Rebuilding Sustainable Communities
after Disasters in China, Japan and Beyond
Rebuilding Sustainable Communities after Disasters in China, Japan and Beyond

Edited by

Adenrele Awotona
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ACKNOWLEDGMENTS

In November 2012, the Center for Rebuilding Sustainable Communities after Disasters (CRSCAD), in collaboration with the College of Advancing and Professional Studies’ China Program Center and the Ritsumeikan Research Center for Sustainability Science, Kyoto, Japan, organized an international conference on Rebuilding Sustainable Communities after Disasters in China and Japan: Best Practices and Lessons Learned. Similarly, in November 2011, CRSCAD organized an international workshop on Innovation, Diversity and Sustainable Development in Areas of Social Vulnerability in partnership with the Chair in Multiculturalism at the University of São Paulo, Brazil. This edited book is based predominantly on papers that were initially presented at these two events.

I would like to begin by expressing my gratitude to the co-sponsors of the 2012 conference and 2011 workshop for their contributions to the successful outcome of the events. They were the China Program Center at the University of Massachusetts Boston, and its Director, Wanli Hu; Shanghai Jiaotong University, Shanghai, China; Dalian University of Technology, Dalian, China; Ritsumeikan Research Center for Sustainability Science, Kyoto, Japan; and the Chair in Multiculturalism at the University of São Paulo, Brazil.

I would also like to recognize the following people and organizations for their efforts to make the events a success: all the program participants; Fran Berger, Director of Marketing, College of Advancing and Professional Studies, University of Massachusetts Boston; Christopher Brindley, Computer Specialist and Domain Administrator, John W. McCormack Graduate School of Policy and Global Studies, University of Massachusetts Boston; Angela Castillo, Research Assistant, Center for Rebuilding Sustainable Communities after Disasters (CRSCAD), University of Massachusetts Boston; Philip DiSalvio, Dean of the College of Advancing and Professional Studies, University of Massachusetts Boston; Candyce Carragher, Business and Grants Manager, John W. McCormack Graduate School of Policy and Global Studies, University of Massachusetts Boston; Carol Darcy, Vice President for the World Organization for Early Childhood Education, United States National Committee and Acting Secretary of the UNICEF NGO Committee on the Working Group on Education; Barbara Graceffia, Director, Marketing and
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In addition to these people, there were many others who worked tirelessly on these events. I thank all of them as well.

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John W. McCormack Graduate School of Policy and Global Studies
University of Massachusetts Boston
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INTRODUCTION

A SYNOPSIS OF EXPERIENCES AND RESPONSES TO DISASTERS IN CHINA AND JAPAN

ADENRELE AWOTONA

This volume consists of papers which were presented at two international conferences that were held at the University of Massachusetts Boston in 2011 and 2012, as well as some invited contributions from leading scholars on community rebuilding after disasters in China and Japan.

According to the United Nations Office for Disaster Risk Reduction, Asia continues to be the world’s most disaster-prone continent, with floods and storms as the foremost dangers “affecting the greatest number of people” and causing the most economic damages in the region, particularly China, where the economic toll in 2012 exceeded US$10 billion. In 2011, Asia recorded a stunning US$300 billion loss, in large part because of Japan’s earthquake and tsunami and Thailand’s floods. Debby Sapir, director of the Brussels-based Center for Research on the Epidemiology of Disasters, has been reported by Ron Corben as saying that Asia’s share [of disasters] in the last ten years is also extremely important. About 90 percent of the total affected population in the world is in Asia and almost all of the other deaths, the economic losses and the numbers of events are all rather high in Asia.

Similarly, Corben quoted Vinod Thom, a director-general at the Asian Development Bank, as noting that going forward, what we are looking at is not an interruption to economic growth and development but a systematic threat that could potentially derail economic development in the region.

In 2012, floods were the most common disasters occurring in Asia, accounting for 54 percent of the death toll and 56 percent of all economic...
damages. In June to July only, floods in China affected over 17 million people and caused the greatest economic losses (US$4.8 billion). Jerry Velasquez, head of the UN Office for Disaster Risk Reduction for Asia Pacific, is reported as saying that the number of people living in flood-prone regions in Asia has more than doubled, in the past forty years, to more than 60 million. About 120 million people live in areas exposed to cyclones.4

Furthermore, UNISDR notes that in Southern, South-Eastern and Eastern Asia, eighty-three disasters (earthquakes, storms and other natural catastrophes) caused 3,103 deaths, affected a total of 64.5 million people and triggered US$15.1 billion damages from January to October 2012. Globally, these three regions accounted for 57 percent of the total deaths, 74 percent of the affected people and 34 percent of the total economic damages caused by disasters in the first ten months of 2012. Worldwide, 231 disasters caused 5,469 deaths, affected a total of 87 million others, and caused US$44.6 billion economic damages.5

Consequently, one of the themes that this book explores is the extent to which flood hazard has been methodically incorporated into all the urban and development management plans of China and Japan in order to ensure sustainable post-disaster reconstruction of its communities and vulnerable populations.

Indeed, on November 8, 2011, the Special Representative of the United Nations Secretary-General for Disaster Risk Reduction, Margareta Wahlström, observed that China “experienced more major reported disasters” in 2010 than any other country.6 They included successions of severe droughts and dust storms in Yunnan, Guizhou, Guangxi, Sichuan, Shanxi, Henan, Shaanxi, Chongqing, Hebei, and Gansu; the Yushu earthquake; and floods and landslides in Guizhou and Gansu, which in total affected more than 230 million people in twenty-eight provinces, municipalities and regions, as well as the evacuation of 15.2 million people.7

Tables I.1–I.3 provide data related to human and economic losses from disasters that occurred in China between 1980 and 2010.8
Table I.1. An Overview of Natural Disasters that Occurred in China from 1980 to 2010.9

<table>
<thead>
<tr>
<th>Overview</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of events:</td>
<td>597</td>
</tr>
<tr>
<td>No. of people killed:</td>
<td>155,563</td>
</tr>
<tr>
<td>Average killed per year:</td>
<td>5,018</td>
</tr>
<tr>
<td>No. of people affected:</td>
<td>2,815,051,215</td>
</tr>
<tr>
<td>Average affected per year:</td>
<td>90,808,104</td>
</tr>
<tr>
<td>Economic Damage (US$ X 1,000):</td>
<td>342,833,162</td>
</tr>
<tr>
<td>Economic Damage per year (US$ X 1,000):</td>
<td>11,059,134</td>
</tr>
</tbody>
</table>

Table I.2. Number of People Killed in Natural Disasters that Occurred in China from 1980 to 2010.10

<table>
<thead>
<tr>
<th>Disaster</th>
<th>Date</th>
<th>No. of People Killed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthquake*</td>
<td>2008</td>
<td>87,476</td>
</tr>
<tr>
<td>Flood</td>
<td>1980</td>
<td>6,200</td>
</tr>
<tr>
<td>Flood</td>
<td>1998</td>
<td>3,656</td>
</tr>
<tr>
<td>Earthquake*</td>
<td>2010</td>
<td>2,968</td>
</tr>
<tr>
<td>Flood</td>
<td>1996</td>
<td>2,775</td>
</tr>
<tr>
<td>Flood</td>
<td>1989</td>
<td>2,000</td>
</tr>
<tr>
<td>Drought</td>
<td>1991</td>
<td>2,000</td>
</tr>
<tr>
<td>Mass Movement Wet</td>
<td>2010</td>
<td>1,765</td>
</tr>
<tr>
<td>Flood</td>
<td>1991</td>
<td>1,729</td>
</tr>
<tr>
<td>Flood</td>
<td>2010</td>
<td>1,691</td>
</tr>
</tbody>
</table>
* Including tsunami

Table I.3. Economic Damage Due to Natural Disasters that Occurred in China from 1980 to 2010.11

<table>
<thead>
<tr>
<th>Disaster</th>
<th>Date</th>
<th>Cost (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthquake*</td>
<td>2008</td>
<td>85,000,000</td>
</tr>
<tr>
<td>Flood</td>
<td>1998</td>
<td>30,000,000</td>
</tr>
<tr>
<td>Extreme temperature</td>
<td>2008</td>
<td>21,100,000</td>
</tr>
<tr>
<td>Flood</td>
<td>2010</td>
<td>18,000,000</td>
</tr>
<tr>
<td>Drought</td>
<td>1994</td>
<td>13,755,200</td>
</tr>
<tr>
<td>Flood</td>
<td>1996</td>
<td>12,600,000</td>
</tr>
<tr>
<td>Flood</td>
<td>1999</td>
<td>8,100,000</td>
</tr>
<tr>
<td>Flood</td>
<td>2003</td>
<td>7,890,000</td>
</tr>
<tr>
<td>Flood</td>
<td>1991</td>
<td>7,500,000</td>
</tr>
<tr>
<td>Flood</td>
<td>1995</td>
<td>6,720,000</td>
</tr>
</tbody>
</table>
* Including tsunami
CRSCAD’s 2012 International Conference

Subsequently, the Center for Rebuilding Sustainable Communities after Disasters (CRSCAD) at the University of Massachusetts Boston organized an international conference on *Rebuilding Sustainable Communities after Disasters in China and Japan: Best Practices and Lessons Learned* from November 15 to 16, 2012.12

**Reconstruction in China**

The central goal of the first part of the conference was to examine best practices and lessons learned in reducing the socio-economic impact of various forms of disasters on vulnerable communities in China and to share these with the international community. For example, UNICEF has noted that children usually represent over 50 to 60 percent of those affected by disasters, whether through loss of life or from diseases related to malnutrition and poor water and sanitation—conditions that are exacerbated by disasters.13

Indeed, McCurry reported that as many as 100,000 children may have been displaced by the March 2011 earthquake and tsunami that devastated Japan.... About 25 percent of the 1,200 people sleeping on cardboard mats at one shelter in Sendai are children, many of them with disabilities.14

Presentations at the event, therefore, focused on the themes listed below with a view to providing insight into what has worked in China under specific post-disaster conditions that could be improved upon and appropriately applied to reconstruct safe and sustainable communities in other parts of the world. Recommendations from the conference aimed to provide policy advice and practical assistance, which should improve the efficiency and effectiveness of reconstruction policies as well as the monitoring of implementation processes and outcomes everywhere.

Here are some of the themes of the conference:

- Sustainable land-use planning mechanisms, traditional mitigation practices, and public policies for managing floods and floodplains.15
- Culture-based post-disaster support mechanisms for the poor.
- The role of public/private sector partnerships in reducing the impact of natural hazards and other types of disasters on vulnerable communities in China.
• The role of Chinese entrepreneurs, commerce, industry and community participation in disaster-risk reduction and the improvement of local disaster resilience.
• The role of local governments in disaster-risk reduction.\textsuperscript{16}
• Post-disaster reconstruction and the role of the media.\textsuperscript{17}
• Strategies for integrating disaster-risk reduction into planning and physical risk management practices in China.\textsuperscript{18}
• The role of Chinese policy-makers and community-based grassroots organizations in pre- and post-disaster urban and rural development and the reconstruction of infrastructure, public health, and schools.
• Housing finance instruments before and after disasters.
• Women and children during and after disasters.\textsuperscript{19}
• The elderly and the disabled in post-disaster reconstruction.
• Post-disaster urban reconstruction policy formulation and implementation processes.
• Assessments of mitigation, preparedness, response and recovery efforts by multilateral agencies.\textsuperscript{20}
• Reinforcement of existing building design and regulations in China’s cities and towns in order to make the buildings earthquake-proof.
• The response of international humanitarian agencies to disasters.
• International case studies of best practices in post-disaster reconstruction.
• Post-disaster participatory planning, housing, and community reconstruction programs and projects.

In their publication, \textit{Disaster Management in China and Taiwan: Models, Policies, and Programs for Social Recovery}, Ngoh Tiong Tan, Yunong Huang, and Lihrong Wang have identified a number of laws and regulations that have been enacted to provide a legal basis for the emergency management system and to ensure its operation in China since the 1990s.\textsuperscript{21} Table I.4 highlights some of the laws, regulations and plans for natural disaster reduction, relief and recovery of the People’s Republic of China (PRC).

\textbf{Reconstruction in Japan}

The second part of the 2012 International Conference surveyed case studies of best practices in post-disaster reconstruction efforts after the March 11, 2011 Great East Japan Earthquake struck, triggering a devastating tsunami,\textsuperscript{22} and the response of the U.S. Nuclear Regulatory
Commission (NRC) to the meltdown of the nuclear reactors in Fukushima. The Asia-Pacific Disaster Report 2012 by the United Nations Office for Disaster Risk Reduction (UNISDR) reported that this compound disaster caused a record $210 billion in losses and damage, representing 3.8 percent of Japan’s GDP. Production sites in the affected coastal areas experienced one and half times as much damage as inland areas...While many sectors suffered severe damage, the manufacturing and chemical industries were particularly badly affected with the potential for long-lasting impacts on companies’ production and delivery of services.

There have been written records of strong earthquakes in Japan since 412 A.D. 26

Table I.5. An Overview of Natural Disasters that Occurred in Japan from 1980 to 2010. 27

<table>
<thead>
<tr>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of events:</td>
</tr>
<tr>
<td>No. of people killed:</td>
</tr>
<tr>
<td>Average killed per year:</td>
</tr>
<tr>
<td>No. of people affected:</td>
</tr>
<tr>
<td>Average affected per year:</td>
</tr>
<tr>
<td>Economic Damage (US$ X 1,000):</td>
</tr>
<tr>
<td>Economic Damage per year (US$ x 1,000):</td>
</tr>
</tbody>
</table>

Table I.6. Number of People Killed in Natural Disasters that Occurred in Japan from 1980 to 2010. 28

<table>
<thead>
<tr>
<th>Disaster, Event Type</th>
<th>Date</th>
<th>No. of People Killed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthquake*</td>
<td>1995</td>
<td>5,297</td>
</tr>
<tr>
<td>Flood</td>
<td>1982</td>
<td>345</td>
</tr>
<tr>
<td>Earthquake*</td>
<td>1993</td>
<td>239</td>
</tr>
<tr>
<td>Storm</td>
<td>1983</td>
<td>131</td>
</tr>
<tr>
<td>Mass Movement Wet</td>
<td>1983</td>
<td>117</td>
</tr>
<tr>
<td>Earthquake*</td>
<td>1983</td>
<td>102</td>
</tr>
<tr>
<td>Storm</td>
<td>1982</td>
<td>100</td>
</tr>
<tr>
<td>Storm</td>
<td>2005</td>
<td>100</td>
</tr>
<tr>
<td>Storm</td>
<td>2004</td>
<td>89</td>
</tr>
<tr>
<td>Storm</td>
<td>2004</td>
<td>88</td>
</tr>
</tbody>
</table>

* Including tsunami

Table I.7. Economic Damages Due to Natural Disasters that Occurred in Japan from 1980 to 2010. 29

<table>
<thead>
<tr>
<th>Disaster, Event Type</th>
<th>Date</th>
<th>Cost (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthquake*</td>
<td>1995</td>
<td>100,000,000</td>
</tr>
<tr>
<td>Earthquake*</td>
<td>2004</td>
<td>28,000,000</td>
</tr>
<tr>
<td>Earthquake*</td>
<td>2007</td>
<td>12,500,000</td>
</tr>
<tr>
<td>Storm</td>
<td>1991</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Storm</td>
<td>2004</td>
<td>9,000,000</td>
</tr>
<tr>
<td>Flood</td>
<td>2000</td>
<td>7,440,000</td>
</tr>
<tr>
<td>Storm</td>
<td>1999</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Storm</td>
<td>1990</td>
<td>4,000,000</td>
</tr>
<tr>
<td>Storm</td>
<td>1998</td>
<td>3,000,000</td>
</tr>
<tr>
<td>Storm</td>
<td>2006</td>
<td>2,500,000</td>
</tr>
</tbody>
</table>

* Including tsunami
Tables I.5–I.7 provide data related to human and economic losses from disasters that occurred in Japan between 1980 and 2010. In March 2013, the Japan Center for International Exchange reported that since Japan was struck by the “triple disaster” in March 2011, the U.S. has donated US$712.6 million to help with relief and recovery efforts, “the largest ever for a disaster in another developed nation and the fifth most generous U.S. response to any disaster in history.”

CRSCAD’s 2011 International Workshop

Earlier, from November 17–18, 2011, CRSCAD organized an International Workshop on Innovation, Diversity and Sustainable Development in Areas of Social Vulnerability in collaboration with the Chair in Multiculturalism at the University of São Paulo, Brazil, a country where floods claimed over 600 lives in January 2011, its deadliest single-day natural disaster. Takeshi Hikihara, the Consul General of Japan in Boston and one of the keynote speakers at this workshop, provided a detailed analysis of Japan’s preparedness and rebuilding process following its 9.0 magnitude earthquake and tsunami of March 2011.

The workshop furthermore addressed the following main issues:

- Strategies for sustainable development in areas of social vulnerability.
- Strategies for population empowerment and the elimination of humiliations connected to social vulnerability and/or gender, age, ethnicity, race, sexual orientation, and disability.
- Children and youth care and empowerment in areas of social vulnerability.
- Strategies for sustainable urbanization against flooding and other kinds of disasters due to climate change or lack of public policies.
- Establishing indicators of social vulnerability and sustainable development.
- Strategies for fundraising to assist in the development of vulnerable areas before and after disasters.

Both the 2011 workshop and 2012 conference brought together specialists and stakeholders from around the globe to share information and experiences and to develop strategies around some of the core issues concerning the place of vulnerable people in local, regional, national and international post-disaster reconstruction policies, plans and programs. These professionals included: disability community leaders; gerontologists; officials of governmental, non-governmental, international, and grassroots agencies; disaster-preparedness professionals; crisis managers; emergency
response workers and managers; employees of humanitarian relief organizations; academics and students; leaders of industry and the private sector; physical medicine and rehabilitation physicians; geriatric rehabilitation professionals; architects; healthcare workers; law enforcement officers; engineers; environmental risk managers; epidemiologists; hazard experts; transport providers; and community leaders, organizers, experts, attorneys, and advocates.

Structure of the Book

This volume is divided into four parts. Part I examines the cultural, ethical and philosophical dimensions of natural disasters and environmental sustainability, and consists of two chapters. Part II, which comprises five chapters, analyses the challenges of post-disaster reconstruction in China, while Part III, with two chapters, explores post-disaster rebuilding in Japan. Part IV, with six chapters, is a global survey of sustainable development in areas of social vulnerability.

In Chapter One, Charles Bonner looks at natural disaster as an ontological event. A natural disaster—flood, tsunami, earthquake or hurricane—has the potential, in itself and in its aftermath, to radically alter the fundamental structure of the world inhabited by its victims. A community of human beings inhabits a world, the basic understanding of reality that constitutes a meaningful whole in which human activity is situated. Our political and economic systems, our social, psychological and personal contexts of meaning are shaken, undermined, perhaps shattered by the forces of nature unleashed in natural disasters. Conceived of in this way as an ontological event—an event that affects the basic layout of a world order for the community—the importance of a philosophical perspective on natural disaster becomes evident. In the experience of disaster, the coherent structure of the world breaks down; the basic and shared understanding of “being itself” that normally holds a community together is called into question in profound and urgent ways. Everyday life, personal and professional relations, and perspectives on past and future, are distorted and torn apart with the same violence that reduces buildings to piles of rubble and twists roads and bridges into grotesque and dysfunctional masses of metal and concrete.

To reflect on the ontological meaning of disaster is not to distract consciousness from the urgent needs of victims—rather, the philosophical dimension reveals what is ultimately at stake: the basic structure of “the world” no longer holds together. Our response to natural disasters can be oriented toward this philosophical or ontological dimension. Attempting to
rebuild sustainable communities in the wake of a tsunami, hurricane, flood or earthquake can be understood as a task of rethinking and reconstituting the basic structures of meaning that make the world livable for a community of human beings.

In Chapter Two, John H Dreher argues for international standards and protocols for ameliorating and responding to environmental catastrophes. Those catastrophes may be due to human error (e.g., Three Mile Island), to natural causes (e.g., earthquakes and tsunamis), or to a combination of the two (e.g., Fukushima). The basic idea is that the protection of the environment is both a planetary issue and an issue affecting the welfare of individual human beings. The chapter argues for international protocols and guidelines to ensure the construction of safe facilities (e.g., from nuclear power plants to apartment houses) and to guarantee timely and effective response to disasters. Nations subscribing to those standards would enjoy the benefits of technical and economic assistance in developing resources, and would also be indemnified and entitled to assistance in cases of disaster. The chapter argues from both moral and prudential perspectives.

Chapter Three, by Yu Wang with Hans Skotte, is a study of the post-earthquake reconstruction of Taoping village, a traditional Qiang settlement in Sichuan, China. The fieldwork in the Taoping Village uncovered that two sequential reconstructions had taken place, the official government reconstruction and a locally driven “re-reconstruction”. The authors call it “voluntary restoration”. This chapter describes and explains why those two reconstructions were not coordinated and presents the consequences of the processes not overlapping. The Chinese Government’s official reconstruction was organized and directed by the State Administration of Cultural Heritage of China. Cultural heritage conservationists, guided by The Venice Charter and its updates, stood responsible for the planning, design, and implementation. The subsequent local voluntary restoration took place without any professional or technical support. It was an individual, unorganized and unexamined activity, mainly focused on reinforcing the buildings’ structures, changing of interior spaces, façades and roofs, etc. This uncoordinated, double reconstruction of Taoping stemmed from two different understandings of the challenge, which were apparent from the very beginning. Reconstruction authorities simply regarded Taoping as a damaged cultural heritage site like any other heritage site damaged by the earthquake. For the local inhabitants, on the other hand, the village was the existential pivot of their lives. The reconstruction was a means of “returning to life”; to recover their homes, their livelihoods, but also improve their living standards, as was the case
for most of the victims in the quake zone. The official reconstruction was conducted in a top-down manner excluding local inhabitants. This official approach was further exacerbated by the social disengagement of the heritage conservationists. These differences in conceptualizing the task at hand and the embedded processes sustained a constant conflict between the official reconstruction and the local population. Out of this conflict, fueled by anger, emerged a “social energy” that underpinned and sustained the individual, uncontrolled “voluntary restoration” which in fact damaged part of both the official reconstruction—and the cultural heritage value of Taoping as a “living monument”.

In Chapter Four, Gui Yanli, Qin Bo and Hao Kai analyze post-earthquake recovery planning in Chengduo County, Tibetan Region. The magnitude 7.1 earthquake on April 14, 2010, caused tremendous damage to Yushu Autonomous Prefecture, Qinghai Province in China. A team made up of faculty members and students from the Department of Urban Planning and Management at Renmin University of China undertook the task of Post-Earthquake Recovery Planning in Chengduo, one of the six counties in Yushu. The recovery planning project was a formidable challenge due to the unfamiliar location, climatic conditions, and unique characteristics of the high Tibetan mountainous region. Its Tibetan culture, stock-raising-dependent economy, small population, and fragile ecological system all put pressure on the planning process. Based on intensive field reconnaissance, several rounds of interviews, and a large scale household survey, the team analyzed the county from both visionary and pragmatic perspectives and proposed a planning scheme which combined both the long-term vision and pragmatic measures. From a visionary perspective, the scheme emphasized preserving cultural resources, facilitating social development, upgrading the industrial structure, and protecting the ecological system; from a pragmatic perspective, the scheme focused on the difficulties in constructing buildings in Chengdu due to its high altitude, cold weather and distinctive culture. Thus the planning project provided feasible solutions for realizing the scheme itself.

Chapter Five, co-authored by Yumei Han, Wenfan Yan, Ling Li, Haifeng Li, Xinzhi Liu and Yuping Han, adopts the perspective and framework of the social support theory to introduce and analyze the function of the social support system in the post-disaster educational reconstruction. The co-authors set up a conceptual framework for the social support system for post-disaster reconstruction in the Chinese context, which is composed of all levels of government, non-government organizations, research institutes, entrepreneurs, and volunteers from all walks of society, who participate in reconstructing the school building and
facilities, the psychological restoration of students and teachers, and the reconstruction of the teaching force. This chapter takes Wenchuan earthquake in China as a case to demonstrate the unique collectivist culture and ideology and the unified power of the centralized government-led social support system when faced with disasters and post-disaster reconstruction. The mandatory one-on-one partnership model is especially emphasized as a unique and effective policy in the Chinese context to combat disasters and facilitate reconstruction.

Chapter Six, by Xinyue Ye and Hao Zhang, examines ecosystem services in the context of the rapid urbanization in China. The rapid urban development and pervasive “land use and land cover” (LULC) change have been significant in stimulating economic prosperity in China. However, unprecedented urban growth has triggered drastic land use conversion, either replacing the wild lands with semi-natural lands, or changing the use of semi-natural lands to urban development. Inevitably, this land use process has altered the structure, pattern and functionality of the ecosystems that provide vital support to human society. Therefore, sustainable development policies must address the decline of ecosystem services to reduce the impact of disasters on vulnerable communities in China. This chapter reviews the substantial recent literature on ecosystem services in China, emphasizing Sustainable Land Use Planning Mechanisms. It attempts to assess critically the progress and changes in the structure of such research, highlighting the important role of institutions and geography, as well as emerging geospatial technologies. Ye identifies intriguing and important questions that remain insufficiently studied and highlights concepts deserving further development. In so doing, he raises questions relating to future research and explores avenues for moving the field forward.

In Chapter Seven, by Bandana Kar, the risk-reduction policies used in the U.S. and China are compared and contrasted to determine best practices for building sustainable communities after a disaster. The occurrence of natural hazards is not uncommon. Over the years, with rapid population growth and urbanization, the financial losses, and in some cases fatality rates, from these hazards have increased in every country. Risk-reduction approaches are implemented by each country to reduce these losses. However, the effectiveness of these policies still remains to be seen. The U.S. is the largest economy in the world and ranks third in terms of world population. China has the highest population in the world and is the world’s second-largest economy. While building codes, land-use regulations, flood insurance, and other risk-reduction techniques have been used for centuries to minimize potential losses from natural hazards
in the U.S., the current financial loss record reflects the lack of success of these measures and policies. China, on the other hand, does not have a long-standing history of emergency management and suffers from a myriad of governance problems, resulting in slow recovery and increased financial losses and fatalities from these hazards. It is pertinent to develop preparedness and mitigation policies for early recovery and subsequent increase in resilience and sustainability of communities in the event of future disasters. To reduce disaster risk, the take home points are: 1) both structural and non-structural mitigation measures should be taken; 2) preparedness and mitigation policy intervention is pertinent, although relief and response are essential for returning impacted communities to normalcy; 3) the socio-cultural characteristics of impacted communities need to be considered during the formulation and implementation of preparedness and mitigation policies; and 4) education and outreach programs are essential to increase the knowledge base of at-risk communities.

Chapter Eight, by James Gannon, investigates American philanthropy and Japan’s 3/11 Disaster. The apocalyptic images that streamed out of Japan after its massive 2011 earthquake and tsunami elicited an unprecedented outpouring of support from around the world. In the U.S., new information technologies and strong grassroots ties with Japan sparked $666 million in donations to aid groups responding to the disaster—the fifth most generous U.S. response to any disaster in history and the largest outpouring of support ever for another developed country. This highlighted new trends in disaster giving, but it also exposed many of the challenges of responding to overseas disasters in our globalized era, particularly ones in other developed countries. Coordination mechanisms for overseas aid organizations were lacking. American groups that raised funds struggled to disburse them to Japanese nonprofit organizations and large differences in institutional capacity, work cultures, and communications styles made partnerships between Japanese and overseas organizations difficult to sustain. Nevertheless, the American outpouring of support has played an important role in helping Japan recover, and it offers numerous lessons for future disaster responses.

The Great Eastern Japan Earthquake Disaster which occurred on March 11, 2011, was the most powerful earthquake known to have hit Japan. How did the Japanese leadership deal with the national crisis? Chapter Nine, by Shoji Azuma, is a contrastive discourse analysis between the political leadership (i.e., the Prime Minister) and the symbolic leadership (i.e., the Emperor). The Prime Minister’s language was largely unsuccessful in consoling and encouraging the people of Japan due to his
traditional report talk, whereas the language of the Emperor was rapport talk filled with compassion. In particular, the conceptual metaphor of family was communicatively powerful. People were deeply moved and encouraged by his language of affection. This chapter argues that the language of solidarity, or rapport talk, is crucial for any leadership when offering people encouragement and hope in the most difficult times.

Chapter Ten, by Cristal Downing, is a study of the Bolivian prison system as a possible model for effective prisoner rehabilitation. Few communities are as socially vulnerable as prisoners, particularly in a developing country like Bolivia. This chapter examines the relationship between two phenomena concerning Bolivian prisons. First, inmates must pay to live in prison. They rent or buy their cells and are responsible for almost all living expenses. These individuals therefore establish small businesses within the prisons. Second, recidivism rates in Bolivia are unusually low compared to the international average. This chapter analyzes the organization of the Bolivian prison. It describes activities related to prison labor and education in the prisons of Cochabamba, Bolivia and assesses the efficiency of the Bolivian prison in terms of rehabilitation and preparation for reintegration. The chapter hypothesizes that the prison environment, by necessitating prison labor and educational programming, empowers Bolivian prisoners to lead stable lives both inside prison and when they return to society outside. The prisons thereby provide an unexpected yet effective solution to problems of social vulnerability in the previously incarcerated community.

Chapter Eleven, also by Cristal Downing, examines the Seywiaka Project, an expanded territory and access to education program in a displaced indigenous community in Colombia. The Seywiaka village project is an indigenous-requested, state-funded development initiative in the Sierra Nevada de Santa Marta, Colombia. The project has three goals: to restore ancestral lands to the indigenous people who were forcibly displaced to remote regions due to armed conflict; to create sustainable villages where indigenous people can maintain their traditions and access state-provided services such as education; and to facilitate a move away from coca production. This chapter first argues that this project was selected for government support because the Kogi people possess ecological and other types of legitimacy, demonstrate high levels of social cohesion despite their vulnerability as a displaced people, and presented the government with an opportunity to establish a peaceful presence in a rural conflict-affected setting without diminishing indigenous sovereignty there. The chapter goes on to discuss potential outcomes of the Seywiaka project, particularly in the area of education, and examines external
limitations that may be detrimental to the project’s potential as a scalable model.

Chapter Twelve, by Jennifer Trivedi, investigates the success or failure of sustainable urbanization and development against flooding. In Biloxi, Mississippi, recovery from Hurricane Katrina and related preparations for future hurricanes have been shaped by both the rising costs associated with rebuilding in flood zones and social and political debates related to new construction in non-flood zones. Both aspects are shaped by external and internal decisions and have led to the underdevelopment of East Biloxi. In addition to East Biloxi’s underdevelopment, the issues of rising rebuilding costs and debates about new construction have had an effect on the city as a whole and its residents. By considering an example like Biloxi, subject to repeated disasters and recoveries, we can better understand influences on urbanization and development against flooding and the potential success or failure of this development. We may also be able to understand better how we can measure this success or failure.

Chapter Thirteen, by Oluwatoyin Olatundun Ilesanmi, examines the indicators of social vulnerability and sustainable development in developing areas like Nigeria, which are susceptible to disasters. The fragility of the human condition in relation to disaster centers on the idea that disasters are simply unavoidable extreme physical events produced by the complex mix of social, political and economic forces that make people vulnerable to hazardous environments. Depending on the nature of the hazard and the socio-cultural context, different groups are more vulnerable than others. Important here is the focus on human agency as expressed in culturally reinforced social practice. That is, the specific things people do, situated in time and space, affect their vulnerability to various kinds of natural hazards. Therefore, in order to address issues of sustainable development effectively in areas that are susceptible to disaster, it is necessary to identify factors that are indicative of social vulnerability (SV) in such societies.

Chapter Fourteen, by Adetokunbo Oluwole Ilesanmi, frames the issues of vulnerability and resilience within two case-study contexts: the megacity of Lagos and the urban fringe of Ibadan, Nigeria. Megacities, as contemporary products of global urbanization, represent both spaces of opportunity and of risk and potential disasters. Megacities in developing nations are particularly critical, given their size, pace of growth, high population density, social inequality, poverty and complexity. The first analysis examines the historical, physical and social characteristics of Lagos, illustrating how Lagos reflects and is positioned within the
coordinates of three tensions related to social vulnerability in megacities: the global-local; the formal-informal; and the social-ecological. The second analysis examines the vulnerability implications of urbanization on the urban fringe of Ibadan—which refers to the border zone between urban and rural landscapes. It traces the changing morphology of the Ibadan metropolis, identifying the factors of vulnerability associated with the sprawling trend of urbanization. The study concludes by stressing the need to appropriate the diversity and human scale of megacities and urban fringes, and the necessity for integrated and participatory approaches to urban planning, development, and governance in order to reduce vulnerability, increase resilience, and improve quality of life. It stresses the value of social capital in transforming these cities into more resilient systems with sustainable futures.

Chapter Fifteen, by Ndumba J. Kamwanyah, examines Namibia’s efforts at rebuilding and reconciliation in its post-independence era. In order to reverse the course of the divisive colonial past, just like the stuff of the tower of Babel in the ancient city of Babylon as told in the Book of Genesis, the South West Africa People’s Organization (SWAPO)-led government introduced the policy of national reconciliation to rebuild and unify Namibia under the rubric of one Namibia, one nation at the dawn of independence in March 1990. Understandably, this distinction is important for post-independence Namibia because colonialism and the national liberation struggle divided and segregated Namibians along geographical, economic, political, gender and sociocultural boundaries.

However, what is the implication of this one national identity for diversity and pluralism? Does unity imply silence over differences, especially unpopular or dissenting views? Put differently, is racial, ethnic and political diversity a curse in the sense that Namibia’s heterogeneity is too great a barrier for the country’s reconciliation and national unity, thus posing a danger for nation-building? Or, the other way around, is reconciliation being used by SWAPO, the ruling party, as a fig leaf for manipulation through the slogan of one Namibia, one nation to control politics in Namibia?

Focusing on the detainee issue (the people detained, tortured and some killed by the then-liberation movement, SWAPO, in exile during the war of national liberation), this article examines the impact of the Policy of National Reconciliation in Namibia at the national and individual levels. The analysis reveals that if the apartheid regime of South Africa used Namibia’s diversity to divide and rule by making racial, ethnic and political groups compete against each other, the SWAPO government is using its national reconciliation policy to control and rule. The chapter