as unfortunate accidents or acts of nature (or God) to framing them as the outcomes of social processes mobilized by human priorities and decisions has begun to alter the role of the international community as well as the state, from disaster response in emergency management to disaster reduction through prevention.

Nonetheless, territory, law, economy, security, authority, and citizenship have all been constructed as national in most of the world. The state gains authority over a particular territory and simultaneously that territory becomes identified with that authority. This association enables the state to assume the role as exclusive guarantor of rights (Sassen, 2006). In displacement, the question of land for resettlement becomes particularly crucial, engaging issues of eminent domain and property rights that can prove complex and contentious (Leckie, 2014) (see case studies for Japan and Sri Lanka). However, the closer a state is connected into the global network of states that accept and validate norms pertaining to human rights and the environment, as well as the international actors and organizations that contribute to their creation, the likelier it is that those norms will inform the institutions of that state (Khagram, 2004), the recent withdrawal of the United States from the Paris Accord notwithstanding. By the same token, there are

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inevitable problems of coordination between international agencies and local governments in post-disaster resettlement (see Sri Lanka and Japan case studies).

In the case of disasters, states normally provide humanitarian relief and reconstruction and resettlement assistance, although there are no international legal requirements binding them to these functions. However, many states lack appropriate legislation on procedures for protection of displaced peoples, which often leads to bureaucratic and administrative confusion and chaotic responses (Bronen, 2009). Since jurisdictional and administrative responsibilities may not be spelled out in laws and regulations, serious flaws occur in all stages of assistance to displaced peoples, particularly in resettlement projects. Moreover, large-scale displacements do not take place in a political vacuum and invariably involve both local and national power relations often inflected as well by international participation and interests (see Sri Lanka case study). However, a wide array of international human rights treaties and the derivative 1998 Guiding Principles on Internal Displacement have created a comprehensive framework designed to protect people from displacement as well as inform decision makers during and after any displacement that may take place (Kirgis, 2005). International organizations such as the IFRC, the IOM, and the UNHCR also actively engage the legal and practical challenges of displacement along with national governments and nongovernmental organizations. For example, dealing with the challenges of regulatory barriers in post-disaster shelter is a major issue in the Disaster Law Programme of the IFRC (IFRC, 2017).

While there may be a certain consistency in broad categories of problems and challenges encountered in dealing with population dislocation, the wide variety of state policies and practices makes it difficult to characterize them, except in the most general terms. Much will depend on the formal organization of national territory, the experience and level of institutional development regarding natural and technological hazards, and the basic socioeconomic profile of the specific state. In this context, three case studies will serve as very generally drawn examples of the performances of the complex mix of state policies and performances in situations of large-scale population displacement. The range of policies, practices, and performances does not pretend to be inclusive of all variations that exist. Each case was chosen to explore specific features that represent events and processes that characterize current disasters as well as those types having significant probability to occur in the future. In the case of Sri Lanka, a disaster and large-scale displacement are analyzed in a developing country that endured a prolonged civil conflict. Hurricane Katrina in Louisiana presents a disaster and significant displacement in a developed country that reveals that many areas of the developed world share much in common with the developing world. New Orleans in particular, has been often seen to share many social and economic characteristics with the developing world of Latin America (Gruesz, 2006). In the Japanese earthquake-tsunami-nuclear accident, a case of the complex interaction of natural hazard and advanced technology signals a possible future trend in the construction of risk, disaster, and displacement.

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Case Studies

The Indian Ocean Tsunami in Sri Lanka (2004): The Politics of Displacement by Disaster in a Conflict-Afflicted Society

The Indian Ocean tsunami of December 26, 2004 was among the deadliest disasters in history. While most disasters tend to be relatively localized, the Indian Ocean tsunami, generated by an earthquake off the coast of Sumatra, struck thousands of miles of coastlines of 14 nations, killing 227,898 people and displacing 1.7 million more (UNDP, 2005). The island nation of Sri Lanka was among the most grievously stricken. The tsunami hit two-thirds of the 1400-kilometer coast of Sri Lanka. In Sri Lanka, 35,322 people lost their lives and 516,150 persons were displaced (UNDP, 2005). In addition, massive damage was caused to public and private infrastructure and personal assets. Further, the event occurred in a nation that had suffered years of chronic armed conflict complicating the recovery process and in some areas exacerbating the conflict (Keenan, 2010).

In the immediate aftermath, hundreds of thousands of people sought refuge in nearly 600 buildings hastily organized as shelters, such as schools, temples, mosques, and churches. Others sought the assistance of relatives or friends (Harsha et al., 2007). Aid arrived fairly quickly, due to fact that destruction, while almost total, was limited to at most a kilometer-wide strip along the coast. At first, as is typical, assistance came from local communities, followed soon after by the government, private, and nongovernmental organizations, as well as the international community of agencies and governments. Initially the crisis submerged the deep conflicts in Sri Lankan society, but they reemerged within a short time, particularly when competition for aid became acute (Keenan, 2010). Within a few weeks, repairs were made to damaged infrastructure and essential services such as roads, health, and sanitation; water, power and telecommunications were restored to minimum functionality (Harsha et al., 2007). However, due to lack of experience with natural hazards and disasters, the government had neither the capacity nor the resources for the larger tasks of moving the stricken regions to transition and ultimately toward reconstruction. It was quickly determined that the posttsunami recovery process was to be financed by foreign donors and agencies, some of which were already working in Sri Lanka and many others arrived very quickly. These organizations began to play increasingly important roles in the relief effort to the degree that local organizations, including NGOs, soon found themselves relegated to junior partner status, dependent on resources from foreign agencies, a typical pattern in disasters that evoke a large international response. While the large agencies recognized the value of working with and through local organizations, coordination efforts were not generally very fruitful (Stirrat, 2006).

Indeed, due to extensive media coverage, international donations to tsunami recovery in general broke records up to that time (Telford & Cosgrave, 2007) producing less competition for funding and more competition for beneficiaries (Stirrat, 2006). Within a week a massive presence of international agencies and NGOs was active in Sri Lanka

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carving out territories and competing for operational tasks and resources. Nevertheless, despite the alacrity with which they had arrived, the large international NGOs, by their very size and administrative structure, proved to be very slow and ponderous in their responses to specific conditions. Moreover, there also arrived a horde of small, newly formed organizations with a strong humanitarian impulse, but little experience in South Asia or disaster relief. In effect, regardless of size the well-known pattern of NGO and international agency competition was rampant. Some of the problems were compounded by the lack of government oversight making sure that NGOs adhere to formal standards for housing reconstruction. However, even though it took some time, some forms of coordination of areas of activity and territory did eventually develop (Stirrat, 2006).

For its part, the Sri Lankan government established the Centre for National Operations to coordinate relief operations, with various task forces for different functions. The Task Force for Relief (TAFOR) would oversee more immediate measures. The Task Force for Rebuilding the Nation (TAFREN) would coordinate reconstruction with district officials at the local level. In terms of the hundreds of thousands of displaced people, TAFOR, with economic support from international donors, was tasked with providing transitional shelters in the form of wooden buildings for people suffering from inadequate potable water and overcrowding in the temporary camps, with some in tents and others in schools, government buildings and churches, mosques, and temples, some for over six months (Fernando, 2010).

In addition to the tsunami-driven displacement, in view of the mass destruction the tsunami caused in coastal communities, the government declared “no construction zones” of one hundred meters on the western and southern coastal areas and of 200 meters on the eastern and the northern coastal areas. Those displaced by the tsunami and living within these zones had to abandon their land and move to the camps and transitional shelters (Birkmann et al., 2013; Fernando, 2010). The “buffer zone,” however, did not apply to tourist facilities, which became a major economic priority in the recovery program, regardless of the displacement imposed on coastal communities (Gunewardena, 2008).

When permanent resettlement began, government guidelines for housing were provided to NGOs (Non-governmental Organizations) and others involved in implementation. However, donors did not follow the guidelines and local authorities did not monitor them. In consequence, there was little coordination between donors and technical officers at the local level. The basic government approach was maximizing the number of houses built based on the idea of housing as “a mono-dimensional artefact,” merely a physical object to be transferred to inhabitants, who were given little opportunity to participate in the process (Boano, 2009; Fernando & Punchihewa, 2011). Moreover, there was sharp criticism of corruption and politically motivated distribution of aid in general (Kuhn, 2010).

In general, there was huge pressure after the tsunami, both from politicians as well as from displaced people, to accelerate housing construction for resettlements, which

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increased the likelihood of failures in planning and construction. Residents in the new settlements site complained about the poor materials used by building contractors to increase profit margins, since there was no proper supervision either from relevant government officials or from donors. Problems emerged in land titling, particularly in questions of gender as they affected matrilocal systems of residence and the reconstitution of family groups (McGilvrey & Lawrence, 2010). The lack of provision of a functioning common social infrastructure (e.g., schools, public transport etc.) before settling beneficiaries in their new locations, also contributed to new risks of livelihood disruption and additional costs for transport to work or social infrastructure such as schools or hospitals. Lack of access to employment or means of livelihood also led many to return to form locations or migrate (Birkmann et al., 2013).

Many of the relocation sites tended to flood during the rainy season and had neither a proper drainage system for either rain water or waste for individual houses nor for the settlement as a whole. Health risks were also likely to increase in the new relocation sites due to the lack of public garbage collection or the inappropriate treatment of wastes (Birkmann et al., 2013). In addition, due to lack of funding for purchasing privately held land, the majority of relocated settlements were constructed on available government land often distant from places of employment, despite officials' intention to relocate people close to their former villages (McGilvrey & Lawrence, 2010; Fernando, 2010). Household expenses such as the cost of public transport for work purposes increased, thus threatening livelihood recovery (Birkmann et al., 2013; Fernando & Punchihewa, 2011).

In the new settlements housing units received individual water and electricity connections. While the connections to water and electricity were clear improvements in housing for most displaced people, the prices for those services were beyond the incomes of many poor households, eventually resulting in their termination (Birkmann et al., 2013). In addition further increases in susceptibility emerged from conflicts between host and guest communities over resources. Conflicts also emerged due to the different cultures the host and guest communities belonged to in terms of different ways of communication, attire, employment, and politics. Some resettled householders have sold or rented their houses and moved back to their old location close to the sea or to another location (Birkmann et al., 2013).

Hurricane Katrina: Racial Politics and Displacement (2005)

In the contemporary context Hurricane Katrina in 2005 uprooted about more than a million people from New Orleans and the Gulf Coast, 300,000 of whom are expected to remain permanently displaced (Plyer, 2016). Their displacement, however, was not due to environmental reasons alone, but to inappropriate and inadequate policy, incompetent practice, and the political economy of reconstruction. New Orleans depended on an inadequate levee system to protect it from storm surges. The response system of the city, the state of Louisiana, and the Federal Emergency Management Agency (FEMA) proved woefully inadequate, provoking widespread criticism of the Bush administration. In

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addition, local interests saw the displacement of African Americans as an opportunity to reconfigure the social environment (Freudenburg et al., 2007; Rodriguez & Marks, 2006).

When Hurricane Katrina made landfall on the Gulf Coast on August 29, 2005, it had diminished from a category 5 storm to a category 3, with sustained winds of 125 mph and strong storm surges up to 30 feet (Cutter et al., 2006). Although the storm gave New Orleans a glancing blow, it nonetheless became the most destructive and costly hurricane in US history. The storm forced the evacuation and displacement of over a million people along the Gulf Coast of Louisiana, Mississippi, and Alabama. It destroyed over a million housing units in the entire region, about half of which were in Louisiana. New Orleans lost 134,000 housing units (Plyer, 2016). A total of 1720 people lost their lives in Hurricane Katrina, most of whom were poor, elderly, or handicapped (Weber & Peek, 2012).

As the threat on landfall became imminent, the first stages of the massive evacuation and displacement began when public authorities in New Orleans issued first voluntary evacuation announcements and subsequently mandatory orders to evacuate. Of the city's 500,000 residents, almost 400,000 were able to reach less exposed and more secure locations by traveling inland, mostly by car. People of more modest means, particularly those who did not own cars, were more hampered in their efforts to evacuate due to lack of timely information and the means with which undertake the journey and temporary displacement. However, some were able to leave on the city buses made available for transportation to out-of-town shelters (Fussell, 2006). Of the many of those remaining in the city, the vast majority of whom were African American, poor, elderly, or handicapped, many made their way as best they could to the Superdome, which in turn became its own disaster zone when water and electricity failed for the thousands of people who took refuge there. In effect, both before and after the storm, evacuation and displacement in New Orleans were shaped by income, age, occupation, gender, and age (Fussell, 2006).

However, the storm itself proved less a threat than the failure of the levees designed as hurricane surge protection for the city. Roughly fifty breaches in the levees caused most of the death and devastation during Katrina (Plyer, 2016). Roughly 80 percent of the city and large sections of neighboring parishes were flooded, some under as much as 10 feet of water. In some cases, people in their homes got trapped under the ceilings or roofs of their houses and drowned as the waters rose. The flooding trapped people who sought shelter in the Superdome and Morial Convention Center for days in conditions that proved fatal to many of the elderly and vulnerable. The floodwaters lasted in many areas of the city for weeks.

Those who had chosen to remain or were unable to evacuate waited out the storm for rescue and relief from resources that had been mobilized by the federal government and largely carried out by National Guard and federal troops whose presence reached more than 45,000 within two weeks of the disaster. The troops moved into the city the day after the storm to restore order, but also to initiate a subsequent evacuation, motivated in part by fears of unrest that the general failure of assistance would unleash, which would

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eventually scatter New Orleanians to all fifty US states (New York Times, 2005). People were coerced into buses and planes, sometimes at gunpoint, and then dispersed to points unknown at least by many of the passengers.

It was not a good start to a reconstruction process that has been slow and uneven in its progress, clearly favoring some interests over others. Federal government funding eventually totaled 129 billion dollars, but was often slow and hampered in its delivery. In addition, an impressive amount of foreign aid, roughly 854 million dollars, was offered by over 90 countries. Although some German technology and Dutch expertise in levee construction was accepted, only 40 million had been used by April 2007. Some aid offered by the nation's closest allies was outright rejected, most offers were declined or left unclaimed (Baker-Smith, 2013). Overall the management of the disaster was considered inept and the Federal Emergency Management Agency (FEMA) received harsh criticism, and was considered emblematic of the lack of both capacity and concern of the Bush administration.

In the wide dispersal of Katrina's victims, just over 70 percent were initially transported to shelters within 200 miles of New Orleans. Later, many were displaced again and scattered across the fifty states. Other destinations which ended up with concentrations of Katrina's diaspora were Houston, Dallas–Fort Worth, and Atlanta, cities with significant African American minorities, but virtually every major urban area received some of the displaced from the storm (New York Times, 2005). In addition, African Americans were displaced to more distant destinations, while most whites moved within a much more local radius (Frey et al., 2007).

In the region as a whole, close to 600,000 households were still displaced up to a month after the disaster. The wide dispersal of the hurricane's victims was especially traumatic for most of the displaced peoples of New Orleans. The African American communities of New Orleans were particularly close knit, composed of dense social networks, many based on kinship that were as deeply identified with neighborhoods as much as with the city (Browne, 2015). The displacement, as carried out by the state and federal government, basically ignored these social factors, often separating even family members, which was immensely traumatizing to survivors, leaving them bereft of such basic anchors of social and material life. Five years after the storm, tens of thousands of Gulf Coast residents were still displaced (Weber & Peek, 2012). Nonetheless, it is also true that some of Katrina's victims have adapted to their new environments, found jobs and housing, and rebuilt their lives, many in the African American communities of their new residences in the diaspora.

However, the forced displacement compounded the trauma of the disaster and hindered recovery for many evacuees. The fragmentation of families and wider social networks, which for the poor are essential for accessing basic needs, left people without necessary resources and unable to reunite with families or return to New Orleans (Browne, 2015). Without access to such resources, the displaced, most of whom had lost any identification documents, had to find shelter, schools, jobs and transportation in completely new

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communities that were socially and culturally different. While most of the receiving communities that initially welcomed Katrina survivors were able to draw on federal, state, local, and private resources to help them, further tensions eventually arose for survivors with “host” communities, some of whom eventually felt that the newcomers were being favored over local people with similar needs (Weber & Peek, 2012). This problem is well-documented in other forms of displacement and resettlement (de Wet, 2006). In point of fact, most of the displaced from Hurricane Katrina were not formally resettled. Though they received some forms of assistance in the new environments, basically their displacement and eventual reestablishment in new settings took the form of a forced migration.

While many of the displaced lacked the resources to return, there were also significant obstacles, some of a structural nature, which impeded their efforts. The city used the disaster as a pretext for the destruction of major public housing units, most of which had suffered only slight damage. For those survivors who did not own homes, the massive destruction in New Orleans made housing scarce and rents increased markedly three years after the hurricane, discouraging many poor African American families from returning. In addition, many poorer African American homeowners had not had insurance coverage and were unable to rebuild without public funding (Zaninetti & Colten, 2012). Toward that end in New Orleans, a large amount of public funding was afforded to homeowners to help them to rebuild through a variety of programs. The state of Louisiana, using billions of federal dollars, devised the Road Home program that provided homeowners the choice between selling their house and funding to rebuild it. As of 2010 the program had disbursed over 8.6 billion dollars to homeowners (Green & Olshansky, 2012). However, selling or rebuilding proved a difficult choice for many because the program’s method of calculating grants in terms of assessed value did not provide sufficient funding for rebuilding in a high-demand market, thus placing yet another burden on lower- and middle-income homeowners and slowing down recovery significantly. Furthermore, the emphasis on home ownership disadvantaged the many people who rented houses and apartments (Green & Olshansky, 2012).

The overall effect of the storm for the displaced is difficult to quantify because many of the losses are noneconomic (Morrissey & Oliver-Smith, 2013). Certainly, the displaced suffered heavy material losses, all the more difficult because of their already low incomes, but the grief for loss of a home and a community where people had been born and lived all their lives cannot be calculated monetarily. The storm also markedly altered the demography of the city. The population of the city fell from 484, 674 before the storm to 230,172 eleven months after the disaster. By 2015 the city had recovered 80 percent of its 2000 population (Plyer, 2016). In the year following the disaster, there were discussions about reducing the footprint of the city, including inflammatory remarks about preventing certain areas and their inhabitants from rebuilding at all (Green & Olshansky, 2012). Indeed, just as race and class shaped the evacuation and the diaspora, the recovery also reflected those factors, in the decline of the African American population by 57.3 percent, while the white population decreased by only 36 percent (Frey et al., 2007). In many instances, such an outcome was the clear intent of local

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policy, both in evacuation and recovery, as evidenced in the demolition of much public housing that was only slightly damaged. However, New Orleans is still an African American majority city.

The Japanese Earthquake-Tsunami-Nuclear Catastrophe and Mass Population Dislocation (2011)

In the early afternoon of March 11, 2011, a magnitude 9.0 earthquake, the fourth most powerful in the world since 1900, struck off the coast of the Tohoku region of Northeast Japan. The earthquake lasted for slightly more than 3 minutes (170 seconds) and was felt in distant regions of the nation. Within a half an hour a tsunami of enormous proportions that the earthquake had triggered crashed ashore with a wave run-up height of 40.3 meters along 650 kilometers of coastline, destroying defensive sea walls, reaching as much as 10 kilometers inland, and inundating more than 500 square kilometers of land (IDMC, 2017A). The tsunami swept away entire communities and killed approximately 20,000 people. The earthquake-tsunami totally destroyed 1.1 million buildings, including 118,640 houses and another 181,836 that were severely damaged. The earthquake also took out the power lines that fed the cooling system of the Fukushima Daiichi Nuclear Power State situated about 75 miles from the epicenter on the coast. Within an hour after the earthquake the tsunami inundated the back-up generator, precipitating a level 7 nuclear accident that produced several explosions and clouds of radioactive gas that contaminated the surrounding area within a radius of up to 50 kilometers over the ensuing weeks (IDMC, 2017A).

The enormous destruction wrought by these three concatenated hazards immediately displaced more than 237,000 people, but eventually roughly 470,000 ended up in nearly 2,500 evacuation centers in the Tohoku region, with more shelters in nearby regions, including hotels, schools, temples, and other public and private facilities. There are indications that even these data represent a significant underestimate (IDMC, 2017A). However, within eight months most of the evacuation centers had closed or had restored their original functions (IDMC, 2017A). Although it took 15 days, the government eventually recommended, but did not order and did not coordinate, the evacuation of local communities, leaving the affected people to evacuate on their own. The government subsequently declared an exclusion zone of 20 kilometers (Bruch et al., 2017; Rangieri & Ishiwatari, 2014). The final count of people left completely homeless by the destruction was about 556,000 that by October 2011 had been reduced to 65,753. The government determined that 22,000 households in the three disaster prefectures had to be resettled to areas that were higher or further inland in the three disaster prefectures (Yonekura, 2013).

The sheer enormity of the disaster initially overwhelmed the capacity of the Japanese, who have considerable experience with serious disasters. Errors in decision making characterized the emergency and initial recovery period. Although stunned by the complex nature and scale of the disaster, Japan, however, was able to call on existing national legislation and programs. Japanese government support for post-disaster

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housing established since the Kobe earthquake of 1995 consists of three phases (Iuchi et al., 2015). The first phase is the provision of shelters for rapid evacuation and shelter that continued throughout the first year of recovery. Although difficult to establish exact numbers, many people are also known to have left the region on their own with serious implications for undermining the recovery of communities.

To deal with the huge destruction that totaled 210 billion USD in economic losses and the enormous challenges that relief and recovery entailed, the Japanese government allocated 4 trillion yen (48.5 billion USD). An additional 91 billion yen (831,300,000 USD) was allocated for reconstruction, although there have been claims that as much as 25 percent of that money was spent on non–disaster related projects (McCurry, 2012). Japan also received donations totaling 520 billion USD from 163 countries and 43 international organizations (Wikipedia, 2017). Overlapping with the emergency shelter program that lasted until the end of 2011, the second phase of the government plan initiated a temporary housing program about a month after the disaster that as of 2015 was projected to last several more years in most impacted areas and perhaps longer in Fukushima Prefecture. The first temporary housing units became available in April of 2011. One of the major problems encountered in the temporary housing program was availability of land and the willingness of owners to sell. To deal with those difficulties, the government adopted a program of building temporary wooden houses and a program of the use of private rental houses as designated temporary housing. As of March 2014, 267,000 displaced people continued to live in temporary housing while they waited for permanent homes to be built or rebuilt due to prolonged construction negotiations and the problematic acquisition of land (Iuchi et al., 2015).

For the final stage of housing support, the construction or reconstruction of permanent housing, there were three national recovery programs that addressed the housing needs of the enormous dislocated population: the collective relocation program, the land readjustment and raising program, and the public housing program (Johnson & Olshansky, 2017). The collective relocation program, established since 1972, has traditionally been used proactively to resettle communities in high-risk zones. In Tohoku, it is being used to relocate communities out of tsunami-prone zones to less hazard-exposed areas. However, the collective relocation program was not used for people from areas affected by nuclear contamination, known locally as “areas difficult to return,” since people fled individually to many different places (Iuchi, 2018, personal communication). Under this program, affected residents can sell their land in hazardous locations and then buy or rent lots at higher elevations to rebuild private homes (Iuchi et al., 2015). The land readjustment and large-scale land elevation program is being applied to communities that are rebuilding in place. People participating in this program will reconstruct their houses on land that has been elevated by the program. The public housing program, started in 1951, enables local governments to provide subsidized rental housing for disaster survivors who lack the means to rebuild their own houses (Johnson & Olshansky, 2017). Most of the more than 20,000 public housing units will be constructed in the newly created higher elevations zones. However, delays in the provision of permanent housing have caused many to search out permanent housing on their own

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which is leading to the scattering of population and the disintegration of communities (Johnson & Olshansky, 2017).

The minister of reconstruction organized a taskforce to speed up community and housing reconstruction, compiling a set of funding and implementation measures to accelerate the process. These efforts notwithstanding, the complexity of the problems represented by labor shortages, prices for materials, difficulties in finding land, as well as storage sites for contaminated soils and coordinating recovery plans with residents, continued to challenge the authorities (Johnson & Olshansky, 2017). A new program of compensation to address the needs of victims of displacement and unemployment and the costs of home rebuilding was also instituted. Relocations of any sort tend to involve complex and sensitive negotiations with displaced peoples as well as owners of land to be occupied as well as existing receiving communities. Forty-eight of the 67 local governments that received housing recovery projects aimed at completing work by March 2017. It is estimated that almost all of the 20,000 new housing units in the collective relocation areas, in addition to 30,000 new public housing units in communities affected by disaster, will be completed by March 2018 (Iuchi et al., 2015). From the original number of people displaced by the disaster (470,000-plus), by November of 2016, more than five years later, there were still 134,191 people living in temporary quarters (IDMC, 2017A). Impacts of the event and subsequent displacement on the elderly are evidenced in increased rates of disability and other stress-related ailments when compared with nonaffected regions (Tomata et al., 2015). In the more than six years since the disaster, the long-term and large-scale population displacements have been complex and difficult challenges for local and national government and have seriously hindered the process of recovery.

Resettlement

Increasingly, as observed in the case studies, organized resettlement is considered as a policy option, rather than an ad hoc response, for communities displaced by or threatened by disaster or climate change effects or both. If population dislocation is large scale, the knowledge and experience acquired in development forced displacement and resettlement becomes highly relevant. The Chinese, for example, resettled between 1.3 and 1.6 million people to construct the Three Gorges Dam. If the displacements involve large numbers of people across broad regions, resettlement programs will need to design projects with culturally and socially defined population groups in mind. Development projects, however, provide time to plan, whereas, unless appropriate frameworks for action are in place, disasters do not. In planning for the resettlement of disaster- or climate change–displaced people, anticipatory legislation, responsibilities, and capacities clearly need to be in place before displacement occurs, although the time frames available for judicious planning for displacement and resettlement due to climate change may be similar to those for development-forced displacement. While such mechanisms

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exist for refugees, there are currently few such provisions for environmentally dislocated populations at the national or international level.

If the option to resettle displaced populations is chosen, the quality of the resettlement project itself may affect the capacity to recover from the trauma of disasters and displacement. Resettlement projects must reconstruct communities after they have been materially destroyed and socially traumatized to varying degrees. Reconstructing and reconstituting communities needs to be understood with a certain humility and realism about the extent of existing capacities. Such humility and realism have not always characterized the planners and administrators of projects dealing with uprooted peoples. Indeed, the goals of such undertakings frequently stress efficiency and cost containment over restoration of community reconstitution. Such top-down approaches have a poor record of success because of a lack of regard for local community resources. Planners often see the culture of uprooted people as an obstacle to success, rather than as a resource.

Minimally, resettlement projects should not impede the process of community reconstitution. However, the impoverishment experienced by most resettled peoples is an indicator that even adequate systems of material reproduction exceed either the will or the capacities of most contemporary policymakers and planners. This does not bode well for the victims of large-scale displacements. The potential for dislocations of catastrophic scale to overwhelm the organizational, logistic, and material capabilities of even the most developed nations is very real.

Nevertheless, over the past half century, researchers on development-induced displacement, refugee studies, and more recently disaster research have learned that involuntarily displaced peoples face many similar challenges (Button, 2009; Cernea, 2000; Turton, 2006). Although the places and peoples are geographically and culturally distant and the sociopolitical environments and causes of dislocation dissimilar, there emerge a number of common concerns and processes. Understanding and responding effectively to large-scale displacements from disasters or other forms of environmental change requires that those pertinent sources of theory and information that can inform appropriate policy formation and practice be identified. As is evident from this discussion, the social scientific literature on displacement and resettlement is clustered around three themes: civil and military conflicts, disasters, and development projects. This research has been complemented by a concern over the last several decades regarding Internally Displaced Persons (IDP) (Deng & Cohen, 1999; Koser, 2007).

While research on disaster displacement and resettlement has produced valuable empirical findings, the literature on development-driven resettlement addresses issues of conceptualization, effects, planning, complexity, and cultural recovery. Thayer Scudder and Elizabeth Colson developed a “Four-Stage Framework” (planning, coping with change, initiating development, and community autonomy) based on the physical, social and psychological stresses experienced, which models behavior in the long term of people in resettlement projects (Scudder, 2009). At roughly the same time Michael Cernea

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developed his now well-known Impoverishment Risks and Reconstruction (IRR) approach to understanding (and mitigating) the eight major risks of displacement: landlessness, joblessness, homelessness, marginalization, food insecurity, increased morbidity, loss of access to common property resources, and social disarticulation (Cernea, 2000). In explaining the difficulties faced by people and planners alike, Chris de Wet argues that a fully participatory approach is required because there is a complexity in resettlement that is inherent in "the interrelatedness of a range of factors of different orders—cultural, social, environmental, economic, institutional and political—that interact in ways that are not predictable and that do not seem amenable to a linear-based, rational planning approach" (2009).

Complexity notwithstanding, there are fundamental questions that have proven to be key in the success or failure of resettlement projects: lack of employment, inadequate or inappropriate site, design or layout of the settlement, housing design and materials, and little or no consultation with the affected population. These problems are generally due to a disparagement of local knowledge and culture on the part of policymakers and planners (Correa, 2011A, 2011B; Oliver-Smith, 1991). Finally, Theodore Downing and Carmen Garcia-Downing argue that in the psycho-socio-cultural (PSC) realm it is highly improbable that a pre-displacement routine culture may be recovered, let alone be restored. However, this does not mean that nothing can be done. The relative success of PSC recovery must be measured by different criteria than those for economic recovery. Relative success is determined by how well the transformed routine culture answers three primary questions: (1) Who are we? (2) Where are we? and (3) How do we relate to one another? (2009). In essence the answers to these questions constitute the basic social relations that are the foundation of cooperative behavior necessary for undertaking action for both individual and community recovery. The applied question thus becomes, "What can be done to support a new routine culture so that it adequately addresses the primary cultural questions faced by displaced peoples?

If large-scale displacement results only in the dispersal of affected populations to poverty-stricken slums, rebuilding in hazardous areas, or consignment to the impoverishment of bad resettlement projects, displacement will compound the trauma and human rights violations of disaster and consign them to misery. Therefore, resettlement projects must be configured as development projects. The projects must include the appropriate investments to enable people to become active and self-sufficient members of resilient communities (Cernea, 2009).

The Near Future

The data currently emerging on displacement by disasters, climate change and other forms of environmental change, alone or in combination, indicate that there is now an urgent need for policies and practices to assist affected populations on both a humanitarian and developmental level. On the one hand, extraordinary changes that will produce potentially devastating threats, including large-scale displacements of people,

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are seen as increasingly probable. On the other hand, scientific and analytical tools that permit projections of increases in exposure and vulnerability, as well as general trends in climate change scenarios, enable predictions with sufficiently high probabilities for preparation to meet those threats. Moreover, we have developed conceptual and methodological tools to implement positive and development-oriented resettlement. The question remains, however, as to why we have not been able to achieve that goal.

Given the likelihood of increasing numbers of disaster victims being affected by displacement, this growing fund of knowledge about the challenges and pitfalls as well as the opportunities for sustainable development that resettlement presents must be used to improve policies and practices for adaptation, mitigation, and assistance for uprooted peoples. It is also imperative that legal frameworks be established and mandated both nationally and internationally to protect the welfare and human rights of people displaced by disasters and radical environmental change. Furthermore, such legal frameworks must lay the groundwork for stronger, more effective policies and practices to mitigate the impacts of displacement, and displaced people should be actively involved in the planning and implementation of resettlement projects, which should be understood and organized as development projects with the aim of not just restoring pre-disaster levels, but improving conditions with a fair and equitable distribution of benefits.

Given the lamentable record of failure of resettlement projects, the need for training of resettlement professionals is acute both currently and for the future (De Sherbinin et al., 2011). Moreover, where exposure and vulnerability assessments indicate risk that cannot be mitigated, assistance should be provided for supporting gradual spontaneous migration before larger-scale resettlement becomes the only remaining option (De Sherbinin et al., 2011). Given its complexity, the considered judgment of both research and policy is that organized resettlement should be avoided if at all possible, but current projections indicate that international organizations, national governments, local authorities, and civil society should recognize that planned resettlement must be prepared for as an option for people threatened by large-scale population dislocation by environmental and technological disasters, sometimes in combination.

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