Disaster Risk Reduction
Methods, Approaches and Practices

Caroline Brassard
David W. Giles
Arnold M. Howitt *Editors*

Natural Disaster Management in the Asia-Pacific

Policy and Governance

Springer

Disaster Risk Reduction

Methods, Approaches and Practices

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About the Series

Scope of the Series

Disaster risk reduction is a process, which leads to the safety of community and nations. After the 2005 World Conference on Disaster Reduction, held in Kobe, Japan, the Hyogo Framework for Action (HFA) was adopted as a framework of risk reduction. The academic research and higher education in disaster risk reduction has made/is making gradual shift from pure basic research to applied, implementation oriented research. More emphasis is given on the multi-stakeholder collaboration and multi-disciplinary research. Emerging university networks in Asia, Europe, Africa and Americas have urged for the process-oriented research in disaster risk reduction field. Keeping this in mind, this new series will promote the outputs of action research on disaster risk reduction, which will be useful for a wider range of stakeholders including academicians, professionals, practitioners, and students and researchers in the related field. The series will focus on some of emerging needs in the risk reduction field, starting from climate change adaptation, urban ecosystem, coastal risk reduction, education for sustainable development, community based practices, risk communication, human security etc. Through academic review, this series will encourage young researchers and practitioners to analyze field practices, and link it to theory and policies with logic, data and evidences. Thus, the series emphasizes evidence based risk reduction methods, approaches and practices.

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Coming from more than 15 countries, forum participants included representatives of national governments from across the region, the United Nations Office for the Coordination of Humanitarian Affairs, the Association of Southeast Asian Nations, major academic institutions, and international nongovernmental organizations. Many of the chapters in this book are written by academics and practitioners who presented earlier versions of their work there.

Neither the conference nor the book would have been possible without the support of the leadership of our two institutions—above all, Kishore Mahbubani, Dean of the Lee Kuan Yew School of Public Policy, and Tony Saich, Daewoo Professor of International Affairs and Director of the Ash Center for Democratic Governance and Innovation, Harvard Kennedy School—and to them we are most grateful. We are also indebted to our colleagues whose effort helped make the 2012 forum a reality, including the many staff members at Harvard and NUS who played a vital role in arranging the logistics necessary to host 100 participants and facilitate 30 different presentations. Special recognition must be given to Professor Herman B. "Dutch" Leonard, Harvard Kennedy School and Harvard Business School, and Faculty Co-Director of the Program on Crisis Leadership at HKS, who along with the editors of this book co-chaired the conference. We also extend our thanks to the Harvard University Asia Center for providing seed money for the Harvard team's involvement in related research activities.

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Abbreviations and Acronyms

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ADRC	Asian Disaster Reduction Center
AHA	ASEAN Coordinating Centre for Humanitarian Assistance
AIR	Applied Insurance Research
ARC	American Red Cross
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Agency for International Development
BCG	Boston Consulting Group
BCM	Business Continuity Management
BCP	Business Continuity Planning
BNPB	National Board for Disaster Management (Indonesia)
BRC	British Red Cross
BRR	Implementing Agency for Rehabilitation and Reconstruction of Aceh and Nias—*Badan Rehabilitasi dan Rekonstruksi Aceh dan Nias* (Indonesia)
CAT	Catastrophe Bond
CC	Crisis Center
CCCPE	China Center for Comparative Politics and Economics
CCEM	Chinese Comprehensive Emergency Management System
CDC	Center for Disease Control (China)
CO_2	Carbon Dioxide
COP	Climate Change Conference
CPC	Communist Party of China
CRC	Community Recovery Committee (Australia)
CRED	Centre for Research on the Epidemiology of Disasters
CSG	Campaign-Style Governance
DAC	Development Assistance Committee
DBJ	Development Bank of Japan
DHS	Department of Homeland Security (USA)
DILG	Department of Interior and Local Government (Philippines)

DND	Department of National Defence (Philippines)
DOM	Military Operation Area—*Daerah Operasi Militer* (Indonesia)
DRDC	Disaster Reduction Demonstration Community (China)
DRI	Direct Relief International
DRR	Disaster Risk Reduction
DRRM	Disaster Risk Reduction and Management
EED	Evangelischer Entwicklungsdienst Church Development Service
EFRT	Emergency Fire Response Team (Japan)
EM-DAT	Emergency Events Database
EMO	Emergency Management Office (China)
ERAT	Emergency Rapid Assessment Team
ETIC	Entrepreneurial Training for Innovative Communities (Japan)
FBO	Faith-Based Organization
FDMA	Fire and Disaster Management Agency (Japan)
FEMA	Federal Emergency Management Agency (USA)
FRC	French Red Cross
GAM	Free Aceh Movement—*Gerakan Aceh Merdeka* (Indonesia)
GAR	Global Assessment Report
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GHQ	General Health Questionnaire
GoI	Government of Indonesia
HCT	Humanitarian Country Team
HFA	Hyogo Framework for Action
HFI	Humanitarian Forum International
HFPC	Health and Family Planning Committee (China)
IDNDR	International Decade of Natural Disaster Reduction
IDP	Internally Displaced Person
IFRC	International Federation of Red Cross and Red Crescent Societies
IICO	International Islamic Charitable Organisation
ILO	International Labour Organisation
INGO	International Non Governmental Organisation
IOM	International Organisation for Migration
IRC	Indonesian Red Cross
IRCM	International Research Conference on Muhammadiyah
JACM	Japan Association of City Mayors
JCCI	Japan Chamber of Commerce and Industry
JICA	Japan International Cooperation Association
JOCA	Japan Overseas Cooperation Association
LDC	Least Developed Country
LIC	Low Income Country
MDG	Millennium Development Goals
MDMC	Muhammadiyah Disaster Management Center
MIC	Middle Income Country
MIC	Ministry of Internal Affairs and Communications

MIT	Massachusetts Institute of Technology
MLIT	Ministry of Land, Infrastructure, Transport and Tourism (Japan)
MMS	Maldives Meteorological Service
MNDF	Maldives National Defense Forces
MOCA	Ministry of Civil Affairs (China)
MOE	Ministry of Education
MOU	Memorandum of Understanding
NATV	National Association of Towns and Villages (Japan)
NDMO	Natural Disaster Management Organisation
NDRC	National Disaster Reduction Commission (China)
NDRRMC	Natural Disaster Risk Reduction and Management Council (Philippines)
NEERP	National Earthquake Emergency Response Plan
NERL	National Emergency Response Law (China)
NERP	National Emergency Response Plan (China)
NFIP	National Flood Insurance Program (USA)
NGO	Non Governmental Organisation
NIMS	National Incident Management System (USA)
NPC	National People's Congress (China)
NPO	Non Profit Organisation
NUT	Nagaoka University of Technology
NWSC	National Work Safety Committee (China)
OCD	Office of Civil Defence
OCHA	Office for the Coordination of Humanitarian Affairs
OECD	Organisation for Economic Co-operation and Development
PADAA	Paired Assistance to Disaster-Affected Areas (China)
PKO	*Penologan Kesengsaraan Oemoen*—Welfare assistance
PKS	*Partai Keadilan Sejahtera*—Justice and Welfare Party
PPP	Public–Private Partnership
PRC	People's Republic of China
PRISM	Philippines Risk and Insurance Scheme for Municipalities
PSP	Psychosocial Support Program
PTWC	Pacific Tsunami Warning Center
RC/HC	Resident Coordinator/Humanitarian Coordinator
RIMES	Regional Integrated Multi-Hazard Early Warning System in Africa and Asia
RMB	Renminbi (Chinese currency)
SARS	Severe Acute Respiratory Syndrome
SAT	Special Allocation Tax Fund for Reconstruction (Japan)
SAWS	State Administration of Work Safety (China)
SDG	Sustainable Development Goal
SIPRI	Stockholm International Peace Research Institute
SLA	Service Level Agreement
SME	Small and Medium Enterprise
SMS	Short Message Service
SPOF	Single Point of Failure

SRQ	Self Reporting Questionnaire
SSCA	Shinging Stone Community Action Center (China)
TAF	The Asia Foundation
TCIP	Turkish Catastrophe Insurance Pool
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Program
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFPA	United Nations Population Fund
UNICEF	United Nations International Child Emergency Fund
UNISDR	United Nations Office for Disaster Risk Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UN-WFP	United Nations World Food Program
USAID	United States Agency for International Development
USD	United States Dollars
USGS	United States Geological Survey
VBRRA	Victorian Bushfire Reconstruction and Recovery Authority (Australia)
WERRH	Wenchuan Earthquake Rescue and Relief Headquarters
WVI	World Vision International
YOTS	Youth Off the Street (Australia)

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Chapter 1
Confronting Disaster: Recent Lessons from the Asia-Pacific

Caroline Brassard, Arnold M. Howitt, and David W. Giles

Abstract Despite the fact that disasters have become more frequent and more costly in terms of economic losses throughout the world, most governments have yet to make a clear priority of addressing and managing risk reduction before disasters strike. According to the Annual Disaster Statistical Review 2012, in the last 10 years, the five countries most hit by natural disasters were China, the United States, the Philippines, India and Indonesia. In 2012 alone, Asia accounted for nearly 65 % of global disaster victims, with hydrological events, such as floods, storm surge and landslides, accounting for 75 % of the disasters in Asia during that year (Guha-Sapir et al. 2012). Taking these factors into account, this chapter discusses current and proposed efforts to reduce natural disaster risk in countries across the Asia-Pacific. It also overviews how subsequent chapters address the issue from a public policy and governance perspective, with a focus on three broad themes: (1) emergency response and humanitarian relief, (2) recovery and resilience, and (3) improving preparedness.

1.1 Introduction

Despite the fact that disasters have become more frequent and more costly in terms of economic losses throughout the world, most governments have yet to make a clear priority of addressing and managing risk reduction before disasters strike. According to the Annual Disaster Statistical Review 2012, in the last 10 years, the five countries most hit by natural disasters were China, the United States, the Philippines, India and Indonesia. In 2012 alone, Asia accounted for nearly 65 % of

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global disaster victims, with hydrological events, such as floods, storm surge and landslides, accounting for 75 % of the disasters in Asia during that year (Guha-Sapir et al. 2012).

Although many countries have succeeded in decreasing mortality risk, most are vulnerable to increasing economic risks. The Global Assessment Report on Disaster Risk Reduction 2013 (GAR13) estimates that the total annual loss from earthquakes and cyclone wind damage alone amounts to US$ 180 billion per year (UNISDR 2013). Low capacity to manage disaster risk has also led to lower levels of foreign direct investment in several countries, including in Pakistan and Nepal. Meanwhile, even as economic losses from disasters grow exponentially, the threat to urban centers in hazard-prone countries has yet to receive prominent attention at the international, regional and local levels.

The overarching goal of this edited volume is to showcase recent research and first-hand experiences in disaster management in the Asia-Pacific that bring forth the complex challenges of reducing disaster risk. Particular emphasis is placed on the emerging roles played by various levels of government and civil society organizations.

1.2 2015 as a Pivotal Year

It is essential for governments to ensure effective disaster risk governance and to be vigilant in doing so, rather than falling on reactive politics and the adoption of ad hoc policy measures. While preventive measures might bear high financial cost, addressing the consequences of risk in terms of the human cost is much more significant.

One way to achieve improved efforts in this field is through a cross-sector, comprehensive approach to disaster risk management, in which governments play a convening role in bringing together donor organizations, civil society, non-governmental organizations (NGOs) and other stakeholders under one umbrella. Recent disasters in South East Asia, such as Typhoon Haiyan in the Philippines in November 2013, highlighted the need for governments to address capacities at the sub-national level, and to have a clear set of operating principles, rather than merely improvising specific activities tailored to a certain disaster. Absence of such principles, as well as the lack of coordination among key stakeholders, tends to compound the damaging impacts of disasters and seriously hamper community resilience.

However, it is no easy feat to establish a common platform on which to develop an inclusive disaster risk management policy which can assign roles and outline an action plan, a common expenditure scheme, and monitoring procedures. Collaboration between state and non-state actors within the existing Hyogo Framework provides a strong foundation for governments to take on a greater role in managing disaster risks and ensuring disaster preparedness for efficient response at all government levels. Yet the Hyogo Framework is based on voluntary commitment and is limited in its capacity to move certain actions forward.

Within the Asia-Pacific region, ten member states of the Association of Southeast Asian Nations (ASEAN) have ratified the 2010–2015 ASEAN Agreement on Disaster Management and Emergency Response (AADMER), a legally binding agreement

that commits them to collaborate more closely in disaster preparedness and relief. But these countries differ in the roles that government and civil society play. On one hand, the 2013 evaluation report by the AADMER Partnership Group noted that many civil society organizations are getting increasingly involved in advocacy work around the disaster risk reduction (DRR) laws in various South East Asian countries, such as in Cambodia, Laos, Indonesia, Thailand and the Philippines (AADMER 2013). By stark contrast, other high-risk countries such as Myanmar, have highly centralized disaster management systems that leave little room for non-state actors.

The issues engaged in this volume are timely, as major new frameworks will soon be developed under the aegis of the United Nations. The year 2015 will be pivotal for three key reasons. First, negotiations on the second phase of the Hyogo Framework will take place during the Third World Conference on Disaster Risk Reduction (DRR) in Sendai, Japan, in March 2015. Second, the 21st Climate Change Conference (COP) will be held in Paris, France, with the anticipation of a global agreement as successor to the Kyoto Protocol. Third, the post-2015 Development Agenda will be finalized with a set of Sustainable Development Goals (SDGs) building on the Millennium Development Goals (MDGs).

The overarching goals of these frameworks are similar: ensuring a safe and secure future for the world and requiring different groups within the UN system to work together as one. There is a functional relationship between the instruments for DRR, SDGs and climate change; however, differences still exist in terms of the major actors, types of commitment and negotiation processes. While the Hyogo Framework is a voluntary commitment with primarily short-term goals, a climate change agreement would be legally binding upon states and require long-term commitment from governments. Although many have aspirations to build synergies between these frameworks, it is widely recognized that integration will be challenging. For example, recent discussions on the climate change agenda have tended to push back the debate on hazard mitigation, thereby losing the focus on social risk and vulnerabilities.

Notwithstanding these different perspectives, it is essential for these processes to come together at the level of governance. Specifically, the second phase of the Hyogo Framework must go beyond DRR and offer a way to deal with the complexities underlying diverse types of risk and the inter-connectedness across countries. Experience over the past 10 years has shown that having an inclusive agenda has not always been a priority and requires building upon the existing features of risk and resilience present within the SDG framework. While the instruments of Hyogo Framework 2 might not be fully integrated under the broad post 2015 framework, the negotiation process pushes the international salience of the DRR agenda further along.

1.3 About This Volume

This book symbolizes a close collaboration between the Lee Kuan Yew School of Public Policy at the National University of Singapore and the Ash Center for Democratic Governance and Innovation at the John F. Kennedy School of

Government, Harvard University. Many chapters result from the *2nd Annual Asia Public Policy Forum: Disaster Management in Asia*, which was jointly organized in May 2012 by the Lee Kuan Yew School and the Ash Center, with the Harvard University Asia Center as a co-sponsor.

As did the conference, the book aims to generate discussions about improved risk reduction strategies, ranging from pre-event planning and mitigation to emergency response to disaster recovery. By bringing together leading scholars, senior public officials, and civil society actors with direct experience in dealing with or researching natural disasters in the Asia-Pacific, it seeks to provide a comparative perspective across countries and to draw lessons from, among other things, public policy, humanitarian systems, and community engagement. While it focuses on larger-scale disasters, it has implications for the multitude of other natural disasters and hazards that occur in these same countries year after year.

The chapters of this volume are organized in three parts: (1) Emergency Response and Humanitarian Relief, (2) Recovery and Resilience, and (3) Improving Preparedness. While each chapter is an independent product, these themes and the ideas in individual chapters interact.

1.3.1 Emergency Response and Humanitarian Relief

When disaster strikes, particularly in "no notice" events like earthquakes and tsunamis, society faces sudden demand for emergency action—to rescue injured or trapped people; to feed, clothe, house, and provide water, sanitation, and medical care to those who have lost their homes; to offer consolation and support to people who are grieving for loved ones or for the calamitous upending of their lives; to restart the disrupted economy; and to ward off threats of disease or civil conflict that may be triggered by the disaster. In response, emergency assistance may come from diverse sources: national or local governments, civil society organizations in the affected country, and international sources (national aid agencies, NGOs, or UN or regional agencies). These needs and the evolving inter-relationships among potential aid providers frame the issues with which the four chapters in this part of the book are concerned.

In "Localising the Humanitarian Toolkit: Lessons from Recent Philippines Disasters," *Rebecca Barber* points to the positive evolution of the disaster management systems in Asia-Pacific countries, while highlighting emerging concerns that these changes have evoked. Using the Philippines as a case example but placing that country in the regional context, Barber notes that nearly all nations in the region have become stronger in their capacity to respond to disasters—developing legal and regulatory frameworks, as well as institutional structures, to deal with disaster risk. As a result, although they remain open to accepting international aid when disasters strike, they are typically neither looking for, nor in need of, generalised assistance. Instead, they accept offers targeted to specific gaps in their capacities—on terms they themselves set. That creates adaptive challenges for international aid

givers previously used to less capable states, more eager and accepting of proffered aid on the terms that donors set.

Looking to the future, Barber sees continued evolution of these issues for both national and international actors. The new relationship between states and international aid givers creates tensions that may erupt in the face of very large, future disasters. First, as climate change threatens to cause more frequent and intense disasters, she predicts that many nations in the region will struggle to cope with the scale of humanitarian need unless they have well developed mechanisms for managing the international aid they will still require. Second, in a number of situations, vulnerable populations may be left behind because their life circumstances create barriers to accessing aid. International organizations, she argues, therefore need to target aid to at-risk groups. Third, Barber notes that the region's frameworks for dealing with disaster do not effectively address another huge humanitarian challenge: conflict. National disaster management agencies, frequently aligned with or part of defense ministries, may not be able or willing to help populations affected by conflicts to which the national government is a party. Where that is the case, Barber contends, the humanitarian community has the residual responsibility of meeting needs that national governments do not.

In many countries in the Asia-Pacific region, domestic NGOs are among the institutional actors that have considerable potential to play a stronger role in emergency response and humanitarian relief. *Robin Bush*, in "Muhammadiyah and Disaster Response: Innovation and Change in Humanitarian Assistance," examines a major Indonesian organization that has taken on important functions of relief in the past decade. Muhammadiyah, the second largest Muslim organization in Indonesia, is a century old and has a mass membership (25 million) and an extensive organizational structure throughout the country (11,700 branch offices in cities and down to the village level). Although historically its primary mission has been to propagate and support the Muslim faith, Muhammadiyah also has a strong commitment to social welfare work. After the Indian Ocean tsunami destroyed much of Aceh province in 2004, it sprang into action; and it subsequently carried out relief functions after the Yogyakarta earthquake in 2006, the Sumatra earthquake in 2009, and the eruption of Mt. Merapi in 2010. This has led to the formation of the Muhammadiyah Disaster Management Center, a professionalized and well-equipped wing of the larger organization that institutionalizes this disaster relief function. Muhammadiyah has also been a driving force in the formation of the Humanitarian Forum Indonesia, a coalition of organizations, some secular and some religious, that collaborates in disaster preparedness and relief work. Overall, the activities of Muhammadiyah represent a significant expansion and growing sophistication in Indonesia's non-governmental capabilities for responding to natural disasters.

In "The Impact of the Indian Ocean Tsunami on Maldives," *Mohamed Waheed*, the country's president in 2012–2013, and *Hussain Alim Shakoor*, examine the impacts of a major disaster on a much smaller country with limited resources and substantial exposure to external threats. The tsunami, they argue, revealed important shortcomings in the emergency management capabilities of Maldives and, more generally, had considerable impact on the long-run destiny of the country:

> Physically, it caused much devastation and the loss of lives. This forced the country to reexamine its development policies, especially regarding small isolated communities and the need for population concentration. Politically, the tsunami unleashed a wave of reforms that changed the country from a centralized autocracy to a multi party democracy. Economically, it pushed the country into a debt trap, which the country is still struggling with ten years on. Socially, it put severe strain on a formerly strong social fabric based on community self help and caring for neighbors. And environmentally, Maldives and the international community had a glimpse of what global warming and sea level rise could do to small island states (see p. 50).

Large countries have also revamped their emergency management systems. A series of major events—the SARS epidemic in 2003, the blizzards that paralyzed southern China in early 2008, and the devastating Wenchuan earthquake a few months later—have stimulated significant change in China. In "Collaboration in Emergency Response in China: Evolution from the Wenchuan Earthquake, May 12, 2008 to the Lushan Earthquake, April 20, 2013" *Haibo Zhang* examines an important dimension of that change—inter-organizational coordination and cooperation—over the half-decade between these major earthquakes.

He looks at three facets of this issue. Zhang finds considerable improvement in *inter-sectoral collaboration*—between government and non-profit organizations. Voluntary organizations were highly active during the response to the Wenchuan earthquake but were not able to act in a coordinated manner with government, which restricted their involvement. By the time of the Lushan earthquake in 2013, the number of organizations engaged had increased substantially, and their collaboration with government was significantly improved. This improvement occurred both because of better self-organization of the voluntary organizations and because of greater willingness of government to accept their participation in relief work. Zhang also finds better *intergovernmental* coordination—that between the central government and provincial and other lower-level governments. In the Lushan earthquake response there was better balance between work done by central government institutions and that of the Sichuan provincial government. However, Zhang notes that coordination was mainly in the response period and did not reflect enhanced intergovernmental coordination in preparedness prior to the earthquake. Finally, Zhang assesses *inter-agency* coordination, especially between the emergency management offices established by China's new emergency management system and those agencies that traditionally have had responsibility for specific types of emergencies (e.g., floods, typhoons, and earthquakes). Here he finds no significant progress in coordination.

Taken together, the chapters in the first part of the book highlight significant changes and trends driven by both major disasters and the potential impacts of climate change in the Asia-Pacific region. Nations large and small have seen the need to improve their emergency management systems, and domestic non-governmental organizations—as exemplified by Muhammadiyah in Indonesia and smaller voluntary groups in China—have become increasingly important actors in disaster response. But coordination among different government agencies, across levels of government, and between government and civil-society organizations remains

problematic, both in large and small countries; and in most countries there are gaps in protection should mega-disasters strike, particularly in rural areas where resources and institutional support are often sparse and transportation slow. These trends create adaptive challenges for international aid organizations, which must work together with more capable and assertive national governments, while providing resources and skills to supplement what individual countries can supply and ensuring protections for vulnerable populations with difficulty accessing relief systems.

1.3.2 Recovery and Resilience

Rescue and relief are intense, short-term responses to major natural disasters, but the process of recovery stretches years—and even a decade or more—into the post-disaster future. The four chapters in this part of the book explore the organization and implementation of the reconstruction process and carefully consider the ways in which responsibility for recovery is divided among national, provincial, and local governments—and the community-at-large. They also consider some of the long-lasting impacts of major natural disasters.

The catastrophic damage and loss of life resulting from the Wenchuan earthquake in 2008 evoked a powerful national response in China. By central government mandate, the task of managing recovery in the devastated counties of Sichuan and Gansu provinces was delegated to 19 of China's more prosperous provinces and provincial-status cities. In each case, a major province or provincial-status city was paired with a disaster-stricken county. The province/city supplied large-scale financial support to pay for reconstruction and dispatched teams of skilled officials to plan and work closely with local officials during an accelerated three-year period of recovery. As *Kaibin Zhong* and *Xiaoli Lu* carefully show in "'One in Trouble, All to Help': The Paired Assistance Program to Disaster-Affected Areas in China," this program of recovery was not unprecedented, but it took previous policies and practices to a new level.

The paired assistance program, Zhong and Lu contend, was successful in achieving its objectives because it adopted a form of "campaign-style governance" to mobilize resources and people. This mobilization, Zhong and Lu argue, was possible because China's system gave the central government the power to mandate that economically advanced provinces take on this responsibility. In addition, China's system of stringent vertical controls and practices of local accountability created powerful incentives for participating local and provincial officials from donor provinces. Competing with each other for advancement in the national promotional system, they were highly motivated to perform effectively in this very visible, symbolically important task. Consequently, Zhong and Lu note, the paired assistance program produced striking results in measurable "hardware" activities such as rebuilding infrastructure, housing, hospitals, schools, and city halls.

But they see significant shortcomings, as well, that require attention if this method is used in the future. “The tight schedule set by the central government under political mobilization left insufficient time for donor provinces to integrate demands of recipient counties in planning the community reconstruction, causing unnecessary wasteful investment.” Moreover, they believe that far too little attention was paid to the social and psychological dimensions of recovery, which left important community needs unmet in the face of horrible loss of people and wholesale disruption of previous ways of life. At the conclusion of the assistance relationship, they report, some of the communities in the earthquake area had difficulty with the transition back to local control, raising questions about the sustainability of the economic and physical development that the assistance program put in motion.

Focusing on another recent catastrophic disaster in the Asia-Pacific, *Naomi Aoki* examines a key problem of recovery in her chapter, “Collaborative Manpower Support for Restoring Hope in the Aftermath of the March 11 Disasters in Japan.” Many of the Tohoku area coastal communities struck by the tsunami lost numerous local government employees, including many with professional skills critically needed in reconstruction efforts. Aoki systematically examines the mechanisms of “collaborative governance” that Japan devised to shore up the civil service of these communities with loaned officials from other parts of the country.

Some of this support came as a result of pre-existing mutual aid agreements with other communities, particularly prevalent for the fire service; but these helped mainly in the emergency response phase of the post-tsunami period, not in recovery efforts. Other mechanisms of collaboration were developed or enhanced specifically for recovery from the March 11 disasters, generally but not always paid for entirely by the national government. One form of “wide-area collaboration” was accomplished through a registry organized by the Ministry of Internal Affairs and Communication (MIC). Disaster-affected communities indicated their needs for particular types of help, while donor communities specified individuals who were available. MIC arranged appropriate matches, with the assistance of the national mayors’ association and the organization of towns and villages. This mechanism worked better for short-term commitments than for longer periods up to a year or more. “Vertical collaboration” was represented by the dispatch of national ministry employees to work in affected local governments, while “horizontal collaboration” involved several national agencies recruiting former international aid workers to go to the Tohoku region to help with recovery. Finally, “inter-sectoral collaboration” involved the recruitment of business sector employees working temporarily for local governments. Overall, however, although helpful, these mechanisms could not supply the number and types of manpower that the stricken coastal communities required. Aoki examines the reasons that these measures were not fully adequate and suggests that prior attention to this problem would be an important element of preparedness for future catastrophic disasters.

Kerry O’Neill, in “Communities at the Heart of Recovery: Reflections on the Government-Community Partnership for Recovery after the 2009 Black Saturday Bushfires in Victoria, Australia,” looks closely at the aftermath of the 700 raging bushfires that took 173 lives, injured many more, displaced 7,500 people,

destroyed 4,600 homes and buildings, and laid waste to the countryside. O'Neill describes the process organized by a central agency, the Victorian Bushfire Reconstruction and Recovery Authority (VBRRA) that placed communities at the heart of the recovery efforts. O'Neill concentrates particularly on how the process worked in the Marysville Triangle region of Victoria. Although the VBBRA took the lead in coordinating recovery efforts, it worked closely with community and business representatives, as well as national and international NGOs, to establish a recovery framework, set priorities for rebuilding, and identify catalyst initiatives that would regenerate economic and social life in the 142 towns and communities affected by the fires.

From this experience, O'Neill draws lessons that she believes can help other jurisdictions initiating recovery from large-scale disasters of many types. She emphasizes the value of pre-disaster recovery planning as part of overall emergency preparedness, the need to respond quickly to the urgent basic service and psychological and emotional needs of those affected-rather than taking too much time to get organized-as well as the importance of timely, transparent, accurate information and frequent communication. She also emphasizes the need to make communities real partners in the recovery process rather than letting it become the sole province of bureaucracies at higher levels of government. Regeneration and rebuilding, she argues, is a multi-dimensional phenomenon which requires planners and implementers to seek alignment across the major pillars of recovery: people, reconstruction, environment, and economy—all the while keeping community at the center. At the same time, because the emotions of the recovery process can lead to unrealistic visions of what is possible, it is important for all concerned to keep a sense of proportionality and realism about objectives. Participants in the recovery process need to have clear roles and accountabilities at the outset; and these should be reinforced periodically during the years of the recovery. In conclusion, she points out that recovery has phases, and people's feelings and expectations evolve over time in the lengthy recovery process. Timing, therefore, is critical—and leaders must expect that the planning, financing, and implementation of projects that do not begin until the later phases will differ from what happened in the earlier phases.

O'Neill, as well as Zhong and Lu, note the importance of psycho-social recovery in addition to physical and economic rebuilding. This is the main focus of *Dicky Pelupessy* and *Diane Bretherton* in "Disaster, Mental Health, and Community Resilience: Lessons from the Field in Aceh Province, Indonesia," which reports on post-disaster surveys of residents in the area hardest-hit by the Indian Ocean tsunami. They set the scene for the December 2004 disaster, describing how it occurred in a province that already had experienced 30 years of armed struggle between the Free Aceh Movement (GAM), an insurgent group seeking independence, and the government of Indonesia.

Pelupessy and Bretherton's chapter first looks closely at a post-intervention study of people who in the aftermath of the tsunami had participated in psychosocial support programs. Five years later, the researchers administered a screening survey to respondents in two cities that had received this support and one that did not. This study found that the percentage of respondents with scores in the clinical

range was twice as high in the jurisdiction that had *not* received the support program as in those that had. This study, they argue, shows that the mental health effects of disaster are long-lived. Pelupessy and Bretherton then describe a second, qualitative study, which intensively interviewed a small number of key respondents who had played active roles in their communities following the tsunami. Noting that it had taken several days for aid to reach these communities, the second study revealed that local people were not passive victims but rather had responded effectively and collectively as communities in giving aid to survivors. The study also revealed that as international agencies arrived, they tended to ignore local capacities; rather than building on local initiative and abilities, their assistance was sometimes culturally inappropriate and tended to create dependence. Pelupessy and Bretherton strongly suggest that international organizations need to ensure that they are culturally sensitive in disaster situations and recommend that they seek to build on local strengths rather than treating survivors as victims who have little to contribute to their recovery.

The four chapters in this part of the book thus present both contrasts and common themes. In China, as Zhong and Lu report, a central government-driven program of aid, powered by expert task forces and financing sent from prosperous provinces to disaster-stricken counties in the areas of Sichuan and Gansu provinces, resulted in dramatic physical and economic reconstruction in only 3 years. But this was a top-down recovery that left only a modest role for affected communities. As Pelupessy and Bretherton show, in Indonesia it was not only central governments but also international aid organizations that could work for—but not always closely with—communities hard-hit by disaster. By contrast, O'Neill describes another centrally organized recovery process in Australia, but one that relied much more heavily on local vision and inputs than that in either China or Indonesia; and Aoki explores the effectiveness of collaborative manpower programs that sought to provide support to community recovery following the Great East Japan Earthquake and tsunami.

Pelupessy and Bretherton, highlighting another significant recovery issue, emphasize the long-lasting psycho-social impacts of major disasters—a theme that Zhong and Lu, and O'Neill also cite.

1.3.3 Improving Preparedness

Where catastrophic natural disasters loom as plausible threats, what can government, business, and individuals do to get prepared effectively and thereby prevent or mitigate the damage that disasters impose on society?

Many business firms in the Asia-Pacific region and elsewhere have learned that business continuity in the aftermath of disaster depends heavily on preparedness in advance of the event itself. The field of business continuity planning (BCP), once largely limited to taking steps to protect corporate data, has now become far more sophisticated by covering a wider range of company resources and capabilities. In

"Regional Business Continuity Management Through Public-Private Partnerships in Japan," *Kenji Watanabe* argues forcefully that the scope needs to be expanded further through business continuity management (BCM). He cites the compelling need to take account of the fact that firms exist in complex networks in which multiple interdependencies (for example, through their supply and sales chains) create corporate vulnerabilities that are not covered by traditional BCP strategies.

Watanabe therefore examines experience in three recent earthquakes in Japan and advocates an approach that combines corporate preparedness with an approach based on public-private partnerships. He shows that *government* is concerned with four interlocking sets of stakeholders: local communities, local agencies, neighboring and remote local governments, and the central government and agencies. For its part, a *business firm* is also concerned with four inter-linked sets of stakeholders: its corporate group, its industry, its supply chain, and the local community. These sets of stakeholders are connected through the shared local community—and, Watanabe asserts, BCM can be effectively structured through a public-private partnership to help provide continuity for its elements and, overall, can increase regional resilience even to catastrophic disasters.

Through his case studies, Watanabe shows both the potential and limitations of this approach. He concludes with ideas about how to improve the prospects that public-private partnerships to achieve continuity and resilience will prove successful.

Gilles Carbonnier's chapter, "The Rise of Disaster Risk Insurance and Derivatives," deals with an emerging set of financial instruments in the disaster risk management realm. He reviews the rationale for these instruments, describes several early experiments, and looks to current developments. Although, at least so far, they are often not viable commercially, aid organizations, governments, the insurance and reinsurance industry, and institutional investors have created public-private partnerships to promote disaster insurance and derivatives in both developed and developing economies. Carbonnier concentrates on the Asian context, the region that has the greatest exposure to disaster risk and suffers the most from natural disasters. He reviews some obstacles to using these instruments, especially in countries with substantial Muslim populations where Shari'a law attitudes toward insurance must be accommodated. He also discusses the incentives that make many developing countries prefer direct foreign assistance after disasters to disaster risk insurance and derivative products. Yet, Carbonnier argues in conclusion, these products "have the advantage to potentially transfer a substantial portion of disaster costs abroad irrespective of the humanitarian response (or lack thereof). More importantly perhaps, they contribute to reducing dependency on foreign assistance, thus supporting national sovereignty claims and ambitions."

In "Building the Urban Community Disaster Relief System in China," *Songyan Chu* focuses attention on China's "urban communities"—equivalent to neighborhoods or sub-areas of larger political jurisdictions—organized through elected resident committees. Communities, many observers agree, *can* be—and, given the difficulties of getting outside relief to areas stricken by crisis, often *must* be—effective bulwarks against the consequences even of major natural disasters. Thus, in many countries, governments and the voluntary sector increasingly are emphasizing

the need to stimulate robust community capacity to respond to catastrophe and prove resilient in the aftermath. Recent Chinese government policy holds that these communities should be the first line of defense in disaster relief systems. Based on her field investigation of five urban communities, Chu concludes that capacity for this function is increasing steadily—slowly evolving from administratively-mobilized, government-dominated organizations to more autonomous entities. Nonetheless, she sees continuing difficulties: there is no institutional channel that reliably creates social participation; coordination between community resident committees and the city government remains weak; and mechanisms for resource sharing among urban communities also remain weak. Looking to the future, she observes, "The government and community play different yet complementary roles, which means that they should share technological and other resources, unify information management, and, through the support of the government and social forces, make volunteers more professional."

1.4 Conclusion

As we indicate at the start of this chapter, the challenge of reducing disaster risk across the Asia-Pacific is immense; and due to a variety of factors—including rapid urbanization, development patterns, and the emerging effects of climate change—it promises to become only more difficult and complex in the foreseeable future. While surmounting this challenge is certainly not impossible, success is highly contingent on the capacity and willingness of countries and communities across the region to embrace and disseminate effective methods of risk governance and disaster preparedness and develop and carry out appropriate policies and capacities to implement them.

This volume highlights a mix of such policies and governance strategies—including but not limited to ones designed to facilitate intergovernmental coordination, better integrate civil society organizations and engage with the private sector, and foster various elements of community recovery and resiliency. Although many of the following chapters focus on a specific topic within the context of an individual event and country, their themes and policy recommendations are also, we believe, broadly applicable and relevant to other countries in the region and other parts of the world (political, geographic, and cultural particularities notwithstanding). By profiling a wide range of events and experiences, identifying best practices and key lessons, and offering possible prescriptions, we aim to help inform those responsible for formulating public policy and driving political debate—along with their partners in civil society, the private sector, and the international community—about the ways in which countries can best mitigate against, prepare for, respond to, and recover from natural disasters, with the ultimate aim of reducing their overall disaster risk and losses to social welfare.

References

AADMER (2013) Facilitating partnerships of National and ASEAN DRR authorities and civil society to support AADMER implementation. ASEAN agreement on disaster management and emergency response (AADMER) partnership group evaluation report 2013. http://www.aadmerpartnership.org/aadmer-partnership-group-evaluation-report-2013/. Accessed 5 June 2014

Guha-Sapir D, Hoyois P, Below R (2012) Annual disaster statistical review 2012: the numbers and trends. Centre for Research on the Epidemiology of Disasters (CRED), Institute of Health and Society (IRSS), Catholic University of Louvain, Brussels

UNISDR (2013) From shared risk to shared value: the business case for disaster risk reduction, Global assessment report on disaster risk reduction. United Nations Office for Disaster Risk Reduction (UNISDR), Geneva

Part I
Emergency Response and Humanitarian Relief

Chapter 2
Localising the Humanitarian Toolkit: Lessons from Recent Philippines Disasters

Rebecca Barber

Abstract Over the past decade, the political and legal landscape for managing disaster risk in Asia has undergone significant shifts. Almost all Asian countries have legal and institutional frameworks for managing disasters, regional bodies have assumed an increasingly prominent role, and national governments are asserting their capacity to manage their own disasters. But increased national capacities have not always kept pace with increased disaster risk, and international actors still have an important—albeit complementary—role to play. This shift in dynamics poses challenges for the international humanitarian system, which for the most part has been set up on the assumption that international actors will take the lead.

The Philippines is one of the most disaster-prone countries in the world. The action that has been taken by the Philippines Government to manage disasters has been commended for enabling the provision of well-coordinated, government-led humanitarian assistance; and thus provides a valuable example for other governments in the region. At the same time, it raises questions regarding the capacity of government-led systems to coordinate humanitarian response, targeting vulnerable groups and ensuring alignment with humanitarian principles, in the context not only of increasing disaster risk but also of ongoing internal conflict.

This chapter examines the response of national, regional and international actors to recent Philippines disasters, and questions whether the humanitarian response system is equipped to respond to increasing disaster risk. It provides recommendations to national, regional and international actors with a view to ensuring that when a disaster does occur, aid is provided where it is needed, when it is needed, to those who need it most. While the analysis and recommendations focus on the Philippines as a case study, the issues discussed are broadly applicable throughout the Southeast Asian region.

Keywords ASEAN • Disaster management • Humanitarian response • Philippines

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2.1 Introduction

Around the world, economic and human exposure to disaster risk is increasing due to the combined effects of climate change, population growth, poorly planned development and urbanisation. The Philippines is one of the most disaster-prone countries in the world. Some 75 disasters have been recorded in the Philippines since 2010, already more than half the number recorded in the previous decade (CRED), and 74 % of the population is vulnerable to natural hazards (World Bank 2012). Recent disasters have had particularly devastating effects, with Typhoon Haiyan in November 2013 the strongest storm to make landfall ever recorded, and even relatively low-intensity storms having been accompanied by unusually heavy rainfall. Even prior to the devastation of Typhoon Haiyan, disasters in the Philippines this decade had affected more than 30 million people and caused almost US$3 billion in economic damages (CRED). Tropical Storm Washi in 2011 left 1,200 dead, almost 40,000 homes damaged or destroyed and almost half a million displaced (OCD 2012). Typhoon Bopha the following year left over 1,000 dead, over 200,000 houses damaged or destroyed and close to a million people displaced (OCHA 2012c, 2013a). Typhoon Haiyan left more than 6,000 killed, a million houses damaged and over 4 million people displaced (NDRRMC 2014).

As discussed in more detail in Sect. 2.3 of this chapter, disaster management capacity in the Philippines has substantially increased in recent years. The Philippines now has one of the most robust legal frameworks in the world for disaster risk management, and strong capacity and commitment within government departments to addressing disaster risk. It also has experience accepting and facilitating assistance from within the region—with Typhoons Bopha in 2012 and Haiyan in 2013 having provided the Association of Southeast Asian Nations (ASEAN) Coordinating Centre for Humanitarian Assistance (the AHA Centre) with the opportunity to step into its intended role of coordinating assistance amongst ASEAN member states.

The Philippines also has substantial experience managing international humanitarian assistance. It is one of the only countries in the region to have issued policy directives adopting the 'cluster' approach—the system established by the international humanitarian community in 2006 to ensure coordination and leadership in all the main areas of humanitarian response. In part because of this experience on the part of the national government, the practice followed in recent disaster responses has avoided some of the complications experienced elsewhere in the region, where international actors have struggled to adapt to contexts where assistance is 'welcomed' but not 'requested'.

The Philippines thus provides an illustration both of the challenges faced by national governments in managing rapidly increasing disaster risk, and of the shifting roles of national, regional and international actors in disaster management.

Based on interviews with national, regional and international actors in the Philippines, Thailand and Indonesia in 2013, this chapter explores some of the issues highlighted by recent disaster responses in the Philippines. The research for

this chapter focused on Tropical Storm Washi in 2011 and Typhoon Bopha in 2012—but the discussion draws also on the subsequent and more recent experience of Typhoon Haiyan in late 2013. It considers the actions taken by government authorities to manage disaster risk, as well as the facilitation and coordination of regional and international assistance, and concludes with recommendations aimed at improving disaster management in the Philippines and encouraging the sharing of lessons learned across the region.

2.2 Disasters and Disaster Management in the Asia-Pacific Region

The Asia-Pacific region is the most disaster prone region in the world. Almost two million people across the region were killed in disasters between 1970 and 2011, representing 75 % of global disaster fatalities (UN ESCAP and UNISDR 2012). It is particularly vulnerable to hydro-meteorological events, which occur more frequently, affect more people and cause greater economic loss than any other type of disaster in the region. More than a billion people have been exposed to hydro-meteorological events since 2000, and this number is expected to rise due to the increased frequency and intensity of extreme weather events (UN ESCAP and UNISDR 2012).

Corresponding with this increase in disaster risk has been an increase in national and regional disaster management capacities. Almost all countries throughout the region have legal and regulatory frameworks as well as institutional structures for managing disaster risk; and the ASEAN Agreement for Disaster Management and Emergency Relief is one of the most robust mechanisms in the world for coordinating disaster relief amongst member states. With this increase in capacity has been a shift in national attitudes towards international assistance. With few exceptions, governments in the region no longer issue generalised, public appeals for assistance, preferring instead to accept specific offers, targeted to meet identified gaps in national capacities, on their own terms. While this is no longer new, international humanitarian actors are in some cases still struggling to define a role for themselves in this context.

But there are some important qualifications to be made about this shift in dynamics between national and international actors. First, with the frequency and severity of climate-related disasters expected to increase, national capacities will continue to be overwhelmed. In such situations, the task of national governments will be significantly easier where robust policies and procedures are in place for managing international assistance. Second, despite increased national disaster management capacities, in many cases vulnerable groups continue to be left behind. Occasionally this is due to deliberate discrimination, but more commonly it is because of innate vulnerabilities that render these groups less able to access assistance, requiring a targeted response that, when resources are stretched, national authorities may not

have the capacity to provide. And third, a significant proportion of populations throughout the region are affected not only by natural disasters but also by conflict. Despite this, most of the region's national legal and institutional frameworks for managing disaster risk do not deal explicitly with the needs of populations affected by conflict, and national disaster management organisations (NDMOs) are in some cases closely aligned with (or part of) the departments of defence—raising the question of whether these agencies are the best placed to provide assistance to conflict-affected populations in circumstances where the government is a party to the conflict. While national governments have the primary responsibility for the protection of their populations, the international community has a residual responsibility—the humanitarian imperative—to provide humanitarian assistance to populations affected by both conflict and disaster where needs are not being met by national governments.

2.3 The National Framework for Disaster Management in the Philippines: Progress and Challenges

The launch of the *Philippine Disaster Risk Reduction and Management Act* (DRRM Act) in 2010 represented a paradigm shift in disaster management in the Philippines, from a narrow focus on disaster response to a much broader focus on preparedness, response, prevention and mitigation, and rehabilitation and recovery. The Act replaces the National Disaster Coordinating Council (NDCC) with the National Disaster Risk Reduction and Management Council (NDRRMC), and gives this new body several wide-ranging responsibilities including advising the President on disaster preparedness, prevention, mitigation, response and rehabilitation operations, and coordinating and managing resources for disaster risk reduction and management (DRRM Act s 6). It is supported by a set of Implementing Rules and Regulations, and the National Disaster Risk Reduction and Management Plan (NDRRM Plan).

Subsequent to the launch of the Act, the Philippines has frequently been cited as an example of good practice in disaster risk reduction and management (see: Jha and Stanton-Geddes 2013; UNISDR, ILO, and UNDP 2010; Oxfam 2011). But while this is true of the legislative and policy framework, there remains a significant gap between policy and practice. The remainder of this section explores three issues which in recent disasters have either impacted, or have had the potential to impact, the quality of the response: lack of disaster preparedness at the local level; insufficient attention to the needs of vulnerable groups; and issues relating to the designation of the Office of Civil Defence (OCD) as the 'lead agency to carry out the provisions of [the Act]' (DRRM Act s 23), in a context in which populations are affected simultaneously by both conflict and natural disaster.

2.3.1 Disaster Preparedness at the Local Level

The DRRM Act establishes a framework for the adoption of a 'disaster risk reduction and management approach that is holistic, comprehensive, integrated, and proactive in lessening the socioeconomic and environmental impacts of disasters' (DRRM Act 2010, s 2(d)). Yet Filipino communities struck by disasters continue to be taken by surprise. A review of the response to Tropical Storm Washi coordinated by the Office for the Coordination of Humanitarian Affairs (OCHA) found that 'people lacked awareness of geo-hazard risks and did not readily comply with … evacuation orders', and that 'evacuation plans were not fully in place or used' (OCHA 2012a). A review of the response to Typhoon Bopha found that many communities were not reached by warnings, while others heard the warnings but either did not understand them or chose to ignore them (OCHA 2013b). An Oxfam analysis of the response to Typhoon Haiyan noted that the unprecedented winds and accompanying storm surge were phenomena 'many people did not fully understand', and that 'the precise threat from the surge was not communicated by the authorities effectively' (Chughtai 2013). What was highlighted by all three disasters was that despite one of the most robust legal frameworks in the world for DRRM, implementation at the local level remains challenged by a lack of resources and capacity.

One of the impediments is that the roll-out of the DRRM Act relies upon the establishment of DRRM offices at the local level—but the establishment of these offices and the recruitment of necessary staff has been slow. This is due in part to the fact that local government salaries must be covered by local government budgets, but local governments are only entitled to use 55 % of their budgets on salaries and 'personal services' (*Local Government Code of the Philippines* 1991, s 325(a)). Many local governments have already reached their 55 % cap, and as such are unable to appoint the staff required by the DRRM Act. Thus many resort to designating existing staff to assume the roles required by the Act on top of their existing responsibilities—with obvious implications for the effectiveness of the DRRM office.

The development of local DRRM plans has proved equally challenging. The NDRRM Plan recognises that 'risk-related information coming from the prevention and mitigation aspect [of the NDRRM Plan] is necessary in order for the preparedness activities to be responsive to … the situation on the ground' (NDRRM Plan 2011)—but at the time the DRRM Act was passed, most local governments either lacked access to this sort of information, or had it but didn't know how to interpret it. Thus, in many cases the local DRRM plans that are in place do not reflect known hazards. As explained by Under-Secretary Austere Panadero of the Department of Interior and Local Government (DILG), 'the issue is not having a plan, the issue is the quality' (Panadero A, June 2013, personal communication). As of the time of writing, Panadero said that 'where we are now is revisiting the plans'—but with 42,000 *barangays* (villages) with varying resources and capacities, this required substantial support.

More broadly, lack of capacity at the local level poses an impediment to the fulfilment of the complete set of responsibilities under the DRRM Act. Under the Act, DRRM offices are responsible for facilitating risk assessments, organising trainings on disaster risk reduction, operating early warning systems, formulating local DRRM plans, and a range of other tasks (DRRM Act 2010, s 12). These cannot feasibly be achieved utilising only expertise available at the local level. Support is thus required from the national government, but this is also limited. As described by Under-Secretary Panadero, 'there are less than 100 geologists in the whole country. Let's say it takes a geologist four days to train a local government to properly interpret a hazard map, and there are 42,000 *barangays*, well, do the maths' (Panadero A, June 2013, personal communication). Reviews following both Washi and Bopha stressed the need for capacity building for local disaster management authorities, and specifically support for the development of contextualised disaster preparedness plans (OCHA 2012a, 2013b).

2.3.2 Responding to the Needs of Vulnerable Groups

One of the things consistently highlighted by recent disasters in the Philippines is the extent to which the poor as well as vulnerable groups have been disproportionately affected—and their needs not always adequately met.

In the case of the flash floods following Tropical Storm Washi, it was the inhabitants of informal settlements in urban areas—who comprised an estimated 85 % of the affected population (OCD 2012)—that bore the brunt of the crisis. The Post-Disaster Needs Assessment found that the location of settlements in hazard-prone areas aggravated the impact of the floods, and that 'the vulnerability of the residential areas … was heightened even further by the unsafe housing and living conditions given the substandard materials and construction of the informal settlements that consisted much of the housing stock in the affected areas' (OCD 2012).

In the aftermath of both Washi and Bopha, the Government announced compensation for those whose property had been damaged or destroyed. But in both cases applicants had to show either title to their land or a tenancy agreement, thus rendering the assistance inaccessible to most of the affected population. A survey conducted in Washi-affected areas in late 2012 found that less than ten per cent of the displaced had been able to claim compensation or reclaim lost property or occupancy rights (Bacal et al. 2013). While it is yet too early to comment on the effectiveness of housing compensation following Typhoon Haiyan, assessments found that over 30 % of affected households had little or no formal security of tenure, and humanitarian actors expressed early concerns that these households would need specialised attention to ensure that their shelter needs were not overlooked (Philippines Shelter Cluster 2014).

Those in informal settlements were not the only vulnerable groups whose needs have not always been adequately targeted. The Washi Post-Disaster Needs Assessment estimated that 80 % of vulnerable groups were not given special

attention; and a number of communities consulted during the Bopha After-Action Review (coordinated by OCHA on behalf of the Government and humanitarian actors) indicated similarly that vulnerable groups were not prioritised (OCD 2012; OCHA 2013b). Oxfam's review of the response to Typhoon Haiyan found that 'mass displacement in overcrowded conditions … raised risks to the safety and wellbeing of vulnerable groups', and that 'lack of female police officers, the scarcity of women-only spaces in evacuation centres, and disrupted maternal and reproductive health services have made the challenge of reducing the risks to vulnerable groups that much harder' (Chughtai 2013).

Children were particularly affected by all three disasters, in part because of their vulnerability to psychological distress, but also because of the extent to which schooling was disrupted. In the aftermath of the disasters, many children went weeks without attending school—either because schools were being used as evacuation centres, or because they were destroyed in the storm. Children who are out of school at a time when families have lost their primary means of income are particularly vulnerable to exploitation. An assessment following Typhoon Bopha found that 19 % of respondents in affected areas said that children were being exploited, while 40 % of boys were involved in 'harsh and difficult work' to support themselves or their families (Philippines Child Protection Sub-Cluster 2013).

Vulnerability exacerbates disasters, and disasters exacerbate vulnerability. The vulnerable are most likely to be affected when disaster strikes, have the most difficulty accessing assistance, and are the least likely to recover. The Philippines has taken great strides in improving its disaster management capacity, but as the country's experience with recent disasters has shown, in some cases the vulnerable are still left behind. In preparing for and responding to future disasters, it is incumbent upon both national and international actors to ensure that programs and policies are targeted to meet the needs of these most vulnerable groups.

2.3.3 The Role of the Military: Implications for Humanitarian Principles

As indicated above, the OCD is the lead agency of the NDRRMC, tasked with carrying out the core functions described by the DRRM Act. The OCD is also one of five bureaus within the Department of National Defence (DND), and this positioning of the OCD within the DND has a number of implications for disaster management.

In the case of large-scale disasters, the government departments tasked with disaster response—the Department of Social Welfare and Development, Department of Health, and others—generally do not have sufficient equipment or logistical capacity to carry out the necessary activities on their own. This means that they must draw upon the resources of the OCD, which—because the OCD sits within the DND and does not have its own civilian resources—means military assets. This reliance on military assets for disaster relief is potentially problematic in times of conflict, when military assets may be otherwise prioritised.

Moreover, while the use of military personnel and assets in disaster response is standard practice throughout the world and is often appropriate due to the military's superior resources and capacity, in the Philippines this poses challenges in areas with a strong presence of anti-government groups. This was highlighted in the Bopha response, during which the military assumed a particularly prominent role. In the severely affected province of Davao Oriental in eastern Mindanao, including in conflict-affected areas, military-led Incident Command Posts were established as hubs for the coordination of humanitarian assistance. For about a month following the disaster, military assets were used by some government departments and UN agencies for the transportation of relief items. Having the military play such a prominent role, in areas where there is an active conflict to which the government is a party, creates the potential of blurring the lines between humanitarian and military objectives and of undermining the security of humanitarian staff and beneficiaries.

During the drafting of the DRRM Act, a number of proposals were put forward with regards to the positioning of the OCD. One such proposal was that the OCD be positioned within the DILG or the Department of Social Welfare and Development; another was that the OCD be a standalone agency reporting directly to the President. One of the reasons these proposals were unsuccessful was a concern that if removed from the DND, the OCD would require significant resources of its own. But removing the OCD from the DND need not mean that military assets can no longer be utilised in disaster relief—rather, that their utilisation would depend upon the request and fall under the management of a body not connected with the DND. The DRRM Act is scheduled for review in 2015, and this should be seen as an opportunity for these proposals to be reconsidered.

2.4 The Facilitation and Coordination of International Humanitarian Assistance

2.4.1 Offers and Acceptance of International Assistance

The DRRM Act and the Implementing Rules and Regulations are relatively silent on the issue of requesting and accepting international humanitarian assistance. The DRRM Act says only that a declaration of a state of calamity 'may warrant international humanitarian assistance' (DRRM Act 2010, s 16); and the Implementing Rules and Regulations add that a call for international assistance by the President will be made on the basis of a recommendation by the NDRRMC. There is a section in the DRRM Act titled 'mechanism for international humanitarian assistance', but it deals only with the importation of relief items by or to the NDRRMC (DRRM Act 2010, s 18). There is no reference to international assistance in the NDDRM Plan.

In recent years, practice adopted by the Government of the Philippines has ranged from formally requesting international assistance, to declining offers of assistance on the grounds that the Government has the resources it needs, to the in-between position of not *requesting* assistance but formally *accepting* an offer made by the UN Resident Coordinator/Humanitarian Coordinator (RC/HC).

Following Tropical Storm Ketsana in 2009, the NDCC (the NDRRMC's predecessor) formally requested international assistance. By way of contrast, in the aftermath of Typhoons Nesat and Nalgae in 2011, and the monsoon floods in Luzon in 2012, the Government did not accept the UN RC/HC's offer of assistance. But in both cases, as in many smaller disasters, government departments made targeted requests to international agencies based on identified needs. Following Typhoons Nesat and Nalgae, the Department of Health asked the UN Population Fund for reproductive health kits, the OCD asked the World Food Program for rubber boats and other equipment, and local government units asked education cluster members for text books and other learning materials (OCHA 2011a, b). Similarly following the 2012 floods in Luzon, the UN reported that 'at the cluster level, the Government has asked Humanitarian Country Team [a decision-making forum comprised of representatives of UN agencies, international NGOs and the Red Cross / Red Crescent Movement] members for local support in camp management, water, sanitation and hygiene, health, food, livelihoods, logistics and information management' (OCHA 2012b). These requests served as the basis for UN agencies and international NGOs to respond so far as they were able by diverting existing resources or drawing on internal emergency response funds.

Following Tropical Storm Washi and Typhoons Bopha and Haiyan, the Government again received offers of assistance from the UN RC/HC, and on these occasions—due in part to the scale of the damage, but also to a level of trust and confidence between senior government and international humanitarian leaders—gave written acceptance. In all cases the written acceptance was shared by OCHA with the HCT, and this then provided the grounds for the provision of humanitarian assistance by donors, the UN and international NGOs, as well as for the launch of a flash appeal.

The formal acceptance of international assistance following Washi, Bopha and Haiyan, and the way in which this was understood by both national and international actors as providing a legitimate basis for such assistance to be provided, stands in contrast to experience elsewhere in Southeast Asia where the reluctance of governments to *request*—while being willing to *welcome*—assistance has in some contexts given rise to considerable confusion.

The response to the 2011 floods in Thailand provides an example. Immediately following the floods, the UN RC wrote to the Prime Minister offering international assistance, and the Prime Minister indicated—in a formal written communication as well as in public statements—that assistance was welcome. This was not regarded by the international community as a sufficient basis on which to formally activate the humanitarian response system—including the activation of the HCT and the cluster system, and the launch of an appeal. Reflecting on the response to the floods, the UN RC explained that it was 'difficult to operate without any clear procedures related to requests for international assistance', while one international NGO staff said that 'at every [coordination] meeting, there was a sense that our hands were tied, that we could only do so much' (Barber 2012). The absence of a formal request for assistance also caused difficulties in the response to the 2011 floods in Cambodia, although for different reasons. In that case the absence of a formal request undermined

the national leadership of the response, because there was a sense amongst some members of the NDMO that it was not authorised to coordinate the activities of international actors in the absence of a Prime Ministerial request for international assistance (Barber 2012).

The Philippines can be distinguished from the Thailand and Cambodia examples in part because it is a context in which the international humanitarian infrastructure—the HCT, clusters, etc—is already there. They were activated in 2007 in response to Typhoon Durian, and have remained in place to coordinate disaster preparedness and response as required. This obviates the need for a discussion—which took up considerable energy in Thailand following the 2011 floods—regarding the trigger for the activation of these systems in the absence of a government request for assistance.

The Philippines experience can also be distinguished by the way in which senior humanitarian leaders interpreted language used by the national government. In Thailand in 2011, much was made of General Assembly Resolution 46/182 on the Coordination of Humanitarian Assistance, which provides that 'humanitarian assistance should be provided … in principle on the basis of an appeal by the affected country.' The absence of such an appeal was seen by many as a sticking point. As explained by one participant in a 'lessons learned' workshop, 'the Thai Government said that they welcome assistance but many agencies do not work that way' (UN Country Team in Thailand 2011). In the response to Washi, Bopha and Haiyan in the Philippines, the fact that the government merely accepted international assistance, rather than making an 'appeal', was not raised as an issue. One UN agency staff explained: 'the moment the government accepts, it's as if they've made the request. Everyone understands the dynamics' (Nyangara A, June 2013, personal communication).

An additional factor setting the Philippines aside is the level of government familiarity with the international humanitarian architecture. Humanitarian coordination structures have for the most part been embraced by the government, to the extent that they are now described by government authorities as part of the government's own coordination system. This is discussed further below, but suffice to note that the question of whether a disaster is sufficiently serious to warrant the imposition of international humanitarian systems is scarcely considered, because in the understanding of the government, with the exception of the UN HCT there are no internationally-led humanitarian systems.

2.4.2 The Coordination of International Humanitarian Assistance

Neither the DRRM Act nor the Implementing Rules and Regulations say anything about the coordination of international humanitarian assistance. There is a reference in the NDRRM Plan to the 'activation of … the cluster approach at the national and

local levels' as a component of disaster response and relief operations, but no detail as to what this should look like (NDRRM Plan 2011).

The cluster approach is described in a Circular issued by the NDCC in 2007, titled 'Institutionalisation of the Cluster Approach in the Philippine Disaster Management System.' The Circular recognises the 'benefits in institutionalising the cluster approach,' defines 11 clusters, designates government cluster leads and international agency counterparts, and sets out the roles and responsibilities of cluster leads (NDCC 2007).

The 2007 Circular was amended in 2008, reducing the number of clusters to eight (NDCC 2008); but at the time of writing this revised list did not match the list of clusters actually operational in the Philippines, as described in the 2013 Humanitarian Action Plan (OCHA 2013a). Furthermore, no memorandum on the cluster approach has been issued since the NDCC was replaced by the NDRRMC in 2010; although as of mid-2013, the NDRRMC reported that an updated memorandum was being prepared (del Rosario E, June 2013, personal communication).

The fact that structures for coordinating international assistance are not described in the DRRM Act or the NDRRM Plan has not significantly impeded coordination on the ground, however. The OCHA-coordinated After-Action Review of the Washi response found that 'key clusters were quickly established in the affected areas or scaled up' and that 'Government cluster leads took strong leadership roles with the support of the HCT cluster co-leads' (OCHA 2012a). The Bopha After-Action Review found similarly that 'the clusters were rolled out quickly' and that 'regular information exchanges allowed clusters to identify priorities and coordinate effective responses' (OCHA 2013b). Importantly, the cluster system is described by national and international actors alike as 'institutionalised' within the government's own coordination structures.

But the fact that the clusters are not enshrined in legislation means that the currently well-functioning system is vulnerable to changes in interpretation as well as leadership. It also doesn't help with knowledge sharing, particularly in regions new to disaster response. One of the significant challenges in both the Washi and Bopha responses was that while coordination structures functioned well at the national and in some cases regional levels, this was much more challenging at lower levels because of a lack of awareness (at those levels) of the cluster system. The Washi After-Action Review found that 'the cluster system … was a new concept for the majority of the local and regional humanitarian actors' (OCHA 2012a), while the Bopha After-Action Review noted similarly that 'there was a lack of awareness of cluster system … at regional, provincial and municipal level' (OCHA 2013b). The Bopha After-Action Review recommended 'inclusion of the cluster approach into Republic Act (RA) 10121 and institutionalising it into the DRRM Plan at municipal and local levels' (OCHA 2013b), while both the Washi and Bopha After-Action Reviews called for greater capacity building for local governments on humanitarian coordination and to 'institutionalise [the cluster approach] in local government units' (OCHA 2012a, 2013b).

2.5 The Regional Response: The ASEAN Coordinating Centre for Humanitarian Assistance

Typhoons Bopha and later Haiyan provided test cases for the newly established AHA Centre. The Centre was established in November 2011 with a mandate to, among other things, receive and consolidate risk data from NDMOs, disseminate information to member states, and facilitate joint emergency response. Bopha and Haiyan were the first large disasters to affect an ASEAN member since the AHA Centre's establishment; and by and large, they were tests that saw expectations met. Immediately following Typhoon Bopha, the Centre deployed senior staff, two national members of ASEAN's Emergency Rapid Assessment Team (ERAT) and much-needed generators to the affected areas. The AHA/ERAT staff participated in a rapid assessment alongside members of the UN's Disaster Assessment and Coordination Team (UNDAC), and over the following days were joined by additional AHA Centre staff and organised the provision of various relief items. The AHA Centre also compiled situation reports and shared these with member states; these reports triggered offers of assistance from Malaysia and Indonesia. Similarly following Typhoon Haiyan, the AHA Centre deployed staff members and the ERAT to the affected areas, compiled and disseminated situation reports, and served as a regional hub for disaster risk monitoring and analysis.

One of the important features of the AHA Centre's contribution to the Bopha and Haiyan responses was the extent to which assistance was placed under the direction of the OCD. As described by one AHA Centre staff, 'what we want to establish is that the AHA Centre belongs to the ASEAN NDMOs' (Capili A, June 2013, personal communication). Equally important was the fact that the assistance provided was understood as coming from within the region. One AHA Centre staff deployed to the Bopha response explained, 'you say you're from ASEAN and it opens doors because they [the national authorities] know they're part of the community' (Capili A, June 2013, personal communication).

While the AHA Centre is regarded by both ASEAN and the NDRRMC as having played an important role in the response to Typhoons Bopha and Haiyan, primarily as a surge capacity for the NDRRMC, there are some acknowledged areas for development. Most importantly, if the AHA Centre is to assume an increasingly prominent role as a humanitarian coordinating body, its relationship with existing international coordination systems will need to be defined. As of the time of writing there were no standard operating procedures for situations in which UNDAC and ERAT were deployed simultaneously, for example, and while this did not pose an impediment following either Bopha or Haiyan, both the AHA Centre and OCHA acknowledged that this needed further clarification (Capili et al., June 2013, personal communication).

More broadly, as the AHA Centre assumes a more prominent role, there is scope to further define not just the relationships between regional and international *actors*, but between regional and international *responses*, and specifically the triggers for the activation of each. As discussed above, the practice followed in recent Philippines disasters regarding international humanitarian assistance has been that the UN RC/HC

makes an offer of assistance on behalf of the international community, which is then either accepted or declined by the NDRRMC. Discussions between the NDRRMC and the AHA Centre take place simultaneously, without one set of discussions being contingent upon, or even necessarily cognisant of, the other. While the current practice is appropriate—with the AHA Centre being in the early stages of its development—moving forward there is certainly scope for these two negotiation processes to be more closely linked so as to allow a more graduated approach.

2.6 Conclusion

The Philippines provides a case study of a government that has significantly increased its capacity to respond to disaster risk. It has a robust legislative framework in place; has demonstrated the ability to facilitate and coordinate international assistance in a manner that maximises available capacities while retaining government leadership; and has hosted the first disaster response mission of the AHA Centre. In all of these areas, there is an opportunity for actors throughout the region to learn from the Philippines experience.

But there is a critical need for further development if the Philippines is to keep pace with increasing disaster risk—a risk tragically highlighted by Typhoon Haiyan in November 2013. Disaster preparedness at the local level requires significant support; evaluations following recent disasters have found that the needs of vulnerable groups have not always been met; the prominent role of the military poses a threat (albeit not realised in recent disaster responses) to humanitarian principles; and the facilitation of international humanitarian assistance is yet to be enshrined in national legislation.

Addressing these challenges requires a coordinated approach by national, regional and international actors. As immediate priorities:

- The Government of the Philippines should expedite efforts to train local governments in disaster risk reduction and management, and ensure that disaster risk reduction and management efforts are targeted so as to minimise the disproportionate impact of disasters on the poor and vulnerable groups. It should also conduct an analysis of the positioning of the OCD within the DND, and consider expanding the DRRM Act to more strongly regulate the facilitation and coordination of international humanitarian assistance.
- International actors should support training for local governments in disaster risk reduction and management, provide technical and financial support to assist local governments develop or revise their DRRM plans, and train government staff at all levels on the roles and responsibilities of cluster leads.
- The AHA Centre and OCHA should pursue initiatives aimed at clarifying roles and responsibilities between the AHA Centre and existing international coordination systems.
- OCHA should continue to create opportunities for senior international humanitarian staff, as well as ASEAN and NDMO staff, to share experiences and lessons

learned from recent disasters. It should also monitor and advocate for adherence to humanitarian principles, particularly in conflict-affected areas.

With disaster risk in the Philippines and throughout the Asian region increasing year by year, national actors have a growing responsibility to ensure that they have the systems and structures in place to safeguard their populations against disaster risk. And as international actors we have a corresponding responsibility to ensure that national governments are provided with the financial and technical support required to address this increasing risk, and to ensure that our own systems are appropriately adapted to complement—not replace—the national and regional response.

References

Bacal C, Carcellar N, Dagondon B, Enriquez J, Temprosa F, Ginnetti J, Villanueva C (2013) Disaster-induced displacement in the Philippines: the case of tropical storm Washi/Sendong. Internal Displacement Monitoring Centre, Geneva

Barber R (2012) Responding to emergencies in Southeast Asia: can we do better? A review of the humanitarian response to the 2011 Thailand and Cambodia floods. Save the Children/AADMER Partnership Group, Singapore

Centre for Research on the Epidemiology of Disasters (CRED) (2013) The international database (EM-DAT). http://www.emdat.be

Chughtai S (2013) Typhoon Haiyan: the response so far and vital lessons for the Philippines recovery. Oxfam International, London

Government of the Philippines (2010) Philippine Disaster Risk Reduction and Management Act

Government of the Philippines (2011) National Disaster Risk Reduction and Management Plan 2011 to 2028

Jha A, Stanton-Geddes Z (2013) Strong, safe and resilient: strategic policy guide for disaster risk management in East Asia and the Pacific. The World Bank, Washington, DC

National Disaster Coordinating Council (NDCC) (2007) Institutionalisation of the cluster approach in the Philippine disaster management system, designation of cluster leads and their terms of reference at the national, regional and provincial level. National Disaster Coordinating Council, Manila

National Disaster Coordinating Council (NDCC) (2008) Amendment to the NDCC circular Nos. 5, 2007 and 4, 2008 and the institutionalisation of the cluster approach in the Philippines. National Disaster Coordinating Council, Manila

National Disaster Risk Reduction and Management Council (NDRRMC) (2014) Sitrep No 90 effects of Typhoon 'Yolanda' (Haiyan). National Disaster Risk Reduction and Management Council, Manila

OCHA (UN Office for the Coordination of Humanitarian Affairs) (2011a) Typhoon Nalgae and Nesat: situation report No 5. OCHA, Manila

OCHA (2011b) Typhoon Nalgae and Nesat: situation report No 6. OCHA, Manila

OCHA (2012a) Tropical storm Washi/Sendong: action review report. OCHA, Manila

OCHA (2012b) Southwest monsoon floods: situation report No 2. OCHA, Manila

OCHA (2012c) Philippines humanitarian bulletin issue No 9. OCHA, Manila

OCHA (2013a) Philippines (Mindanao) humanitarian action plan 2013: Typhoon Bopha/Pablo response—an action plan for recovery. OCHA, Manila

OCHA (2013b) Report: the after action review/lessons learned workshops Typhoon Bopha response. OCHA, Manila

Office of Civil Defence (OCD) (2012) Tropical storm Sendong post-disaster needs assessment. Office of Civil Defence, Manila

Oxfam (2011) Rising to the call: good practices in disaster risk reduction and climate change adaptation in the Philippines. Oxfam, Manila

Philippines Child Protection Sub-Cluster (2013) Inter-agency child protection rapid assessment report: protection risks for children as a result of Typhoon Bopha/Pablo. Child Protection Sub-Cluster, Manila

Philippines Shelter Cluster (2014) Key messages on housing, land and property issues. Philippines Shelter Cluster, Manila

UN Country Team in Thailand (2011) Lessons learned from the international humanitarian community: report of the workshop on the Thailand floods response. UN Country Team in Thailand, Bangkok

UN Economic and Social Commission for Asia and the Pacific (UN ESCAP) and UN Office for Disaster Risk Reduction (UNISDR) (2012) Reducing vulnerability and exposure to disasters: the Asia-Pacific disaster report. UN ESCAP and UNIDSR, Bangkok

UNISDR, International Labour Organisation (ILO), UN Development Program (UNDP) (2010) Local governments and disaster risk reduction: good practices and lessons learned. UNISDR, UNDP and ILO, Geneva

World Bank (2012) ASEAN: advancing disaster risk financing and insurance in ASEAN member states: framework and options for implementation. World Bank, Washington, DC

Chapter 3
Muhammadiyah and Disaster Response: Innovation and Change in Humanitarian Assistance

Robin Bush

Abstract In the past 50 years, nine out of ten people affected by disasters were in Asia. Southeast Asia, in particular, has been the site of some of the worst natural disasters in the world over the past 10 years. At the same time, many Southeast Asian nations are now "middle-income countries" and for a variety of political reasons, their governments increasingly decline to request humanitarian aid through traditional channels coordinated by UN agencies. This has opened the door for a more active role to be played by domestic and international NGOs (INGOs). Muhammadiyah, Indonesia's second largest Muslim organizations, is one of the country's largest and oldest social welfare organizations—running thousands of schools, clinics, hospitals, and universities. Since the 2004 tsunami, it has also become one of the country's most active private disaster relief agencies, responding to the Yogyakarta earthquake (2006), Sumatra earthquake (2009) and Mt Merapi eruption (2010). Muhammadiyah's leading role in the area of disaster and humanitarian assistance in Indonesia has furthermore brought it into international political discourses on humanitarian aid.

Keywords Disaster-response • Humanitarianism • Muhammadiyah • Religious NGOs

3.1 Introduction

Over the past 20 years, Southeast Asia has been the site of some of the worst natural disasters in recent history. During that period, many Southeast Asian nations have become "middle-income countries" and for a variety of political reasons, their governments increasingly decline to request for humanitarian aid through traditional channels coordinated by United Nations (UN) agencies. This has opened the

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door for a more active role to be played by domestic and international NGOs (INGOs). Often due to political factors, Muslim INGOs are playing an increasingly important role as providers of humanitarian and disaster relief in much of the Muslim world. Muhammadiyah, Indonesia's second largest Muslim organization, is one of the country's largest and oldest social welfare organizations—running thousands of schools, clinics, hospitals, and universities. Since the 2004 Indian Ocean tsunami, Muhammadiyah has developed a relatively new element of social welfare provision, by becoming one of the country's most active private disaster relief agency, responding subsequently to the Yogyakarta earthquake (2006), Sumatra earthquake (2009) and Mt Merapi eruption (2010). Furthermore, due to Muhammadiyah's leading role in the area of disaster and humanitarian assistance in Indonesia, it has become an integral part of the international political discourses on humanitarian aid. Muhammadiyah is the Indonesian representative on Humanitarian Forum International, a London-based coalition of Islamic and non-Islamic aid agencies seeking to remove the stigma of Islamism from international aid agencies like Islamic Relief, Muslim Aid, etc., and to contribute to greater understanding and collaboration between Islamic and non-Islamic aid organizations. Through its Muhammadiyah Disaster Management Center (MDMC) it has played an active role in organizing other religious groups in Indonesia, bringing their weight to bear both within Indonesia and globally. With this context as a backdrop, this chapter will argue that MDMC and Muhammadiyah's disaster response activities represent an important innovation and will influence the direction of future international humanitarian assistance. The analysis in this chapter is based on data drawn from a mixed-methods approach of interviews, review of the academic literature, and the author's experience as a Program Director and then Country Representative of The Asia Foundation, an international NGO that partnered with Muhammadiyah on a range of development activities from 1990s to the present.

3.2 International Politics of Disaster Response

Since the 1980s, the number of natural disasters reported globally has increased by 130 %, and the Asia-Pacific region is home to 45 % of them (Barber 2011). The region is particularly prone to floods (90 % of those exposed to floods live in Asia) but also typhoons, earthquakes, volcano eruptions, and landslides besiege Asia, and in particular Southeast Asia. The region is made more vulnerable to these naturally occurring disasters due to climate change-related events such as rising seas and increasing levels of rainfall, as well as urbanization, resulting in higher population density in disaster prone areas (Barber 2011, p. 6).

In response, disaster-assistance and humanitarian aid organizations have experienced concurrent growth, and increasing levels of mobilization, professionalization, and institutionalization. Donors and aid agencies have invested in the development of tools, standardized supply packages, and template response designs that can be

easily transported from one disaster site to another. On the recipient side, disasters have become so frequent that Bankoff (2007) speaks of "cultures of disasters," in which disaster-prone societies develop cultural adaptations to what has become commonplace phenomenon.[1]

Over the last decade, global political and economic developments have resulted in changes to this landscape, bringing new players and 'non-traditional' actors to the forefront. Severino and Ray (2009) characterize these changes to the development and humanitarian world as a "triple revolution in objectives, players, and instruments". One of the most dramatic shifts has been driven by economic growth across much of Asia, and the subsequent transition to Middle Income Country (MIC, a World Bank classification) status of many formerly Low Income Countries (LIC) in the region. The rise of Southern actors, often called 'non-traditional donors' or 'non-Development Assistance Committee (DAC) donors' has been the subject of increasing analysis within both the development practitioner and development studies worlds (Davey 2012; Smith 2011; Sumner and Mallett 2013). Within non-DAC donors, China and India are now 'donor' nations rather than 'recipient' nations, India was the largest contributor to the Pakistan emergency response in 2010, and Saudi Arabia was the largest contributor globally (including of traditional donors) to the Haitian emergency response in the same year (Smith 2011).

In Southeast Asia, one of the repercussions of the transition to MIC status of many of its nation-states, and of increasing self-reliance and confidence, has been a shift in the disaster-response impulses of its governments. Many Southeast Asian nations now have dedicated state agencies responsible for disaster response and management, and with economic growth making aid budgets less important, there is a political imperative for them to exhibit less reliance on international aid in the face of disaster. Nick Finney, Director of Humanitarian Response for Save the Children, describes this phenomenon as no less than a "new paradigm of humanitarian assistance in Southeast Asia," (Finney 2012). His experience in the region, especially since 2010, is that nations increasingly do not go through the traditional channels of officially requesting assistance through the UN system in the case of a disaster such as the flooding in Thailand and Cambodia in 2010, but rather leave the "back door" open for response by humanitarian agencies, NGOs, and other organizations who are already present and poised to assist (Finney 2012). This means that large-scale, government and UN-driven disaster response is giving way to a range of smaller players like humanitarian INGOs, local NGO and civil society organizations, and religious organizations, who are often already active in the communities in which disasters occur, and who are able to mobilize immediately.

Often, however, humanitarian and disaster response practitioners are resistant to the notion of religious organizations or actors playing a central role in what they portray as an intrinsically secular, neutral, apolitical field of endeavor—humanitarianism. Barnett (2011) goes a long way towards debunking this pristine 'secularity' by detailing the Christian mission roots at the origins of western humanitarianism.

[1] My thanks to Philip Fountain for bringing Bankoff's work to my attention.

Barnett and Stein (2012, p. 5) point out that, since the 1990s, the humanitarian landscape has been dominated by surge in growth and presence of faith-based organizations. Furthermore, humanitarianism does not only have Christian roots—the engagement of Muslim religious organizations in poverty alleviation and care for the poor and destitute is as old as the faith itself. This is institutionalized through mechanisms of *waqf* [endowments], *sedakah* [charity, alms], and *zakat* [religious tax] and reinforced by Qur'anic injunctions to care for the sick, orphans, and poor. Two of the best known international Muslim aid agencies, Islamic Relief and Muslim Aid, established in 1984 and 1985 respectively, are contemporary manifestations of this phenomenon within the humanitarian response world, and both have headquarters in the United Kingdom. They boast budgets of USD 96 million and 73 million respectively, with over 1,000 staff each, and have major operations in Palestine, Bangladesh, Pakistan, Sudan, Indonesia, Somalia, and India (Petersen 2011, p. 47).

The international geopolitical landscape has inspired the emergence of international Muslim NGOs, but the post 9/11 geopolitical dynamic placed significant constraints on their activities. In wake of 9/11, President Bush gave the US Treasury Department the authority to freeze the assets of any terrorist organization. A few months later, three of the largest Muslim charities in the US were shut down, and as of 2009, nine U.S. based Muslim charities had been closed (ACLU 2009, p. 7). The US government was not alone in taking stern action against organizations suspected of terrorist links after 9/11. The governments of Bosnia, Bangladesh, UK, and Saudi Arabia arrested or closed down branches of Muslim charities or relief organizations on the grounds of links with Al-Qaeda (Petersen 2011, p. 100). The climate of suspicion and fear surrounding Muslim charities has led to a significant "chilling" effect in Muslim charity giving in the west, which is the primary source of funds for many of the Muslim humanitarian and disaster response NGOs (ACLU 2009; Petersen 2011). In response, international organizations like Humanitarian Forum (run by Islamic Relief founder Dr. Hany El-Banna) and the Islamic Charities Project (formerly the Montreux Initiative) have been established to build alliances amongst Muslim NGOs, and to remove "unjustified obstacles" from bona fide Islamic charities and NGOs (Barnett and Stein 2012, p. 8).

3.3 Disaster Response in Indonesia: The Case of Muhammadiyah

Muhammadiyah is often described as Indonesia's oldest social welfare organizations and is the second largest mass based Muslim organization after Nahdlatul Ulama. But its primary purpose is *dakwah*, which can be translated as 'religious propagation' and is better understood as 'improving the understanding and practice of Islam amongst believers'. However, a strong secondary mission of Muhammadiyah is social welfare. Muhammadiyah claims a membership of approximately 25 million

people, and an internal infrastructure of over 11,700 branch offices (at provincial, district, sub district, and village levels), 450 hospitals and clinics, 174 universities and over 10,000 schools and kindergartens nationwide.[2] Founded in 1912 in Yogyakarta, Central Java, Muhammadiyah is the institutional manifestation of the reformist/modernist movement sweeping the Muslim world at the turn of the century.[3] Its leaders and intellectuals draw on the thought of Islamic scholars such as Muhammad Abduh and Rashid Rida in articulating a vision of a modern, scripturalist Islam from the Qur'an and *hadist*,[4] rather than drawing from the interpretations of the *ulama* [religious clerics] of the middle ages, and holding up the practice of *ijtihad*,[5] or individual interpretation of scriptures (Syamsuddin 1991, p. 220).

Muhammadiyah's social welfare orientation stemmed from its founder, Ahmad Dahlan, who was committed to the idea of Muhammadiyah providing health and education services for the poor as part of its core mission (Fauzia 2012). In the early twentieth century, Muhammadiyah established the PKO (*Penologan Kesengsaraan Oemoem*—Public Poverty Assistance), the precursor to its contemporary humanitarian activities (Fauzia 2012). In contemporary times, Muhammadiyah leaders such as Amien Rais (chairman of Muhammadiyah from 1995 to 2000) articulated their idea of social justice around the concept of *tauhid*, or the 'unity' of God, and argued for *zakat* [religious tax] to be used as a mechanism for providing material assistance to the poor (Latief 2012b, pp. 86–92). Similarly, Muhammadiyah activist and intellectual Moeslim Abdurrahman articulated a concept of 'transformative Islam' advocating for poor farmers, fishers, and laborers (Latief 2012b, p. 87). Whether seen as a tool for *dakwah* [religious propagation], or as an instrument for social justice, Muhammadiyah's network of schools, clinics, hospitals, orphanages, and universities has come to play a significant role in service provision for lower-to-middle class Indonesians, and fostered its own institutional identity as a major social welfare player.

This social welfare identity has become increasingly destabilized over the past decade, as a result of changes within Muhammadiyah's own service provision, coupled with a stepping up of health and education services provided by the state. Survey research conducted by The Asia Foundation in 2011 indicated that an

[2] These figures are found on the official Muhammadiyah website at http://www.muhammadiyah.or.id/id/content-49-det-profil.html (accessed 22 Oct, 2012).

[3] Howard Federspiel positions Muhammadiyah as part of the Muslim orthodox reformation of the twentieth century, distinguishing it from syncretic Islam and secularist Islam. Federspiel, "The Muhammadiyah: A Study of an Orthodox Islamic Movement in Indonesia," *Indonesia* 10 (October, 1970): 57–79. James Peacock characterizes Muhammadiyah as a puritan movement, *in Purifying the Faith*: *The Muhammadiyah Movement in Indonesian Islam* (Berkely: 1978).

[4] The *hadist* are the collection of reports by the first generation of Muslims, about the words and deeds of the Prophet Muhammad. This body of scripture is considered second in authority only to the Qur'an.

[5] Although the actual practice of '*ijtihad*', or individual interpretation of the scriptures, is actually based on collective interpretation by the Majlis Tarjih, the body within Muhammadiyah with the authority to make doctrinal decisions for Muhammadiyah. Thanks to Michael Feener for this insight.

overwhelming majority of Muhammadiyah members are choosing state schools over private schools (77.9 %) and state health care facilities over private (including Muhammadiyah) health care facilities (79 %) (Bush 2012). The reasons for these choices are complex and require exploration, however Hicks (2012) recently argued that Muhammadiyah adopted a new approach toward healthcare, "away from providing healthcare to the poorest patients, and towards increased profitability," (Hicks 2012, p. 53). Hicks points towards changes in the direction of building more hospitals, rather than clinics or outpatient facilities primarily used by the poor, efforts to standardize and professionalize services, and to Muhammadiyah Chairman Din Syamsuddin's call for a "more modern approach" to its social services provision, at a conference in 2010 (Hicks 2012). She also bases her conclusion on one of the only comprehensive reports on Muhammadiyah health care services, an unpublished World Bank report written by Sciortino and Ridarineni (2008, Muhammadiyah health care provision: a case study, unpublished) which concludes that "there is a shift in the target population of Muhammadiyah health services from 'the poorest to the lower middle classes' in an effort to raise their commercial potential in an increasingly competitive environment," (cited in Hicks, Sciortino and Ridarineni, 2008, unpublished).

This shift marks a significant departure from past practices, in which Muhammadiyah social services—schools, orphanages, hospitals—were aimed at providing low-cost (or even free) services to the poor. Because Muhammadiyah's social welfare orientation has been a key part of its identity, this shift away from the poor and towards profitability turns on its head an element of institutional identity that has been core since its establishment. Muhammadiyah's engagement with the policies of the Suharto New Era meant that Muhammadiyah leaders became integrated into the state bureaucracy, with a prevailing presence in the Ministry of Education, and attention shifted slightly to issues and priorities of the urban middle class. In the Post-New Order, the role and position of Islamic organizations like Muhammadiyah has been quite volatile, with a sharp upswing in politicization of Islam in the early 2000s, but what most observers posit as decreasing influence and political clout in more recent years. Combined with more aggressive state policies towards social service provision, this has left some observers noting a 'crisis of identity' or search for relevance on the part of Muhammadiyah (IRCM 2012). Given this context and background, the remainder of this chapter discusses more in details Muhammadiyah's disaster response activities starting with the Tsunami of 2004.

3.4 The Tsunami and Its Aftermath in Aceh

The Indian Ocean tsunami that struck on December 26, 2004 caused devastation across Sri Lanka, Thailand and other parts of coastal Indian Ocean, but Aceh bore the brunt of the destruction. Over 200,000 people were killed as a huge wall of water drove inland for up to a kilometer in some parts of the island. The scale of the devastation was soon matched by the scale of the response, and international and

national aid agencies, governments, militaries, and NGOs, flooded into Aceh. In the immediate hours and days after the tsunami, as international agencies began to mobilize huge quantities of food, water, and medical supplies for survivors, questions remained as to how to get this aid to those who needed it most. For a time the airport was inoperable, no one knew which roads were passable, which bridges were down, and how many had survived on the ground to assist with immediate response. Overnight, Muhammadiyah became an important player, as its membership in Aceh was already organized, with a clear chain of command, and was closely connected to the headquarters, with knowledge of the terrain, access to survivors, and invested in providing assistance. The international first-responders like the International Organization of Migration (IOM) and Save the Children (already active in Aceh) swiftly connected with Muhammadiyah leadership in Jakarta, and began to collaborate on getting emergency supplies, food, and water to victims and survivors.[6] In Jakarta, Muhammadiyah quickly mobilized its national membership, and donations of clothes, blankets, and basic supplies began flooding in from its chapters throughout the country. Hundreds of Muhammadiyah activists and students were deployed to sort through the materials, pack them up, and send them to Aceh. Teams of doctors from Muhammadiyah hospitals across the country were deployed to Banda Aceh to provide emergency medical assistance. After the immediate response shifted into reconstruction, teams of Muhammadiyah teachers and activists provided educational and psycho-social inputs to children and young adults in the camps and the temporary shelters for internally displaced people in Aceh.

Muhammadiyah leadership at the time showed astute understanding of both domestic and international political dynamics at play in this disaster-response. Din Syamsuddin, the Chairman of Muhammadiyah, displaying his usual political alacrity, was on one of the first helicopters to touch down in Banda Aceh, immediately rolled up his sleeves and began the arduous physical labor of cleaning out the Baiturrahman Grand Mosque of debris and human bodies. Muhammadiyah colleagues in Jakarta mentioned to the author that the symbolism of this action was intentional and multi-layered—on the one hand, he wanted to demonstrate service and humility, that in the face of such devastation, all Muhammadiyah members, even the Chairman, must be willing to do the most basic of menial labor. On the other hand, his physical presence in the most important mosque in the city (and one of the only buildings left standing) was also meant to convey a message to other Islamic organizations, in particular *Partai Keadilan Sejahtera* (PKS—Justice and Welfare Party, with whom Muhammadiyah had a tense and competitive relationship), that Muhammadiyah would not allow them to use this disaster as an opportunity to gain inroads in Aceh.[7] Several scholars have noted the propensity of the PKS to deploy social-welfare activities as a mechanism to gain support within communities

[6] The author was involved in facilitating some of this collaboration, in her capacity as Program Director at The Asia Foundation at the time, and as such is familiar with the events as they unfolded.

[7] Personal communication from a source requesting anonymity within Muhammadiyah, January 2005.

that then potentially could translate into electoral gains (Hamayotsu 2011; Welsh 2011). This is not, of course, a tactic adopted solely by PKS. Riza Nurdin has shown that the Hizbut Tahrir intentionally used its disaster response and reconstruction activities in Aceh as a vehicle to pursue Hizbut Tahrir's "global agenda of caliphatization" (Nurdin 2012). Muhammadiyah just as intentionally staked out its territory in the already politically-sensitive terrain of post-tsunami Aceh by deploying the symbolic presence of its highest leadership and its vast human resources and expertise.

Not only was Muhammadiyah a deft political player in terms of the intra-Islamic dynamics and domestic politics of the post-disaster context in Aceh, it was also an agile and sophisticated partner for international agencies navigating the politics of aid in Aceh. The tsunami took place at a moment when anti-American and anti-western sentiment in Indonesia was at peak levels—Islamist and militant elements easily gained momentum through public anger about invasions of Iraq and Afghanistan, and the virulent antipathy towards the US during President Bush's administration. This hostility was not directed solely at US government targets, but much more widely towards American entities including NGOs and businesses in Indonesia. This toxic atmosphere eased almost immediately, and only temporarily, with the deeply appreciated response by the US military after the tsunami. Operation "Unified Assistance" saw over 20 US Navy ships deployed to tsunami—affected areas, including Aircraft Carrier Lincoln and the 1,000-bed hospital ship Mercy—this humanitarian assistance was warmly welcomed by the Indonesian government and Acehnese people, and resulted in a marked warming in public opinion towards the US (Qodari 2006). While the general public opinion effect lasted for more than a few weeks, very shortly there began to be conflicts and rumors related to perceptions that Christian NGOs in Aceh were using the post-disaster context as an opportunity to proselytize. These stories ranged from uproar over Bibles found amidst boxes of emergency supplies, to concerns that Christian agencies were taking Acehnese orphans out of the country to raise them in Christian homes (Rhode 2005). The consternation over these rumored activities only served to reinforce an often-stated view that NGO activity was operating in concert with US government interests in Indonesia.

In the atmosphere of suspicion and tension, back-dropped by the geo-political dynamics in which 'Islam-west' relations were already at a low-level point, Muhammadiyah became a strategic and highly valued partner for international NGOs and agencies. Muhammadiyah collaborated with foreign government agencies like AusAID and USAID, with INGOs like Save the Children and Asia Foundation, with UN agencies like IOM and UNICEF, and with other faith-based organizations, to provide assistance to the survivors of the Aceh tsunami (see Table 3.1 below). It was perhaps in its collaborations with the other faith-based organizations, though, that its strategic and political role as a Muslim mass-based organization was most effective. For example, Youth Off the Streets (YOTS), a non-denominational NGO founded by a Catholic priest in Australia, seeks to help homeless, drug-dependent and abused youth.[8] YOTS sent a group to Aceh after the tsunami, with the intention

[8] See: http://foundation.youthoffthestreets.com.au

Table 3.1 International organizations that collaborated with Muhammadiyah

Category	Actors	Area of activities	Disaster Event
Faith-BASED Organizations	Father Chris Riley's Youth Off The Street (YOTS) Australia	Child safety/ orphanage	Tsunami, Aceh 2004
	Catholic Relief Service	Health equipment /clinic reconstruction	Tsunami, Aceh 2004
	Islamic Relief	Emergency response	Tsunami, Aceh 2004
	World Vision International	Education Emergency kits (family kit) Sustainable livelihoods	Tsunami, Aceh 2004 Merapi Eruption, Earthquake Yogyakarta 2006
	Won Buddhism, Korea	Temporary shelter Wheel chairs, crutches	Earthquake Yogyakarta 2006
	Knight of Malta—Singapore	Blanket—emergency response	Merapi Eruption, Yogyakarta 2010
	World Islamic Call Society, Libya	Supplies—rice	Earthquake Yogyakarta 2006
International Agency (Government)	The Australian Government -AusAid	Education Emergency response	Tsunami, Aceh 2004 Earthquake Yogya 2006, Earthquake, West Sumatera 2010, and Merapi Eruption, Earthquake Yogyakarta 2006
	The Japan Government—JICA	Ambulances/health	Tsunami, Aceh 2004
	The US government —USAID	Cleaning debris— cash for work program	Tsunami, Aceh 2004
	Arab countries (Saudi Arabia, Oman)	Food, clothing, hygiene kit, praying sets	Tsunami Aceh 2004
UNagencies—International institution (bilateral and multilateral)	UNICEF	Children center Nutrition, hygiene kits	Tsunami, Aceh 2004 Earthquake Yogyakarta 2006
	IOM	Evacuation, logistic transportation	Tsunami, Aceh 2004
	United Nations Population Fund (UNFPA)	Emergency response	Tsunami, Aceh 2004
	United Nations World Food Program (UNWFP)	Food	Tsunami Aceh
	Islamic Development Bank	Reconstruction	Earthquake Yogyakarta 2006

(continued)

Table 3.1 (continued)

Category	Actors	Area of activities	Disaster Event
International NGOs	Direct Relief International (DRI)	Health support: medicine and medical equipment/ ambulances	Tsunami Aceh 2004, Earthquake in Yogyakarta 2006 and West Sumatera 2009, Merapi Eruption, Yogya 2010
	The Asia Foundation (TAF)	Emergency response operation, radio station	Tsunami, Aceh 2004
	Give2Asia	Medical team, sustainable livelihood/ microfinance Schools reconstruction	Tsunami, Aceh 2004 Earthquake Yogyakarta, 2006
	Mercy Relief Singapore	School reconstruction	Tsunami, Aceh 2004
	OXFAM	Water supply and sanitation, cash for work	Tsunami, Aceh 2004
	Basic Human Need (BHN)	Transistor radio	Tsunami, Aceh, 2004
	International Red Crescent (IRC)	Food	Tsunami, Aceh, 2004

Table used with permission. Taken from Husein (2012)

of establishing a tent orphanage for children who had lost their parents (Husein 2012). Given the sensitivity of the orphanage issue in Aceh, and the Christian identity of YOTS, Muhammadiyah played a vital role in providing religious and political legitimacy for this endeavor. Muhammadiyah played a leading role in setting up the orphanage, selecting the orphanage manager, co-running the facility with YOTS and ensuring that activities were selected with an eye to the cultural and religious context of Aceh (Husein 2012). Muhammadiyah played a similarly strategic and political role in partnership with other faith-based organizations in Aceh such as Catholic Relief Services and World Vision.

Other aspects of Muhammadiyah as a disaster response partner (its vast network of volunteers on-the ground, its experience in service delivery especially in health and education, etc.) were certainly used to advantage by large INGOs and government aid agencies. As Table 3.1 demonstrates—Muhammadiyah played an active role in delivering and disseminating large quantities of emergency supplies donated by international groups that did not have networks or distribution mechanisms on the ground in the hardest-hit areas of Aceh. However, its religious and political strengths—as a trusted Muslim mass-based organization, with a leadership already embedded within the delivery communities, and political clout at the national level, made it a very strategic partner, both for other faith-based organizations as well as for western governments that had to navigate hostility or sensitivities in a highly Muslim context.

Recognizing these advantages and seeing the potential for Muhammadiyah to play an increasing role in disaster response, the Muhammadiyah activists involved in the Aceh response were also able, with institutional encouragement, to organize themselves to respond to the Yogyakarta earthquake of 2006, the Sumatra earthquake of 2009, and the eruption of Mt. Merapi in 2010. Through these experiences, and with international funding and training, these activists over time organized, professionalized, and equipped themselves—finally in 2010 Muhammadiyah established the Muhammadiyah Disaster Management Center (MDMC), becoming one of the most-active non-government disaster response organizations in the country.

Not only has Muhammadiyah navigated the domestic politics of disaster response, and proved to be a strategic partner for international organizations in disaster response in Indonesia, it has also become a player on the international stage, through its role in Humanitarian Forum International (HFI). HFI was established in June 2004 by a consortium of organizations led by Hany El Banna (then president of Islamic Relief), including Oxfam GB, United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), International Islamic Charitable Organization (IICO) Kuwait, British Red Cross, Qatar Red Crescent Society, and others. The aim of the Humanitarian Forum was to promote dialogue and cooperation between Muslim humanitarian organizations and their counterparts in the west, with a sub-text of seeking to circumvent some of the restrictions placed by western nations on international Muslim organizations, and the associated 'stigma' as perceived by US and UK in particular (interview, Sudibyo Markus, 8 February 2013).

Muhammadiyah was a founding member of the consortium, and was represented by Dr Sudibyo Markus, then the head of International Affairs for Muhammadiyah. Through Markus, Muhammadiyah became one of 15 organizations on the Steering Committee (Husein 2012). HFI developed a five module initiative focusing on (1) capacity building, (2) NGO regulatory framework, (3) coordination and cooperation in the field, (4) humanitarian policies and standards, and (5) bridge building (Husein 2012). These five modules were to be rolled out in three model countries—Sudan, Kuwait, and Indonesia. For this purpose, Humanitarian Forum Indonesia was established in 2008, also as a consortium of 12 organizations, eight of which are faith-based. While Muhammadiyah is only one of the 12 members, it is clearly the dominant member, with Sudibyo Markus serving as its first Director, followed by Muhammadiyah activist Hening Parlan. Until very recently, it was also headquartered within the Muhammadiyah headquarters in Menteng, Jakarta—it has now moved to a small rented office just down the street.

According to Parlan, HF Indonesia is primarily focused on activities of providing information and coordination amongst its members, educational activities on the value of humanitarianism, building platforms of mutual understanding, and capacity building (interview, 8 February 2013). While actual disaster and humanitarian response is largely implemented by its member organizations in their respective fields, she cites coordination and conflict resolution drawing upon its inter-faith network as one of HF Indonesia's biggest strengths. For example, in the wake of the 2010 earthquake in Padang, some of World Vision's psychosocial response activities were perceived by residents of this strongly Muslim area to be 'proselytizing'.

HF Indonesia mobilized its membership, and Muhammadiyah partnered with World Vision International (WVI) in the area to diffuse suspicion. They then reached an agreement that in future disaster response situations, an HF Indonesia member that was from the majority religion of the disaster area would serve as the 'advance team', smoothing the way for the other consortium members to come in under their umbrella of legitimacy and partnership (Husein 2012).

3.5 Analysis and Discussion

Petersen (2012) has distinguished between four typologies of transnational Muslim NGOs—*da'wahis*t [oriented towards religious propagation], *jihadist* [oriented towards religious struggle], solidarity-based, and secularized. She argues that the four types of NGOs emerged at different times in history, and in response to changing political and social contexts. Her intervention provides a useful complication to the prevailing treatment of Muslim NGOs as either homogeneous and unchanging, or at best categorizable into 'bad' and 'good' Muslim entities. From the descriptions that she provides of the four 'types' that she puts forward, we argue that Muhammadiyah could be considered as combination of '*dakwah*ist' and 'secularized'.[9]

Petersen further describes the '*dakwah*ist' Muslim NGOs as emerging in the late 1970s out of a desire to respond to Muslim victims of conflict and disaster, in a context in which pan-Islamic ideals were growing (2012, p. 766). There was some competition with the west—wanting to show that Muslim NGOs could provide effective aid just as well as western NGOs—but there was also an element of wanting to counter what was seen as the proselytizing by-product of a lot of western Christian NGOs (767). Petersen describes a 'battle of souls' carried out by Christian and Muslim NGOs at this time, in Africa, Bosnia, and Afghanistan. As discussed earlier, Muhammadiyah has always characterized *dakwah* (religious propagation—Indonesian spelling) as its primary mission, though this was meant in its traditional sense, not so much as proselytizing to non-Muslims, but supporting the practice of Islam amongst the *ummah* (fellowship of believers). In its disaster response work,

[9]The term 'secular' (and cognates) is highly contested and multi-interpretable. In this context, Petersen is deploying an understanding of 'secularism' as a view of religion as confined to the private sphere, which she ascribes to 'secularist aid traditions'. In Indonesia, and certainly among Muslim organizations like Muhammadiyah, 'secularism' has a rather different, and quite negative connotation, largely implying the absence of religion or religious values. In this article, while I am specifically arguing that it is the Muhammadiyah disaster response activities, not Muhammadiyah itself, that may be labelled partially 'secularist', according to Peterson's definition of the word, I do also wish to recognize that the assumption that mainstream development or aid is a 'secular' endeavor that in some cases 'engages' with religion is also problematic. The work of Philip Fountain 2013. "The Myth of Religious NGOs: Development Studies and the Return of Religion." *International Development Policy*: *Religion and Development* 4: 9–30. is a useful counter-weight to this notion.

one can see a clear imperative to respond to the suffering of fellow Muslims, especially in the case of Aceh. But there is also an undertone of awareness of the importance of having a 'Muhammadiyah' presence in the post-disaster zone, amidst many other Muslim influences (PKS, Hizbut Tahrir, etc.) as well as the Christian NGO's (World Vision International, Catholic Relief Services) that were on the scene. In that sense, there is certainly a *dakwah* element to its relief work, despite the complete absence of religious content to the assistance provided.

The 'secularised' Muslim NGOs discussed by Petersen were the immediate result of the post 9/11 'War on Terror' crackdown on funding and flows of material resources to and from Muslim organizations trans-nationally. Petersen describes the twin (but not completely consonant) impulses of western governments to (1) limit funds and aid to Islamic organization that may be linked to terrorist groups, and (2) reach out to and engage Muslim NGOs that have extensive networks and credibility in the Muslim world (2012, p. 772). In response to the latter impulse, large Muslim NGOs like Islamic Relief and Muslim Aid, according to Petersen, have secularized their activities, which unlike earlier groups, "do not have the explicit purpose of fulfilling spiritual needs, strengthening Islamic solidarity or rectifying religious injustice. Instead they reveal an acceptance of Islam as a means for the effective implementation of mainstream aid activities—an instrumentalised religiosity," (Fountain 2013, p. 773). This has allowed these transnational Muslim NGO's to seek funding from western agencies such as the UN system and DFID, the British Aid agency. This trend can clearly be seen in Muhammadiyah's disaster response activities. The MDMC website indicates that their institutional vision is: "Developing a functioning system of effective disaster response based on PKO (Penolong Kesengsaraan Oemoem—welfare assistance) in order to develop the quality of life for a society that is aware of and prepared for disasters, and capable of assisting disaster victims quickly and effectively".[10]

The MDMC workplan from 2010 to 2015 indicates that 24 out of the 26 activities MDMC is undertaking are those which are typically found on any disaster response workplan—training for disaster preparedness in schools, strengthening the management and institutional effectiveness of branch offices, training in 'needs assessment and damage/loss assessment', training in disaster response for hospital staff, etc. [1] The two remaining items on the 26 item workplan remind us that Muhammadiyah is not entirely secularized, but remains at core a *dakwah* [religious propagation] organization—they are (1) conduct a study of the theology of disasters, and (2) develop and produce a 'Guidelines for an Islamic Life' handbook to be given to disaster survivors (Fountain 2013).

But MDMC and HF Indonesia founder Sudibyo Markus insists that what marks Muhammadiyah disaster and humanitarian response activities is a commitment to

[10] My translation—the original is: "Berkembangnya fungsi dan sistem penanggulangan bencana yang unggul dan berbasis Penolong Kesengsaraan Oemoem (PKO) sehingga mampu meningkatkan kualitas dan kemajuan hidup masyarakat yang sadar dan tangguh terhadap bencana serta mampu memulihkan korban bencana secara cepat dan bermartabat" http://www.mdmc.or.id/index.php/program#.

what he calls "humanitarian principles" of not differentiating on the basis of religion (interview, 8 February 2013). MDMC Vice Chair Rahmawati Husein also emphasizes Muhammadiyah's commitment to the "humanitarian principles", and argues that this makes the effective partnerships with other (including non-Muslim) faith-based organisations (FBOs) so effective (Husein 20). Apparently international donors such as AusAID, UN OCHA, and IOM are convinced of this as well, as MDMC has received considerable funding and institutional training from these donors, who have stringent requirements for such secularity in perspective. Even outside of MDMC, within the larger Muhammadiyah organization, one can find similar views. Khoirul Muttaqin, the director of Muhammadiyah's *zakat* [religious tax] collecting and administering agency, Lazizmu, says that it is the view of those who run Lazizmu that *zakat* and *sedakah* [alms] are to be used to bring blessings (*berkah*) to all humanity, not just to Muslims (interview, 8 February 2013). He acknowledges that this is not necessarily a majority view in the Muslim world, or even within all Muhammadiyah membership, but that the Muhammadiyah and Lazizmu leadership are committed to this position.[11] As a result, *zakat* for disaster victims is distributed on the basis of need rather than religious affiliation (Fountain 2013). While empirical data gathering to verify this claim remains to be done, it is unusual enough for the head of a *zakat* agency to hold this view, as a representative of one of the largest Muslim mass-based organizations in the world.

In conclusion, in the international humanitarian world, Muhammadiyah and its disaster response unit MDMC is the wave of the future, especially in Southeast Asia, where the political economy of growth means that NGOs and locally embedded organizations will often be preferred to traditional UN-driven response mechanisms. The geopolitics of religion also means that Muhammadiyah's Muslim identity makes it a strategic partner for international agencies and other faith-based organizations working in strongly Muslim areas of Indonesia. Within Muhammadiyah, MDMC and its disaster response activities may represent an effort at renewal—a contemporary manifestation of its core mission of *dakwah* [religious propagation] and social welfare provision. It may also be a response to an internal quest for relevance in an Indonesian and a global context, which is highly connected, and at the same time increasingly religious. Given these conclusions, this chapter makes the following policy recommendations:

For Muhammadiyah:

- Consolidate internal support for MDMC, and continue to provide institutional resources for the expansion of MDMC branches at the regional level;
- Invest financial and institutional resources in encouraging MDMC to play a leadership role both within Indonesia to engage other FBOs in disaster and humanitarian response, and internationally, in keeping an Indonesia presence in HFI;

[11] Muttaqin indicated that this was a subject of debate within Muhammadiyah, until the Majelis Tarjis (Muhammadiyah's doctrinal advisory body) issued a *fatwa* (decree) in 2005 that put the matter to rest.

- MDMC should continue to engage actively with and be a partner for the Indonesian National Board for Disaster management (BNPB);

For other Faith-based Organizations in Indonesia:

- Join or actively participate in Humanitarian Forum Indonesia, in coordinated disaster and humanitarian response activities;
- Participate in MDMC training opportunities or otherwise learn from MDMC's experience in professionalizing disaster response activities;
- Seek out international donor or Indonesian government funding for training and professionalization opportunities;

For the Government of Indonesia:

- Through agencies such as the National Board for Disaster Management (BNPB), the Asian Disaster Reduction Center (ADRC), and the ASEAN Coordinating Centre for Humanitarian Assistance (AHA Centre), actively include MDMC in all routine coordinating meetings, training opportunities, and DRR plans. In addition, branch out beyond MDMC and include representative of other FBOs who may have less experience than MDMC, in order to widen networks of potential disaster response partners on the ground throughout Indonesia;

For the Humanitarian Community:

- Actively seek out mechanisms for partnership and relationship-development with like-minded FBOs in strategic localities in disaster-prone areas;
- Provide opportunities for training and skill-building on humanitarian principles and disaster response and reduction strategies for FBO partners;
- Provide opportunities for internal education and exposure through seminars, trainings, or circulation of relevant literature, on effective engagement with FBOs.

References

American Civil Liberties Union (ACLU) (2009) Blocking faith, freezing charity: chilling Muslim charitable giving in the 'war on terrorism financing'. ACLU, New York

Bankoff G (2007) Cultures of disaster: society and natural hazard in the Philippines. RoutledgeCurzon, London

Barber R (2011) Responding to emergencies in Southeast Asia: can we do better? Save the Children Asia Regional Office, Singapore

Barnett M (2011) Empire of humanity: a history of humanitarianism. Cornell University Press, Ithaca

Barnett M, Gross Stein J (2012) Sacred aid: faith and humanitarianism, 1st edn. Oxford University Press, Oxford

Bush R (2012) A snapshot of Muhammadiyah: social change and shifting markers of identity and values. Paper presented at the international research conference on Muhammadiyah (IRCM), University of Malang, Malang, Dec 2012

Davey E (2012) New players through old lenses: why history matters in engaging with Southern actors, vol 48, Policy brief. Overseas Development Institute, London

Fauzia A (2012) Creating Muslim civil society without discrimination of religion and nationality: Muhammadiyah's philanthropic activities in the colonial period. Presented at the international research conference on Muhammadiyah (IRCM), Malang, 28 Nov–2 Dec 2012

Finney N (2012) Presentation of the report "Responding to emergencies in Southeast Asia: can we do better?" At Save the Children Singapore workshop on the new paradigm of humanitarian response in Southeast Asia: lessons learnt and the way forward, York Hotel, Singapore, 18 Dec 2012

Fountain P (2013) The Myth of religious NGOs: development studies and the return of religion. Int Dev Policy Religion Dev 4:9–30

Hamayotsu K (2011) The political rise of the prosperous justice party in post-authoritarian Indonesia: examining the political economy of Islamist mobilization in a Muslim democracy. Asian Surv 51(5):971–992

Hicks J (2012) The missing link: explaining the political mobilisation of Islam in Indonesia. J Contemp Asia 42(1):39–66

Husein R (2012) Extending transnational networks: a case study of Muhammadiyah collaboration with various actors in major disaster response. Presented at the international research conference on Muhammadiyah, Malang, 29 Nov–3 Dec 2012

IRCM (2012) Introduction. International research conference on Muhammadiyah (IRCM) in commemoration of its centennial anniversary, University of Muhammadiyah, Malang, 29 Nov–2 Dec 2012

Latief H (2012b) Islamic charities and social activism: welfare, dakwah and politics in Indonesia. Unpublished Ph.D. Dissertation, University of Utrecht

Nurdin MR (2012) 'Caliphatization' through rehabilitation: Huzbut Tahrir Indonesia in response to aceh post-tsunami. Presented at salvage and salvation: religion, disaster relief, and reconstruction in Asia, Asia Research Institute, National University of Singapore, 22–23 Nov 2012

Petersen MJ (2011) For humanity or for the umma? Ideologies of aid in four transnational Muslim NGOs. Ph.D. Thesis, University of Copenhagen, Copenhagen

Petersen MJ (2012) Trajectories of transnational Muslim NGOs. Dev Practice 22(5–6):763–778

Qodari M (2006) The tsunami, humanitarian aid, and the image of the United States in the Muslim world. In: Asia program special report No. 130, Woodrow Wilson International Center for Scholars

Rhode D (2005) Mix of quake aid and preaching stirs concern. In: New York Times, 22 Jan 2005. http://www.nytimes.com/2005/01/22/international/worldspecial4/22preach.html?_r=0

Severino J-M, Ray O (2009) The end of ODA: death and rebirth of a global public policy. In: Working paper 167. Center for Global Development, Washington, DC. http://www.cgdev.org/content/general/detail/1421419

Smith K (2011) Non-DAC donors and humanitarian aid: shifting structures, changing trends. Global Humanitarian Assistance, Somerset

Sumner A, Mallett R (2013) The future of foreign aid: development cooperation and the new geography of global poverty. Palgrave Macmillan, Basingstoke

Syamsuddin MS (1991) Religion and politics in Islam: the case of Muhammadiyah in Indonesia's new order. Unpublished Dissertation, University of California, Los Angeles

Welsh B (2011) New Islamic governance: the PAS and PKS evolution. Paper presented at the association of Asian studies, Hawaii, USA

Chapter 4
The Impact of the Indian Ocean Tsunami on Maldives

Mohamed Waheed and Hussain Alim Shakoor

Abstract This chapter examines the impact of the December 26, 2004, Indian Ocean Tsunami on the political, social, and economic situation of Maldives and also looks at the recovery work that was done with the assistance of, and in collaboration with, international aid agencies, shedding light on both its successes and failures. At the same time, the chapter also reveals the impact of the tsunami on a democracy in its infancy and explores the positive and negative effects of the interplay between the disaster and the country's rapidly evolving political environment. It concludes with lessons that are useful for small countries when dealing with large-scale disasters.

Keywords Disaster response and recovery • International NGOs (INGOs) • Maldives • Tsunami

4.1 Introduction

Maldives was severely affected by the 2004 Indian Ocean Tsunami; and its impact was far reaching, affecting the country's politics, economy and the overall society. Some of the islands were completely devastated, lives were lost and thousands of people displaced. This chapter examines the effects of the tsunami on a small country, with limited resources and high degree of vulnerability to external factors, including natural disasters. It analyzes how Maldives coped with this mega-disaster, along with how it shaped public policy and changed the destiny of the country in the long run. From a public policy perspective, it also discusses whether Maldives could

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have better prepared itself and managed the repercussions of a natural disaster of such magnitude.

We begin with an explanation of the relevant geographical and social background of Maldives at the time of the tsunami, and the institutional capacities present at the time to deal with such a massive natural disaster. Then we examine how institutional capacities, or lack of them, contributed to the way this disaster was managed.

The greatest impact of the tsunami was on the lives of the people who lost their family members, their property, homes and livelihood. In addition to the humanitarian impact, the tsunami had significant effects on the political and economic development of the country. While every major disaster has its immediate effects, its long-term implications in Maldives cannot be ignored.

Physically, it caused much devastation and loss of life. This forced the country to reexamine its development policies, especially regarding small isolated communities and the need for population concentration. Politically, the tsunami unleashed a wave of reforms that changed the country from a centralized autocracy to a multi-party democracy. Economically, it pushed the country into a debt trap, which the country is still struggling with 10 years on. Socially, it put severe strain on a formerly strong social fabric based on community self help and caring for neighbors. And environmentally, Maldives and the international community had a glimpse of what global warming and sea level rise could do to small island states. The experience of the tsunami on Maldives and its implications for future disaster preparedness and response can help Maldives and other small countries better prepare for any such eventuality.

This chapter is based on the relevant literature and recent interviews with policy makers in Maldives and key people involved in disaster management in government, civil society and the private sector. The memories of the tsunami experience are still vivid in their minds and the effects of the tsunami on the society still linger on. Through these interviews, it is clear that the impact of the tsunami was far reaching, in all sectors of the economy.

The analysis is also based on the personal experience of the authors. Both authors were directly involved in supporting the government in its emergency response following the tsunami, one as a member of the local team and the other as a member of the United Nations global team supporting tsunami-affected countries during immediate recovery and relief efforts.

The Maldives experience demonstrates how community preparedness and resilience played a major role in mitigating the adverse effects of a natural disaster, and how the contribution of local communities and civil-society organisations were a significant part of the recovery and reconstruction process.

4.2 Background on Maldives

Maldives is comprised of some of the most low-lying islands in the world, making it extremely vulnerable to storm surges and tidal waves. Concerns about the potentially devastating effects of global warming and sea-level rise were high on the minds of most Maldivians and the international community, but few people had

envisaged the possibility of a disaster of such magnitude as the Indian Ocean Tsunami of December 2004.

Maldives' is an archipelago of 1,190 islands, most of which are only a meter or two above sea level. They are distributed sparsely over nearly 10,000 km^2 of the Indian Ocean. The population of 298,968 (Ministry of Planning and National Development 2008) is distributed over 194 islands, most of which are inhabited only by a few hundred people. The written history of Maldives' dates back to the pre-Islamic period before the eleventh century. But some historians have claimed that Maldives' could have been inhabited for more than 2000 years. The people of Maldives' are excellent boat builders, fishermen and sailors.

The effects of Sinhalese Buddhist culture remained strong even after the proclamation of Islam as the official religion of Maldives in the eleventh century. With growing Islamic awareness and religious practice coupled with the exposure of the people to other cultures, through trade and travel, Maldives developed a unique language, a unique script, and a liberal Islamic practice—in short a cultural milieu that is uniquely Maldivian (Bell and Bell 1993, p. 165). The people themselves are a mix of very different ethnic backgrounds: Indian, Sri Lankan, Malay, African and Arab. But Maldives is unique in the sense that there has been no major inflow of migrants in modern times. As a result there are no distinct ethnic groups or communities (Bell and Bell 1993, pp. 231–240). Maldives has developed as a distinct nation, and the people of Maldives have thrived as independent people for centuries. The greatest fear today is for Maldives own existence in the face of growing environmental threats caused by global warming.

Maldives is familiar with natural disasters caused by rough weather conditions, but it is unprepared for catastrophes such as a major earthquake or a tsunami. Given the harsh weather conditions, especially during the tropical monsoons, Maldivians experience natural disasters of various magnitude almost on an annual basis. Most islands experience storm surges once or twice a year and shortage of drinking water during several months of the year (Asian Disaster Reduction Center 2013).

Prior to the 2004 tsunami, the biggest natural disaster faced by the country was the "Bodu Raalhu" (meaning big waves) on April 10, 1987. For three days, some of the islands experienced floodwaters up to a meter (Harangozo 1992). Hence the emergency response system in place could only respond to events of a small magnitude.

While climate change and global sea-level rise pose a direct threat to Maldives, its efforts in bringing this to the notice of the international community have been difficult, at best. The voices of the skeptics of climate change are much louder. For the past two decades, Maldives has been campaigning for "climate justice."

The government's ability to pay attention to various issues is often determined by the level of urgency and importance given to an issue. In Maldives in 2004, there were more urgent and important issues facing the government than preparing for an unforeseen natural disaster. The government was under enormous pressure from its political opponents. Its preoccupation was with containing the political opposition and growing social unrest, as reflected in the mass gathering in August 2004. In December 2004, just days prior to the tsunami, many of the leading opponents were either detained in prison or were under house arrest (The National Democratic Institute for International Affairs 2004).

Long before that, a different kind of storm was already brewing in Maldives. Although the population was small, it was highly literate and young; 60 % of the population was under 30 years of age (Ministry of Planning and National Development 2008). Some of them were highly educated and had lived in other countries, experiencing more liberal political systems. Since the late 1980s, Maldivian youth have been demanding a more open and participatory political system. The government made several efforts to revise the constitution but fell short of introducing a multi-party democracy with fundamental human rights (The National Democratic Institute for International Affairs 2004).

Following prison riots and the death of a prison inmate at the hands of the prison guards, the opposition galvanized into open opposition leading to a mass rally in August 2004. At the time of the tsunami, many political opposition leaders were in prison without trial. At the time, it was unthinkable to imagine that a natural disaster could create such profound changes in the politics of a country.

Most diplomats and international aid officials accredited to the Maldives reside in other countries and visit the archipelago occasionally. Once the tsunami hit Maldives and the extent of the damages became apparent, many diplomats and representatives of aid agencies hurried to see for themselves and to assess the situation. The state of political unrest could not be ignored. Many senior diplomats visited the prison to meet prominent political figures. They demanded the immediate and unconditional release of political prisoners and the introduction of fundamental human rights.

The tsunami resulted in unprecedented attention to the plight of the Maldivian people. It became obvious to the international community that recovery from such a massive disaster would require internal reconciliation and a sense of unity and urgency. As a result, the international community put pressure on the government to release its political prisoners and to fast track the government's political reform agenda.

The impact of the tsunami on the economy was no less important. The country had been enjoying steady economic growth, mainly led by the tourism sector, followed by fisheries. By 2004, GDP per capita of Maldives was higher than any other South Asian country, and stood at USD 2,228.10 (2004 current price). Tourism itself contributed to about 33 % of GDP, while fisheries contributed 6 %. The rest was transport, construction and others. The budget deficit was at 4 % of GDP in 2003 and narrowed to 2 % of GDP in 2004 (Maldives Monetary Authority 2005). As a result, Maldives was considered by the UN for graduation from a Least Developed Country to a Middle Income Country. International attention on Maldives was shifting from development to human rights, following the increased local demand for political liberalization. This background is very important to understand the impact of the tsunami on the politics and economy of the country.

The social aspects of the Maldivian communities were equally affected. Maldives has always been a peaceful country, with a unique sense of community responsibility and national pride. This was clearly seen in the early days after the tsunami,

when thousands of internally displaced persons (IDPs) were voluntarily cared for by their neighbors in nearby islands. But the hardships associated with prolonged displacement and the resulting burden on host families led to community friction and some hostilities.

The level of community cohesiveness, economic development and political awareness differ from island to island. Generally, the islands closer to the capital Malé benefit more from employment opportunities in the hospitality industry, while the southern atolls (ring-shaped coral reefs) of Addu and Huvadhoo have been historically more politically conscious and active. Islands with a strong fishing industry are generally more prosperous and display greater capacity to share their resources.

Prior to the tsunami, in order to avoid frightening the public and avoid possible panic, the government focused more on mitigation of the effects of disasters rather than prepare the population and create awareness on what to do in times of disaster. The impact of the tsunami in Maldives is likely to qualitatively change the way Maldives responds to future disasters. Before we examine the implications of those changes to disaster preparedness and response, we need to examine the state of Maldives preparedness prior to December 2004.

4.3 How Prepared Was Maldives?

4.3.1 Disaster Preparedness and Planning

Arguably, the government, the private sector and local communities were only prepared to address the effects of annual storm surges, flooding associated with the tropical monsoons, and the annual shortages of drinking water in some of the communities.[1] Few islands had water pumps to flush out floodwaters resulting from tidal waves and storm surges, and the government had long-term arrangements with the private sector to supply fresh water to drought-affected islands. Out of the 194 inhabited islands, about 50 islands require emergency drinking water supplies every year.

In addition, any disaster that required emergency response was managed by the Maldives National Defense Forces (MNDF). This system was adequate to meet predictable effects of severe weather conditions, but inadequate for any major natural disaster (Asian Disaster Reduction Center 2013). With the assistance of international organizations, the Ministry of National Planning in Maldives developed disaster management plans that mostly covered the common emergencies mentioned above. No contingency plans were in place for a major natural disaster like the tsunami.

[1] Interestingly, the island of Fuahmulah, unlike any other island, had a system of trenches to drain floodwater. Fuahmulah is more like a crater, lower in the center and has two large fresh water lakes. The island is naturally prone to flooding after heavy tropical storms.

During the 1987 tidal wave incident, the response was mainly provided by the Ministry of Public Works and the Maldives Security Service (armed forces). According to the senior officials who were part of that response team, there was no centralized control on a national scale; but each line ministry worked according to its domains. After this incident, the government created the Ministry of Environment, tasked, among other things, with environmental disaster management.

At the time the 2004 tsunami struck Maldives, the Ministries of Construction and Environment had been established to undertake some aspects of environment related disasters, but there was no central authority to coordinate a national level effort.[2] Hence, the response mechanism to the tsunami was as fragmented as that of 1987.

The central government through the Maldives armed forces provided the only continuous backup support to island communities when a disaster happened. But due to the vast distances, it took days before adequate relief was provided from the capital.

4.3.2 Early Warning System

Although no individual country could have been adequately prepared for a disaster of such magnitude as the Indian Ocean Tsunami, it might be expected that, collectively, the international community would be better prepared. However, it became quite clear that there was no tsunami early warning system that was available to the Maldives. Even after the news of the earthquake off the coast of Sumatra was reported, there was still no serious concern in Maldives.

In order to understand how the early hours of this event unfolded, we interviewed meteorologists and senior officials from emergency response units in the government.[3] When the earthquake hit Sumatra, the Maldives Meteorological Service (MMS) did not issue a bulletin warning of a potential tsunami. This is despite the fact that the Pacific Tsunami Warning Center (PTWC) in Hawaii had issued a tsunami bulletin at 6:14 am (Maldives Time) (Chossudovsky 2013), which was a full three hours before the tsunami reached Maldives. According to an official on duty on the ill-fated day, the tsunami bulletin that was first issued described the event as a localized one. This implied that it would not travel as far as the Maldives at a significant magnitude.[4]

Thereafter, the MMS tried to contact the United States Geological Survey (USGS) but found that the office was not answering. Senior officials felt that while there might have been significant early detection systems and actionable guidelines

[2] Ali Amir, former Director at Ministry of Construction and Environment. Interviewed May 2014.

[3] Among the people we interviewed are Abdul Muhsin, Director of the Maldives Meteorological Service; Zahid, Director of Climatology; and Abdullahi Majeed, State Minister of Ministry of Environment and former deputy minister who headed the meteorological service in 2004. Interviewed in April 2014.

[4] Muhsin, Interview, April 2014.

set in place for the Pacific Islands, the Indian Ocean region did not receive the same attention. There was no coordination among the meteorological agencies located in the Indian Ocean. However, the situation today is very different. Under the leadership of the UN and the generous aid of many countries, the Indian Ocean has been fully equipped with early warning systems that are now fully operational (UNESCO 2006).

According to the former director, the MMS had discovered that a tsunami was on its way towards Maldives before it actually reached the country.[5] However, there were procedures and policies in the government that stressed the need to exercise extreme caution when it came to issuing warning bulletins because it might evoke fear and panic within the community. Hence, when the tsunami reached Maldives, the director was still navigating through the red tape trying to get the required authorization from the President's Office to issue a bulletin.

Consequently, while the meteorological office had some idea as to what was about to happen, this information had not been passed down the line to those who were mandated to take action. "We were discussing potential dangers when we were informed that large waves had crashed into the capital. We broke up the meeting and went to investigate," said Ali Amir (Interview, April 2014), Deputy Director of the Ministry of Environment. In sum, the lack of adequate institutional mechanisms for early warning, inadequate awareness and coordination, and time-consuming administrative procedures, coupled with excessive caution, contributed to undermining the efficiency of the disaster management and response during the tsunami.

4.4 Physical Damage Caused by the Tsunami

While it may be possible to quantify the damage to the economy and create a recovery plan, the very real psychological damage to those who lost friends and loved ones, and the disruption in lives of the Internally Displaced Persons (IDPs), cannot be quantified or compensated. Fourteen islands were completely destroyed and evacuated. Close to 12,000 people were displaced from their islands, and another 29,000 people had to be housed in temporary shelters, representing as much as 7 % of the entire population.[6]

Most islanders kept their savings in cash hidden away in their homes due to difficulty in accessing the banking system. The waves simply wiped it all out. In addition to other assets such as household electrical and electronic items, jewelry, and furniture, other items of great personal and financial value were lost forever. To most people these valuables represented their life's work.

[5] Majeed, Interview, April 2014.

[6] Joint Needs Assessment by the World Bank, Asian Development Bank and the UN system, 8th February 2005.

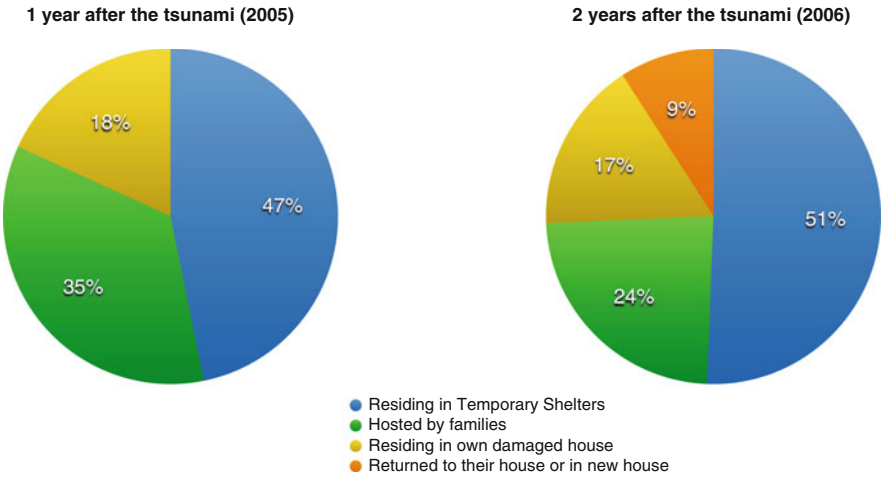

Fig. 4.1 Comparison showing the distribution of internally displaced people in 2005 and 2006. Only 9 % of the IDP's had been returned back to permanent housing by the end of 2 years after the tsunami. *Data*: Government of Maldives (2005, 2006)

Most of the displaced were immediately cared for by people from nearby island communities. Maldives government agencies, especially the Maldives National Defense Forces, and international aid organizations rushed in to help within a few days. The challenges faced in the initial response included the remoteness of some of the islands, shortage of transportation, and limited capacity for production and distribution of drinking water. Island communities depended on ground water for washing and rainwater harvesting for drinking water. The tsunami had damaged both sources of water.

Water storage tanks and desalination plants were provided to the islands in the months that followed the tsunami. As seen in Fig. 4.1, many IDPs were housed in transitional or temporary shelter and remained so for a long time. These were temporary family units made of plywood and steel roofing that could house a maximum of eleven persons. Each unit had electricity and consisted of two bedrooms, a bathroom with a flush toilet and shower and a kitchen area with gas stove, which, according to the Ministry of Planning, met SPHERE standards (Government of Maldives 2005).

According to the Ministry of Health (2005), the number of confirmed deaths stood at 83, while 25 people were declared missing and presumed dead. More than 1,300 people suffered injuries. The majority of the dead were children, along with some elderly. While the fatalities are considered less severe in comparison to other countries, this is the largest number of lives lost due to a single event in Maldives in recent history.

A psychosocial assistance program was started within the first few months to help the IDPs. The program, conducted with the assistance of local NGOs and assisted by international partners, was deemed one of the most successful collaborations between local and foreign agencies by the Tsunami Evaluation Coalition (TEC) (Schepeer et al. 2006).

The emergency response to the tsunami clearly highlighted the challenges Maldives faced due to its geography, sparsely distributed population and weak logistics capacity. Having to respond to a large number of small and remote islands made policy makers in Maldives seriously rethink the idea of focusing future development projects on fewer islands and increasing population concentration. The suggestion is regularly discussed as a major policy imperative, but the government continues to follow a nonaggressive approach to population concentration, due to political and cultural sensitivities.

4.5 The Impact on Political Change

One of the most profound impacts of the tsunami in Maldives was on speeding up democratic change in the country. A small country, heavily dependent on external assistance for emergency relief, cannot afford to ignore the pressures of its development partners, nor can it muster sufficient local support for a major relief effort without mobilizing the cooperation of all segments of the population.

The floodgates of democracy opened up with the tsunami. From then on, the political landscape of the country rapidly changed. By mid-2005, political prisoners were released, the government started to register political parties (six came into existence) and allow free political gatherings and rallies. While senior government officials were busy with tsunami recovery efforts, the opposition was organizing itself and garnering more public support for political change. Most of the senior cabinet ministers with responsibilities for education, health, rural development, defense, home affairs, and local officials were busy with the recovery and reconstruction efforts. They also spent a considerable amount of time planning and consulting with their international counterparts. The three years following the tsunami saw intensive political maneuvering, demonstrations and unrest. In 2008, a new constitution was passed by the parliament, for the first time incorporating a full Bill of Rights and introducing separation of powers. Under this new constitution, the first multi-party elections were held in October 2008. We argue that such rapid political change would not have been possible without the high level of attention caused by the tsunami.

4.6 Economic and Social Impact

4.6.1 Tsunami and the Debt Crisis

Due to its small size and dependence on a few industries, the Maldives economy is highly vulnerable to external shocks, especially with respect to its reliance on tourism revenues. According to a Joint Needs Assessment by the World Bank, Asian Development Bank and the UN system, released on 8th February 2005, the total damages are estimated at US$470 million, which constitutes up to 62 % of the GDP,

Table 4.1 Summary of losses and financing needs

Losses	USD (million)
Direct losses	297.9
Indirect losses	172.2
Total losses	470.1
Losses as percent of GDP (2004 est)	62 %
Cost of reconstruction	
Needs for next 6 months	120.1
Medium term needs	286.2
Total costs	406.3
Costs as percent of GDP (2004 est)	54 %
Public financing needs	204.2
Public financing needs as percent of GDP (2004 est)	40 %
Estimated revenue loss	60
Total financing gap including revenue loss	364.2
Total financing gap including revenue loss as a percent of GDP	48 %

A summary of the losses and financing needs published by the Joint assessment report by Government of Maldives, WorldBank, Asian Development Bank, and UN Systems. *Data*: Joint Assessment Report by GOM, WB, ADB and UN, 2005

with direct losses amounting to US$298 million. The estimated losses and financial needs identified by the joint assessment report reveal a significantly large financing gap, which imposed serious setbacks to the recovery effort.

The main effects of the tsunami on the Maldives economy were a reduction in revenues, increased public spending resulting from the demands of the reconstruction and required improvements in sanitation, water, health and education. From 2005, the Maldives economy went into a downward spiral leading to a worsening balance of payments and national debt. Foreign direct investment declined sharply, and both government recurrent expenditures and development programs had to rely increasingly on heavy domestic and international borrowing. This resulted in an internal financial crisis from which the country is still struggling to recover. Among other macroeconomic impacts, the biggest industries—namely, tourism and fisheries—sustained large losses and led to increased unemployment. Table 4.1 shows the economic impact, based on the Joint Needs Assessment.

Immediately after the tsunami, the country went into a spending spree using both its own resources and the massive inflow of emergency aid. This deeply affected the balance of payments and progressively increased the external debt. Because of the needs of the reconstruction process, coupled with the introduction of new institutions of governance (such as many independent commissions) and highly contested and pledge-driven election campaigns, public finances deteriorated sharply after 2005, as illustrated in Fig. 4.2.

Only a year after the tsunami, despite the fact that both the economic and social context were still shaky, the country embarked on a drastic overhaul of the political system. The change of political system, the introduction of independent commissions, an enlarged parliament with expanded powers, and the introduction of state financed political parties added further financial burdens on the national

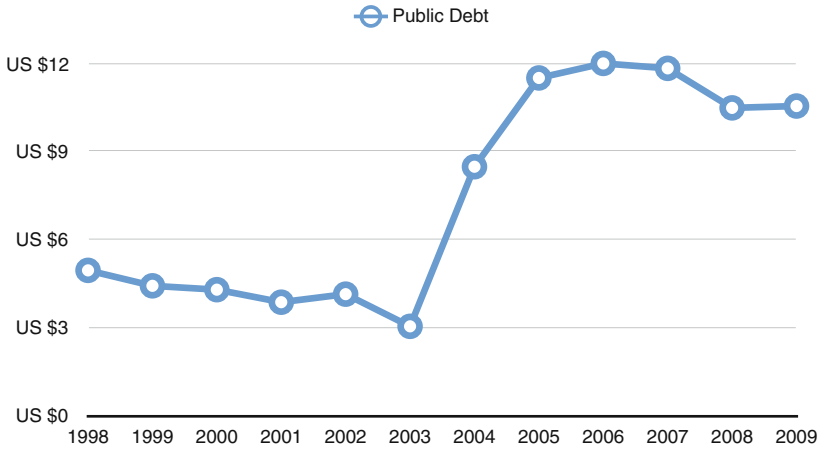

Fig. 4.2 Maldives public debt (1998–2009). The public debt raised significantly from 2004 onwards and is a direct result of the borrowings stemming from Tsunami reconstruction and recovery programs. *Data*: Index Mundi (2012)

budget. This created a highly volatile and explosive situation. Political expectations, coupled with economic and social instability, could have had disastrous consequences for stability and peace in the country. But there were three reasons why that did not happen in Maldives.

First, substantial external aid cushioned the economic impact of the tsunami, even though the immediate reduction in tourist arrivals had meant a corresponding loss of revenue for the government. Second, the social fabric of Maldives remained largely intact, especially in the rural islands. Despite strains on the local communities due to overstretched local resources, there were no major threats to the lives of IDPs or to the host communities. Third, there was a determination by political leaders in Maldives to avoid systems breakdown by upholding the rule of law. Indeed, although there were concerns about the timing of the general elections on 22 January 2005, coming only months after the tsunami, the elections were held according to the schedule.

4.6.2 Social Values and Community Support

The success of any country in managing and recovering from a major natural disaster is attributable primarily to the resilience of its people, its communities and its partners. However, the government has a crucial role. Its policies and decisions can foster or obstruct the collective energy of the people and their partners in development. Recognizing the enormous contribution made by the people of Maldives and its development partners, the government decided to mark 26 December, the anniversary of the tsunami, as the annual "Day of Unity". This was to value the outpouring of public sympathy and assistance rendered by the local communities to those who were severely affected. In times of hardship, Maldivian communities

demonstrate a high level of cooperation, generosity and support to government. The relief and reconstruction process after the tsunami demonstrated those values.[7]

All the IDPs we interviewed gave accounts of how they were helped by neighboring island communities long before an official response from the government. IDPs were taken in by communities and families into their homes and voluntarily provided shelter and assistance. As shown by the data presented above, even as late as November 2006, 1936 IDPs were still being hosted by families.

The resources available to an ordinary family in Maldives can easily be exhausted when hosting people for a prolonged period. Therefore, assistance to such host families must come in time to prevent potential conflicts, and survivors need be relocated to temporary shelters within a specific time.

A key lesson learned from Maldives (and from previous emergency operations by the United Nations) is that relocation has to be quick but must involve the hosting communities as part of the planning process. Mistakes made at this stage can cause further complications at a later stage. Indeed, a crucial mistake made in relocation of the IDPs to other islands was the lack of attention paid to cultural differences between the host community and those of the IDP communities. The conflict that arose in A.Dh Maamigili between the host community and the IDPs was a clear result of this oversight. The administrators of the program falsely assumed homogeneity among the entire population, yet communities from different geographical areas had different cultures and social norms that at times contradicted each other (Hameed, Interview, April 2014).

There was little or no involvement of the host community in the planning of the relocation and subsequent management of the guest communities. In the immediate recovery stage, families took the IDPs into their homes and treated them as friends. But later on, the IDPs were relocated to temporary settlements parallel to the local village. Within a very short timeframe, local villages had to deal with another village on the same island that was receiving all the attention of the government and donor agencies. The tensions witnessed in Laamu Atoll Gan are a case in point (Hameed, Interview, April 2014).

In some cases, the hosting communities became discontented after witnessing the brand new housing and infrastructure built for the IDPs in their communities—at standards, which they themselves could only aspire to. Those involved in planning relief and recovery programs overestimated the generosity and patience of host communities and assumed that the level of empathy within the communities would remain unchanged in the long run.

The result was a certain degree of conflict arising within the islands that were hosting IDPs in large numbers. According to the former Minister of National

[7] Until recently most inhabited islands outside of the capital Malé did not have hotels or guest houses. Visitors always stayed in the homes of friends or acquaintances. Many island communities were used to hosting total strangers due to a penal system that involved banishment of offenders to remote villages. Famous travelers such a Ibn Batuta have talked about the kindness of Maldivian communities. These traditional social attitudes towards strangers were mostly due to kindness. As an example of such kindness which can also be dangerous at times, in 2011 one of the island communities happily received a dinghy full of Somali men who were later suspected to be pirates and were taken away by the security forces.

Planning Hamdhun Hameed (interview, April 2014), there was a high level of harassment to IDPs in some of the islands that had a lasting impact on the success of the reconstruction and relocation program for those IDPs. Such conflicts were not foreseen, and policy positions were not clear on how to deal with them when they arose; relevant Ministries often expected some other agency to take action.

The policy of the government was to build housing infrastructure, latrines and water storage for the IDP families and to upgrade public goods such as schools, mosques and roads in the host communities. Due to financial constraints and lack of banking facilities in the rural areas, the government was unable to extend the financial compensation scheme to non-IDPs. Generally, this policy was consistent with the way emergency situations are usually managed internationally, but it was not well understood by the communities.[8]

4.7 International Cooperation and Partnerships

The citizens of Maldives returned to a life of normalcy much quicker due to the generous aid and assistance from bilateral donors, multi-lateral agencies and other international organizations. Given the extent of involvement both in terms of financial assistance and technical expertise, it is important to highlight the role of UN agencies, International Federation of the Red Cross (IFRC), British Red Cross (BRC), and the French Red Cross (FRC). Figure 4.3 contrasts the international assistance received for housing reconstruction.

While the aid, loans, and grants by various international agencies were much needed and appreciated, Maldives also learned some lessons when dealing with external aid. Figure 4.4 shows the different sources and amounts of foreign aid that were committed in response to this tragedy.

Foreign aid is an inflow of foreign currency into the economy. During times of emergencies, this initial inflow is not always regulated or monitored. In the case of Maldives, whose economy was quite small, a large inflow of unregulated foreign currency distributed by the donors to the islands that they chose to help created an inflationary factor that adversely affected the economy and the recovery effort in the long run.

Tasked with the reconstruction effort in Huvadhoo Atoll (G.A and G.Dh Atoll), Ibrahim Athif Shakoor (interview, April 2014), former Managing Director of Maldives Industrial Fisheries Company Ltd,[9] noted that construction prices increased threefold within weeks after the tsunami.

[8] In our interviews with Ismail Shafeeu, the former Minister of Defense and Head of the Disaster Management Centre (interviewed March 2014), and Hamdun Hameed, former Minister of Planning, we inquired why the administration did not attempt an economic compensation system to overcome these effects. The general plan, according to them, was for the government to provide the IDPs and the hosting families with staple foods and to build infrastructure within the hosting communities which would provide public goods (e.g. upgrading schools. mosques, roads, etc.).

[9] Ibrahim Athif Shakoor, Former Managing Director, Maldives Industrial Fisheries Company Ltd (interviewed April 2014).

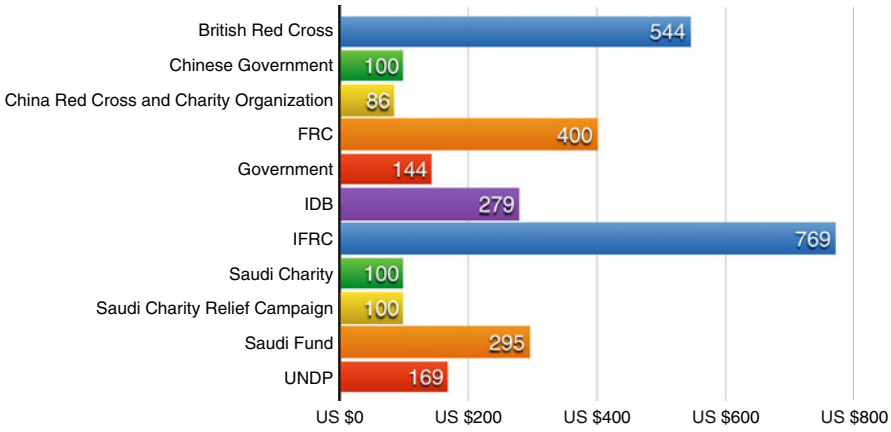

Fig. 4.3 Housing reconstruction assistance by donor. This chart shows the spread of international assistance given for housing reconstruction. Housing reconstruction is the most time consuming and the most costly component of the recovery program. *Data*: Government of Maldives (2005, 2006)

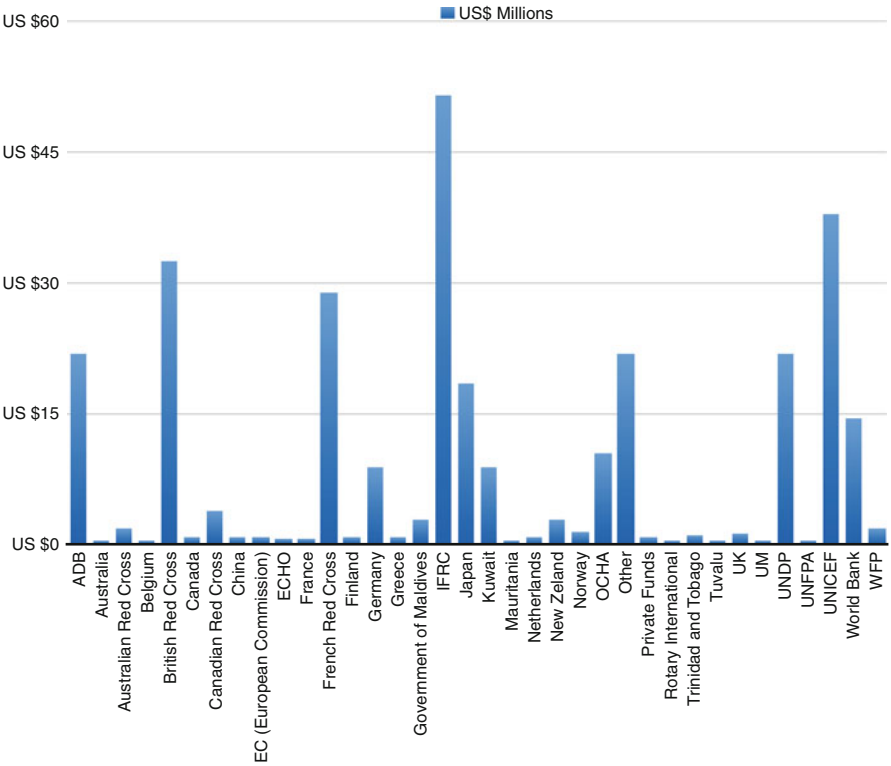

Fig. 4.4 Commitment by donor (USD millions). This chart shows the amounts committed by different donors during the first year after the tsunami. *Data*: Government of Maldives (2005, 2006)

According to Hameed (Interview, April 2014), contracting to build a house in Maldives reached roughly six times that of any other tsunami-affected country. His calculations showed that while it took US$ 25,000 to build a house in Sri Lanka, the cost of building a house in Maldives was several times more. Some of this was due to the high cost of transportation within Maldives as well as the higher standard demanded by the community and imposed by the government.

Overall, the inflationary pressure from the sudden influx of foreign currency and high demand, compared with the supply capability in construction within the country, was very disruptive and caused lasting damage to the economy. The Consumer Price Index went from a deflated rate of −1.7 in 2004 to 12.0 in 2008. During that period, the Ruffiya was devalued by 20 %, further increasing the cost of living. Several measures were taken to mitigate such effects, including the formation of the Tsunami Reconstruction and Relief Fund, which channeled the funds in accordance to the plans approved by the relevant agencies.

Funds allocated and disbursements were aligned with the joint needs assessment, as shown in Fig. 4.5 (Government of Maldives, World Bank, Asian Development Bank, United Nations 2005). However, the needs assessment was done based on

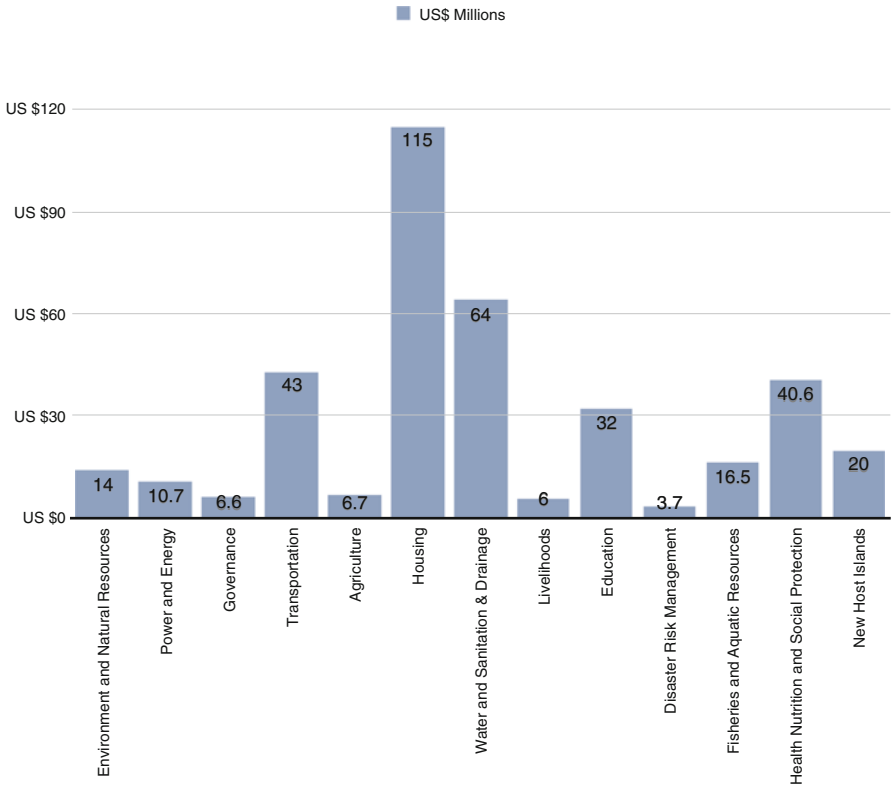

Fig. 4.5 Donor commitment by sector. This chart shows the distribution of funds between sectors. *Data*: Government of Maldives (2005, 2006)

six months requirements and a medium term of 36 months. However, long-term requirements were overlooked and important areas such as capacity building for future disaster management and extensive sea transportation networks have been neglected to this day.

Nevertheless, one of the positive outcomes of this experience was a regional initiative to set up a Multi-hazard Regional Integrated early warning system in Africa and Asia (RIMES). Maldives acted as chair of the Executive Committee and helped to set up a computerized data center and early warning hub in Bangkok, Thailand. The government of Thailand and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) provided much needed logistical and financial support. Today, this center is able to communicate disaster information to participating meteorological offices in Asia and the Pacific within a few minutes of the event.

4.8 Tsunami Raised Awareness on Climate Change

Thariq Ibrahim (Interview, April 2014),[10] the current Minister of Environment and Energy, argues that the opportunity to completely rebuild some islands allowed Maldives to create "Safe Islands" which are designed to be higher than most other islands. In addition, the local communities have also taken the issue of global warming more seriously. During the last presidential campaign visits to the islands, coastal erosion due to storms, ground water contamination and waste management were mentioned by island communities as being of the highest importance to the people.

Despite the severe devastation and loss of life, the Tsunami of 2004 provided Maldives with a stronger voice in its advocacy towards "climate justice." Since 1987, Maldives has been an untiring voice on the world stage, urging the international community to take climate change and global warming seriously. All three presidents since then raised the climate change concerns of the Maldives internationally and made Maldives a champion against global warming and sea level rise.

According to Majeed (interview, April 2014), the former head of Maldives Meteorological Service and current State Minister of Environment, the industrial nations have changed their attitude towards climate change since the 2004 tsunami. "Previously when we spoke about climate change, most large countries decided that we were just trying to get some money; however, after the tsunami and the world having witnessed a very real scenario of what could happen to vulnerable countries such as us, their attitudes have changed markedly. We are being taken more seriously" (Majeed, Interview, April 2014).

[10] Thariq Ibrahim, Minister of Environment and Energy. Interviewed April 2014, Former Director at Ministry of Construction in 2004 in charge of the reconstruction effort.

4.9 Local Partnerships and Cultural Sensitivities

Successful partnerships are the most important aspects of recovery programs. Maldives was commended for its partnerships among the international agencies, local NGOs and civil society by the Tsunami Evaluation Coalition in its 2006 report "Impact of the tsunami response on the local and national capacities." However, according to the TEC, "to a significant extent local ownership of the tsunami response was undermined by the actions of international agencies." (Schepeer et al. 2006).

Underplaying the importance of community ownership in the response efforts can have disastrous outcomes. This is evident from the projects undertaken by the Red Cross agencies in the Maldives. Three Red Cross agencies played a vital role in the reconstruction effort: the International Federation of the Red Cross, British Red Cross, and the French Red Cross. Each of these agencies undertook reconstruction of three individual islands. Both the IFRC and FRC undertook the construction of two "Safe Islands," where IDPs would be resettled. BRC undertook the reconstruction of Meemu Kolhufushi that was entirely destroyed, except for a few houses.

The IFRC project was very successful, and IDPs from two other communities were relocated to R. Dhuvaafaru without problems (Talbot 2012). However, community participation and ownership is a very fine balancing act that needs to be approached with extreme care and pragmatic thinking, as witnessed by the cases of the FRC and BRC.

The project undertaken by the FRC faced troubles from the start. This project was designed to resettle the communities from two neighboring islands within the same atoll to a larger island. The hosting community became extremely hostile to this project, which resulted in harassment and sabotage of the project. Even though the houses had been completed, some of the beneficiary families refused to relocate and decided to return back to their unsafe islands, repairing the damage to their houses as much as they could. The reasons behind this are manifold, but the harassment faced by the IDPs was a key factor (Hamdun, Interview, April 2014) (Shockwaves 2006) and (Shafeeu, Interview, 2014).[11] The difficulties faced by FRC could have been mitigated had there been better community involvement and consultation.

In contrast, the project led by the BRC in Meemu Kolhufushi was modified many times as the beneficiary community continuously changed its mind and was unable to reach a consensus. Eventually, the BRC had to pull out of the project because one single family – whose house remained undamaged because it was located in the central part of the island – refused any compromise. In total, 13 plans had been drafted, and each one failed as the community went to the extent of harassing and not allowing contractors to come onto the island. The BRC had to abandon the project and shifted its finance to Thaa. Vilufushi, which was an equally devastated

[11] Hamdun Hameed former Minister of Planning and National Development, Ismail Shafeeu, Former Defense Minister and Head of Disaster Management Center.

island. Today the IDPs from Thaa. Vilufushi have moved into their brand new island (BRC 2009). But the reconstruction in Meemu Kolhufushi is still incomplete.

The pressure and influence of local politicians must not be undermined either. As mentioned earlier, the tsunami struck the country in a time of great political unrest. Local political figures tried to take ownership of positive achievements while putting the blame for any failures on their opposition. In a small community, it is often difficult to find aid workers without political affiliations. The case of Maldives illustrates that it is difficult to decouple politics from development, and that aid workers can have positive or negative impacts depending on their political leanings. Some of the local employees of the foreign aid agencies were political activists and were able to disrupt aid efforts. For example, such political factors contributed to the failure of the reconstruction projects in Meemu Kolhufushi (Hameed, Interview, April 2014).

4.10 Conclusion

The case of Maldives points to the interrelatedness of natural events to social, political and economic issues. It also demonstrates many unique challenges small island nations have to deal with in order to reduce the risks of major disasters and to ensure sustainable development. Maldives suffered major losses due to the tsunami, but the joint efforts of the local communities, the government of Maldives and its international partners helped the people to largely recover those losses. However, the long-term effects of the tsunami will continue to shape the future development of the country.

Politically, we argued that the speed of democratic change in Maldives had a great deal to do with the international attention it received following the tsunami. Although the immediate needs for shelter for the IDPs and their resettlement were solved, a situation of normalcy for Maldives could not be achieved until political and economic stability was firmly established.

Economically, it is evident that small economies are especially vulnerable to external shocks and that economic recovery can take much longer than physical recovery. Therefore, public finances have to be carefully managed to avoid long-term public debt. In Maldives, the financial crisis emanating from the tsunami continues to be worsened by the demands for public sector spending within the newly acquired peoples' democracy. Arguably, it will take difficult adjustment measures and a few more years of political stability to solve the financial crisis.

Socially, the chapter indicates that local capacity to deal with emergencies is enhanced when there are strong community and social values, and when disaster management plans pay attention to cultural values. Even in small countries and communities, cultural differences and inadequate attention to community capacities and resilience can derail well intentioned programs.

Environmentally, the experience of the tsunami was not only a wake-up call for better preparedness for natural disasters and disaster management; it is also a wake-up

call for what is about to happen to Maldives and other low-lying islands as a result of rapidly worsening climate change. The efforts of Maldives and other members of the Association of Small Island States at the international level to cap CO_2 emissions have failed, and the ambition of keeping global warming under two degrees is no longer feasible. Global warming is a slow onset emergency that has already begun to affect Maldives. Of the 194 inhabited islands, 113 are being affected by coastal erosion, ground water is being contaminated and coral reefs are being destroyed. Disaster preparedness and emergency management planning in Maldives and other small island states must be integrated with climate change adaptation.

From the perspective of disaster preparedness, it is clear that no country can afford to delay the establishment of a well functioning emergency preparedness and management system. For small island developing countries, emergency preparedness and climate change adaptation must become an integral part of the regular exercise of development planning. Development policies must incorporate disaster risk reduction and preparedness, and government budgets have to make adequate provision for those programs.

Disaster planning and preparedness must be mainstreamed into development planning in order to avoid unnecessary red tape, permit efficient allocation and utilization of resources and maximize national capacities to deal with the changing environmental conditions. As lives of the majority of the people in each country are being affected by mega-disasters like tsunamis and major climate change phenomena, the planning process must involve the participation of a wide representation of the people. This is only possible if planning becomes more decentralized. Maldives and other island nations have to recognize the critical role of the local communities and their leaders in disaster preparedness and management.

In Maldives and other small island nations where remote communities are exposed to severe weather conditions, the local authorities must have a decisive role in the planning and management of development and emergency programs. National laws and regulations along with programmatic support are needed to empower communities and for local authorities to be better prepared.

Since the tsunami, the disaster management system in Maldives has evolved, but more needs to be done. A Disaster Management Act was developed in 2006 but has not yet been enacted. It mandates the government to provide budget allocations for disaster preparedness and management in annual government budget. A Disaster Management Center is in place whose mandate includes receiving and disseminating information to various line agencies to ensure timely action.

The importance of centralized coordination with a dedicated agency to mandate preventive and mitigation measures were lessons learned the hard way. Today the Maldives complies with the Hyogo Framework for Action (HFA) with inter-agency co-operation, and there is better and centralized information collection and dissemination. The Act still has to be passed by the parliament, and the institutional mechanisms provided in the law have to be further strengthened, while DRR and preparedness are completely mainstreamed into national development planning. These steps will enable Maldives to fully implement the HFA II and promote sustainable development.

References

Asian Disaster Reduction Center (2013) Information on disaster risk reduction in member Countries, Maldives. http://www.adrc.asia/nationinformation.php?NationCode=462&Lang=en&NationNum=36. Accessed May 2014

Bell BN, Bell HM (1993) Bell H.C.P.: archeologist of Ceylon and Maldives. Archtype Publications, Michigan

British Red Cross (2009) Maldives tsunami survivors move make to "beloved island". British Red Cross. http://www.redcross.org.uk/About-us/News/2009/May/Maldives-tsunami-survivors-move-back-to-beloved-island. Accessed May 2014

Chossudovsky M (2013) Nine years ago, December 26, 2004: Indian Ocean Tsunami. Why did the information not get out?|Global research. http://www.globalresearch.ca/indian-ocean-tsunami-why-did-the-information-not-get-out/207. Accessed Mar 2014

Government of Maldives (2005) Maldives: one year after the tsunami. Ministry of Planning and National Development, Malé

Government of Maldives (2006) Maldives: two years after the tsunami. Ministry of Planning and National Development, Malé

Government of Maldives, World Bank, Asian Development Bank, United Nations (2005) Tsunami impact and recovery. Joint Needs Assessment by the World Bank, Asian Development Bank and the UN system, Malé

Harangozo SA (1992) Flooding in the Maldives and it's implication to the global sea level rise debate. In Woodworth L, Pugh DT, DeRonde JG, Warrick RG, Hannah J (eds) Sea level changes: determination and effects, pp. 95–99. International Union of Geodesy and Geophysics and the American Geophysical Union, Washington, DC. http://www.agu.org/books/gm/v069/GM069p0095/GM069p0095.pdf. Accessed 15 Apr 2014

Index Mundi (2012) Public debt of Maldives. http://www.indexmundi.com/facts/maldives/public-debt. Accessed Apr 2014

Maldives Monetary Authority (2005) Annual report 2004. Maldives Monetary Authority, Malé

Ministry of Planning and National Development (2008) Census analytical report 2006: population and housing census 2006. http://planning.gov.mv/en/images/stories/publications/analysiscd/index.html#. Accessed June 2014

Schepeer E, Parakrama A, Patel S (2006) Impact of tsunami on local and national capacities. Tsunami Evaluation Coalition, London

Shockwaves (2006) Shockwaves in Maldives >>Blog Archive >>Harassment going on in camps for tsunami victims. http://www.shockwavesinmaldives.com/idps/harassment-going-on-in-camps-for-tsunami-victims. Accessed June 2014

Talbot J (2012) Returning to Dhuvaafaru, eight years on from the Indian Ocean Tsunami. IFRC. http://www.ifrc.org/en/news-and-media/news-stories/asia-pacific/maldives/returning-to-dhuvaafar--ight-years-on-from-the-indian-ocean-tsunam--0490/. Accessed May 2014

The National Democratic Institute for International Affairs (2004) Assessment of the opportunities and the challenges to development of political parties in Maldives. The National Democratic Institute for International Affairs, Washington

UNESCO (2006) UNESCO: Indian Ocean Tsunami warning system up and running. http://portal.unesco.org/en/ev.php-URL_ID=33442&URL_DO=DO_TOPIC&URL_SECTION=201.html. Assessed May 2014

Chapter 5
Collaboration in Emergency Response in China: Evolution from the Wenchuan Earthquake, May 12, 2008 to the Lushan Earthquake, April 20, 2013

Haibo Zhang

Abstract Collaboration is the central issue of emergency response. Using a method of comparative case studies, this paper demonstrates the evolution of collaboration in emergency response in China from the Wenchuan Earthquake in 2008 to the Lushan Earthquake in 2013. In the intersectoral dimension, collaboration between governments and nonprofit organizations has been significantly improved. In the intergovernmental dimension, more reliance on local agencies has been observed only in response. In the interagency dimension, no progress has been made to the collaboration between the newly established Chinese Comprehensive Emergency Management system and the conventional typed-based disaster management system. To improve collaboration in emergency response in China in the future, this paper suggests that an inclusive framework for intersectoral collaboration should be developed. At the same time, assigning more responsibilities to local governments is critical for rebalancing external assistance and local reliance in the periods before, during, and after a disaster. Finally, a unified command and coordination structure for interagency collaboration is urgently required.

Keywords China • Collaboration • Emergency management • The Lushan Earthquake • The Wenchuan Earthquake

5.1 Introduction

The period from the Wenchuan Earthquake on May 12, 2008, to the Lushan Earthquake on April 20, 2013, marked an evolution of Chinese emergency management methods to deal with natural disasters. In focusing on the evolution of

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collaboration in emergency response to natural disasters in these 5 years, this paper seeks to explore the extent to which progress has occurred in:

(1) *intersectoral* collaboration in emergency response, particularly between governments and nonprofit organizations,
(2) *intergovernmental* collaboration, particularly between the central government and provincial governments, and
(3) *interagency* collaboration, particularly contrasting China's newly established comprehensive emergency management system and its previous, more conventional, disaster management regime.

The paper first constructs a theoretical framework of collaboration in emergency response to natural disasters. Employing system thinking (Gharajedaghi 2011) and complex adaptation theory (Comfort 1999), the paper highlights the interactions of organizations involved in emergency response. These interactions, not only in response but also prior to disasters, facilitated collaboration between organizations with different backgrounds in terms of trust building, information exchange, and mutual adjustment.

Generally, collaboration operates in three dimensions: intersectoral, intergovernmental, and interagency. For comparison, the paper looks at the Wenchuan Earthquake and the Lushan Earthquake. Although the Wenchuan Earthquake was more severe, these two cases share several characteristics. First, they took place in the same seismic area, and their epicenters were geographically close. Second, they registered at the same response level according to the newly established comprehensive emergency management system in China; both triggered top-level national responses. Third, they shared almost the same response network. Most of the organizations that participated in the response to the Lushan Earthquake had also experienced the Wenchuan Earthquake. These similarities make it possible to track changes along all three dimensions of collaboration practices in Chinese natural disasters.

To sharpen understanding of the Chinese situation, the paper makes several comparisons to the United States. In conclusion, it makes policy recommendations for both the short- and long-term development of the Chinese system.

5.2 Collaboration in Emergency Response to Natural Disasters

Collaboration is the central issue in achieving a coordinated response to natural disasters. In emergency situations, interactions among organizations are critical. If they share information in a timely manner, they can adapt to each other effectively on the basis of that information exchange (Comfort 1999). Moreover, if organizations with responsibilities for natural disasters can build trusting relationships prior to disasters by working together, they are more likely to share information with each other and achieve a coordinated response.

Research and practice in the United States shows that collaboration in three dimensions is important for achieving a coordinated response (Comfort 1999, 2007; Waugh and Streib 2006; Comfort et al. 2013; Tierney and Trainor 2003; Kendra et al. 2003; Ansell et al. 2010; t' Hart 2013; Howitt et al. 2009). These dimensions are also relevant in the context of China.

5.2.1 Dimension 1: Intersectoral Collaboration

In the arena of emergency management, it is widely accepted that an effective response to a large-scale disaster mainly depends on collaborations among public sectors, private sectors, and nonprofit organizations. First, we are living in what has been called a "risk society" (Beck 1992). Systemic risks are rising due to the interaction of social structure, demography, technology innovation, and environmental changes (OECD 2003). Second, the participation of the private sector and nonprofit organizations can provide diverse resources to meet various demands of different groups affected by disasters (Comfort 2002; Tierney and Trainor 2003). As a result, emergency response has to rely on collective efforts by the public sector, private sector, and nonprofit organizations. Third, natural disasters are social phenomena of complexity (Comfort 1999). As the emergent component of emergency response (Dynes 1970; Kreps and Bosworth 1994; Drabek and McEntire 2003), participation of the private sector and nonprofit organizations can significantly increase the possibility of adaptative self-organization or improvisation in response (Comfort 1999, 2002; Comfort et al. 2013; Kapucu 2006, 2009; Tierney and Trainor 2003; Kendra et al. 2003; Wachtendrof 2005).

In China, intersectoral collaboration, particularly between government and nonprofit organizations, has become an important part of emergency response to large-scale natural disasters since the Wenchuan Earthquake when participation of large and small nonprofit organizations was observed (State Council of the PRC 2009).

5.2.2 Dimension 2: Intergovernmental Collaboration

The core issue of intergovernmental collaboration is how to keep balance between external assistance and local reliance in the periods before, during, and after a disaster. On one hand, external assistance from higher levels of government or nonprofits is important for response and recovery when a disaster overwhelms local capacities. On the other hand, reliance on local capabilities is critical for hazard mitigation and preparedness, both of which are considered more effective than response in reducing disaster loss. The danger is that local governments will lose motivation to mitigate hazards and won't invest in preparedness if they over-rely on external assistance. The United States has repeatedly had to make major adjustments to seek this balance. Before the 1950s, disaster response was mainly regarded as the responsibility

of state and local governments; but several large events proved the critical necessity of higher level aid. A significant reform was enacted in the Stafford Act in 1988. It clarified the respective responsibilities of the federal government, state governments, and local governments. In 2005, however, Hurricane Katrina caused huge loss, and the response of the federal government was criticized as a "failure of initiative" (U.S. House of Representatives 2006), indicating ongoing problems of intergovernmental collaboration in the post-9/11 era. The U.S. has since adopted the National Response Framework (FEMA 2013) and the National Incident Management System (FEMA 2012) to update and make responsibilities clearer and foster a framework for intergovernmental collaboration.

In China, intergovernmental collaboration mainly refers to the relationship between the central government and provincial governments. In the aftermath of the SARS outbreak in 2003, China's central government initiated the development of the Chinese Comprehensive Emergency Management (CCEM) system. This new system integrated emergency response to natural disasters, accidents, epidemics, and social riots, and clarified different responsibilities at national, provincial, municipal, and county levels. Particularly in the aftermath of the Wenchuan Earthquake, China's central government played the dominant role in not only response but also recovery, setting a benchmark for involvement of the central government. However, the greater role of the central government might cause local governments to over-rely on its assistance in case of catastrophes. As a result, the rebalance of responsibilities between the central government and local governments is rising as both a research and a policy issue.

5.2.3 Dimension 3: Interagency Collaboration

The central issue of interagency collaboration is how to integrate the efforts of a wide range of government agencies with different responsibilities for natural disasters. The United States has grappled with this problem, too. In 1979, the Federal Disaster Assistance Administration in the Housing and Urban Development Department, the Federal Preparedness Agency and the Defense Civil Preparedness Agency were consolidated as the Federal Emergency Management Agency (FEMA). It was an independent organization—and had Cabinet status during the Clinton Administration—until the establishment of the Department of Homeland Security (DHS) in 2002. During the decade after its creation, FEMA sought to integrate the responsibilities of agencies concerned with natural disasters with those focused on civil defense from nuclear war (National Research Council 2006). In this process, the Comprehensive Emergency Management (CEM) perspective was conceived and formed the conceptual framework for interagency collaboration in emergency response. In the aftermath of the 9/11 terrorist attack in 2002, the US Congress established the Department of Homeland Security (DHS), which combined more than 20 agencies, including FEMA, into a super-agency with many responsibilities for security in addition to emergency preparedness. At the same time Congress mandated the National Incident Management System (NIMS) as the emergency

operating template for all organizations involved in crisis response. After the problems revealed by Hurricane Katrina in 2005, however, the Post-Katrina Reform Act reconfirmed FEMA's central position in the natural disaster management network (Morton 2012). FEMA replaced the National Response Plan, which had not proved effective during Katrina, with the National Response Framework. It sought to improve the integration of FEMA with other participants in the disaster response system, across functional types and levels of government. All these reorganizations in practice could be regarded as efforts to improve interagency collaboration of emergency response in the United States (Waugh and Streib 2006; Kapucu 2009).

In China, interagency collaboration in emergency response mainly refers to the collaboration between the newly established CCEM system and conventional disaster management systems. Before the SARS outbreak in 2003, China had at least four types of disaster management systems, each responsible for dealing with a different type of disaster (Zhang and Tong 2009; Zhang 2012).

For example, in natural disaster management, civil affairs agencies at all levels are in charge of disaster relief. When a large scale disaster occurs, local civil affairs agencies apply for financial and material assistance from the Civil Affairs Ministry in the central government. Construction administrations and land-use administrations are respectively authorized to deal with geological disasters such as landslides and mudslides in urban and in rural areas. For the most devastating natural disasters, such as earthquakes and floods, the Chinese government set up earthquake administrations and water resource administrations at the national, provincial, municipal and county levels. Because earthquakes and floods always cause large-scale devastation needing other agencies to participate, the State Council established the Earthquake Relief Headquarters, based in the State Earthquake Administration, and the Flood Control and Drought Relief Headquarters, based in the Ministry of Water Resources. These two headquarters are responsible for the command and coordination of response to large scale earthquakes and floods, respectively. In 1990, China joined the United Nations-sponsored International Decade of Natural Disaster Reduction (IDNDR). In China, this became the National Disaster Reduction Committee (NDRC), which took charge of natural disaster reduction nationwide when the IDNDR terminated in 2000. The NDRC is mainly responsible for natural hazard mitigation, and the Ministry of Civil Affairs, the Earthquake Administration and the Ministry of Water Resources all became member institutions.

Other agencies were established to foster collaboration for other types of emergencies. In 1999, the State Administration of Coal Mine Safety was set up to deal with mining accidents. In 2001, it was expanded to become the State Administration of Work Safety (SAWS), integrating accident management responsibilities in other industries. In 2003, in order to command and coordinate accident management across agencies nationwide, the National Work Safety Committee (NWSC) was established. In 2002, the Center for Disease Control (CDC) was established at each level to manage epidemics. And the public security system always has responsibility for dealing with social riots.

Post-SARS, the need for greater collaboration within China's government was clearly recognized. By means of the National Emergency Response Plan (NERP), promulgated in 2006, and the National Emergency Response Law (NERL), enacted

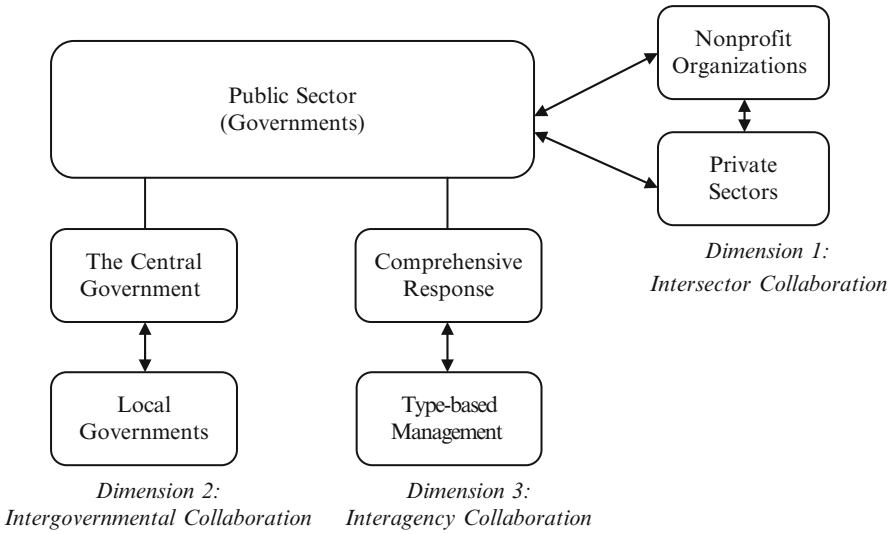

Fig. 5.1 China's emergency management structure according to the national earthquake response plan

in 2007, China revamped its organizational structure and practices. In the construction of the Chinese Comprehensive Emergency Management system, these previously separate disaster management systems remained in existence but were required to work more closely with each other under the coordination of the newly established Emergency Management Offices (EMOs) at various levels.

Figure 5.1 indicates the theoretical framework for collaborations of emergency response to natural disasters in the context of China.

5.3 Case Examples

To understand the recent evolution of the Chinese emergency management system, let us examine two brief case studies of major natural disasters.

5.3.1 Case 1: The Wenchuan Earthquake, May 20, 2008[1]

At 2:28 pm, May 12, 2008, an earthquake registered at 8.0 magnitude on the Richter scale hit Sichuan, Shanxi and Gansu provinces in central China with severe impacts. It caused 69,226 deaths, left 17,923 missing and presumed dead, injured 374,643 people (State Council of the PRC 2008), and resulted in a direct economic loss of 845.1 billion RMB (Xinhuanet 2008). An estimated six million residents in rural areas lost homes, and 102 million m^2 of apartments in the urban area were destroyed

[1] Case information please also see: Zhang (2012).

(State Council of the PRC 2008). Public infrastructure for transportation, electricity supply, telecommunications, and water and gas supply were massively paralyzed. Schools and hospitals were destroyed. Industry and agriculture were severely affected. Vast forests disappeared, and natural environments were degraded. The Wenchuan Earthquake was the most severe natural disaster in China since the even more deadly Tangshan Earthquake in 1976.

5.3.2 Case 2: The Lushan Earthquake, April 20, 2013[2]

The Lushan Earthquake took place at 8:02 am, April 20, 2013, and registered at a 7.0 magnitude on the Richter scale. It was far less devastating than the Wenchuan Earthquake, causing 196 deaths, 21 missing and 11,470 injuries, and affecting 2.31 million people (Xinhuanet 2013a). The direct economic loss was estimated to be 50 billion RMB.

However, these two cases share some significant features. First, they took place in the same area. The epicenter of the Lushan Earthquake was located in Longmen Town, Lushan County, Ya'an City, Sichuan, China, about 100 km away from the epicenter of the Wenchuan Earthquake. Although there were debates on whether or not the Lushan Earthquake was an aftershock of the Wenchuan Earthquake, these two earthquakes were the same type and were located in the same seismic zone.

Second, the emergency response was treated at the same level. According to the National Earthquake Emergency Response Plan (NEERP), these two earthquakes both triggered top-level national responses (see Table 5.1).

Table 5.1 Emergency level and response level by the National Earthquake Emergency Response Plan (NEERP)

The Lushan Earthquake	The Wenchuan Earthquake
Subject to NEERP (issued August 28, 2012)	Subject to NEERP (issued January 12, 2006)
Emergency at "I" Level (the most severe level)	Emergency at "I" Level (the most severe level)
# Death toll ≥ 300, or	# Death toll ≥ 300, or
# Direct economic loss ≥ 1 % GDP of Province, or	# Direct economic loss ≥ 1 % GDP of Province, or
# Magnitude ≥ 7.0 in less densely populated areas, or	*# Magnitude ≥ 7.0 in less densely populated areas*
# Magnitude ≥ 6.0 in densely populated areas	
Response at "I" Level (the top level)	Response at "I" Level (the top level)
# Provincial Command Headquarters, and	# Provincial Government, and
# the State Council	# the State Council

[2] Case information please also see: Zhang (2013).

Third, the response networks were nearly the same. China's central government, the Sichuan provincial government, and the Chengdu military region, which all responded to the Wenchuan Earthquake, were also all involved in the response to the Lushan Earthquake. In addition, as natural disasters classified at the top level of emergency, they required collaboration of organizations ranging from the Emergency Management Offices to almost all type-based management agencies. In particular, local nonprofit organizations which had gained experience in the Wenchuan Earthquake response were also an important part of the Lushan Earthquake response network.

5.4 To What Extent has Progress Occurred in Collaboration in Emergency Response?

5.4.1 Intersectoral Collaboration

Collaboration between governments and nonprofit organizations has been significantly improved. In the Wenchuan Earthquake, large-scale, spontaneous participation of nonprofit organizations indicated the co-existence of a strong government and a strong civil society in catastrophic situations (Yang 2008; Zhang et al. 2011). Far from complete data showed that more than 300 nonprofit organizations participated in the emergency response and disaster relief (Chen and Zhu 2009). In the Lushan Earthquake, about 700 nonprofit organizations emerged in the response (Huang 2013). They collaborated with government more effectively than their peers did in the Wenchuan Earthquake. On April 26, only 5 days after the earthquake, the Social Service Group under the structure of the Command and Coordination Headquarters of the Lushan Earthquake was established to organize participation of nonprofit organizations and volunteers. By contrast, in the Wenchuan Earthquake, participation of nonprofit organizations was less organized. Although there was a temporary office to coordinate the participation of nonprofit organizations, it was not established by the command and coordination headquarters. As a result, it did not play as important a role as in the Lushan Earthquake.

Intersectoral collaboration between government and nonprofit organizations was improved in the Lushan Earthquake partly because of better self-organization of nonprofit organizations. Some major nonprofit organizations, such as the One Foundation, the China Foundation of Poverty Alleviation, and the China Red Cross Society Foundation, served as centers of the response network of nonprofit organizations. They became contact points to connect the response network of nonprofit organizations with the response network of government agencies. Table 5.2 shows that the One Foundation, the China Foundation Poverty Alleviation, and the China Red Cross Society Foundation, along with seven government agencies, are at the center of the whole Lushan Earthquake response network.

Table 5.2 Top ten organizations of the response network to the Lushan Earthquake by Total Degree Centrality

	Total degree centrality	
Rank	Organizations	Value
1	Sichuan Provincial Government	0.009
2	One Foundation	0.005
3	China Health and Family Planning Committee	0.005
4	China Poverty Alleviation Foundation	0.005
5	Sichuan Provincial Command and Headquarters	0.004
6	Sichuan Civil Affairs Department	0.004
7	Ya'an Municipal Government	0.003
8	China Red Cross Society Foundation	0.003
9	Sichuan Health Department	0.003
10	China Earthquake Administration	0.003

Data source: Zhang (2013)
Note: The Total Degree Centrality of a node is the normalized sum of its row and column degrees. Those who are ranked high on this metric have more connections to others in the same network

In addition, the Sichuan provincial government was more aware of the importance of nonprofit organizations in the response to the Lushan Earthquake than in the Wenchuan Earthquake. However, there was still no regular working relationship between government and nonprofit organizations in the period before the Lushan Earthquake. The lack of trust, which should have been built before the earthquake, prevented even more coordinated intersectoral collaboration between government and nonprofit organizations. Moreover, interaction between government and nonprofit organizations was negatively affected because they lacked a unified information system and common language for describing conditions and actions during the emergency response.

5.4.2 Intergovernmental Collaboration

A better balance of external assistance and local reliance was achieved in the emergency response to the Lushan Earthquake. The Sichuan provincial government and its agencies played the dominant role in the response network of governmental agencies. Table 5.3 shows that government agencies at the Sichuan provincial level are not only the core of the response network of government agencies, but also the most important part of the whole Lushan Earthquake response network.

Compared to the central government's response to the Wenchuan Earthquake during Prime Minister Wen Jiabao's administration, the response of Prime Minister Li Keqiang's administration to the Lushan Earthquake involved more local reliance (Xinhuanet 2013b). In the Lushan Earthquake, China's central government

Table 5.3 Top ten organizations of the response network to the Lushan Earthquake by Eigenvector Centrality

	Eigenvector centrality	
Rank	Organizations	Value
1	Sichuan Provincial Government	0.743
2	Sichuan Civil Affair Department	0.454
3	Sichuan Provincial Command and Coordination Headquarters	0.404
4	Sichuan Armed Police	0.328
5	Sichuan Health Department	0.323
6	Sichuan Communication Administration	0.321
7	Sichuan Transportation Department	0.253
8	Sichuan Housing and Urban-rural Development Department	0.244
9	Sichuan Firefighting	0.244
10	Sichuan Land and Resource Department	0.232

Data source: Zhang (2013)

Note: Eigenvector centrality calculates the principal eigenvector of the network. A node is central to the extent that its neighbors are central. Leaders of strong cliques are individuals or organizations who are connected to others that are themselves highly connected to each other. Higher values signify greater importance in the network

provided assistance rather than supplanting the Sichuan provincial government to command and coordinate the response.

However, more reliance on local agencies was observed only in the response, but not prior to the earthquake. Partly because of the overreliance on the central government in the response and recovery to the Wenchuan Earthquake, local governments in affected areas paid too little attention to hazard reduction and preparedness prior to the Lushan Earthquake. Consequently, some buildings reconstructed after Wenchuan were still vulnerable to earthquakes.

5.4.3 Interagency Collaboration

No significant progress was made in interagency collaboration in the period between the Wenchuan Earthquake and the Lushan Earthquake, particularly in the collaboration between the newly established CCEM and the type-based disaster management systems. Tables 5.2 and 5.3 both show that the EMOs were not in the top ten organizations in the Lushan Earthquake response network. This means that the EMOs, both at the national and provincial levels, did not play a coordinating role as effectively as intended. It was similar in the Wenchuan Earthquake response. No research indicated the importance of the EMOs in the Wenchuan Earthquake response network. However, the EMOs were very new institutions at the time of the Wenchuan

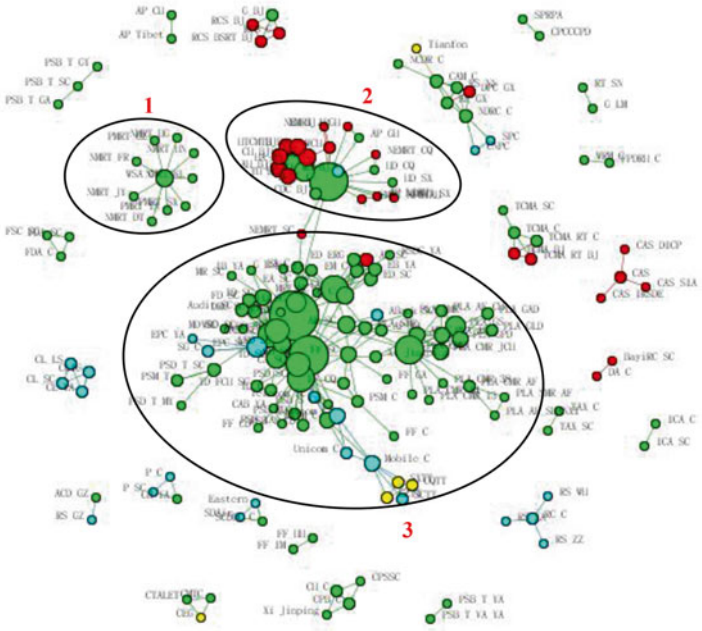

Fig. 5.2 Sub-network of command and coordination of the response to the Lushan Earthquake. *Data source*: Zhang (2013)

Earthquake; more might have been expected of them by the time of the Lushan Earthquake.

The lack of interagency collaboration was most evident in the task of search and rescue. Alongside the newly established EMOs, another significant organizational reform of the CCEM was to appoint firefighting agencies as the lead search and rescue team of local governments. Meanwhile, the conventional, functional disaster management agencies—the China Health and Family Planning Committee (HFPC) and the State Administration of Work Safety (SAWS) both sent their own rescue teams to participate in on-site search and rescue. However, the response network of the Lushan Earthquake shows weak interagency collaboration among search and rescue teams from firefighting departments, medical departments, and the State Administration of Work Safety. Figure 5.2 shows that the interaction among the sub-network centered on the State Administration of Work Safety (Circle 1 in Fig. 5.2), the sub-network centered on the Sichuan provincial government (Circle 3), and the sub-network centered on the China Health and Family Planning Committee (Circle 2) were not well connected with each other.

Although we do not have a network analysis of the Wenchuan Earthquake serving as a baseline, we can infer that at that time the interagency collaboration between the newly established CCEM and the conventional disaster management systems was similar or even worse.

5.5 Policy Recommendations

Between the Wenchuan Earthquake on May 12, 2008, to the Lushan Earthquake on April 20, 2013, significant progress has been observed in intersectoral collaboration and intergovernmental collaboration, but not in interagency collaboration. In order to improve collaboration of emergency response to natural disasters in China in the future, the following policies are suggested.

5.5.1 An Inclusive Framework for Intersectoral Collaboration

The Wenchuan Earthquake and the Lushan Earthquake both demonstrated strong potential for participation of nonprofit organizations in emergency response to natural disasters. However, more efforts should be made to build trust between nonprofit organizations and governments prior to disasters. Several steps will be critical to encourage more robust intersectoral collaboration in emergency situations.

First, China's Central Government should ease restrictions on registration of nonprofit organizations. Fortunately, a big step forward has been made. On March 16, 2013, China's State Council declared that nonprofit chambers of commerce and organizations in science, technology, charity, and community service are able to register legally without the previous requirement for an authorized supervisory agency. Previously, it was reported that about 3 million existing nonprofit organizations in these three categories operated illegally (Beijing Times 2011). Benefiting from the new policy, these nonprofit organizations will have legal status in the near future.

Second, more nonprofit organizations should commit themselves to participate in emergency response to natural disasters. Although an increasing number of nonprofit organizations have become involved in response in the period from the Wenchuan Earthquake to the Lushan Earthquake, that is still a small number compared to the large number of volunteers in China. Economic development in the past three decades has released the Chinese people's passion for charity affairs. In the Wenchuan Earthquake, there were more than three million volunteers participating in on-site response, as well as more than ten million volunteers off-site (State Council of the PRC 2009). Response could be even better organized if more nonprofit organizations are networking tens of millions of potential volunteers.

Third, working relationships between government and nonprofit organizations should be developed prior to disasters. Local governments should encourage nonprofit organizations to participate in hazard mitigation and emergency training. In some cities, such as Shenzhen and Guangzhou, the governments are more willing to contract out social services to nonprofit organizations and work with them prior to disasters. If more local governments did this, it would be very helpful for trust

building and creating understanding of what the governments and nonprofit organizations, respectively, can do in emergency situations.

Fourth, threshold qualifications for participation by nonprofit organizations in emergency response are essential; and leading nonprofit organizations should be identified as critical contact points. Participation of nonprofit organizations brings plentiful resources; however, disorganized participation increases the cost of coordination by governments. Leading nonprofit organizations serving as contact points will decrease the cost of coordination and increase the willingness of government to collaborate (Moynihan 2009).

To do so, China's central government should expand the National Emergency Response Plan (NERP) to create a more inclusive framework to encourage collaboration between governments and nonprofit organizations prior to disasters. In 2006, the NERP began to serve as the framework for emergency response; however, it mainly applied to government agencies, not nonprofit organizations. After 7 years, it is time to revise the NERP.

Similarly, private sector organizations should also be included. In particular, information technology companies are worthy of being incorporated to increase information gathering and analysis capacity (Jaeger et al. 2007).

5.5.2 Rebalance Intergovernmental Collaboration to Place More Responsibilities at the Local Level

The National Emergency Response Law (NERL) in 2007 clarified the responsibilities of governments at different levels in emergency situations but did not make it clear who should be responsible for hazard mitigation prior to disasters. Motivating local governments to invest in hazard mitigation is a universal problem; in the short term, therefore, some lessons can be learned from the practices of the United States which has sought to encourage all-hazards mitigation. The EMO of the State Council should adopt an all-hazards mitigation policy to motivate local governments to engage in hazard mitigation efforts. For this purpose, a national grant program should be developed; and local governments which have all-hazards mitigation plans should be able to apply for it. However, in the long run, a new National Mitigation Act is still essential. China's central government enacted the Earthquake Prevention and Disaster Mitigation Act in 1997 but still needs to develop a law for comprehensive hazard mitigation and improve coordination of all types.

In addition, the central government should reinforce local responsibilities in emergency response to encourage local governments to pay more attention to hazard mitigation. Local governments suffer from disasters even if they get post-disaster relief funds from the central government. If responsibility assignments are based on government capacity rather than on death toll or economic loss, local governments are more likely to make greater efforts in both emergency response and hazard mitigation.

5.5.3 *A Unified Command and Coordination Structure for Interagency Collaboration*

A unified command and coordination structure is essential for interagency collaboration. In this aspect, the National Incident Management System in the United States can be a reference (FEMA 2012). In 2002, the US Congress mandated NIMS as a template for unified command and coordination by all federal agencies in emergency response. A subsequent presidential order in 2003 made use of the system a condition for state and local government agencies, the private sector, and nonprofit organizations to receive federal grants for preparedness. This commitment to NIMS was reinforced when the Department of Homeland Security promulgated the National Response Framework in 2007. NIMS provides a common language and a shared information system to facilitate interagency collaboration, as well as intersectoral collaboration, in emergency response.

In China, the NERP in 2006 and the NERL in 2007 both required the establishment of a unified information system. However, it is yet to be developed. A unified command and coordination system requires actual integration of the CCEM with the four traditional functional disaster management systems at the national level. At the local level, Shenzhen City has partly made such efforts. In 2009, the Shenzhen Municipal Emergency Management Office, Shenzhen Work Safety Administration, and Shenzhen Civil Defense Office were reorganized in a new agency. However, such a reform is more difficult at the national level.

A less progressive strategy is to further empower the EMOs. The EMOs should be given more responsibility for coordination prior to disasters. At the national level, the EMO of the State Council should work more closely with the National Disaster Reduction Committee, the State Work Safety Administration, the Center for Disease Control, and the Ministry of Public Security to develop a unified command and coordination structure and information system, and then implement it from top to bottom.

References

Ansell C, Boin A, Keller A (2010) Managing transboundary crises: identifying the building blocks of an effective response system. J Contingencies Crisis Manag 18(4):195–207

Beck U (1992) Risk society: towards a new modernity. Sage, London

Beijing Times (2011) There are three million illegal nonprofit organizations and three categories of them are able to register legally. http://politics.people.com.cn/GB/1026/15119105.html. Accessed 11 July 2011

Chen J, Zhu J (2009) From SARS to Wenchuan Earthquake: Chinese civil society response to disaster. In: Proceedings of the 4th Cross-strait Forum on disaster and public management. Nanjing University, Center of Management of Social Risk and Public Crisis, Nanjing

Comfort LK (1999) Shared risk: complex systems in seismic response. Pergamon, New York

Comfort LK (2002) Rethinking security: organizational fragility in extreme events. Public Adm Rev 62(s1):98–107

Comfort LK (2007) Crisis management in hindsight: cognition, communication, coordination, and control. Public Adm Rev 67(Special Issue): 189–197
Comfort LK, Okada A, Ertan G (2013) Networks of action in catastrophic events: the 11 March Tohoku-Oki disasters. Earthq Spectra 29(s1):387–402
Drabek TE, McEntire DA (2003) Emergent phenomena and the sociology of disaster: lessons, trends and opportunities from the research literature. Disaster Prev Manag 12(2):97–112
Dynes RR (1970) Organized behavior in disaster. Health Lexington Books, Lexington
FEMA (2012) National response framework. Federal Emergency Management Agency. http://www.fema.gov/national-response-framework
FEMA (2013) National incident management system. Federal Emergency Management Agency. http://www.fema.gov/national-incident-management-system
Gharajedaghi J (2011) System thinking: managing chaos and complexity: a platform for designing business architecture, 3rd edn. Elsevier, Massachusetts
Howitt A, Leonard HB, Giles D (2009) Managing crises: response to large-scale emergencies. CQ Press, Washington, DC
Huang Y (2013) Establishment of the first governmental social service platform. Beijing Times. http://epaper.jinghua.cn/html/2013-05/27/content_1992449.htm. Accessed 27 May 2013
Jaeger PT et al (2007) Community response grids: e-government, social networks, and effective emergency management. Telecomm Pol 31(10):592–604
Kapucu N (2006) Interagency communication network during emergencies: boundary spanners in multi-agency coordination. Am Rev Publ Admin 36(2):207–225
Kapucu N (2009) Interorganizational coordination in complex environments of disasters: the evolution of intergovernmental disaster response system. J Homeland Secur Emerg Manag 6(1):1–26
Kendra J, Wachtendorf T, Quarantelli EL (2003) The evacuation of Lower Manhattan by water transport on September 11: an unplanned "success". Jt Comm J Qual Saf 29(6):316–318
Kreps GA, Bosworth SL (1994) Organizing, role enactment, and disaster: a structural theory. Associated University Presses, New Jersey
Morton JF (2012) Next generation homeland security: network federalism and the course to national preparedness. Naval Institute Press, Annapolis
Moynihan DP (2009) The network governance of crisis response: case studies of Incident Command System. J Publ Admin Res Theor 19(4):895–915
National Research Council (2006) Facing hazards and disasters: understanding human dimensions. The National Academies Press, Washington, DC
OECD (2003) Emerging risks in the 21st century: an agenda for action. OECD Press Service, Paris
State Council of the PRC (2008) Post-Wenchuan Earthquake restoration and reconstruction master plan. [2008] 31. State Council General Office, Beijing
State Council of the PRC (2009) White paper on China's disaster reduction action. State Council of the PRC, Beijing
t' Hart P (2013) After Fukushima: reflections on risks and institutional learning in an era of mega-crises. Publ Admin 91(1):101–113
Tierney K, Trainor J (2003) Networks and resilience in the World Trade Center disaster. DRC working paper
U.S. House of Representatives (2006) A failure of initiative: final report of the selected bipartisan committee to investigate the preparation for and response to Hurricane Katrina. US Government Printing Office, Washington, DC
Wachtendrof T (2005) Improvising disaster in the city of Jazz: organizational response to Hurricane Katrina. http://forums.ssrc.org/understandingkatrina/improvising-disaster-in-the-city-of-jazz-organizational-response-to-hurricane-katrina/
Waugh W, Streib G (2006) Collaboration and leadership for effective emergency management. Public Adm Rev 66(Special Issue):131–140
Xinhuanet (2008) News: the direct economic loss of the Wenchuan Earthquake reached to 845.1 Billion RMB. http://news.xinhuanet.com/newscenter/2008-09/04/content_9768363.htm. Accessed 4 Sept 2008

Xinhuanet (2013a) The Lushan Earthquake has caused 196 deaths, 21 missing and 11, 470 Injuries. http://www.sc.xinhuanet.com/content/2013-04/24/c_115528235.htm. Accessed 24 Apr 2013

Xinhuanet (2013b) Li Keqiang's requirement for new disaster relief system and demonstrates the desire of government reform. http://news.xinhuanet.com/fortune/2013-11/06/c_125662242.htm. Accessed 6 Nov 2013

Yang G (2008) A civil society emerges from the earthquake rubble. New Perspect Q 25(3):39–42

Zhang H (2012) What China has learnt from disasters: evolution of the emergency management system after SARS, Southern Snowstorm, and Wenchuan Earthquake. J Comp Pol Anal 13(3):234–244

Zhang H (2013) Organization response network of the Lushan Earthquake on April 20, 2013, Working Paper. Disaster Management Center, University of Pittsburgh, Pittsburgh

Zhang H, Tong X (2009) An analytical framework of governmental emergency capacity assessment. Chin Publ Admin 286(4):32–36

Zhang Q, Qibin L, Zhang X (2011) An outlook on Chinese model of emergency management based upon the review of Wenchuan Earthquake response: an interactive perspective of strong state and strong society. Chin Publ Admin 2011(5):50–56

Part II
Recovery and Resilience

Chapter 6
"One in Trouble, All to Help": The Paired Assistance Program to Disaster-Affected Areas in China

Kaibin Zhong and Xiaoli Lu

Abstract Paired Assistance to Disaster-Affected Areas (PADAA) is a mutual disaster aid and recovery program with Chinese characteristics, which has shown its efficiency after the 2008 Wenchuan Earthquake in restoring and reconstructing the expansive disaster-impacted regions. This chapter aims to describe how PADAA works in China. The chapter provides an overview of the history of PADAA, and depicts the process by which PADAA incrementally developed from local experiments to a national policy and finally became a planned and institutionalized political mobilization in the Chinese emergency management system after several decades. We adopt the concept "campaign-style governance" to explain how PADAA works in the Chinese administrative system. China's central government was able to require provincial and local governments from more economically developed areas to provide necessary assistance to devastated areas for post-disaster restoration and reconstruction. This was effective because of the Chinese system's stringent vertical controls and the practices of local accountability that gave provincial and local officials from donor provinces strong incentives to perform effectively in reconstruction work. We use the 2008 Wenchuan Earthquake as a case to demonstrate how PADAA works in reality, and discuss the challenges of PADAA in its implementation process.

Keywords Campaign-style governance • China • Disaster reconstruction • Emergency management • Paired assistance • The Wenchuan earthquake

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6.1 Introduction

In the past decade, many "mega-crises" caused catastrophic impacts to human societies, which challenged the local-centered disaster response and recovery approach (Posner 2004; Helsloot et al. 2012). Demands of responding to and recovering from "mega-crises" could easily stress local disaster management capacities; and disaster recovery after these "mega-crises" ran slowly in many cases, such as the reconstruction in New Orleans after the 2005 Hurricane Katrina. By contrast, the Paired Assistance to Disaster Affected Areas (PADAA) program in China showed its strength in rebuilding catastrophe-impacted communities after the 2008 Wenchuan Earthquake. This has been officially defined as the engine of the rapid earthquake restoration and reconstruction—known as a "Chinese miracle"—that has impressed not only China but also the world (People's Daily 2011).

The PADAA program impressed the world not only for its great speed in mobilizing resources quickly and expediting the process of recovery and reconstruction in disaster impacted areas, but also for its contributions to the enhanced development of disaster impacted regions. The PADAA program facilitated resource allocations in the reconstruction process, which, by creating high public attention and attraction, potentially reduced the resource disparities among disaster-impacted areas. Moreover, it helped bring in advanced technology from the economically developed provinces to disaster-impacted regions. Some donor provinces further created job opportunities for disaster survivors in order to sustain local development after the 3-year counterpart assistance (Xu et al. 2014).

This article aims to describe the PADAA program, the historical development and the driving forces of this program, program operations in rebuilding disaster-impacted areas after the 2008 Wenchuan Earthquake, and the challenges that remain in the implementation of the PADAA program in China.

6.2 Historical Background of PADAA: From Local Experiments to National Policy

Paired Assistance to Disaster Affected Areas (PADAA, *Duikou Zhiyuan* in Chinese, alternatively translated as targeted support, counterpart support, counterpart assistance, partnership support, or one-to-one support) refers to aid offered by one region, department, or corporation (the donor) to a corresponding region, department, or corporation (the aid recipient) impacted by a major disaster under the coordination of a higher-level government. This policy has not only been used in supporting disaster response and reconstruction, but also in two other policy domains: assisting the economic development of border areas and minority areas, and supporting the construction of key infrastructure projects (such as the Three Gorges Dam) (Yu 2010).

Over the course of several decades, PADAA has become a planned and institutionalized political mobilization in the Chinese emergency management system (Zhong 2011). The embryonic form of PADAA appeared in the post-civil war (1945–1949) reconstruction, in which regions liberated early were assigned to assist the reconstruction of regions liberated late. In the early stage, local authorities triggered paired assistance of disaster relief on an ad-hoc basis, and there were varied formats of assistance. For instance, in responding to a series of widespread disasters caused by floods, rainstorms and drought in 1953, the North Bureau of the Central Committee of the Communist Party of China (CPC) ordered all the CPC members, military forces, workers and peasants in all of north China to help deal with the disaster and support the post-disaster restoration and reconstruction of the disaster-stricken areas (People's Daily 1953).

After the successful response to a drought disaster in 1978, the PADAA program was acknowledged and highly praised by the CPC's official newspaper *People's Daily* for the first time, which was highlighted on the front page: "During the drought-fighting process, Hubei province has gained plenty of experience by creating innovative ways of paired assistance (such as the rural–urban, enterprise-village) in disaster relief. By doing this, the forces in the urban areas and state-owned enterprises have been more effectively mobilized, and the drought-fighting efforts have been more firmly supported" (People's Daily 1978). The coverage by the mainstream media signified that the PADAA program was officially recognized as an effective method of coping with disasters. After the coverage by *People's Daily*, PADAA was soon disseminated through extensive media coverage, high-profile conferences and inter-visitation programs, and was emulated by other regions.

While the horizontal mobilization of paired assistance (region-to-region) has made great achievements since the 1980s, the vertical mobilization of paired assistance (ministries-to-local government) became prevalent in the 1990s. In responding to a series of drought and flood disasters striking several provinces between the Yangtze River and Huaihe River in the summer of 1991, more than 30 central ministries and agencies, and state-owned enterprises were mobilized by the central government to give paired aid to severely affected Anhui Province (Zhou et al. 2002). During the response to the major floods in the Yangtze River, Songhua River and Nenjiang River basins in 1998, ministries and commissions at the central level became the coordinators who relied on their vertical power to mobilize corresponding departments in the provincial and local governments to assist disaster impacted areas.[1] To guarantee emergency supplies to disaster survivors, the Ministry of Civil Affairs (MOCA) sent notices on August 25 and 31 respectively, ordering the provinces of Beijing, Tianjin, Liaoning, Shandong and Hebei to prepare emergency supplies (such as clothes and quilts) for assigned paired provinces (People's Daily 1998b). The Ministry of Education (MOE) ordered education sectors in 11 provinces

[1] In contrast to those countries with a high level of local autonomy, ministries in the central government in the 1990s in China had vertical powers to issue orders to corresponding departments in local governments. Since the middle of the 1990s, ministries' vertical power was constrained by the central government, but they technically still hold the power to instruct local departments today.

to provide immediate disaster aid to seven disaster-hit provinces, while those unaffected and lightly-affected areas in one province were instructed to provide paired assistance to those heavily-stricken areas within the same province (People's Daily 1998a).

After scattered and unsystematic mobilizations over a few decades, PADAA was formalized in government emergency management documents in 2006. Issued by the State Council in 2006, the official document titled *Opinion on Comprehensively Strengthening Emergency Response Work* emphasized that governments at all levels in China should "perfect the social mobilization system such as social donation and paired assistance, to mobilize social forces to participate in the work of major disaster rescue, relief and post-disaster rehabilitation and reconstruction." The *National Emergency Plan on Natural Disaster Relief*, released in 2006, specifies that upon request by the disaster-stricken provinces, the central government can mobilize paired assistance programs. In 2007, the administrative procedure of adopting and managing counterpart assistance in disasters was specified in the *Emergency Response Law of the People's Republic of China*.

6.3 PADAA as a Political Mobilization Process: A Campaign-Style Governance Perspective

PADAA is consistent with the value of mutual assistance after the occurrence of a disaster [in Chinese, *yifang younan, bafang zhiyuan*] advocated by the Chinese top leadership and highly respected in Chinese society. This value emphasizes that when one part of the country is in trouble, all others should provide aid. It considers the whole Chinese society as a potential pool of aid. The catastrophe should trigger communities not-at-all or lightly impacted by disasters to assist disaster survivors.

PADAA is a political mobilization process, which could be termed "campaign-style governance" (CSG) (Zhou 2012). CSG refers to a termination of normal routines of bureaucratic operations, and a shift to a temporary and quick mobilization of resources and bureaucrats to cope with an unexpected situation, including a disaster. CSG could be traced back to the traditional bureaucratic operations in the Qing dynasty (1636–1912), during which the Qianlong emperor relied on CSG to cope with natural disasters and the widespread sorcery threatening the regime (Kuhn 1990). CSG became a governing style in contemporary China to politically mobilize resources to cope with a situation that the central government perceived to be beyond the capacities of normal bureaucratic routines. In responding to or recovering from a major disaster, local government may have difficulty coping with surge demands of disaster survivors, and PADAA as a CSG format could be triggered to mobilize resources and facilitate fast reconstruction.

PADAA as a CSG breaks through the boundaries of organizations and drops normal organizational routines, concentrating on a temporary central task. CSG is normally mobilized by the highest-level authority, such as the emperor in ancient China or the central government in contemporary China. Relying on the top-down

hierarchy in the governing system and Communist Party line (which strongly contrasts with the highly decentralized federal system in the United States), the higher-level authority can mobilize every level of bureaucracy (from provinces, prefectures, counties, townships and even to villages) to commit to a central but temporary task. Often PADAA is initiated by the central government when it perceives that a disaster may have very large impacts on society or that the catastrophic damage has very high public visibility.

When further exploring the conditions that make the campaign-style governance possible, two factors stand out in the Chinese administrative system: competition between local officials in the "promotion tournament," and accountability in the hierarchy.

6.3.1 The Tournament System and Local Competition

The governance structure of China's local governments is modeled as a "promotion tournament," which motivates Chinese local officials (Li and Zhou 2005; Zhong 2007; Xu et al. 2014). Local government officials, who have to face the pressure coming from the political contract system and the performance contracts that local governments and officials have to sign with the government at the next-higher level, get engaged in this promotion tournament and compete with each other for promotions. Performance targets are usually divided into a mixture of priority, hard, and soft targets. Local officials have to decide carefully how to use their limited resources since generally they lack sufficient capacity to fulfill all the targets (Saich 2005, 2008; Rong et al. 1998, pp. 269–270; Liu et al. 2009).

PADAA could easily trigger competitions between local officials because of the features of the task. When initiating PADAA, higher-level governments usually designate paired relations and label it as a political task. The political-oriented nature of the task means that it should be considered as a priority task and be accomplished successfully on schedule, meeting both quality and quantity standards. Moreover, the performance of this program can be easily measured and compared across different local governments because they have been designated in a policy arena, and will draw attention from higher-level government, the mass media and disaster survivors.

For example, after the 7.1-magnitude earthquake shook a Tibetan area of northwest China's Qinghai Province on April 14, 2011, the Beijing municipality was designated by the central government as a "main socialist construction supporter" of Yushu—the epicenter of this violent earthquake—charged with providing materials, funds, talent, and strategies for the reconstruction of most of the public service facilities and infrastructure. The Beijing Municipal Government and Party Committee attached great importance to the paired assistance work. Liu Qi, member of the Political Bureau of the CPC Central Committee and Secretary of the CPC Beijing Municipal Committee, emphasized the opportunity to "accomplish the glorious and honorable task of paired assistance to the standards of primary excellence";

while Guo Jinlong, Mayor of the Beijing Municipal Government, promised to "do our best to conduct the mission of paired assistance and thus to play a model role of Beijing capital" (People's Daily 2011).

6.3.2 *Delegation of Assignments*

Once the PADAA task has been assigned by the central government, provincial governments usually divide the assigned task among its corresponding lower-level governments to ensure that the task can be accomplished on schedule. The division of tasks goes down multiple levels (three levels for the Wenchuan Earthquake, as shown in Fig. 6.1), which can ensure the connection or "link-up" between donors and aid recipients in an all-round way in the top-down bureaucracy system. Each level of government assumes a sub-target and the general target is to be achieved through the achievement of all the sub-targets.

At the top layer, the central government, acting as a moderator, will activate PADAA and assign the paired relations. It is actually the "one province-to-one county help," with provinces, municipalities and autonomous regions not affected by disasters each urged to care for and help a seriously quake-hit county or city at the county level. At the second layer, the framework at the top layer would be extended downward to the prefecture level, and it is actually the "one prefecture-to-one town help." That is, provinces, municipalities and autonomous regions should

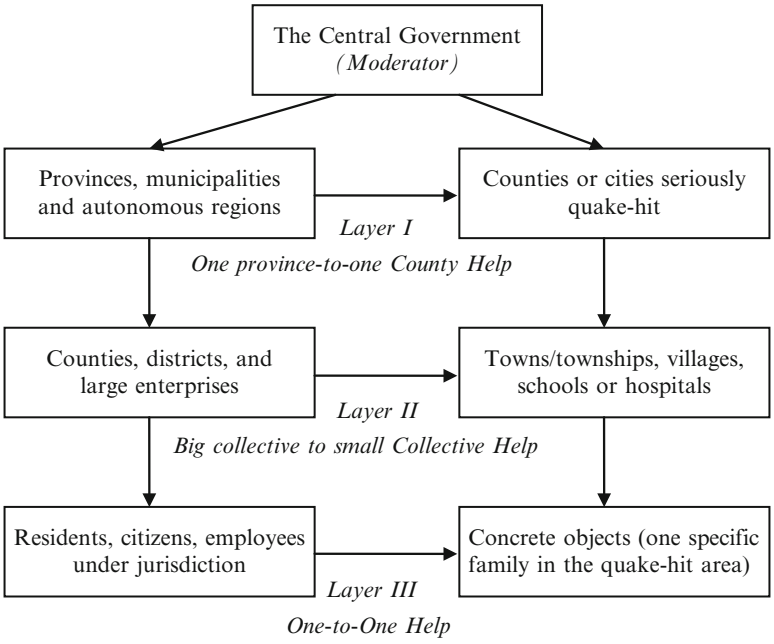

Fig. 6.1 The multi-layer vertical framework of the PADAA for the Wenchuan earthquake

delegate their assignments to their districts, counties and large state-owned enterprises, and enable each of them to help a town or a township, and a village, school, or hospital. (Normally one prefecture would be designated to aid one or two towns.) This represents a "one-to-one help" scheme at the second layer, which means "a big-collective to a small-collective help." At the third layer, the districts and counties, big state-owned enterprises and public institutions on their part call on their residents or citizens or employees or functionaries under their jurisdiction to sign up for participation in such activity, and the latter will in turn be assigned to care for and aid the concrete objects of the "one-to-one help" (People's Daily 2009).

6.4 PADAA in the Post-Wenchuan Earthquake Reconstruction: A Case Study

The exceptionally deadly 8.0-magnitude earthquake that struck Wenchuan County, Sichuan Province in southwest China on May 12, 2008, was the most destructive earthquake that affected the widest areas and posed the most severe challenge to disaster relief efforts in the past three decades in China. It affected 417 counties, 4,667 townships and 48,810 villages across ten provinces including Sichuan, Gansu, Shaanxi and Chongqing. It affected 46.25 million people, killing 87,150 and injuring 374,638, damaging or completely destroying 6 million houses in rural areas, 102 million square meters of houses and apartments, as well as critical infrastructure and public facilities in urban areas, causing 845.1 billion Chinese Yuan of direct economic losses. The total disaster zone was approximately 500,000 km^2, including 130,000 km^2 of exceptionally heavily hit areas and heavily hit areas (State Council of the PRC 2008).

6.4.1 An Overview of the PADAA Program in the Wenchuan Earthquake

The foremost role of the PADAA program in the Wenchuan Earthquake was to serve as one of the key financial sources for post-catastrophe reconstruction and recovery (Tan et al. 2011). It was officially reported that the resources committed to the paired assistance program by the 19 donor provinces and municipalities had reached 22.7 billion Chinese Yuan by August, 2008 (International Daily News 2008) and 34 billion Chinese Yuan by March, 2009 (People's Daily 2009), and would eventually reach 70 billion Chinese Yuan (International Daily News 2009). In the earthquake epicenter Wenchuan County, pair-assisted by Guangdong Province, the paired assistance fund reached 8.2 billion Chinese Yuan by October 2010 (Xinhua News Agency 2011). These funds from assisting counterparts were used in 3,668 reconstruction projects (and 3,662 projects had been completed by 2011) (Sichuan Provincial Government 2011).

Besides financial aid, as required by the central government, donor provinces provided assistance in a full range of services. These included (1) planning, designing, construction, expert consulting, project construction, and inspection, (2) renovation of residential communities, (3) restoring and upgrading public facilities and critical infrastructure, such as schools, hospitals, roads, water, gas, disposal and sewage, social welfare, and other public services, (4) selecting and sending doctors and teachers to hospitals and schools in disaster hit areas, and providing equipment, tools, facilities, and construction materials to help reconstruction, (5) providing training services, education and schooling to students who cannot go back to school, and (6) restoring basic infrastructure for trading and operational centers (Xu et al. 2014).

6.4.2 Activation and Political Mobilization by Top Leaders

Soon after the catastrophic earthquake struck, PADAA was activated by the Ministry of Civil Affairs (MOCA) based on the *National Emergency Plan for Natural Disaster Relief* (2006 version) but adapted because of the severe damage in this situation. The plan specified that only Jiangsu should provide paired assistance to Sichuan. Clearly, the damage in Sichuan was beyond the capacity of Sichuan and its counter-partner Jiangsu. On May 20, MOCA issued the *Urgent Notice on Providing the Paired Assistance to Wenchuan Catastrophic Earthquake Stricken Areas*, requiring the civil affairs departments in 6 provinces of Jiangsu, Zhejiang, Shandong, Henan, Hubei and Guangdong to provide counterpart aid to the disaster-hit prefectures in Sichuan. The aid included providing temporary housing, emergency aid, and planning for post disaster recovery and reconstruction. The scale of the paired assistance expanded 2 days later, with the civil affairs departments of all the provinces designated to care for and counterpart-assist 21 seriously quake-hit counties in Sichuan and those disaster-stricken counties in Gansu and Shaanxi.

In the next few days, the PADAA program upgraded from the mobilization by a single central ministry (MOCA) to a full mobilization by the highest-level authority in the Chinese political system. On May 26, the Political Bureau of the CPC Central Committee decided to "adopt the paired assistance program and accelerate the post-quake recovery and reconstruction through concerted efforts of the entire country," requiring that every earthquake-affected county will be financially supported by a provincial-level administrative region in its reconstruction (State Council of the PRC 2008). The *Wenchuan Earthquake Rescue and Relief Headquarters* (WERRH), which was established on May 12 with Premier Wen Jiabao as the chief head to coordinate the disaster rescue and relief efforts, further stated that the paired assistance should be implemented by the way of "one province to assist one heavily hit county, several provinces to assist one heavily hit prefecture." On June 5, the Standing Committee of the CPC Central Committee Political Bureau, China's top leadership, confirmed the implementation of the PADAA program. It declared that the provinces and municipalities involved in the rebuilding project should support the affected counties in various formats, including providing labor, materials, financial and intelligence assistance, under the unitary plan of the central authorities (Xinhua News Agency 2008c).

The PADAA program in the reconstruction of earthquake impacted communities after the Wenchuan earthquake was legalized by two official documents: *Regulations on the post-Wenchuan Earthquake Restoration and Reconstruction,* and *The Paired Assistance Program for Post-Wenchuan Earthquake Restoration and Reconstruction*, which were released by the State Council on June 8 and June 11 respectively. Directly under the central government, 19 economically developed provinces and municipalities in the east and middle parts of China, unaffected by the earthquake, were assigned by the central government to establish one-to-one paired relations with the 24 most severely impacted counties in Sichuan, Gansu and Shaanxi provinces (See Table 6.1). For example, Shandong province was paired with Beichuan

Table 6.1 The PADAA program of the Wenchuan Earthquake

Earthquake affected counties	Total cost required for reconstruction (billion Chinese Yuan)	Counterpart provinces	Total of 1 % of its financial income in three years (2008–2011) (billion Chinese Yuan)	Percentage of assistance fund to reconstruction cost
Beichuan	80	Shandong	6.469	8.09
Wenchuan	100	Guangdong	10.641	10.64
Qingchuan	40	Zhejiang	6.403	16.01
Mianzhu	160	Jiangsu	9.063	5.66
Shifang	100	Beijing	5.748	5.75
Dujiangyan	70	Shanghai	7.931	11.33
Pingwu	60.8	Hebei	2.996	4.93
Anxian	108	Liaoning	4.197	3.89
Jiangyou	107.5	Henan	3.32	3.09
Pengzhou	27.3	Fujian	2.744	10.05
Maoxian	NA	Shanxi	2.441	NA
Lixian	58.325	Hunan	2.267	3.89
Heishui	17	Jilin	1.216	7.15
Songpan	23.7	Anhui	2.082	8.78
Xiaojin	13	Jiangxi	1.468	11.29
Hanyuan	3	Hubei	2.228	74.27
Chongzhou	35	Chongqing	1.769	5.05
Jiange	20.3	Heilongjiang	1.529	7.53
Severely afflicted area in Gansu Province	NA	Guangdong (mainly Shenzhen)	NA	NA
Severely afflicted area in Shaanxi Province	NA	Tianjin	NA	NA

Note: (1) The total of 1 % of the financial income of all the counterpart-assist provinces in 3 years (2008–2011) is estimated on the base of data in 2008; (2) We could not obtain the official statistics of severely afflicted areas in Gansu (mainly supported by Shenzhen) and Shaanxi (supported by Tianjin)

Source: State Council of the PRC (2008), National Bureau of Statistics of China (2008)

County, and Guangdong province was paired with Wenchuan County. The program requires that each province or municipality contributes at least 1 % of its financial income in the previous fiscal year to assist their paired disaster-hit areas for 3 years. As shown in Table 6.1, the proportion of "total aid provided" by PADAA to "total cost required for reconstruction" is estimated to range from as high as 74.27 % to as low as 3.09 %.

Since its launching by the central government in China, reconstruction of the quake-hit region has ranked high on the political agenda. Post-earthquake reconstruction became a national priority to which the whole bureaucratic system committed. On June 13, 2008, during a meeting for the chiefs of all provinces, autonomous regions and municipalities, and all central ministers and commissioners, the Central Party Committee and the State Council stated that "those disaster survivors are members of the big family of China" and "to aid the afflicted people to restore their homes and to ensure the normal order of urban and rural production and life, is a common wish shared by all Chinese and a common responsibility that is duty-bound" (Xinhua News Agency 2008b).

6.4.3 Implementation by Local Donor Governments

Once the paired relations had been assigned and the principles of financial assistance had been clarified by the central government, all donor provinces were politically mobilized. Temporary Headquarters were soon set up at the provincial level to coordinate all the paired assistance activities, and reconstruction projects were initiated soon. For example, the Guangdong Provincial Government established a high-rank headquarters on June 14, 2008, with Governor Huang Huahua as its chief and the Executive Vice Governor Huang Longyun, one Vice Chairman of the Standing Committee of Guangdong Provincial People's Congress, one Vice Chairman of Guangdong Provincial People's Political Consultative Conference, and the Mayor of Shenzhen, as vice chiefs. During the kick-off Meeting of Post-Quake Paired Assistance to Affected Areas, Governor Huang Huahua stressed that the paired relations of Guangdong with Wenchuan "demonstrated the full confidence and high expectations of the Party Central Committee and the State Council to Guangdong." It is "a bound duty," he continued, "and important political task for Guangdong as the Vanguard in implementing the reform and opening-up policy." And "we should consider it as a glorious mission, a challenging task and a great responsibility, and launch all-out efforts to ensure the target to be achieved" (Xinhua News Agency 2008a).

Donor provinces mobilized their resources to ensure the achievement of the target by breaking down the tasks into multiple sub-tasks and executing them in parallel at the prefecture and county level. For example, under the counterpart-assistance program, Guangdong province, paired with Wenchuan County, further broke down the assistance task and paired its 13 prefectural cities with 13 townships in Wenchuan

Table 6.2 Pairings in the Guangdong-Wenchuan assistance program

Disaster Hit Towns	Counterpart Prefectures in Guangdong
Weizhou Town	Guangzhou
Shuimo Town	Foshan
Yingxiu Town	Dongguan
Xuankou Town	Zhongshan
Miansi Town	Zhuhai
Yanmen Township	Jiangmen
Sanjiang Township	Huizhou
Chaopo Township	Shantou
Longxi Township	Zhanjiang
Keku Township	Zhaoqing
Yinxing Township	Maomin
Wolong Town	Jieyang
Gengda Township	Chaozhou

Source: The Plan of Paired Assistance to Post-quake Areas to Support the Rehabilitation and Reconstruction, adopted by the Guangdong Provincial Government in June 2008

County (as shown in Table 6.2). These prefectural governments were responsible for raising funds and completing the reconstruction projects in the assigned township. For example, Shuimo Town, which was only about 10 km from the epicenter (Yingxiu Town in Wenchuan County) and severely damaged by the earthquake, was paired with Foshan Prefecture in Guangdong. The paired assistance program helped to raise funds for the reconstruction of Shuimo. Initially, Foshan Prefecture planned 640 million Chinese Yuan for the reconstruction of Shuimo Town, which exceeded 60 years' total revenue before 2008 in Shuimo (Liu 2011: 33). During the reconstruction process, 640 million Chinese yuan was far from enough. The Foshan assistance team received around 200 million Chinese Yuan provincial assistance awards in competition with other prefectural governments and raised nearly 200 million Chinese Yuan in public donations from various sources in Foshan. The overall assistance funding contributed by Foshan towards Shuimo's reconstruction reached 1.07 billion Chinese Yuan (Xu et al. 2014). Moreover, state-owned enterprises and public institutions became major players in the paired assistance process. In the paired assistance between Beijing and Shifang, Beijing municipal authorities have entrusted some major state-owned enterprises with the task of hardware reconstruction, and assigned the task of sending teachers and other related resources to key middle schools financed by the municipal government (People's Daily Online, June 8, 2008).

As paired assistance was implemented by districts, counties, large state-owned enterprises, and public institutions, they called on volunteers in their jurisdictions to participate in the reconstruction projects; and the volunteers would in turn be assigned to aid concrete reconstruction projects (People's Daily Online, June 8, 2008).

6.5 The Sustainability of PADAA: Challenges Ahead in the Future

In short, PADAA has become a unique Chinese phenomenon in disaster management, which could mobilize large amounts of resources to speed up the recovery process. This research finds that (1) PADAA originates from the idea of mutual assistance "one in trouble, all to help"; (2) PADAA can be implemented in the Chinese administrative system because of the hierarchical authority and effective power of the central government, which can assign donors to assist disaster impacted areas; and (3) the high efficiency of PADAA implementation is the result of initiating "campaign-style governance" (labeling PADAA as a political task), which could easily trigger competition between donors in the "promotion tournament" through which officials are selected for promotion.

PADAA had flaws in its implementation process, however, which challenge the sustainability of this program. Similar to findings from post-war reconstructions (Pugh 1998; Martz 2010: 1–26), officials focused on observable and measurable performance in the PADAA program, which inevitably ignored the social and psychological dimensions of reconstruction. In the Wenchuan case, those "hardware" infrastructure facilities such as schools, hospitals and city halls drew much attention from donors. Meanwhile, the "soft" part related to the social side or the human dimension of rehabilitation in the reconstruction was ignored by donors. Projects related to strengthening civil society and socio-economic development, governmental institutional building, building local-community governance structure, and sponsoring programs related to rule of law, gender equality, and democratization often went unnoticed and under-funded.

In the PADAA program, the tight schedule set by the central government under political mobilization left insufficient time for donor provinces to integrate demands of recipient counties in planning the community reconstruction, causing unnecessary wasteful investment. In the Wenchuan case, donor counterparts sometimes dominated the reconstruction process as providers of financial and human resources, as well as expertise. Local citizens from disaster-hit areas failed to participate in the reconstruction planning process. As a result, some reconstruction projects failed to consider local social or cultural conditions and demands of disaster survivors. Hundreds of luxurious public facilities including schools, hospitals and city halls did not actually meet the real needs of local people.

In the implementation process of PADAA program, recipients' reliance on donor assistance might lead to a loss of sustainable development capacity. The goal of post-disaster reconstruction is not only to restore basic services and living conditions in an incrementally improved way, but also to embed the reconstruction efforts into the overall development strategy of the region. As the time approached for the aid projects to be completed and the aid teams to withdraw, the transition from a giver-taker relationship to a two-way practical partnership was nevertheless hard to establish. In the Wenchuan case, after receiving paired assistance from its counterpart for 3 years, some recipient communities failed to build a sustainable development model but still maintained their old ways of working.

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References

Helsloot I et al (2012) Mega-crises: understanding the prospects, nature, characteristics, and the effects of cataclysmic events. Charles C Thomas Pub Limited, Springfield

International Daily News (2008) The funds committed for Wenchuan earthquake recovery by paired provinces and municipalities reaching 22.7 billion Yuan 05/10/2008 (in Chinese). http://www.chinesetoday.com/news/show/id/122644

International Daily News (2009) The report of paired assistance of Wenchuan earthquake: Making people lead good lives as early as possible 04/05/2009 (in Chinese). http://www.gov.cn/jrzg/2009-05/04/content_1304190.htm

Kuhn P (1990) Soulstealers: the Chinese sorcery scare of 1768. Harvard University Press, Cambridge

Li H, Zhou L (2005) Political turnover and economic performance: the incentive role of personnel control in China. J Public Econ 89:1743–1762

Liu H (2011) Transition: personal experience and reflection of an assistance leading cadre on reconstruction operations in Wenchuan earthquake-affected areas (in Chinese). Yangcheng Evening News Publishing House, Guangzhou

Liu M et al (2009) The political economy of earmarked transfers in a state-designated poor county in Western China: central policies and local responses. China Q 2009:973–994

Martz E (2010) Introduction to trauma rehabilitation after war and conflict. In: Martz E (ed) Trauma rehabilitation after war and conflict: community and individual perspectives. Springer, New York

National Bureau of Statistics of China (2008) China statistical yearbook (in Chinese). China Statistics Press, Beijing

People’s Daily (1953) The North Bureau of the CPC central committee sends a notice mobilizing the whole north china to support the post-disaster restoration and reconstruction of the disaster-stricken areas 18/09/1953 (in Chinese), p 1

People’s Daily (1978) Hubei province has gained plenty of experiences by creating innovative ways of paired assistance 11/11/1978 (in Chinese), p 1

People’s Daily (1998a) Ministry of education ordered education sectors to provide immediate disaster aid to disaster-hit areas 16/10/1998 (in Chinese), p 5

People’s Daily (1998b) Clothes and quilts against cold has been collected and assigned to disaster-affected provinces 30/09/1998 (in Chinese), p. 9

People’s Daily (2009) 19 provinces or municipalities’ pair assistance to severely disaster-affected counties keeping the same, total investment reaching 34 billion Yuan 15/07/2009. http://unn.people.com.cn/GB/8948470.html

People’s Daily (2011) Wenchuan Reconstruction: “Chinese miracle” impresses world. http://english.people.com.cn/90001/90776/90882/7378343.html

People’s Daily (2012) The Promise of Beijing 03/02/2012 (in Chinese). http://cpc.people.com.cn/GB/64093/82429/83083/17009389.html

Posner R (2004) Catastrophe: risk and response. Oxford University Press, New York

Pugh M (1998) Military intervention and humanitarian action: trends and issues. Disasters 22(4):339–351

Rong J et al (1998) The transformation from a pressurized system to a democratic cooperative system (in Chinese). Central Translation Bureau Publishing House, Beijing

Saich T (2005) SARS: China’s Chernobyl or much ado about nothing. In: Kleinman A, Watson A (eds) SARS in China: prelude to pandemic? Stanford University Press, Stanford, pp 71–104

Saich T (2008) The changing role of urban government. In: Yusuf S, Saich T (eds) China Urbanizes: consequences, strategies and policies. The World Bank, Washington, DC, pp 181–206

Sichuan Provincial Government (2011) Official update on Wenchuan earthquakes disaster reconstruction and recovery situations (in Chinese). http://news.sina.com.cn/c/2011-10-14/095123302670.shtml. Accessed 10 Dec 2012

State Council of the PRC (2008) Post-Wenchuan earthquake restoration and reconstruction master plan (in Chinese). http://www.gov.cn/zwgk/2008-06/09/content_1010710.htm

Tan N, Huang Y, Wang L (2011) Disaster management in China and Taiwan: models, policies, and programs for social recovery. J Global Social Work Pract 4(1) (web-publishing journal). http://www.globalsocialwork.org/vol4no1/Tan.html

Xinhua News Agency (2008a) An official at director-general level of Guangdong is appointed as the vice party chief of Wenchuan 25/07/2008 (in Chinese). http://news.xinhuanet.com/local/2008-07/25/content_8765901.htm

Xinhua News Agency (2008b) The Party Committee and the State Council holds a meeting participated by the chiefs of all provinces, autonomous regions and municipalities, and all central ministries and commissions 13/06/2008 (in Chinese). http://news.xinhuanet.com/newscenter/2008-06/13/content_8363888.htm

Xinhua News Agency (2008c) Hu Jintao Presides over a meeting of the standing committee of the CPC central committee political Bureau, ordering provinces to help quake zone counties 05/06/2008 (in Chinese). http://news.xinhuanet.com/newscenter/2008-06/05/content_8316793.htm

Xinhua News Agency (2011) Press conference: 95 % of reconstruction work has been finished in Wenchuan 10/05/2011 (in Chinese). http://english.cntv.cn/program/newshour/20110510/106972.shtml

Xu P, Lu X et al (2014) Post-Wenchuan earthquake reconstruction and development in China. In: Kapucu N, Liou KT (eds) Disasters and development: examining global issues and cases. Springer, New York, pp 427–445

Yu X (2010) From paired assistance to long-term cooperation: an analysis of two-stage game (in Chinese). Reform Econ Syst 5:37–39

Zhong K (2007) Crisis management in China. China Security (winter):90–109

Zhong K (2011) Paired assistance to disaster-affected areas: policy origin and development (in Chinese). Comp Econ Soc Syst 6:140–146

Zhou X (2012) On campaign-styled governance: rethinking the institutional logic of China's state governance (in Chinese). Open Times 9:105–125

Zhou Y, Ma Z, Wang L (2002) Chaotic dynamics of the flood series in the Huaihe River Basin for the last 500 years (in Chinese). J Hydrol 258:100–110

Chapter 7
Collaborative Manpower Support for Restoring Hope in the Aftermath of the March 11 Disasters in Japan

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Abstract Local governments can be expected to play a crucial role in rebuilding communities damaged by disasters, but what if a disaster affects a large number of local government employees so that the functioning of the local government is compromised? This was the case in Japan when an offshore earthquake of magnitue 9.0 and a massive tsunami hit the municipalities in the Tohoku on 11, 2011. As a result, the disasters highlighted, in an unprecedented way, the importance of manpower support for the affected municipalities. A variety of collaborative governance arrangements have been put in place by the Japanese authorities to boost manpower support for the recovery and reconstruction process in years ahead. Japan's experience in this endeavor offers suggestive lessons and should prompt policy makers elsewhere, too, to reassess their governance to make their communities more resilient.

Keywords Collaborative governance • Manpower support • Post-disaster recovery and reconstruction • Tohoku

7.1 Introduction

Japan, a country plagued by natural disasters, is arguably one of the most advanced countries when it comes to disaster governance. Even so, the country appeared unprepared when an unprecedentedly gigantic tsunami hit its Tohoku region on March 11, 2011, following an offshore earthquake of magnitude 9.0 (hereafter referred to as the 3.11 disasters). The tsunami devastated communities; however, it did not irreparably damage them. Massive efforts have been mobilized for the recovery and reconstruction process, which is projected to take a decade (Reconstruction

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Agency 2011). The timely completion of this stage is deemed a necessity especially for the 263,958 people who are still living as evacuees (the figure as of March 2014) (Reconstruction Agency 2014).

This chapter investigates the recovery and reconstruction stage that follows emergency response. The recovery and reconstruction stage is aimed at helping "victims to return to normal life," restoring "facilities with the intention of preventing disasters in the future and implementing fundamental development plans that focus on safety in the community" (Cabinet Office and Government of Japan 2002, p. 20). Drawing from the cases of various countries, some writers have proposed that social capital (Buckland and Raman 1999; George 2008; Miyamoto 2010; Nakagawa and Shaw 2004) and resource availability for construction work (Chang et al. 2012) facilitate recovery and reconstruction. Others have highlighted the economic vulnerability of communities and households (Carter et al. 2007; Fothergill and Peek 2004; Robinson and Jarvie 2008) as hindrances to recovery.

By contrast, this chapter illuminates the functioning of collaborative governance as another condition affecting the recovery and reconstruction process. Two phenomena that came into the limelight among practitioners in the aftermath of the 3.11 disasters were: (1) the significant flow of manpower support to Tohoku municipalities and (2) the collaborative governance alternatives invented to mobilize such support. These practices are still occurring, and they are deemed necessary because Japan's disaster management is the shared responsibility of the national government, 47 prefectural governments, and 1,718 municipal governments (the figures according to MIC n.d.b). In the 3.11 disasters, affected municipalities in Tohoku lost their decision-making capability, as well as communication and operational functionalities (Cabinet Office and Government of Japan 2011). This was not only because their office buildings were partially or completely destroyed, but also because many employees lost their lives to the tsunami. For example, Rikuzentakada City lost 111 city employees, including about 23 % of regular staff, about 7 % of fire fighters, and 11 % of district chiefs, among others (Rikuzentakada City 2014). Otsuchi Town lost 40—that is, one-third—of its employees, including the town mayor (Otsuchi Town 2013). Ishinomaki City lost 48 employees; the City's Kitakami general branch office lost 17 out of nearly 40 staff (Gunma Prefecture n.d.). Shortages of human resources have been, and will be, detrimental, to the recovery and reconstruction process in years ahead.

With a focus on the area of manpower support, this chapter proceeds as follows. The next section defines collaborative governance in disaster management. The third section reviews the scholarship on this topic. The fourth section explains a variety of governance arrangements invented to boost manpower support to the Tohoku municipalities. The fifth section discusses policy challenges and lessons, and suggests future research agendas. Japan's story—its struggles and inventions—is worth sharing with the rest of the world. The conclusion thus discusses the applicability of Japan's case to the broader, global community. In particular, the case warns policy makers in countries with decentralized disaster management that their disaster governance could lose its functionality at the local level and encourages them to craft manpower governance that will make their communities more resilient.

7.2 Definitions of Collaborative Governance in Disaster Management

Emerson et al. (2011) conducted a meta-analytic study of collaborative governance research and defined collaborative governance as "the process and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished" (Emerson et al. 2011, p. 2). Such cross-boundary decision making and management is exactly what has been happening since the 3.11 disasters. When speaking hereafter of the municipalities directly affected by the 3.11 disasters, this chapter uses the term "collaborative manpower support" to mean collaborative governance in the area of manpower support.

The term *coordination* is often used along with the term *collaboration*. Scholars distinguish these two in terms of what actors do and how they engage each other. Kapucu et al. (2009) noted that "[c]oordination requires that different positions or actors perform subtasks of the decision in a sequential order," which is different from collaboration, whereby actors "cooperate throughout all stages of the task" (p. 299). Similarly, Ansell and Gash (2007) noted that "the institutionalization of a collective decision-making process is central to the definition of collaborative governance," whereas collective decision-making is "secondary" in coordination, which is a mere agreement among actors, such as between the public and the private sectors, "to deliver certain services or perform certain tasks" (p. 548). According to these definitions, the extent of engagement among actors is more intense in collaboration than in coordination.

In this chapter, four collaborative arrangements are discussed, and they are identified as collaboration rather than coordination, notwithstanding the aforementioned distinctions between these two terms. This is because actors may be performing different subtasks; and hence, according to the abovementioned definitions, they are in coordination. But their subtasks may be neither clearly demarcated nor delivered independently in a strict sequence. This chapter, therefore, relaxes the definition of collaboration to refer to an arrangement encompassing features of collaboration and coordination: it is a cross-boundary arrangement whereby actors may not always engage in the same subtasks, but work closely together with a high degree of communication to accomplish the shared goal. This chapter still uses *coordination* to mean the act of organizing and arranging collaboration, defined in this way.

The four collaborative arrangements, defined in terms of manpower support, are as follows. *Vertical collaboration* generally refers to an inter-governmental arrangement. This chapter uses the term to specifically mean an arrangement involving the national government, disaster-affected municipalities and their prefectural governments. *Horizontal collaboration* generally refers to an arrangement whereby organizations in the same tier of government work together; this chapter discusses collaboration among agencies in the national tier. In *inter-sectorial collaboration*, the government, businesses, and nonprofit sectors work closely together to run a manpower support scheme. In *wide-area collaboration*, municipalities nationwide

jointly offer their manpower to aid municipalities in disaster-affected areas. Wide-area collaboration is different from horizontal collaboration due to the sheer number of municipalities involved, and hence, it requires coordination by the national and prefectural authorities (Aoki forthcoming).

7.3 Scholarship on Collaborative Governance in Disaster Management

Despite increasing attention to collaborative governance in the field of public administration, studies of collaborative governance remain scant in the context of disaster management (Kapucu and Garayev 2011; McGuire and Silvia 2010), although they are not entirely absent. Recently, scholars have become aware that disaster management is inherently collaborative, and they write about cross-boundary decision making and management, referring to "disaster networks" (Vasavada 2013), "collaborative decision-making" (Kapucu and Garayev 2011), "integrated and interdependent collaborations" (Kapucu et al. 2010), "integrated governance" (Samaratunge et al. 2008), "cross-sector collaboration" (Simo and Bies 2007), and "networks" (Choi and Brower 2006; Wise and McGuire 2009) or "collaborative networks" (Waugh and Streib 2006). A few have taken what Provan and Kenis (2008, p. 232) called "network analytical approaches," empirically describing and explaining "network structural characteristics," such as the density of connections among actors and the centrality or importance of actors in the network (see, for example, Choi and Brower 2006; Kapucu et al. 2009, 2010).

In general, past studies suggest that collaboration can be triggered by (1) the presence of a leader who "initiate[s] and help[s] secure resources and support"; (2) interdependence, which arises when "individuals and organizations are unable to accomplish something on their own"; (3) uncertainty about problems and solutions, which drives organizations to collaborate to reduce, diffuse, and share risk; and (4) consequential incentives, such as resource needs, interests, and opportunities inside organizations, as well as crises, threats or opportunities external to organizations (Emerson et al. 2011, p. 9). Collaboration in disaster management emerged in the US as a corrective alternative to the top-down, command-and-order type of Weberian bureaucracy (Waugh and Streib 2006). Once collaboration begins, scholars claim that an effective collaborative process requires mutual trust (Emerson et al. 2011; Samaratunge et al. 2008) and shared visions and values (Samaratunge et al. 2008), as well as effective leadership (Waugh and Streib 2006). These are hard to come by, especially in the context of a disaster, as was illustrated by Hurricane Katrina, where coordination among federal agencies and state and local governments was problematic (Leonard and Howitt 2006; Mycoff 2007; Waugh and Streib 2006; Wise 2006). The coordination problem was compounded by federalism, by which a concentration of power is avoided (Menzel 2006); there was an unsettled understanding as to whether and when federal agencies could supersede state and local governments

in order to execute the National Response Plan designed to ensure intergovernmental coordination (Mycoff 2007; Wise 2006).

The above-cited works generally concern the emergency response stage; in contrast to this is a dearth of studies on the recovery and reconstruction stage. This may be because the impact of disasters is most visible to practitioners and researchers immediately after a disaster occurs—namely, during the emergency response—and, in particular, because collaborations are less frequent during recovery and reconstruction than during the emergency response. This is suggested by the findings of Samaratunge et al. (2008): in Sri Lanka, in the aftermath of the Indian Ocean tsunami, the government, NGOs, international organizations, the business community, and local communities were all engaged in the relief stage, but only the government and NGOs made recovery and rebuilding efforts. The recovery and reconstruction stage deserves as much attention as the emergency response stage in the bid to build disaster-resilient communities and nations. Resiliency requires people to be rescued first, but their communities also need to be restored and rebuilt, so that they can move forward despite adversities. This requires a longer time span than the emergency response stages. Unlike what is seen in most previous work, the present case of the 3.11 disasters illuminates the role collaborative governance plays in expediting recovery and reconstruction.

Also noteworthy about the current case is that it offers insight into the question of whether countries can make themselves self-resilient via governance innovations, and if so, how. In this regard, this case involves a set of innovations that differ from those of other collaborative models like (1) Indonesia's post-Aceh national initiative called the Badan Rehabilitasi dan Rekonstruksi (BRR), designed to coordinate donor-funded projects for reconstruction (Brassard 2009), and (2) the United Nations' cluster approach, introduced under the 2005 Humanitarian Reform Agenda, which aims to coordinate UN and non-UN humanitarian agencies during several stages of disaster management including early recovery (UN Office for the Coordination of Humanitarian Affairs n.d.). The BRR and UN approaches are about how to coordinate foreign aid that is not entirely under the control of the country receiving it. In contrast, collaborative manpower support in the wake of the 3.11 disaster is an attempt to craft governance to mobilize available scarce domestic human resources to buttress the communities directly affected by the disaster.

7.4 Japan's Collaborative Manpower Support Prior to 3.11 Disasters

Collaborative manpower support is not new in Japan. A classic model for this is the Emergency Fire Response Team (EFRT), formed in 1995 after the Great Hanshin-Awaji Earthquake. As of October 2010, prior to the 3.11 disasters, the EFRT comprised 3,961 municipal firefighting and prefectural air fire teams from 789 firefighter headquarters nationwide. EFRTs are organized and trained at the prefectural level. Although fighting fires is a function of the municipalities in ordinary times, in

large-scale disasters, EFRT member teams are called into action by the Commissioner of the National Fire Response Agency or by the mayors of affected municipalities (FDMA n.d.). During the 88 days after the 3.11 disasters, approximately 110,000 team members were deployed, and they rescued 5,064 people in Miyagi, Iwate, and Fukushima prefectures (MIC 2014a).

On a smaller scale, municipalities enter into mutual aid agreements with other municipalities to insure smoother functioning in the wake of a disaster as a self-reliant mechanism. Article 67 of the Basic Act on Disaster Control Measures stipulates that the mayors of disaster-hit municipalities can request the mayors of other municipalities to provide emergency help when the disaster affects the region involving them, and the mayors who receive requests are not allowed to refuse them without good justification. Motivated by this act, 1,571 (about 90 %) of 1,750 municipalities in Japan had mutual aid agreements as of April 2010. Of these, 820 had agreement with municipalities outside their prefectures (FDMA 2012). As for the municipalities in Tohoku, prior to the 3.11 disasters, all municipalities in Iwate and Miyagi prefectures and about 80 % of the municipalities in Fukushima were engaged in such agreements as of April 2010 (FDMA 2012). These mutual aid agreements, made prior to any disaster, are intended mainly for the emergency response stage of disaster management; they differ from the governance arrangements discussed in the following section, in that the latter are put into place after a disaster for the recovery and reconstruction stage.

7.5 Collaborative Governance Alternatives in the Aftermath of the 3.11 Disasters

This section elaborates on the four arrangements defined earlier. Although they differ with respect to the stakeholders involved, they are all aimed at boosting manpower for disaster-affected municipalities. Under all of the arrangements, disaster-affected municipalities receiving manpower support (hereafter referred to as "receiving municipalities") bear zero financial costs, owing to the national government's Special Allocation Tax Fund for Reconstruction (hereafter referred to as the SAT), a part of which is budgeted for mobilizing manpower support. The SAT itself decreased over 2 years, from 813,449 million yen in 2011 to 507,074 million yen in 2013. Even so, the budget for manpower support increased from 4.8 billion to 27.3 billion yen (MIC 2014a, c). This suggests the growing importance of, and commitment to, manpower-support activities.

7.5.1 Wide-Area Collaboration

Wide-area collaboration was launched in March 2011, and it is still ongoing as of mid-2014. The target sources of support are municipalities nationwide and their third-sector organizations (i.e., incorporated foundations and associations), which

are funded partially by the municipalities. In essence, national and prefectural entities play a role in matching the demand for, and supply of, manpower support. They are the Ministry of Internal Affairs and Communications (MIC), the Japan Association of City Mayors (JACM), the National Association of Towns and Villages (NATV), and disaster-affected prefectural governments, three of which are in the Tohoku region (Iwate, Miyagi, and Fukushima prefectures) and two in nearby regions (Ibaragi and Chiba prefectures). The MIC oversees the whole scope of activities for wide-area collaboration; surveys prefectural governments on manpower needs in their municipalities; solicits manpower offers nationwide via JACM and NATV; and proposes human-resource arrangements in accordance with current legal frameworks. Next, the JACM and NATV act as a bridge between the MIC and municipalities nationwide; they call for help and indicate how many personnel they need by posting announcements on their websites. Municipalities nationwide then volunteer their employees. This information is passed on to the MIC and to the prefectural governments in the disaster areas, which in turn decide the allocation of manpower within their prefectures. Further arrangements are made thereafter between the particular sending and receiving municipalities.

This model is a form of collaborative governance and differs from mere coordination as defined by Kapucu et al. (2009) and Ansell and Gash (2007). This is because stakeholders are engaging and communicating very closely to decide what action to take, even though they play different roles. The JACM's published record reveals that on March 21, 2011, the JACM conferred with the MIC regarding the manpower support scheme, and on the following day, the JACM President made requests to the Minister of the MIC and the Vice Chief Cabinet Secretary regarding manpower support for disaster-affected municipalities. The JACM President, in a press conference held on March 30, 2011, explained that the JACM was working to build manpower support schemes, in collaboration or cooperation (*kyōdo-de* in Japanese, which can be translated as either) with the MIC, disaster-affected prefectures, and the NATV (see JACM [n.d.]) for the chronology of actions the JACM has taken since March 11, 2011). The MIC does more than coordinate; it offers financial assistance and provides legal advice to municipalities concerning existing legal frameworks that can be applied to recruit and/or send their employees to receiving municipalities.

Although the recovery and reconstruction stage is the focus of this chapter, the successful implementation of the aforementioned scheme during the 3.11 emergency response is noteworthy for highlighting the challenges faced later during the recovery and reconstruction stage. On March 30, 2011, municipalities were invited to send their employees for a short period of time—that is, a few weeks or months—to help with emergency work such as restoring the functions of government offices, administering office counter services, operating evacuation sites, sorting out relief goods, and so forth (JACM 2011a), in an attempt to answer requests for 673 workers. To everyone's satisfaction, this goal was quickly met, owing to 400 municipalities and five associations of city and district mayors who expressed their willingness to offer 2,000 employees by April 11, 2011 (JACM 2011b). By June 15, 2011, 1,056 employees of 360 municipalities had been, or were ready to be, sent (JACM 2011c). This

number increased further to 1,119 by July 22 (JACM 2011d) and to 1,142 from 412 municipalities by August 26 that same year, when the JACM President announced that the demand for short-term manpower support had been largely met (JACM 2011e). In the end, 1,148 persons from 417 municipalities were sent by September 12, 2011 (JACM 2011f), generally for periods of less than a month (JACM 2014).

In stark contrast to this achievement were the difficulties encountered during the recovery and reconstruction stage from late 2011 through 2013. In May 2011, the MIC and the JACM (and the NATV) called for manpower support in anticipation of the recovery and reconstruction phase (JACM 2011g). Manpower support for this stage differed (and still differs) from that for emergency response, in three respects. First, employees were asked to stay in the receiving municipalities for mid- to long-term periods of time (i.e., several months to years) (JACM 2011a), to ensure the continuity needed for reconstruction work such as engineering and public nursing. Second, in addition to general administrative officers, recovery and reconstruction requires manpower in advanced technical areas, such as architects, public nurses, and civil, agricultural, electronic, and mechanical engineers. Lastly, the municipalities sending help did not have to pay compensation and expenses for their departing employees; these were treated as employees of both municipalities under Article 252 (17) of the Local Autonomy Act. Their salaries, allowances (except for retirement allowances), and travel expenses were borne by the receiving municipalities, and hence, financed by the SAT. This arrangement was (and is) different from the short-term manpower transfer mentioned earlier, where salaries were still paid by the sending municipalities, although the SAT paid 80 % of other expenses.

Due to the lesser financial burden, one might expect that the arrangement for mid- to long-term manpower support would have been a more powerful incentive to municipalities to offer help than the arrangement for short-term manpower transfers. However, lending their employees for mid- to long-term timeframes was difficult for many of them, for the following reasons: In response to MIC surveys, some municipalities explained that their governments were short of technical staff to begin with, and sending scarce human resources for the requested periods was difficult because it meant they had to fill the positions vacated by the departing employees. Some municipalities had to rotate their staff to prevent positions from being vacated for too long and collaborate with other municipalities to send replacements in turn (MIC n.d.a). Due to these reasons, among others, although Tohoku municipalities requested 187 persons by June 10, 2011 (JACM 2011h), only 166 persons were offered as of November 18 that same year (JACM 2011i). As 2012 approached, another call was made for the coming year; the demand reached 540 positions by then, but only 310 were filled by April 13 the following year (JACM 2012a).

Aware of these trying circumstances, the MIC, in an announcement dated February 24, 2012, proposed four actions municipalities could take to boost the manpower supply. These were: (1) hiring not only new graduates, but also mid-career workers as full-time, regular employees; (2) rehiring former employees or retaining retiring employees as full-time or part-time staff, in accordance with Article 28, 4–6 of the Local Public Service Law; (3) hiring fixed-term (full-time or

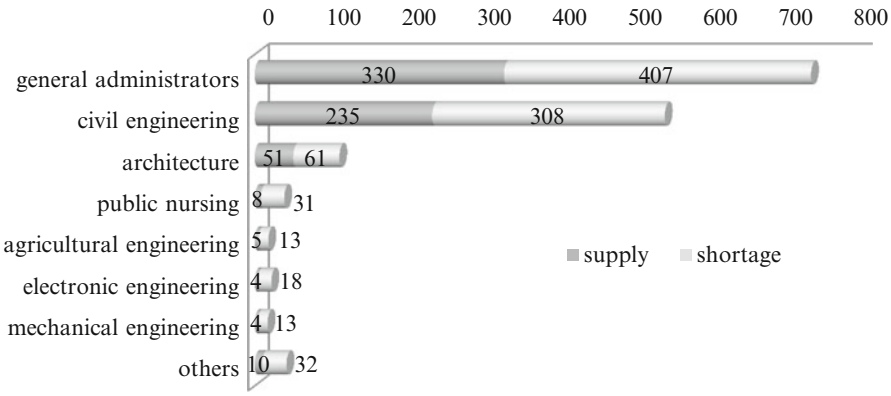

Fig. 7.1 Supply and shortage of manpower support in Iwate, Miyagi, and Fukushima municipalities, February 14, 2014 (Unit: Number of Personnel). *Source*: Created by the author based on the data from MIC (2014b)

part-time) staff; and (4) hiring temporary staff with technical skills and knowledge, in accordance with Articles 17 and 22 of the Local Public Service Law. The first three would be financed by the SAT while the last would be financed by another national budget, the Job Creation Fund (*Koyōsōshutukikin*) (JACM 2012b). Some municipalities followed these proposals. Even so, the supply of manpower was still insufficient as of November 2012. Towards the end of 2013, the MIC expanded the sources for the supply of manpower to the third sector (JACM 2013); it arranged for third-sector employees to retain their existing employment, while working for Tohoku as fixed-term municipal employees (MIC 2013).

In sum, in 2011, 2012, and 2013, respectively, 166, 457, and 550 workers were sent to disaster-affected municipalities for mid- to long-term periods of time (JACM 2014). Figure 7.1 shows the degree to which the supply of the manpower met the demand for various work areas. The length of the bars represents the volume of demand, some of which was met by supply (darker gray), while the rest experienced a shortage. In terms of percentages, the degree to which demand was met was relatively high in areas of general administration, civil engineering, and architecture, though the supply was still below 50 % of the demand. The supply for other areas remained considerably lower, particularly for electronic engineering (about 18 %). While wide-area collaboration remains in place today, the following additional arrangements have been set up to recruit larger amounts of manpower for the long reconstruction process ahead.

7.5.2 Vertical Collaboration

Before delving into vertical collaboration, it is worth noting that the national and prefectural governments have been unilaterally helping disaster-affected municipalities. The central ministries directly send national civil servants to help.

Evidence for this is seen in the 49 national civil servants, from six national ministries (excluding those from the Ministry of Defense), who worked for municipalities in Iwate, Miyagi, and Fukushima prefectures on December 11, 2013 (Reconstruction Agency n.d.a.). The Reconstruction Agency hires fixed-term general national civil servants, either full-time or part-time, and dispatches them to disaster-affected municipalities. Iwate, Miyagi, and Fukushima prefectures also recruit human resources to send to municipalities; on October 1, 2013, 207 persons recruited by the prefectures were working at municipal governments (Reconstruction Agency n.d.b.).

Vertical collaboration differs from the abovementioned unidirectional help in that it requires all stakeholders to work together to boost manpower in disaster-affected municipalities. In vertical collaboration, the national government finances, out of the SAT, the hiring of fixed-term municipal employees by disaster-affected municipalities. Two national agencies (the MIC and the Reconstruction Agency) and the prefectural governments' websites guide prospective workers to the municipal governments' web pages for detailed application information and job descriptions. The national government has also set up a reconstruction assistant scheme to help municipalities hire workers as reconstruction assistants for periods of 1–5 years. These workers engage in community building, patrolling, and providing care to evacuees, among other tasks. The disaster-affected municipalities recruit them, while the MIC and Iwate, Miyagi, and Fukushima prefectures help with the hiring process by posting program information online (MIC 2012).

7.5.3 Horizontal Collaboration

In January 2013, three national agencies—namely, the Reconstruction Agency, the Japan International Cooperation Agency (JICA), and the Japan Overseas Cooperative Association (JOCA)—launched a collaboration to send former Japan Overseas Cooperation Volunteers to municipalities in the Iwate, Miyagi, and Fukushima prefectures. Japan Overseas Cooperation Volunteers are dispatched to developing countries by JICA, an administrative agency which oversees Japan's Official Development Assistance (JICA n.d.). JOCA is an organization representing mainly former Japan Overseas Cooperation Volunteers (JOCA n.d.a.). As of April 2014, JOCA called for applications from volunteers to work in the areas of nursing, architecture, engineering, social work, community development, temporary housing, and collective relocation, among others (JOCA n.d.b.). Former Volunteers whose skills match the needs of Tohoku municipalities are employed as either part-time or full-time national public employees. The positions include general administrators in the areas of community development, community problem solving, and assistance with temporary housing, and collective relocation, and specialists in the areas of health, engineering, architecture, and community development (JOCA n.d.b.). The mission duration is set to be less than a fiscal year, although up to two renewals can be made, depending on a worker's performance. On March 11, 2014, there were 76 people working in Tohoku municipalities under this scheme (JOCA 2014).

7.5.4 *Inter-Sectorial Collaboration*

In October 2013, the Reconstruction Agency launched a platform called "Work for Tohoku," aimed to mobilize manpower support from the business sector in collaboration with private and nonprofit sectors. In essence, Work for Tohoku is a platform designed to bridge the manpower needs of disaster-affected municipalities with the desire of business corporations to offer their employees opportunities to gain experience and grow. The project is managed by the Nippon Foundation, a nonprofit philanthropic organization that uploads calls for manpower support to their website and makes personal visits to companies interested in participating. To mobilize manpower support from the business sector, the Foundation works with three economic organizations:

(1) the Japan Association of Corporate Executives (Keizai Doyukai),
(2) the Japan Business Federation (Keidanren), and
(3) the Japan Chamber of Commerce and Industry (JCCI).

These are private nonprofit organizations representing extensive networks in the business sector; Keizai Doyukai has 1,280 top executives of large corporations among its membership (Keizai 2013); as of 2013, Keidanren had memberships involving 1,300 companies, 121 industrial associations, and 47 regional economic organizations (Keidanren n.d.); and JCCI represented about 1.26 million members from the business sector (JCCI 2014). The role of these organizations is to use their extensive networks to disseminate information about Work for Tohoku and encourage support. Through Work for Tohoku, the Reconstruction Minister hopes to create "win-win" opportunities for both the private sector and the receiving municipalities (Nemoto 2013).

7.6 Policy and Research Implications

The above empirical evidence of collaborative governance arrangements was drawn mostly from published official announcements and publicly available data. This implies that there might be other information that has not been captured. Nevertheless, the evidence is enough to encourage policy makers and researchers to revisit the way current disaster governance is conducted, and to ask if their current arrangements can handle future disasters. This section draws policy and research implications.

First and foremost, what has been happening since the 3.11 disasters sends a warning that decentralized disaster governance entails the risk of losing functionality at the local level. Thus, governance must be able to make a nimble adjustment to restore functions. This is beyond the capability of a single local government when the devastation is enormous. After the 1995 Hanshin and Awaji Earthquake, Japan appeared to be well prepared in terms of EFRT and municipal aid agreements for emergency response; but the actual disaster, when many municipal employees lost

their lives to the tsunami, substantially exceeded expectations. With no remedy, this could have been detrimental to the progress of recovery and reconstruction. Awareness of this risk has prompted some Japanese municipal governments to revise their evacuation plans, in order to prevent public officials from being victimized (see, for example, Kamaishi City 2012), and it led to an increase in the number of municipalities in mutual aid agreements, from 1,592 to 1,650, and an increase in the number of agreements, from 1,848 to 2,920, between April 1, 2011 and April 1, 2013 (FDMA 2012, 2014).

Second, the challenges faced by Japanese stakeholders are noteworthy. The studies reviewed earlier indicate that the capacity of stakeholders is a condition essential for collaborative governance. This explains what happened in the 3.11 case: even though a number of municipalities were willing to offer help under their wide-area collaboration, some municipalities were simply not able to offer help, due to a shortage of technical staff in their own municipalities, while others were not able to let their employees go for a mid- to long-term span of time. The discontinuity of work in receiving municipalities, associated with short-term manpower transfer, has been raised as the main problem (see, for example, Cabinet Office and Government of Japan 2011 and Kamaishi City 2012). Another concern is over the sustainability of manpower support. Sato et al. (2013) found that stakeholders in Ishinomaki City were anxious about the increasing difficulty in getting unaffected municipalities to understand why they should send manpower to the affected municipalities, due to the decreasing media coverage of the post-disaster situation in Tohoku. They were also concerned that the distribution of manpower might be skewed towards municipalities with better infrastructure. The challenges, thus, seem to be how to ensure continuity of work, and a sustainable flow and equitable distribution of manpower. Third, the leadership roles of two national agencies, namely the MIC and the Reconstruction Agency, are noteworthy. As reviewed earlier, the literature emphasizes the importance of a leader who can secure resources to keep collaborative governance going. The national agencies took the lead in inventing a variety of collaborative arrangements, stepped forward to bear financial costs, and disseminated information regarding manpower support. This role of the national agencies is deemed to be significant because manpower support has to be mobilized from municipalities nationwide; the national agencies are in a good position to coordinate the voluntary support efforts of municipalities, due to their bird's-eye view, which enables them to oversee all of the municipalities in Japan. Furthermore, they are also in a good position to craft collaborative arrangements within national legal frameworks. It would have been difficult for municipalities or the private and nonprofit sectors to play this role. The asymmetric power relationship between the central government and the localities in the unitary state may have helped the MIC to intervene without hesitation and to carry out its coordination and advisory roles without concern about dissent from local governments.

Lastly, the above discussion, drawn from a single case study, is merely suggestive, and hence, may prompt future research to investigate a number of empirical questions. For instance: What factors and conditions determine the performance of

collaborative governance? How can we ensure that collaborative governance can be quickly arranged? What would be the optimal design of collaborative governance for a given administrative and political setting? How can the continuity of work and a sustainable flow and equitable distribution of manpower be attained? Furthermore, something that has not been addressed in Japan's policy discourse is the question of how to get the SAT scheme right, such that municipalities maintain an efficient level of demand for manpower, knowing all of the costs will be borne by the national government. These questions would be better addressed by going beyond a single case study and bringing comparative and systematic perspectives to bear in future research.

7.7 Conclusions

In some ways, governance can be considered as a form of technology; if designed and implemented well, it can help communities to mitigate risks and restore hope in the wake of disasters. Japan, a disaster-prone country, had been working to buttress its communities with improved disaster governance. Even so, it was not able to handle the 3.11 disasters with its existing governance arrangements. As a result, the architecture of governance changed. Massive manpower support has been flowing into the Tohoku municipalities to help rebuild their communities, and this has been made a reality through a range of collaborative governance arrangements. Japan's experiences urge the creation of new agendas for disaster governance for future generations. Although the implications drawn from this single case study are merely suggestive, future researchers may provide more systematic and comparative views for understanding the issues surrounding manpower support.

Policy makers outside Japan are encouraged to carefully assess the transferability of the aforementioned policy implications because what works best, and the challenges faced, in one political and administrative context may not be the same in another. They need to be aware that collaborative manpower support took place within the unitary context of Japan. Hence, the case is most generalizable to unitary states with a large number of localities with decentralized disaster management or countries whose governments are considering decentralizing disaster management. Japan's case is not applicable to city and island states with no local governments. Furthermore, the way collaborative manpower support works might differ in a federal state. Fewer intergovernmental issues appear to have been reported in Japan's collaborative manpower support than, say, in the wake of Hurricane Katrina, where federalism was considered to hamper coordination among the federal, state and local governments. The vertical intervention needed to achieve collaboration was, and is, probably less politically difficult in Japan than in a federal state.

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References

Ansell C, Gash A (2007) Collaborative governance in theory and practice. J Public Admin Res Theory 18:543–571

Aoki N (forthcoming) Wide-area collaboration in the aftermath of the March 11 disasters in Japan: Implications for responsible disaster management. International Review of Administrative Sciences

Brassard C (2009) Measuring aid governance in developing countries: an application to post-tsunami Aceh, Indonesia. Int Rev Admin Sci 75(4):629–648

Buckland J, Raman M (1999) Community-based disaster management during the 1997 red river flood in Canada. Disasters 23(3):174–191. doi:10.1111/1467-7717.00112

Cabinet Office, Government of Japan (2002) Disaster management in Japan. http://www.cao.go.jp/en/disaster.html. Accessed 14 Feb 2013

Cabinet Office, Government of Japan (2011) 2011 Higashinihondaishinsai-niokeru saigaiōkyūtaisaku-nikansuru kentōkai chūkantorimatome (2011 Great East Japan Earthquake: a mid-term report on the disaster emergency response). http://www.bousai.go.jp/oukyu/higashinihon/pdf/cyukan_torimatome.pdf. Accessed 18 May 2014

Carter MR, Little PD, Mogues T, Negatu W (2007) Poverty traps and natural disasters in Ethiopia and Honduras. World Dev 35(5):835–856. doi:10.1016/j.worlddev.2006.09.010

Chang Y, Wilkinson S, Potangaroa R, Seville E (2012) Managing resources in disaster recovery projects. Eng Construct Architect Manag 19(5):557–580. doi:10.1108/09699981211259621

Choi SO, Brower RS (2006) When practice matters more than government plans: a network analysis of local emergency management. Admin Soc 37:651–678. doi:10.1177/0095399705282879

Emerson K, Nabatchi T, Balogh S (2011) An integrative framework for collaborative governance. J Public Admin Res Theory 22:1–29. doi:10.1093/jopart/mur011

Entrepreneurial Training for Innovative Communities (ETIC) (2012) Disaster recovery leadership development project: Annual report 2011–2012. http://www.etic.or.jp/recoveryleaders/en/wp-content/uploads/2012_E_report_ETIC_Disaster_Recovery_Leaders.pdf. Accessed 20 Apr 2014

Fire and Disaster Management Agency (FDMA) (2012) Chihōkōkyōdantai-no sogoōen-no kyōkanituite (On the strengthening of inter-local mutual assistance). A handout prepared for the information sessions for local governments, concerning the basic act on disaster control measures. http://www.fdma.go.jp/neuter/about/shingi_kento/h24/tikoutai/01/shiryo_02.pdf. Accessed 13 Apr 2014

Fire and Disaster Management Agency (FDMA) (2014) Chihōbōsaigyōsei-no genjō (The status of local disaster management). http://www.fdma.go.jp/disaster/chihoubousai/pdf/genkyo24.pdf. Accessed 19 May 2014

Fire and Disaster Management Agency (FDMA) (n.d.) Emergency fire response teams. http://www.fdma.go.jp/neuter/topics/kinkyu/kinshoutai.pdf. Accessed 20 Apr 2014

Fothergill A, Peek LA (2004) Poverty and disasters in the United States: a review of recent sociological findings. Nat Hazards 32:89–110. doi:10.1023/B:NHAZ.0000026792.76181.d9

George BP (2008) Local community's support for post-tsunami recovery efforts in an agrarian village and a tourist destination: a comparative analysis. Community Dev J 43(4):444–458. doi:10.1093/cdj/bsm019

Gunma Prefecture (n.d.) Higashinihondaishinsai-de tsunamihigai-wouketa jichitai-no kōbunsho (Official documents of municipalities affected by tsunami in the Great East Japan Disasters). http://www.archives.pref.gunma.jp/20110311-hisaibunsyo/20110311-hisaibunsyo-hou/20110311-hisaibunsyo-hou-ishi.pdf. Accessed 20 May 2014

JACM (2011a) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 14-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 14-1)

JACM (2011b) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 23-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 23-1)

JACM (2011c) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 44-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 44-1)

JACM (2011d) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 49-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 49-1)

JACM (2011e) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 54 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 54)

JACM (2011f) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 58 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 58)

JACM (2011g) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 35-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 35-1)

JACM (2011h) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 39-2 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 39-2)

JACM (2011i) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 66-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 35-1)

Japan Association of City Mayors (JACM) (2012a) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 83-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 83-1)

JACM (2012b) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 88-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 88-1)

JACM (2013) Zenkoku shichōsonkai heisei 23-nen tōhokuchihō taiheiyōokijishin saigaitaisakuhonbu: Jōhō 117-1 (The Japan Association of City Mayors 2011 Tohoku Region Pacific Offshore Earthquake response team headquarter: Information 117-1)

JACM (2014) Higashinihondaishinsai-nikakawaru hisaishichōson-nitaisuru shokuin-no hakenketteijōkyō-nituite (Heisei 26-nen 2-gatu 14-kka Genzai) (The status of manpower support to the municipalities affected by the Great East Japan Earthquake, as of February 14, 2014). http://www.mayors.or.jp/p_saigaihonbu/documents/260324hakenjyoukyou.pdf. Accessed 20 Apr 2014

JACM (n.d.) Heisei 23-nen tōhōkuchihō taiheiyōokijishin saigaitaisakuhonbu (2011 Tohoku Region Pacific Offshore Earthquake response team headquarter). http://www.mayors.or.jp/p_saigaihonbu/documents/251101honbu_ugoki.pdf. Accessed 19 May 2014

Japan Chamber of Commerce and Industry (JCCI) (2014) About JCCI. http://www.jcci.or.jp/english/about.html. Accessed 20 Apr 2014

Japan International Cooperation Agency (JICA) (n.d.) About JICA. http://www.jica.go.jp/english/about/organization. Accessed 20 Apr 2014

JOCA (2014) Higashinihondaishinsai hisaishien – Jicchino jigyōichiran (Assistance in the aftermath of the Great East Japan Earthquake – A list of projects being implemented). http://www.joca.or.jp/activites/disaster/tohokuearthquake/20140311.html. Accessed 20 Apr 2014

JOCA (n.d.a) About JOCA. http://www.joca.or.jp/english/about. Accessed 20 Apr 2014

JOCA (n.d.b) Fukkōchō, JOCA, JICA tono sansharenkeijgyō-niyoru fukkōshienin-no boshu (Reconstruction Assistants: Call for application by the Reconstruction Agency, JOCA, and JICA in collaboration). http://www.joca.or.jp/activites/disaster/tohokuearthquake/re0124.html#entry. Accessed 27 Apr 2014

Kamaishi City (2012) Kamaishishi higashinihondaishinsai kenshōhōkokusho (An) (Report on The Great East Japan Earthquake for Rikuzentakada City (Plan)). http://www.city.kamaishi.iwate.jp/index.cfm/10,19876,c,html/19876/20120501-100843.pdf. Accessed 20 May 2014

Kapucu N, Garayev V (2011) Collaborative decision-making in emergency and disaster management. Int J Public Admin 34(6):366–375. doi:10.1080/01900692.2011.561477
Kapucu N, Augustin ME, Garayev V (2009) Interstate partnerships in emergency management: emergency management assistance compact in response to catastrophic disasters. Public Admin Rev 69:297–313. doi:10.1111/j.1540-6210.2008.01975.x
Kapucu N, Arslan T, Collins ML (2010) Examining intergovernmental and interorganizational response to catastrophic disasters: toward a network-centered approach. Admin Soc 42(2): 222–247. doi:10.1177/0095399710362517
Keidanren (Japan Business Federation) (n.d.) About KEIDANREN. http://www.keidanren.or.jp/en/profile/pro001.html. Accessed 20 Apr 2014
Keizai Doyukai (2013) Keizai Doyukai: Japan Association of Corporate Executives. http://www.doyukai.or.jp/en/about/pdf/pamphlet_en_2013.pdf. Accessed 20 Apr 2014
Leonard HB, Howitt AM (2006) Katrina as prelude: preparing for and responding to Katrina-class disturbances in the United States: testimony to U.S. Senate Committee, March 8, 2006. J Homeland Secur Emerg Manag 3(2):1–20
McGuire M, Silvia C (2010) The effect of problem severity, managerial and organizational capacity, and agency structure on intergovernmental collaboration: evidence from local emergency management. Public Admin Rev 70:279–288. doi:10.1111/j.1540-6210.2010.02134.x
Menzel DC (2006) The Katrina aftermath: a failure of federalism or leadership? Public Admin Rev 66(6):808–812. doi:10.1111/j.1540-6210.2006.00649.x
MIC (2012) Fukkōshienseido-nitsuite (On the reconstruction assistant scheme). http://www.soumu.go.jp/main_content/000259314.pdf. Accessed 20 May 2014
MIC (2013) Daisansekutā-no shokuin-wo tōgaidantai-no mibun-wo yūshitamama hisaichihōkō kyōdantai-ga ukeirerarerushikumi-no seibi-nituite (On the system that allows municipalities to recruit third-sector employees while keeping their employment with their current organizations). http://www.soumu.go.jp/main_content/000213010.pdf. Accessed 27 Apr 2014
MIC (2014a) Heisei 25-nendo shinsaitokubetuhukkōkōhuzei-no kettei (Decisions on the 2013 special allocation tax for disaster reconstruction). http://www.soumu.go.jp/main_content/000279773.pdf. Accessed 27 Apr 2014
MIC (2014b) Heisei 26-nendo higashinihondaishinsai hisaishichōson-eno shokuinhaken-nituite (2014 manpower transfer to municipalities affected by Great East Japan Earthquake). http://www.soumu.go.jp/main_content/000264880.pdf
MIC (2014c) Shinsaitokubetuhukkōkōhuzei-nituite (On the special allocation tax for disaster reconstruction). http://www.pref.okayama.jp/uploaded/life/334155_1569770_misc.pdf. Accessed 20 Apr 2014
MIC (n.d.a.) Higashinihondaishinsai-no hisaichihōkōkyōdantai-eno shokuinhaken-nisaishi kuhūshiteirutorikumi-no rei (Examples of initiatives in the area of manpower support to local governments affected by the Great East Japan Earthquake). Ministry of Internal Affairs and Communications. http://www.soumu.go.jp/main_content/000208135.pdf. Accessed 27 Apr 2014
MIC (n.d.b.) Shichōson-no hensen-to meiji/shōwa-no daigappei-no tokuchō (The change in the number of municipalities and the patters of municipal mergers in the Meiji and Showa periods). http://www.soumu.go.jp/gapei/gapei2.html. Accessed 28 Apr 2014
Miyamoto Y (2010) Social capital and livelihood recovery: post-tsunami Sri Lanka as a case. Disaster Prev Manag 19(5):548–564. doi:10.1108/09653561011091887
Mycoff JD (2007) Congress and Katrina: a failure of oversight. State Local Govern Rev 39(1):16–30
Nakagawa Y, Shaw R (2004) Social capital: a missing link to disaster recovery. Int J Mass Emerg Disast 22(1):5–34
Nemoto T (2013) Fukkōdaijingoaisatsu (Greeting from the reconstruction minister). http://www.work-for-tohoku.org/about/message.html. Accessed 19 May 2014
Otsuchi Town (2013) Otsuchi-cho higashinihondaishinsai kenshōhōkokusho (An) [Report on The Great East Japan Earthquake for Otsuchi Town (Plan)]. http://www.town.otsuchi.iwate.jp/docs/20140328000031/files/kensyo.pdf. Accessed 20 May 2014

Provan KG, Kenis P (2008) Modes of network governance: structure, management, and effectiveness. J Public Admin Res Theory 18(2):229–452. doi:10.1093/jopart/mum015

Reconstruction Agency (2011) Basic guidelines for reconstruction in response to the Great East Japan Earthquake. http://www.reconstruction.go.jp/topics/000052.html. Accessed 27 Apr 2014

Reconstruction Agency (2014) Zenkoku-no hinansha-no kazu (The number of evacuees nationwide). http://www.reconstruction.go.jp/topics/main-cat2/sub-cat2-1/20140327_hinansha.pdf. Accessed 9 Mar 2014

Reconstruction Agency (n.d.a.) Hisaijichitai-eno kokkakōmuin-no hakenōkyō, heisei 25-nen 12-gatu 11-nichi jiten (Transfers of national civil servants to disaster-affected municipalities, as of December 11, 2013). http://www.reconstruction.go.jp/topics/main-cat3/20131211_kokkakoumuinhaken.pdf. Accessed 27 Apr 2014

Reconstruction Agency (n.d.b.) Hisaijichitai-no fukkōtaisei-no shien (Assistance for the reconstruction efforts of disaster-affected municipalities). http://www.reconstruction.go.jp/topics/post_108.html. Accessed 9 Mar 2014

Rikuzentakada City (2014) Rikuzentakada-shi higashinihondaishinsai kenshōhōkokusho (An) [Report on The Great East Japan Earthquake for Rikuzentakada City (Plan)]. http://www.city.rikuzentakata.iwate.jp/shinsai/oshirase/houkokuan.pdf. Accessed 16 May 2014

Robinson L, Jarvie JK (2008) Post-disaster community tourism recovery: the tsunami and Arugam Bay, Sri Lanka. Disasters 32(4):631–645. doi:10.1111/j.1467-7717.2008.01058.x

Samaratunge R, Coghill K, Herath HMA (2008) Tsunami engulfs Sri Lankan governance. Int Rev Admin Sci 2008 74(4):677–702. doi:10.1177/0020852308098474

Sato S, Imamura F, Hayashi H (2013) An analysis of human resource management by the local government office in Great East Japan Earthquake disaster: focus on Ishinomaki city, Miyagi prefecture. Chiikianzengakkai Ronbunshū (Inst Soc Safety Sci) 21:169–177

Simo G, Bies AL (2007) The role of nonprofits in disaster response: an expanded model of cross-sector collaboration. Public Admin Rev 67(s1):125–142. doi:10.1111/j.1540-6210.2007.00821.x

UN Office for the Coordination of Humanitarian Affairs (n.d.). Cluster coordination. http://www.unocha.org/what-we-do/coordination-tools/cluster-coordination. Accessed 27 Aug 2014

Vasavada T (2013) Managing disaster networks in India. Public Manag Rev 15(3):363–382. doi:10.1080/14719037.2013.769854

Waugh WL Jr, Streib G (2006) Collaboration and leadership for effective emergency management. Public Admin Rev 66(s1):131–140. doi:10.1111/j.1540-6210.2006.00673.x

Wise CR (2006) Organizing for homeland security after Katrina: is adaptive management what's missing? Public Admin Rev 66(3):302–318

Wise CR, McGuire M (2009) Wildland fire mitigation networks in the western United States. Disasters 33:721–746. doi:10.1111/j.1467-7717.2009.01106.x

Chapter 8
Communities at the Heart of Recovery: Reflections on the Government-Community Partnership for Recovery After the 2009 Black Saturday Bushfires in Victoria, Australia

Kerry O'Neill

Abstract On February 7, 2009, the day that would become known as Black Saturday, over 700 bushfires ravaged the State of Victoria, Australia. Devastating many communities and shocking the entire nation, the fires took 173 lives, injured many more, and caused widespread destruction. In their wake, the national and Victorian governments established a central agency, the Victorian Bushfire Reconstruction and Recovery Authority (VBRRA), to lead and coordinate a massive recovery and reconstruction process that placed local communities at its core. This chapter provides a case study of how the VBRRA collaborated with community partners by examining the recovery planning efforts in Victoria's Marysville Triangle region. In particular, it explores how representatives of local communities, local businesses, and all levels of government jointly developed a framework for rebuilding in and around Marysville; settled on recovery priorities; and identified catalyst initiatives for regenerating community life and the local economy. The chapter concludes with a set of lessons drawn from this experience—but broadly applicable to other post-disaster scenarios—about government-community partnerships for the recovery planning process.

Keywords Advance recovery • Bushfires • Community partnerships • Disaster planning and recovery

8.1 Introduction

Bushfire (or wildfire, as referred to in other parts of the world) has always been an integral feature of the Australian environment. Hot, dry summers and long periods of drought contribute to climatic conditions that drive strong northerly winds from

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inland Australia southwards over parched, heavily vegetated forests. This set of factors poses high fire risk for more densely settled regions in the southeastern state of Victoria, which along with California and southern France is one of the three most fire prone areas on the planet (Parliament of Victoria 2009).

Post European settlement records point to 52 significant bushfires[1] in Victoria since 1851, when fires burned approximately 5 million hectares. Two-thirds of these events have occurred in the last 75 years. They include the Black Friday fires of 1939, which led to 71 deaths and burnt between 1.5 and 2 million hectares; and the Ash Wednesday fires of 1983, which contributed to 47 deaths (Parliament of Victoria 2009). In various ways, the government inquiries and scientific analysis that followed these disasters improved understanding of bushfire behavior in the Australian landscape and informed systems and policies for preparedness and response. However, 26 years after the last major bushfires, emergency agencies and local communities across Victoria seemed unready for the devastation that beset them on February 7, 2009, subsequently referred to as Black Saturday, when hundreds of fires overtook the state. In turn, the enormous damage and suffering they caused prompted the state—in partnership with the national government—to organize what would become the largest rebuilding and recovery program in its history, led and coordinated by the Victorian Bushfire Reconstruction and Recovery Authority (VBRRA).

This chapter begins with an overview of the Black Saturday Bushfires, followed by a discussion of the origins of the VBRRA and other recovery-related mechanisms. The author's experience as a practitioner leading long-term recovery planning in the Marysville Triangle region[2] is then used as a case study to explore the strengths and weaknesses of the partnership between the Authority and impacted communities. The chapter concludes with a set of lessons drawn from the Marysville experience to help inform future approaches to the disaster recovery planning process.

8.2 The Disaster

February 7, 2009 was forecasted to be a day of extreme fire risk in southeastern Australia. The State of Victoria was in the midst of a 10-year drought (one of the worst in recorded history); and in the preceding days it had experienced temperatures 12–18° above average. On the eve of the disaster, the state's Premier warned, "It's just about as bad a day as you can imagine and on top of that the

[1] A significant fire is defined as a fire in which one of the following occurs: human deaths, substantial property loss, or large areas of public land are burnt (Parliament of Victoria 2009).

[2] Marysville Triangle refers to the cluster of villages in the region around Marysville to the north–east of the Melbourne metropolitan area. It includes the villages of Narbethong, Granton, Buxton, Taggerty and Marysville.

State is just tinder dry. People need to exercise real common sense tomorrow" (Moncrief 2009).

On Black Saturday, with the highest official temperature in the state peaking at almost 49 °C/120 F and the capital city, Melbourne, reaching a record high of 46.4 °C/116 F (Australian Government Bureau of Meteorology, 2014), a series of bushfires ignited and spread rapidly. Suddenly, authorities were confronted with hundreds of reports of fire incidents. As the two largest fires to the northern and north-eastern peripheries of Melbourne gained momentum, changing winds and dry forests fuelled the spotting of embers up to 25 kilometres ahead of the fire front,[3] causing further outbreaks and contributing to the rapidly expanding spread of fire. Eventually, these two large fires joined to become one enormous blaze that destroyed the townships and properties that lay in its path (Tolhurst 2009; Country Fire Authority 2014).

Despite the best efforts of emergency response agencies, over 700 fires[4] ultimately affected 109 towns and 33 communities, taking the lives of 173 people and destroying 4,600 homes and buildings. Across the state, they burned 430,000 hectares of land and displaced more than 7,500 people (Parliament of Victoria 2009; Victorian Government 2011). Had Australia been a more densely settled country, the impact in terms of lives lost would probably have been far worse.

8.3 Organizing for Recovery[5]

In the fires' wake, the Australian and Victorian governments moved quickly to set up several mechanisms for implementing what would become the largest recovery program ever undertaken in Victoria. Among other things, they partnered with the Australian Red Cross to launch an appeal fund to support those affected by the bushfires and established a central agency, the Victorian Bushfire Reconstruction and Recovery Authority (VBRRA), to lead and coordinate a wide range of recovery-related tasks (Victorian Government 2011).[6]

[3] Fire spotting: the sparks and embers carried by wind and convective activity that start fires outside the main fire front. Spotting and the development of spot fires most commonly occur in front of and around the lead edge of fires, but can also occur along the perimeter (Parliament of Victoria (2009a) Victorian Bushfires Royal Commission: Interim Report).

[4] Over 1,300 fires incidents were reported to fire authorities on or immediately before Black Saturday (Victorian Bushfire Reconstruction and Recovery Authority 2009).

[5] Victorian Government (2011) provides a detailed overview of the process to establish the Authority. The Authority also produced a series of reports to the Victorian Government on the progress and steps towards the recovery of communities affected by the 2009 bushfires. These included comprehensive reports at key milestones (e.g., 100 days, 6 months, 12 and 24 months, 3 years). Much of this section draws from these reports.

[6] The Victorian Bushfire Appeal Fund ultimately received over US$400 million in donations from the public, along with contributions from private corporations and businesses, to support the recovery of people and communities affected by the fires (Victorian Government, 2014).

The State of Victoria, in collaboration with the national Government, designed the VBRRA as a unique public body. By drawing together personnel from across government, non-governmental organizations, and the private sector, officials aimed to establish the Authority as a flexible, dynamic, and action-oriented agency. This approach, they hoped, would on the one hand enable the VBRRA to mobilise resources across the bureaucratic silos of government, while on the other, allow it to harness the generosity, skills, and resources from the private and not-for-profit sectors. The VBRRA had an important role in guarding the broader public interest by ensuring that donations and government funds were allocated fairly and spent responsibly; streamlining processes for decision-making and cutting through red-tape; brokering outcomes across bureaucracies; and resolving problems quickly.[7]

8.3.1 A Framework for Recovery

The Authority structured its work program around an internationally recognised disaster recovery framework featuring four core pillars for recovery: *People* (which focused on the safety, health, welfare and wellbeing of affected individuals); *Reconstruction* (which sought to facilitate the rebuilding of destroyed and damaged infrastructure, including residential, commercial, rural, and public property); *Environment* (which focused on biodiversity and ecosystems, amenities, waste and pollution management, and natural resources); and the *Economy* (which aimed to support the regeneration of businesses, farming, and tourism).[8]

Understanding how these pillars worked in parallel and intersected with one another would be an essential element of the planning and design stages of rebuilding. But perhaps most fundamentally, and as illustrated in Fig. 8.1, the framework also emphasized the centrality of local communities for every issue and activity included in the four pillars. The VBRRA's community focus is detailed in subsequent sections of this chapter.

[7] The Authority was responsible for leading and coordinating an extensive number of tasks. These included: the development of a state-wide plan for recovery, the clean-up of affected areas, donations management, the provision of temporary housing, planning and co-ordinating the rebuilding of community infrastructure, providing assistance to rebuild private homes and businesses, mobilising the delivery of welfare and material aid, and facilitating psycho-social support, environmental rehabilitation, and economic development.

[8] The Recovery and Reconstruction Framework was adapted from one developed by the New Zealand Government, which acknowledges the multi-faceted nature of recovery by identifying four environments (social, economic, natural, and built) and the community as the unifying focus across all four. This model is similar in many respects to ones previously used by the Victorian and Commonwealth governments (Victorian Government 2011).

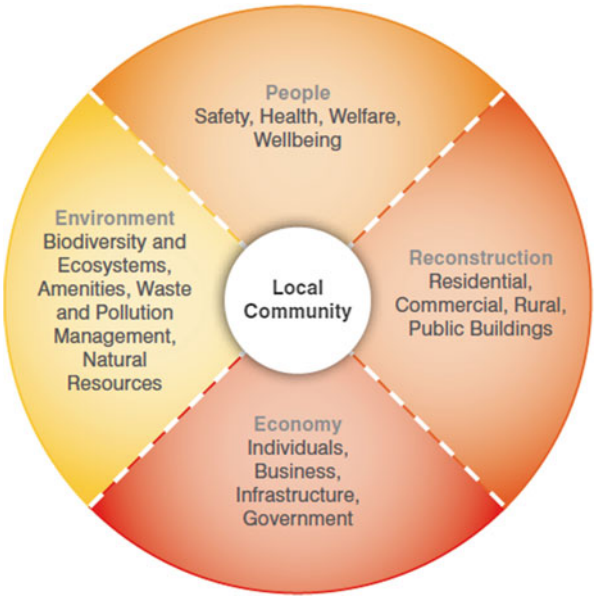

Fig. 8.1 VBRRA recovery and reconstruction framework. *Source*: Victorian Government (2011)

8.3.2 A State-Wide Plan for Recovery

One of the VBRRA's initial core tasks was to prepare a state-wide plan for reconstruction and recovery that would serve as the overarching agenda for disaster-affected communities' recovery efforts. Completed eight months after the disaster, the *Rebuilding Together Plan* allocated US$193 million from national and state governments, the Bushfire Appeal Fund, and other donors to support communities as they rebuilt homes and community infrastructure, stimulate economic development and rehabilitate the environment (Victorian Bushfire Reconstruction and Recovery Authority 2009).[9]

In parallel with the development of this plan—and in collaboration with responsible government agencies—the VBRRA also established several different bodies to facilitate the planning and delivery of bushfire recovery activities across government and non-governmental agencies. These included an interagency taskforce to oversee and coordinate across national and state levels of government; a long-term planning group to coordinate the state-wide plan for recovery; and a state-wide implementation group to oversee the delivery of the plan. In addition, the VBRRA created mechanisms at the local level for coordination between communities, local government authorities, service providers, and non-governmental organizations (Victorian Government 2011).

[9] It should be noted that by September 2009, just prior to the completion of the *Rebuilding Together Plan,* some US$867 million had already been invested in the reconstruction and recovery effort from government and other sources (Victorian Bushfire Reconstruction and Recovery Authority 2009).

8.4 Taking Steps Towards Community Recovery[10]

The establishment of the VBRRA marked a significant shift in the relationship between government and many of the rural communities affected by the fires. Before Black Saturday, residents of the region could be characterized as reasonably self-reliant; but the fires forced them into greater dependency. Concerned with their immediate needs, they suddenly found themselves looking to all levels of government for the support necessary to rebuild. At the same time, with the Authority's terms of reference (Victorian Government 2011) requiring that it place communities at the heart of the recovery process, government would come to rely heavily on the participation of local stakeholders to deliver a recovery agenda responsive to community priorities and needs. Within this context, a partnership between high-impacted communities and government would be critical to rebuilding.[11]

In the immediate aftermath of the disaster, the Authority primarily focused on responding to survivors' most urgent needs[12]; and as per its terms of reference and guiding framework, it soon began implementing several measures to empower and build the capacity of communities to lead their own recovery. From the onset, its government-appointed chairperson, executive team, and a small pool of senior officers (drawn largely from state government agencies) were on the ground, listening to survivors discuss their needs and helping communities identify priorities for the future. As the recovery process unfolded, the VBRRA also assigned its senior executives to "adopt a town" in the highest impacted communities. These officials were charged with streamlining coordination across project teams and troubleshooting problems; and their efforts would prove instrumental in building constructive working relationships with local recovery committees and community leaders.

Some key elements of the community-based recovery planning process are explored in greater detail below.

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[10] The Authority produced a series of reports to the Victorian Government on the progress and steps towards the recovery of communities affected by the 2009 bushfires. These included comprehensive reports at key milestones (e.g., 100 days, 6 months, 12 and 24 months, 3 years); and the Victorian Bushfire Reconstruction and Recovery Authority Legacy Report (Victorian Government 2011). Much of this section draws from these reports.

[11] VBRRA's Terms of Reference explicitly placed a strong emphasis on working closely with, and consulting, local communities throughout the rebuilding and recovery process. Specifically, they stated that the Authority was required to "work with communities to develop co-ordinated plans to deal with the effects of the disaster on local economies, communities, infrastructure, and the environment. These plans should cover the immediate recovery requirements and longer term development" (Victorian Bushfire Reconstruction and Recovery Authority 2009). The Authority also adopted guiding principles to support its Recovery and Reconstruction Framework that emphasized the importance of community-led approaches: "Community involvement is key and will be pursued through all activities with management at the local level empowered to deliver results" (Victorian Government 2011).

[12] Above all, this meant providing support for the bereaved as well as assisting people with finding shelter, cleaning up their properties and accessing material aid. Subsequently, the Authority also facilitated access for individuals to grants to rebuild their homes and support to re-establish their businesses through the Bushfire Appeal Fund, advisory services, economic leadership training, and small business assistance.

8.4.1 Community Service Hubs

In coordination with the VBRRA, the state's Department of Human Services established ten community hubs across Victoria to provide survivors with single, coordinated points of access to services offered by the three levels of government, along with linkages to non-governmental aid and charitable services. Through these hubs 500 case managers provided information, advice, and advocacy to survivors; they also coordinated direct personal support for bushfire-affected households. At its peak, with each affected person entitled to a case manager, the service provided support to over 5,500 clients (Victorian Government 2011).

8.4.2 Community Recovery Committees

In accordance with the Victorian Government's Emergency Management Manual (Parliament of Victoria 2009a), local governments were responsible for establishing and resourcing community recovery committees (CRCs) to support and coordinate local recovery efforts. Given the Authority's core principle of a community-led approach to reconstruction and recovery, it proactively worked with local authorities to facilitate the establishment of these committees (33 in total). Once formed, the CRCs prepared plans outlining their priorities for recovery; and the Authority then worked with them to scope projects and to match the projects against the criteria for funding through the state-wide plan for recovery, private donors, the Bushfire Appeal Fund, or a mix of these sources. Approximately 800 of the 1,100 priority projects identified in the community recovery plans were ultimately addressed through the state-wide plan, donor funding, or through the endeavors of local CRCs (Victorian Government 2011). Of the remaining projects, some were assessed as not financially viable; and as time progressed and recovery initiatives started to be implemented, community recovery committees reconsidered others, determining that they no longer had the importance or the broad applicability they appeared to have had in the immediate aftermath of the disaster.

8.4.3 Facilitating Understanding of the Community Recovery Process

As the recovery process unfolded, the Authority also emphasized the dissemination of information to local communities. This included promoting knowledge about the psycho-social phases of disaster response and the community recovery process (Gordon 2004; Federal Emergency Management Agency (FEMA) 2013), so that recovery officials and community leaders could better understand the impacts of the disaster on survivors' psychological and emotional wellbeing—and, consequently,

on the overall recovery process. The Authority worked with government health officers to conduct workshops, briefings, and information sessions led by health and academic experts in the psycho-social dimensions of disaster recovery. They held these events in workplaces and local venues for recovery officials, community leaders, and community members as issues became visible.

Providing such information was especially important for those working in non-human service areas such as economic development, planning, urban design and reconstruction, as they generally had limited theoretical understanding of, and practical experience with, the psychological and social complexity of disaster recovery. The effort also benefitted municipal officials and community leaders who were directly engaged with those experiencing the trauma of the disaster, as well as anger and grief at the loss of loved ones, homes and businesses, and the community life they cherished.

These insights influenced the recovery process in a number of important ways. In particular, they informed adjustments to the prioritization and timing of recovery initiatives, as well as the types of information provided in response to the needs of specific communities of interest. For instance, the Authority made the rebuilding of local schools an immediate priority, realizing the importance they had for local communities in reassuring them that daily life could return to normal. The Authority also identified and began supporting events, such as separate retreats and getaways for each gender, and arts and sporting projects that provided critical outlets for people to come together to express their grief and support for each other, thus enhancing their mental and social wellbeing. Recovery officials and community leaders were also better able to identify emerging tensions, frustrations, and mental health issues. As a result, they could then work with service providers and community groups to develop and offer appropriate interventions and assistance, including community education and health promotion activities that encouraged people to seek professional help and that also built the capacity for mutual support amongst local residents.

8.5 Marysville Triangle: A Case Study of a Highly Impacted Community[13]

The picturesque subalpine tourist town of Marysville and its surrounding villages, located approximately 100 kilometres to the northeast of Melbourne, are representative of the communities caught in the maelstrom of the Black Saturday Bushfires and which subsequently engaged in the recovery planning effort facilitated by the VBRRA. This cluster of small settlements, situated in the deeply forested foothills of Victoria's Great Dividing Range, has a history of timber milling and gold mining.

[13] The Marysville Triangle case study draws on the experience of the author working as a practitioner with community members in planning and implementing projects for the rebuilding and recovery of local communities.

Since the early 1900s, the area has also been a popular tourism, honeymoon and conference destination; and the towns' collective population of around 2,000 residents[14] before the fires regularly swelled with visitors during weekends and holidays.

On Black Saturday, the bushfires descended on the Marysville Triangle, resulting in 40 fatalities and destroying or damaging approximately 500 homes (Parliament of Victoria 2009). In Marysville, the fires devastated the local commercial centre; badly damaged tourism, water, and telecommunications infrastructure; and incinerated the town's main street, historic guesthouses, school, and community facilities—as well as the beautiful surrounding landscape that had drawn visitors to the area.

Following the bushfires, Marysville residents were locked out of their community for six weeks due to legal and risk constraints (Caldwell 2009). This left them unsure of their circumstances—of what they had lost and for what future they needed to start planning. It was under these conditions that they began the painful process of confronting the deaths of friends and families, disruptions to their livelihoods, and the erosion of the place identities that had long shaped their sense of belonging. In the following months, survivors also suffered from insufficient access to food, fuel, and other basic provisions necessary for everyday life, largely due to the reluctance of private operators to reinvest in local businesses and other regulatory and logistical hurdles.

8.5.1 The Phoenix Workshop

Setting a vision for the recovery of Marysville and surrounding communities thus became a pressing need for local residents and businesses. As a first step, community leaders organized a day of celebration three months after the fires. Through this event, they aimed to affirm the qualities of the Marysville Triangle district and to start the process of imagining a new future for their communities. A month later, in response to the urgent demands of local leaders for a design charrette process to set a framework for rebuilding the township, the Authority provided staff and funding to help organise an intensive three-day planning and design forum, known as the Phoenix Workshop.[15]

As VBRRA organizers prepared for the workshop, however, they faced difficulties in being able to resource the participation of everyone who wanted to provide input on the town's future. In the middle of winter, without initial funding commitments, and in an area that had been largely decimated by the bushfires, organizers struggled to find a suitable place to meet and thus had to limit the number of attendees at the workshop. VBRRA staff also lacked knowledge of the community's

[14] This figure is for the towns of Marysville, Buxton, Narbethong, Taggerty and Granton (Australian Bureau of Statistics 2006).

[15] A design charette is a collaborative design process, frequently used in the fields of architecture, urban design and planning, in which key stakeholders participate with a group of designers to develop solutions to planning and design problems.

structure, leadership and dynamics—and how these factors could inform the process of envisioning a new future and a plan for rebuilding. Unfortunately, the resentment amongst those who felt they had not been included would complicate recovery efforts for some time.

All the same, the workshop featured the participation of over 120 representatives from the community at large, businesses, state and local governments, non-government service providers and potential corporate donors. Working with these participants, the VBRRA, in partnership with the community leaders group and a consultant planning and design team, led a collaborative process over the course of the three-day gathering to establish a shared vision and an overarching urban design framework for rebuilding. Critically, the workshop deliberations were informed by an analysis of the region's pre-fire economy and an economic recovery strategy commissioned by the Authority and conducted pro-bono by the Boston Consulting Group (BCG). BCG's work pointed to a new economic vision built around nature-based tourism, in which new community infrastructure, township retail services, visitor amenities, and supporting utilities would play an important role in the region's revival (The Boston Consulting Group 2009).

8.5.2 A Framework for Rebuilding

At its conclusion, the Phoenix Workshop issued a draft of a planning and urban design strategy, the *Marysville and Triangle Urban Design Framework* (Roberts Day 2009) for feedback from across the community, relevant government agencies, and representatives of the private sector. Despite some lingering dissatisfaction about the process for selecting those who participated in the Phoenix Workshop, the resulting feedback demonstrated a remarkable degree of consensus for the community regeneration priorities articulated in the framework. But stakeholders also provided some important suggestions on how to adapt it. In particular, they highlighted the need to emphasize investment in the local economy and the value of recreating the character (and the necessary infrastructure) of an area that had long attracted visitors due to its natural beauty and amenities. In recognitions of this input, the Authority ensured the framework was revised with minor adjustments; it was then adopted by the local municipal planning authority.

In its final form, *The Marysville and Triangle Urban Design Framework* provided overarching guidance on design, reconstruction, and investment to rebuild the Marysville Triangle communities. It also identified eight catalyst initiatives that workshop participants believed could stimulate the local economy and provide the skeleton for regenerating community life. They included:

- basic retail (including a general store and fuel station);
- new tourist accommodations and a convention centre;
- a new police station;

- a new community hub (including a school, a community health clinic, and a recreation centre);
- enhancements to the town's large public park (including a memorial garden, innovative playground and sporting facilities);
- the regeneration of the town's main street and landscape;
- the development of a new iconic public space (known as Marysville Heart) as a focus for events and celebrations; and
- the creation of a walking and cycling trail linking the small towns of the Marysville Triangle region.

Almost all of the catalyst initiatives were completed within 3 years of the fires. The two exceptions were the walking and cycling trail, which had been partially built at the time of publication of this volume, and the multi-million dollar accommodation and convention centre, which first required government support to attract the private investment necessary for its eventual development.

Meanwhile, as these and other projects began to be realised, it became apparent that for some survivors, the proposals for new modern buildings were a stark and painful confrontation with the past—a statement about what had been lost and would never again be the same. After all, the historic character of their communities had been erased and the area's native and exotic landscapes denuded. For other survivors, the post disaster trauma had significantly impacted their capacity to receive and absorb information and to participate consistently in the extensive consultation and planning activities that had been organized to facilitate the rebuilding of community infrastructure priorities. Yet others saw opportunities for grander projects that they believed would lead to the revival of the region, sometimes spurred on by the interests of charismatic potential benefactors or individuals.

For their part, planners and builders brought their own professional perspectives and regulatory obligations to the planning process. Among other things, they needed to comply with new building standards, as well as with the requirements of local municipal authorities to construct buildings that were more flexible and multiuse in their design (and therefore more financially viable and adaptable to future community needs) than the older pre-fire public facilities.

The Authority needed to mediate the divide between the different factions of residents, professional planners, and the government and municipal owners of the new infrastructure. Along with its community partners, it strove to design viable projects that could be matched to funding opportunities but that could also address the aspirations of local communities for the future. Accordingly, for each recovery project, the Authority led community and stakeholder workshops to establish design and planning objectives, convened community and stakeholder committees to steer project development, negotiated funding, and obtained planning approval. Some projects were implemented with a strong alignment between the community and infrastructure owners. For others, differences remained between some sections of the community and government owners about aspects of design and function. For instance, a group of long-standing residents strongly advocated for the police station to be rebuilt as a reproduction of its original form. They argued that this would

be a symbolic representation of the historic role of the police in safeguarding the community. Their advocacy led to the station being rebuilt in its former location; however, the Victoria Police required that the station be built with a contemporary design to meet the standards for modern policing.

Whilst differences about rebuilding outcomes remained, feedback from local residents indicated that there was support for the Urban Design Framework (Victorian Government 2011) – and for most projects, they perceived the process for planning and implementing recovery projects to be fair and transparent, even if their particular interests and concerns were not directly addressed.

8.5.3 Planning for Community Recovery

As noted earlier, community recovery committees (CRCs) throughout the disaster-affected areas played an important role in bridging the interests of the many stakeholders involved in local reconstruction. The Marysville and Triangle Community Recovery Committee was no exception. Encompassing a wide range of community members, it was chaired by a local guest-house owner and community bank agent and included representatives of the small towns in the triangle area: local business and tourism operators, an artist, farmers, and community leaders who had been active in local organisations before the fires as well as in their aftermath.

Among other things, the Marysville Triangle CRC was required to produce a community recovery plan that identified the local communities' priorities for recovery, including those that would be funded through the state-wide plan for reconstruction and recovery. This document would serve as the primary concrete plan for recovery in Marysville Triangle, encompassing the many social, economic, and environmental initiatives that would support long-term recovery and community wellbeing. It built on early post disaster planning efforts in the communities, particularly the Urban Design Framework that had emerged from the Phoenix Workshop.

To ensure different interests and groups were consulted in preparing these plans, the CRC implemented a wide range of proactive strategies designed to reach and engage with local residents as extensively as possible. Initially these efforts included holding regular, open community meetings and dinners, supplemented by email chains, networking, letter drops, and face-to-face contact with local groups and businesses. As the community moved toward reaching consensus over the recovery plan, the CRC's emphasis shifted to keeping residents informed and engaged in the progress of recovery projects. This involved holding regular public meetings to update the community on the progress of the recovery plan, engaging with the proponents of particular recovery projects about the status of their projects, and participating as community representatives on project development committees and as advocates for their communities in forums with government.

However, the Marysville Triangle CRC was not without its issues. To start with (and as was the case with CRCs across the state), it was slow to be established.

The time taken to create structures for facilitating recovery at the local level lasted almost five months, in large part because local government authorities and the VBRRA were slow to develop and provide the guidelines for how to do so. As a result, it was unclear for too long how the CRCs should be constituted so that they would have local legitimacy, the appropriate authorities, and strong community leadership. This, in turn, led to uncertainty and anxiety at the local level and created a vacuum into which the community began to establish its own arrangements for recovery. Such improvised mechanisms, unfortunately, were not necessarily accountable to the broader community, nor were they cognisant of government decision-making processes, policy parameters, and the need for public transparency and accountability. The delays also led to unrealistic time pressures on CRCs to identify recovery priorities that could be supported through the state-wide plan for reconstruction and recovery.

Over time, however, the legitimacy of the Marysville Triangle CRC strengthened as its capacity for community leadership and advocacy vis-a-vis the Authority and other government agencies grew—both locally and with recovery partners. It proactively sought to resolve issues and to engage and negotiate with other sectional interests in the community to be an inclusive and representative committee. Ultimately, it evolved into being a strong and skilled advocate for its constituents and served as an important bridge between the VBRRA, the local municipal authority and other recovery agents, and local communities.

8.5.4 Interagency Coordination for Community Recovery

Another significant challenge encountered by the Marysville Triangle CRC and its project partners was coordinating the complex mix of government institutions involved in the local recovery process. The Community Recovery Plan and the associated catalyst projects depended on a high degree of coordination among the VBRRA, state government departments, and importantly, the local government authority responsible for approving, delivering, operating, and maintaining many of the township's projects. Accordingly, the state Minister for Planning acted quickly to incorporate the Urban Design Framework into the state planning framework, providing the legislative authority for rebuilding. In addition, mechanisms for approving and coordinating the delivery of recovery projects were established between the Authority and the local municipality.

Ensuring effective collaborations was by no means an easy process, however, and developing and maintaining the arrangements between the VBRRA (and other state government officials) and the local municipal authority required a significant and sustained effort. This required both sides taking into account and negotiating differences in power and influence between the two levels of government, the sometimes-overlapping roles and responsibilities for recovery processes and decision-making; and the need to support and enhance the capability of a small and rural local authority to manage the impact of such a large scale disaster.

8.6 The Lessons

Reflections on the recovery planning experience in Marysville and surrounding communities point to eight key lessons. These lessons, although drawn from the particular experiences of the 2009 Black Saturday Bushfires, can help inform stakeholders involved in recovery from many different forms of disaster, across a variety of geographic and political contexts. In particular, several of these lessons point to how strategies of "advance recovery" can enhance the effectiveness of disaster recovery by building social resilience and preparedness *prior* to an event.[16]

8.6.1 Pre-disaster Planning for Recovery

In advance of the bushfires, better pre-disaster planning could have enhanced the speed and effectiveness of recovery processes. For the VBRRA, the local government authority, and local communities, the framework for recovery largely evolved after the recovery process had commenced, despite the requirements set forth in state emergency management legislation and policy to plan for emergencies (Parliament of Victoria, 2009a).

Similarly, the emotional response to the impact of the disaster across the nation generated a very immediate and logical desire by political leaders to assure local communities that "we will rebuild" (Nicholson and Rood 2009). Whilst this approach was initially very reassuring for those impacted by the disaster, it did not properly address questions about whether this was the safer and best rebuilding strategy, particularly in light of future climate change scenarios and the subsequent costs associated with compliance to new building standards and state-wide bushfire vulnerability assessments.

Some of these challenges could have been alleviated. As Leonard and Howitt (2010) and Ahlers et al. (2011) argue, taking steps in advance of a disaster can provide a clear pathway for carrying out recovery. Key areas for more effective pre-disaster or "advance recovery" strategies include:

- Having clear timelines and guidelines for the establishment and structuring of local community recovery mechanisms (for instance, how community recovery

[16] As described by Ahlers, Howitt, and Leonard, at its most fundamental level advance recovery means having in place "a basic framework about how to organize, build support for, finance, and carry out recovery operations—so that action can begin quickly and public confidence can be secured (Ahlers et al. 2011)" once a disaster has occurred and the recovery process begins. Ahlers et al. have proposed that more attention should be given to a number of different advance recovery strategies, including developing comprehensive frameworks for examining social risks and measures to prevent or mitigate large scale risks before a disaster strikes; as well as the engagement of communities and governments in general planning and preparedness for recovery, rather than assuming that recovery is something that is invented after the event. Their work also identifies elements that are important to mobilizing swift and effective recovery in communities, such as high quality community-based leadership; demonstrated government capability and resources; pre-existing relationships with outside organizations; the ready availability of discretionary funds; and the availability of credit (Leonard and Howitt 2010, Ahlers et al. 2011).

committees should be constituted and what community engagement and planning processes could be used to inform rebuilding priorities);
- Establishing guidance and parameters for recovery projects before the disaster in order to provide more certainty and faster decision-making in the aftermath of the event (What projects fall within the scope of recovery? Are they proportional to the needs of the community? What standards are required for new infrastructure?)
- Providing clear guidance as to how replacement and new infrastructure systems should be structured and located after a disaster (For instance, what opportunities exist for betterment in fire prone and other high risk areas? Should decentralised water and energy systems be installed to provide greater security and continuity of service, thereby reducing the likelihood of systems collapse and of communities being stranded in the future?);
- Strengthening community leadership capacity and developing strong working relationships with different levels of government and other outside agencies; and,
- Building the knowledge and understanding of psycho-social recovery processes amongst emergency management agencies, local municipal authorities, and key professions.

8.6.2 Responding to Urgent Needs

For Marysville Triangle residents the wait to return to their communities was too long; and delayed access to basic services, such as fuel and food supplies, added to their stress, making it difficult for people to normalise their lives and take the next steps in the recovery process.

Finding ways for people to meet their psychological and emotional needs and enabling them to visit their former homes and towns *as soon as possible* (such as through guided tours) can help their decision-making about future options and support them through the grieving process. Likewise, it is critical to prioritise access to everyday needs, such as food, transport, and social connections, through either temporary arrangements or by bringing these to the fore in the clean-up and rebuilding process.

8.6.3 The Critical Role of Information and Communication

Providing timely, transparent, and accurate information is essential to the recovery process. The Black Saturday experience reveals several promising methods for addressing this issue. In the Marysville Triangle communities, a bushfire hotline, locally based community engagement workers, and localised community hubs provided critical information for survivors, the VBRRA, and other recovery agents about what was happening on the ground. These multiple forms of communication

and outreach enabled officials to respond to people's need for information in a generally effective manner.

Meanwhile, as altruism fades and physical and emotional exhaustion sets in, disillusionment with the daunting task of rebuilding and fear that government is not taking action cognisant of people's needs can threaten to undermine the recovery process. It is thus paramount for those involved in recovery efforts to counteract a propensity for rumour and misinformation. To this end, multiple avenues for distributing information are required and messages need to be continually reinforced. Key messages must be honest, constant, and repeated. Consistency between the responsible authorities will be crucial; and on occasion, immediate and urgent action by those in official leadership roles will be necessary to reassure, explain, hear, and respond to community concerns. Over time, this approach can help build the mutual respect, confidence, and trust necessary for recovery efforts.

8.6.4 Rebuilding with Local Communities

From the outset, it is important to find ways of ensuring that as many members of the community as possible have the opportunity to be part of the visioning and planning process for recovery. If the processes of participation and engagement are perceived to be fair, open, and considered, people will invest heavily in the recovery plan. It is also important to stay faithful to the recovery plan, which serves as a safeguard and as a concrete vision of the future. Doing so provides legitimacy for planning decisions. On the other hand, decisions that are perceived to be in contravention of the recovery plan can haunt later projects and be the subject of much despair.

In addition, recovery officials need to find ways of re-including people who may have missed critical steps in the recovery planning process. The trauma that was experienced and the corresponding adjustments that were required after homes and livelihoods were lost in the Marysville Triangle fires had impacts on the physical location and the wellbeing of a significant proportion of the community. This affected people's capacity to participate in recovery efforts and to process and remember information. It was only many months after the fires that some local residents were able to focus on broader questions of community recovery.

Moreover, the capacity and willingness of local communities to work in partnership with recovery authorities in rebuilding their communities should not be underestimated. Community recovery committees and similar structures for local empowerment provide access to local leaders and knowledge that is critical for strengthening and harnessing local capacity and resources.[17] Through its CRC,

[17] Ahlers et al. (2010) identify the pre-disaster factors in local communities that demonstrate social resilience and have been found to accelerate post disaster recovery, including self-reliance, existing community leaders that are highly adaptive and have capacity to organize and mobilize, and working relationships with outside agencies.

Marysville Triangle demonstrated a strong capacity for community-based leadership that could be mobilised and then strengthened as it engaged with government recovery agencies. As revealed by the Marysville experience, local leaders can provide insight on emerging issues (such as mental health), foster the exchange of information, gain community endorsement for a course of action, and draw local ideas and solutions into the recovery process.

In addition, carefully listening to communities underpins the capacity for recovery agencies to understand local needs and determine the best way to address them. Government recovery personnel have to learn how not to be "all knowing" and how to engage with communities as equal partners.

8.6.5 Building Alignment Across Recovery Processes

Recovery officials need to consider the multi-dimensional aspects of community regeneration. Understanding the factors that need to intersect in order to achieve a holistic outcome requires constant engagement across multidisciplinary teams. In the aftermath of the bushfires, the VBRRA's Reconstruction and Recovery Framework—with its alignment of the four pillars of People, Reconstruction, Environment, and Economy, and with local communities at its core—helped reinforce the need for an integrated approach to planning for recovery. Adherence to this enabled the VRBBA, for example, to understand the benefits of supporting cultural projects that spontaneously emerged in Marysville Triangle and other impacted communities. Through expressing grief, and celebrating achievements and stages in the recovery process, along with rituals of mourning and memorial, these activities were beneficial to emotional recovery and reduced social isolation.

8.6.6 Proportionality and Realism

The high altruism and intense emotions that often prevail in post-disaster environments can contribute to local interest groups, influential donors, and consultants proposing grand visions or ideas for the future. In the Marysville Triangle communities, significant tensions developed around proposals that could not be supported in terms of their overall viability. Proving the viability of these ideas and addressing these tensions subsequently consumed a considerable amount of the CRC's and the VBRRA's time. Thus, realistic parameters for the scope, timeframe, and cost of recovery projects need to be established early in the recovery process—and potentially given consideration even before a disaster strikes. They need to be proportional to the anticipated scale and role of the community in the future; and decisions about rebuilding should be made with sufficient information and knowledge to situate the response in proportion to the overall need.

To this end, communities and recovery officials need to have clear parameters for costing and scoping projects at the outset and engage consultants who understand or are capable of learning about local conditions, listening to and engaging with people, and responding in ways that are sympathetic and proportional to the local context and need.

8.6.7 Clear Roles and Accountabilities

In leading and coordinating the recovery and reconstruction process, the VBRRA had the challenging task of negotiating the procedures and practices of different government departments and local statutory authorities to achieve consistent and timely results. Strong leadership and task- and time-bounded arrangements for decision-making and coordination between different levels of government were critical to making progress on recovery projects. As such, it was important to clearly articulate and promote the role of the VBRRA, especially as it related to the roles of other government agencies, local municipal authorities, and the community recovery committees.

In the Marysville Triangle recovery process, the respective roles and responsibilities of the VBRRA and the local authority needed to be clarified and reinforced multiple times and in multiple ways. To help build capacity and empower the local authority to carry out its role, recovery leaders adopted a number of different measures, including executive level mentoring, secondment of senior officers, and ensuring that decision-making meetings were held in local authority offices.

Recovery officers need to be skilled to work in a post-disaster context, have the authority to act, be able to manage expectations, and have the capacity to work in a way that is efficient and not wasteful of others' time. Moreover, changes to staffing should be minimized as they can potentially be confusing for people who need reliability and continuity.

8.6.8 Timing

Another important consideration for disaster recovery is timing. In Marysville Triangle the eight catalyst projects for renewal were largely completed within three years, which was in line with most other bushfire-affected communities' progress. However, it is worth considering whether post-disaster reconstruction is a longer process that can be aligned with a better appreciation of the different phases of recovery.

An initial rebuilding phase might consider the core projects that must be agreed upon and around which a community can regroup and renew. Allowing some time for reflection and adjustment after this first phase could then be considered. As time passes, people's priorities change, and what seemed important in the

immediate aftermath of the disaster may not be after the first stages of recovery have ended and new priorities have emerged.

This approach has implications for how later projects can be planned, funded, and implemented. Financial trust arrangements could be established to hold funds, and the strengthened leadership skills that likely emerged through the recovery planning process could be harnessed in subsequent years. As needs emerge, initiatives that support the ongoing renewal of those communities could be funded and implemented.

8.7 Conclusion

The bushfires that consumed Victoria on Black Saturday had a devastating impact on local communities throughout the state. In response, the Australian and Victorian governments organized a massive recovery and reconstruction effort—coordinated by the Victorian Bushfire Reconstruction and Recovery Authority (VBRRA)—that at its core aimed to strengthen the capacity of the disaster-affected communities to prepare and implement their own recovery plans. As discussed above, the VBRRA employed a range of mechanisms and strategies in order to facilitate this process.

In April 2011, two years after the bushfires, representatives of community recovery committees from across the State of Victoria came together to reflect on their experiences and share their insights from the disaster recovery process supported and coordinated by the VBRRA. Echoing the mission and goals of the agency, the committee members' core advice to government stressed that empowering "communities and local decision-making by local people should be a fundamental principle for any disaster recovery" and "is essential to a community's long-term recovery" (Community Recovery Committees 2011).

Indeed, the VBRRA's focus on the particularities, priorities, and existing and potential capacities of disaster-affected communities was a critical factor for success as places like the Marysville Triangle undertook disaster recovery planning. As detailed in this chapter, however, the Marysville experience also reveals a number of important lessons that recovery officials and local community leaders learned as the process unfolded. Attention to these lessons by all types of stakeholders—including representatives of government, the nonprofit sector, and private enterprises, along with communities themselves—should lead to even more effective community-based recovery programs going forward.

References

Ahlers D, Howitt AM, Leonard HB, 'Dutch' (2011) Preparing in advance for disaster recovery. In: Global-is-Asian, Issue 12, Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore pp 40–41

Australian Bureau of Statistics (2006) Census data. Australian Bureau of Statistics, Canberra

Australian Government Bureau of Meteorology (2014) Bushfires in Victoria. http://www.bom.gov.au/vic/sevwx/fire/20090207/20090207_bushfire.shtml. Accessed 2 Sept 2014

Caldwell A (2009) Marysville residents return home six weeks after bushfires. AM – Australian Broadcasting Corporation http://www.abc.net.au/am/content/2008/s2522445.htm. Accessed 21 Mar 2009

Community Recovery Committees (2011) Lessons learned by community recovery committees of the 2009 Victorian bushfires, Advice for Government. www.strathewen.vic.au/index.php/download_file/view/19/112/

Country Fire Authority (2014) About black Saturday, Victoria. http://www.cfa.vic.gov.au/about/black-saturday/

Federal Emergency Management Agency (FEMA) (2013) Crisis counseling assistance and training program guidance. CCP Application Toolkit, Version 4.0 US Department of Health and Human Services. http://www.dhhr.wv.gov/healthprep/programs/behavioralhealth/Documents/FEMA%20CCP%20Toolkit.pdf

Gordon R (2004) Community process and the recovery environment following emergency. Environmental Health 4(1):19–34

Leonard HB 'Dutch' and Howitt AM (2010) Advance recovery and the development of resilient organisations and societies. In: Woodward S (ed) Integrative risk management: advanced disaster recovery. Swiss Re, Centre for Global Dialogue, Switzerland, pp 43–58

Moncrief M (2009) Worst day in history: Brumby warns of fire danger, Fairfax Media. 06/02/2009. The Age, Melbourne

Nicholson B, Rood D (2009) We will rebuild brick by Brick, Fairfax Media 11/02/2009. The Age, Melbourne

Parliament of Victoria (2009a) 2009 Victorian Bushfires Royal Commission: Interim Report, Chapter 1, p 45, Australia. http://www.parliament.vic.gov.au/vufind/Record/80772

Parliament of Victoria (2009b) The Victorian bushfires royal commission final report. 2009 Victorian Bushfires Royal Commission, Australia

Roberts Day (2009) Marysville and triangle urban design framework report. Roberts Day, Melbourne

The Boston Consulting Group (2009) Marysville and triangle communities economic recovery strategy, Final recommendations. The Boston Consulting Group, Melbourne

Tolhurst K (2009) Report on the physical nature of the Victorian fires occurring on the 7th February 2009, University of Melbourne, Melbourne

Victorian Bushfire Reconstruction and Recovery Authority (2009) Rebuilding together, A statewide plan for bushfire reconstruction and recovery. State Government of Victoria, Australia

Victorian Government (2011) Victorian bushfire reconstruction and recovery authority legacy report. State Government of Victoria, Australia. http://www.rdv.vic.gov.au/__data/assets/pdf_file/0008/192806/VBRRA-Legacy-Report.pdf

Victorian Government (2012) Victorian bushfire recovery three year report, State of Victoria. Progress reports regarding the 2009 Victorian bushfire reconstruction and recovery process are located at fire recovery unit publications. Regional Development Victoria, Australia. http://www.rdv.vic.gov.au/about-us/publications/FRU-publications

Victorian Government (2014) Victorian bushfire appeal fund. Department of Human Services. http://www.dhs.vic.gov.au/bushfireappeal/about-the-fund

Chapter 9
Disaster, Mental Health, and Community Resilience: Lessons from the Field in Aceh Province, Indonesia

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Abstract The mental health burden of a disaster is immediately apparent and remains for a considerable period of time. Focusing on Aceh, Indonesia, where a large-scale natural disaster washed over a landscape marred by a protracted conflict, this chapter discusses some lessons about community resilience in the face of natural disaster. This chapter draws on field experience and presents two studies, one quantitative and one qualitative, in the aftermath of the 2004 Indian Ocean tsunami. It draws out some lessons about psychosocial intervention and the provision of aid, and considers how aid can help without undermining local capacities and resilience. We conclude that a "cookie-cutter" model of intervention in disasters is not effective. Beside ongoing response and provision of mental health services, an effective response to disaster needs flexibility in adapting to local context. This can be achieved through the inclusion of local systems and the strengthening of service channels. Partnerships between local and national and international organizations enable a response, which is "with" rather than "for" the people who need the assistance.

Keywords Community resilience • Disaster aid • Indian Ocean tsunami • Mental health

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9.1 Introduction

This chapter discusses two studies conducted in Aceh, Indonesia, in the aftermath of the 2004 Indian Ocean tsunami. It explores the mental health impact of twin disasters, the first a devastating political conflict, the second a natural disaster of unprecedented proportions, the tsunami. The studies examined the mental health status of the tsunami survivors—who had been recognized to experience the conflict that preceded the tsunami– and the provision of aid intended for meeting the needs of stricken communities. They show that the mental health impacts of the disasters persisted for years, but could possibly be ameliorated by psychosocial intervention. In this chapter, we define mental health as described by the World Health Organization as "*a state of well being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community*" (WHO 2001). This definition implies mental health as the functioning of an individual in everyday life, in which an individual can or cannot cope with the daily life stresses, can or cannot work in a productive manner, and is able or is not able to make a contribution to his or her community. Community resilience, meanwhile, is defined by Norris et al. (2008) as a set of adaptive capacities and a strategy for effective disaster readiness and response. With this definition, we embrace community resilience both as an outcome and as a process. In relation to mental health, this suggests that a community with limited adaptive capacity is at greater risk of suffering mental health problems among the individuals in the community.

Differentiating between the types of psychosocial intervention is important. Historically, psychology has tended to focus on individual therapy. It is also important to respect the collective, the capacity of communities to be self-organizing and bounce back after a disaster. Furthermore, in designing psychosocial interventions and providing aid in general, there is a crucial need to understand the cultural context. In the following section we give an overview of Aceh's cultural heritage, as a background to the two studies.

9.1.1 Mecca's Verandah

Aceh has been nicknamed *Serambi Mekkah* (Mecca's Verandah) and has long been portrayed as a devoted and committed Islamic society. In the pre-colonial period, and before the inception of Indonesia, Aceh was an Islamic sultanate. Even after its integration into the nation-state of Indonesia, Aceh kept Islam as its hallmark. Special region and the special autonomy status were granted by the central government in 1999 and 2001, and Aceh is the only province in Indonesia that institutes Islamic law (*shari'a*).

Aceh has a long history of prosperity. In the sixteenth century, through a strong tie with the Turkey Ottoman at the time, the sultanate exported pepper up to the

Mediterranean via the Red Sea (Reid 2010). In the 1820s, Aceh produced over half of the world's supply of pepper. Oil and gas were discovered in the north of Aceh at the beginning of the 1970s. After oil and gas were discovered, Aceh's gross domestic product per capita was, on paper, almost triple the Indonesian average and Aceh's oil and gas fields supplied 30 % of Indonesian oil and gas exports (Rist 2010). However, the revenue from oil and gas exports, the basis of Indonesia's high economic growth, did not bring significant benefits to Aceh society. Instead, a drastic increase of poverty took place, and paradoxically, Aceh became the third poorest province.

9.1.2 Conflict in Aceh

The exploitation of Aceh's wealth by the central government and the dominance of western oil companies and people from outside Aceh over the locals created a situation of relative deprivation (e.g. Tadjoeddin and Chowdhury 2009). Under the autocratic and centralized government of the Soeharto presidency, the Acehnese could only accept the dictates of Jakarta. As grievances and dissatisfaction mounted, the Free Aceh Movement (*Gerakan Aceh Merdeka* or GAM) emerged.

While this conflict between Government of Indonesia (GoI) and GAM was not the first, it was the most ferocious intra-state conflict that has ever occurred in Indonesian history (Tadjoeddin and Chowdhury 2009). The Stockholm International Peace Research Institute (SIPRI) Yearbook 2005 classified the conflict between GoI and GAM as a major armed conflict, "*where the use of armed force between two or more organized armed groups resulting in the battle-related deaths of at least 1,000 in any single year and in which incompatibility concerns of control government, territory, or communal identity*". The cost and suffering of the conflict between GoI and GAM not only stemmed from battle-related deaths, but also from significant civilian casualties and human rights abuses, on both sides.

After the launch of military operations by the Indonesian armed forces, GAM was militarily quelled in May 1977, but GAM had never surrendered. A key figure from GAM, Hasan di Tiro, and others, managed to flee Aceh and seek asylum status. From their exiles they continued to organize the resistance against Indonesia, and armed conflict broke out again in 1989. The conflict came to a head when GoI declared Aceh to be a Military Operation Area (*Daerah Operasi Militer* or DOM). Killings, kidnappings, torture, rapes and other human rights abuses occurred during this period. As Indonesian security forces committed human rights violations on Acehnese civilians, sympathy toward GAM among the Acehnese population grew. After the fall of the Soeharto dictatorship in May 1998, GoI called for an end to the DOM status. In addition, former President Habibie visited Aceh at the end of March 1999 and publicly conveyed an apology to the Acehnese for the abuses they had suffered during DOM. Nevertheless, the conflict did not stop.

After a short cease-fire during the Cessation of Hostility Agreement in December 2002, the conflict escalated to its highest level. GoI under the Megawati

administration responded by imposing martial law in Aceh in May 2003. A new wave of massive military operations was launched to crack down on GAM. The martial law status was extended, from a maximum of six months to another six months. In May 2004, the government decided to downgrade the status to that of civil emergency, transferring the authority from the military to the civilian government. Despite the shift, a military presence and security approach (e.g. curfew, press restriction and censorship) remained strong.

9.1.3 Natural Disaster in Aceh

On the boxing day of December 26, 2004, the Indian Ocean tsunami hit coastal communities in nine countries across two continents. Aceh was the hardest-hit and the most devastated area. The exact death toll is unknown, but of 175,000 deaths across the Indian Ocean rim, 131,000 were in Aceh. In addition, more than 37,000 people went missing. Furthermore, the tsunami left more than 500,000 people (out of a population of approximately 4 million people) displaced. More than 600,000 people in Aceh lost their source of livelihood and more than 140,000 houses were destroyed in Aceh. The total estimated cost of the damage was US$4.5 billion. GoI set up a special agency called the Implementing Agency for Rehabilitation and Reconstruction of Aceh and Nias (*Badan Rehabilitasi dan Rekonstruksi Aceh dan Nias*, or *BRR*) to manage the rebuilding process in Aceh and Nias, with a specific time frame from April 2005 to April 2009.

Within the context of attempts to achieve peace in Aceh, the tsunami became a catalyst for the peace talks between GoI and GAM. A formal invitation from the Crisis Management Initiative in Finland (acting as a mediator) to GoI and GAM to meet was issued on 24 December 2004, 2 days *before* the tsunami hit Aceh. The first round of talks started on 27 January 2005, about a month after the invitation and the tsunami. After going through five rounds of talks mediated by Martti Ahtisaari, former Finnish president, a peace agreement between GoI and GAM was reached. On 15 August 2005 GoI and GAM signed the Memorandum of Understanding and, at last, the almost 30-year long conflict between GoI and GAM officially came to an end. The historic signing of the Memorandum of Understanding marked the end of protracted conflict in Aceh that had caused 33,000 deaths (Aspinall 2008), over 100,000 internally displaced persons (Bean and Knezevic 2008), and widespread conflict-induced trauma (Good et al. 2007).

9.2 Methodology

Against this background, this chapter draws on two studies: one quantitative and the other qualitative. The quantitative study involved a survey in three districts in Aceh province, while the qualitative study involved interviews with informants residing in Banda Aceh, capital of Aceh Province.

9.2.1 Study 1

The first study is a quantitative study that was carried out by a research team from the Crisis Center of the Faculty of Psychology, University of Indonesia in Aceh and in partnership with the American Red Cross (ARC).[1] The aim of the study was to assess the psychological wellbeing of respondents of the study who had participated in a psychosocial support program as an intervention (American Red Cross 2009, Endline survey report of psychosocial support program: Banda Aceh, Aceh Besar, and Aceh Jaya. Unpublished report). The intervention started off with international mental health experts providing a "train the trainer" program for staff drawn from ARC in Indonesia and the Indonesian Red Cross. Graduates of this training served as supervisors and trainers for the paraprofessionals who implemented the intervention. In villages where the intervention was implemented, men and women with good standing and communication skills were also recruited as community facilitators. Their tasks included inviting people to community meetings, distributing materials, leading discussions, and assisting the paraprofessionals. The intervention had six targets: psycho-education; strengthening connection to place and cultural belonging; vocational training; collaborative micro-planning for reconstruction; and activities for children that released adults for participation in other activities. These six targets were addressed by many activities (e.g. psycho-education activities included provision of information about normal stress reactions, self-care, and stress management; planting trees, traditional handy-crafting). Within many activities, communities had a choice concerning specific projects.

The data was collected in 2009, 5 years after the tsunami, by trained university students and paraprofessionals. This study was conducted in three districts that were hardest hit by the tsunami (Doocy et al. 2007), namely: Banda Aceh, Aceh Besar, and Aceh Jaya. Banda Aceh is the capital of Aceh province. Aceh Besar is the greater area and neighboring area of the city of Banda Aceh. Aceh Jaya is located southwest of Banda Aceh; its capital city, Calang, is located approximately 150 km from Banda Aceh. During the period of conflict, Aceh Jaya was considered a medium intensity area; while Banda Aceh and Aceh Besar were low intensity areas (Tsunami Recovery Indicator Package 2009).

A multi-stage cluster sampling technique resulted in the samples consisting of 523 respondents in Banda Aceh, 295 respondents in Aceh Besar, and 285 in Aceh Jaya. The respondents were adults aged 18 to 54. Respondents in Banda Aceh and Aceh Besar were recruited as they had received a psychosocial support intervention program. In contrast, the respondents in Aceh Jaya had not yet received it. The respondents' psychological wellbeing was assessed using the 12-item General Health Questionnaire (GHQ-12). This is a screening measure, not a diagnostic test. Twelve symptoms were assessed in the General Health Questionnaire: problems

[1] The first author led the Crisis Center's research team; team members included Wahyu Cahyono and Martina Estrely, to whom this chapter is indebted for their contribution to the study. Further statistical analysis of the data was jointly conducted with Dr. Julie Robinson from the School of Psychology, Flinders University, Australia.

with concentration, decision-making, loss of sleep, constantly under strain, feeling that they could not overcome their difficulties, failure to enjoy day-to-day activities, inability to face problems, unhappy and depressed, lost confidence in themselves, not feeling reasonably happy, not playing a useful part in things, and thinking of themselves as a useless person. Respondents rated the items on a 4-point scale, from "not at all" to "more than usual". As recommended by Goldberg (1978), responses from respondents were recoded onto a 2-point scale before the total score was counted. The score was only descriptive and was not an actual measure of disorder burden.

9.2.2 Study 2

The second study was qualitative, and was also conducted in 2009 (Pelupessy et al. 2011). Twelve key informants who had first-hand experience of the tsunami and played an active role in the community responding to the aftermath of the tsunami were interviewed. The key informants included volunteers, humanitarian workers, and community members who participated in international and national/local non-governmental organization (NGO) programs with surviving communities. All informants were survivors who actively engaged in helping and organizing fellow survivors. The field interviews were conducted in *Bahasa Indonesia.*[2] They explored the experience of the key informants and communities in dealing with the tsunami and their responses to humanitarian aid.

9.3 Quantitative Study Findings

The quantitative study enabled a comparison of the total number of symptoms, the percentage of the sample with scores in the clinical range, and the presence of specific symptoms, from the two districts that had received the intervention program (Banda Aceh and Aceh Besar) and the adjoining district of Aceh Jaya, which had not received the intervention program.

The results showed that the total GHQ scores were lower in the two districts (Banda Aceh = 2.0 and Aceh Besar = 2.0) that had received the intervention program than in the adjoining district that had not received the intervention program (Aceh Jaya = 3.1). The percentage of respondents with GHQ scores in the clinical range was more than twice as high in the samples that had not received the intervention (Aceh Jaya = 40 %) than in the samples that had received the intervention program (Banda Aceh = 19.3 % and Aceh Besar = 16.6 %). Furthermore, the samples in districts that had received the intervention (Banda Aceh and Aceh Besar) had lower prevalence rates for most symptoms than the samples that had not

[2] The first author, who is a native speaker of *Bahasa Indonesia*, conducted the field interviews.

received the intervention program. The study also showed that there was overall a high mental health burden in the sample that had not yet received the intervention (Aceh Jaya): two out of every five participants had GHQ total scores that were within the clinical range.

These results, summarized in Table 9.1, were consistent with the idea that the intervention program was beneficial in reducing psychosocial problems, especially for a population that was affected by the tsunami and in the low-intensity conflict area. However, it was not possible to attribute the difference in scores to the intervention, as there was no baseline data, and different levels of conflict may have been responsible for the observed differences. Nonetheless, overall, there was a high mental health burden in the population that had been affected by the tsunami and in the medium-intensity conflict area. The timing of the study suggests that the mental health burden was alarming, even 5 years after the tsunami, in more-intense-conflict areas despite a massive influx of aid programs.

9.4 Qualitative Study Findings

The qualitative study of community resilience found that local people were not passive victims but responded effectively as communities. They responded using prior knowledge and skills. They were on their own for the first few days or weeks immediately after the tsunami, since outside organizations and even national agencies had not yet mobilized. Therefore, people had to use the knowledge, resources and strengths they possessed, in order to respond as best they could. While a natural disaster overwhelms some people, some survivors find reserves of moral and physical strength that they did not know they possessed. Far from falling into chaos or an "every man for himself" mentality, most people responded in a responsible collective way, working together for mutual survival.

The challenge for outsiders is how to assist, while respecting and building on these local capacities, rather than undermining them and creating dependence. As the devastation was unprecedented and on an incredible scale, the international agencies, driven by a great sense of urgency, tended to overlook local capacities. Many interventions were like pills prescribed by clinicians for pre-existing diseases, and failed to acknowledge local communities as knowledgeable and resourceful. This reflected not only a deep-seated clinical model and victimhood perspective, but also a perceived hierarchy of experts. Even though lacking in knowledge about local language, culture, and conditions, for instance, a foreign military commander outranks the head of the local village. Dependence is the opposite of agency, which is central to resilience. Too often, resilience is neglected, ignored or bypassed by interveners.

While the Acehnese were grateful for the aid provided by the national government and the international agencies, there were examples of embarrassingly inappropriate aid. The main source of this was a failure to appreciate the heritage of Mecca's verandah, the strength and pride of the people, and the importance of Islam

Table 9.1 Results from survey using General Health Questionnaire for samples included in between-district and within-district comparisons

General Health Questionnaire	Intervention samples						Comparison samples			Difference between samples	
	Banda Aceh (n = 523)			Aceh Besar (n = 295)			Aceh Jaya (n = 285)			Between district comparisons (n = 1,103)	
	M	(SD)	%	M	(SD)	%	M	(SD)	%	Statistic	Sig.
Total score	2.0	(2.0)		2.0	(2.2)		3.1	(2.2)		F (2,1089) = 10.9	*
Scores in clinical range			19.3			16.6			40.0	$\chi^2(2) = 55.2$	*
Individual symptoms											
Concentration problems			21.4			18.0			35.5	$\chi^2(2) = 28.7$	*
Lost sleep			18.9			19.7			27.6	$\chi^2(2) = 9.2$	*
Not playing useful part			44.9			45.1			52.8	$\chi^2(2) = 5.2$	*ns*
Decision making			33.5			32.9			48.6	$\chi^2(2) = 21.6$	*
Under strain			7.5			8.5			14.5	$\chi^2(2) = 11.2$	*
Cannot overcome difficulties			15.9			12.5			22.8	$\chi^2(2) = 11.5$	*
Fail to enjoy activities			10.3			7.8			20.8	$\chi^2(2) = 26.4$	*
Unable to face problems			20.7			23.7			39.3	$\chi^2(2) = 34.9$	*
Unhappy and depressed			8.4			7.5			16.6	$\chi^2(2) = 17.0$	*
Lost confidence			4.0			4.1			11.0	$\chi^2(2) = 19.0$	*
Useless person			3.1			6.1			5.9	$\chi^2(2) = 5.4$	*ns*
Not reasonably happy			9.4			9.8			15.2	$\chi^2(2) = 7.0$	*ns*

* $p \leq .01$
ns=not statistically significant

to their core identity. For example, some of the measures and gifts were seen as offensive to Muslims and created problems for local community leaders, who recognized the good intent behind the gift and did not wish to insult the donors, but could not take the gifts or sanction the measures within a Muslim context. Specific examples would be the gift of Father Christmas dolls, or the use of games involving body contact and dancing in psychosocial activities.

Another problem was the tendency of aid agencies to compartmentalize. From a local perspective, the aim of post-disaster reconstruction is to re-build a functioning society. If aid agencies are organized around responding to some events, and not others, rather than around the needs of the people and the society, then inequalities occur. In Aceh, a lot of money was available to victims of the tsunami, but much less to those whose state of need derived from the conflict.

9.5 Discussion of Results

Evidence that supports the findings of Study 1 is provided by a recent study conducted by Mundzir (2012, Pengalaman konflik, kesejahteraan ekonomi, persepsi terhadap bantuan pasca konflik, modal sosial, dan kesehatan mental pada penduduk dewasa di Kabupaten Aceh Utara. Unpublished report), focusing on adults in the high-intensity conflict area of Aceh Utara eight years after the tsunami and seven years after the peace agreement. In that study, of the 576 adult respondents that were recruited using a multi-stage cluster sampling technique and using a 20-item Self Reporting Questionnaire (SRQ) 38.4 % reported mental emotional distress. Interestingly, the Mundzir study also found that prevalence of mental emotional distress, among other variables, was associated with and predicted by difficulty in meeting household basic needs and a negative perception of post-conflict aid.

The findings of Study 1 are also consistent with a more recent study by Musa et al. (2014), which measured the prevalence of depression, anxiety, and stress among the tsunami survivors in Aceh. The findings from Musa et al. (2014) suggest that mental health impacts following the tsunami persisted and remained prevalent in up to 50 % of the survivors. Moreover, unemployment was found to be significantly associated with depression. This finding is also in agreement with a previous study by Bass et al. (2011), which suggests that the lack of economic and job opportunities contributed to the mental health status of adult survivors in Aceh.

While there have not been similar studies of community resilience conducted in Aceh, evidence to support the findings comes from similar studies of disasters in other countries (Ride and Bretherton 2011). The Aceh study was part of a global study, and the findings from Aceh are similar to the studies conducted in other countries (Pakistan, Solomon Islands, Kenya, and Myanmar). The global study began with a hypothesis that some communities would be resilient in the face of disaster, and others would not, but rejected this hypothesis as all the communities studied were found to be resilient. Further, all case studies showed that while participants were grateful for aid, international interventions tended to be marred by lack of respect for local culture and poor understanding of the local contexts.

9.6 Lessons from the Field

9.6.1 Disasters

A key lesson from the two studies is that disasters have a long lasting effect on mental health. Media coverage and international attention tend to focus on the more dramatic images of the crisis when it first strikes and then move on to something new. For the survivors of a disaster, however, the immediate impact is just the first step in a long journey to reconstruction and healing.

The results of the quantitative study emphasized that the effects of disaster are not spread evenly amongst the population, and that some communities and individuals are more affected than others. Paradoxically, the humanitarian response to the Indian Ocean tsunami was recorded as being the largest amount of aid per affected person and as involving the largest number of donors and implementing agencies in history (Zeccola 2011).

Disasters may be natural or man made. People tend to be philosophical about natural disasters, sometimes even giving a religious interpretation of their causes. In contrast, human made disasters can give rise to particularly acrimonious resentments and people can find that their trust in humanity and reality is undermined. With regard to the conflict in Aceh, the undermining of trust applied especially to people from other parts of Indonesia, as the conflict was about separatism. Ironically, the natural disaster of December 2004 led to contact with helpful outsiders, from other parts of Indonesia, as well as other parts of the world, which actually built trust.

The international media tended to represent the disaster as singular, giving extensive coverage to the tsunami, but little to the conflict. Our research shows how disasters may come in multiples and little is known about how multiple disasters effect people. In the case of Aceh, people in areas with low intensity conflict showed fewer psychological symptoms than those in higher conflict areas, even though all had been affected by the natural disaster, and the natural disaster served to help bring peace.

Disasters may be acute or chronic. While acute disasters like the tsunami attract media attention and aid, chronic disasters like the conflict may fall under the radar of the international press but be just as damaging in their effects. Waizenegger and Hyndman (2010) coined the term “tsunami for peace” in Aceh since the tsunami brought an opportunity for peace. The tsunami was a key to ending the conflict in Aceh. Therefore, there was a distinctive connection between the conflict, the tsunami, and peace in Aceh. Setting aside the politics, the conflict, as a chronic disaster, and the tsunami as an acute disaster, were inseparable.

Disasters may be resolved (or mitigated) or unresolved (or unmitigated). For example, after an earthquake there is an increased probability of further shocks, which makes it very difficult for people to readjust. In the case of Aceh, the scale of the tsunami is unlikely to occur again in a relatively short period of time, but the conflict may erupt again, and is less resolved.

Our empirical findings suggested that psychological symptoms were lower in those who had been exposed to the tsunami (which was natural, acute, resolved) if they had not also been exposed to a higher intensity conflict (which was human-made, chronic, and unresolved).

9.6.2 Mental Health and Psychological Symptoms

While the number of symptoms varied, and those who had participated in a psychosocial intervention showed lower levels of distress, the overall level of mental health suggested that the disasters were a heavy burden on the population, even after an interval of four years. Study 1 showed a higher burden on the population in the medium-intensity conflict area.

As mentioned earlier, the symptoms were twelve psychological distress symptoms of: problems with concentration, decision-making, feeling constantly under strain, feeling that they could not overcome their difficulties, failure to enjoy day-to-day activities, inability to face problems, unhappy and depressed, lost confidence in themselves, not feeling reasonably happy, not playing a useful part in things, and thinking of themselves as a useless person. The Study found that most of the symptoms—9 out of 12—were significantly higher for people in the medium-intensity area than for those that did not receive the intervention.

Some studies (e.g. Grayman et al. 2009; Bass et al. 2011) suggest that conflict that preceded the tsunami sparked off the mental health burden in the communities in Aceh. For many Acehnese, the tsunami was merely another layer of a prevailing crisis and consequently its mental health consequences became entangled with pre-existing symptoms.

9.6.3 Psychosocial Intervention

The intervention (from Study 1) that was carried out meets the criteria we had earlier set out for effective aid: co-operation between the international agency (the American Red Cross) and the local agency (the Indonesian Red Cross-the Aceh branch of the Indonesian Red Cross). The Crisis Centre worked with the PSP (Psychosocial Support Program) Division of Indonesian Red Cross HQ. Most importantly, it engaged local community members. Both the American Red Cross and the Indonesian Red Cross still work continuously in the area (rather than just during the acute crisis phase) and have an ongoing network of relationships. The psychologists and trained paraprofessionals who delivered the program had cultural affinities with the participants, shared a respect for and understanding of Islamic beliefs, and spoke local languages. They did not ask participants to undertake activities, which are drawn from the tool kit of trauma psychology but are culturally inappropriate, such as playing with dolls, or movement activities that involve a lot of body contact.

Aceh prides itself on its resilience and strength, so it was important that the psychological intervention did not cast people as "victims". Acehnese society is collective so it was important that the psychological intervention did not stress individualism. The key lesson is the importance of the local context. Any intervention needs to respect the core identity of the people it aims to assist. As indicated in the introduction to this chapter, the Acehnese see themselves as strong, resilient defenders of the faith. Aid and interventions that do not take this into consideration are potentially destructive.

The engagement of local communities and organization is not a panacea, but it is a fundamental element in contextualizing an intervention. In Aceh, as observed by Waizenegger and Hyndman (2010) in the aftermath of the tsunami, international NGOs to a great extent overlooked local NGOs and opted for direct implementation. This posed a problem with contextualizing; furthermore, it created imbalances in terms of the level of aid provided to conflict-affected and tsunami-affected communities. Because external actors did not fully engage local stakeholders, there were insufficient opportunities for locals to define problems and priorities in interventions, which resulted in conflict survivors being less prioritized in the delivery of aid.

9.6.4 Community Resilience

Results from the community resilience qualitative study showed that just as the disaster was not equally distributed in its effects, so the aid was not equally available to all victims. Amongst those whom received aid from outside Aceh, there were many instances where some of it was culturally inappropriate. Response-ability is at the center of the notion of community resilience, in which through its adaptive capacities, a community has the ability to respond effectively to a disaster. Psychosocial interventions must work towards easing negative psychological impacts of disaster, as well as building response-ability of local communities. Psychologists and others who intervene must take into consideration the political situation. Given that unequal distribution of resources was the key factor driving the conflict, the subsequent interventions should be careful to not feed into existing structural inequalities, or add another layer of relative deprivation.

International agencies need to learn about local conditions, to trust local organizations to deliver programs in a way that is sensitive to local contexts, and to work with and build on local capacities. Building up and developing local capacities through psychosocial interventions will advance the response-ability of communities to future disasters.

Natural disasters have dreadful consequences, but they can also bring out new depths and strengths in people and their communities. In the very early phase of disasters, people are on their own, self-organizing. Therefore, it is important for aid

to respect and uphold, among other things, existing measures and local socio-cultural features. Natural disasters are crises that provide opportunities to change communities, for better and for worse. Local organizations or groups are valuable to change communities and play a pivotal role not only in helping local communities to overcome adversities, but also in mediating between communities and national/international agencies that provide aid.

The quantitative study found that the impacts of the disaster on survivors' psychosocial wellbeing were long lasting, but that psychosocial intervention was useful in mitigating the impact. In particular, interventions that were conducted by a local service with knowledge of the local faith, language and customs were beneficial. This suggests that post-disaster recovery requires an ongoing response and provision of mental health services. The sense of urgency that is inherent in disaster means that interventions need to start as soon as possible. However, the often preconceived plans of external agencies are not necessarily tailored to the local culture, and require a degree of flexibility. More analysis and evaluation is required as an integral part of project management of aid, but also as a learning process, to ensure a continuous process of adaptation to emerging realities.

Disaster is a potentially traumatic and collectively experienced event (McFarlane and Norris 2006), so building community-level resilience is as important as individual-level resilience. Community-level resilience, or community resilience, is when people in communities are resilient *together* and is the quality of being able to enhance chances of communal survival. It builds upon community as being collectively "response-able", rather than responsible. Collective "response-ability" develops as community's capacities also develop. As a consequence, when people are response-able they will be in a good stead in an emergency.

We believe that community resilience can also become a "peace litmus test" to indicate the level of peace in a community. A resilient community has the ability to organize effective and collaborative decision-making and action to overcome adversity. When dealing with adversities, the level of effectiveness and collaboration displayed in a community is a sign of the level of cohesion and is positive for peace.

The Acehnese have a long history of glorifying Islamic entity and a sense of freedom as fighters against the colonialism that suppressed them during the course of the conflict in Aceh. Despite being preceded by the experience of oppression and the deterioration of living conditions before and during the armed conflict, the devastating tsunami was an unprecedented test for the Acehnese's capacity for not merely "bouncing back" but also for "bouncing forward" into a new order. The paradigm of aid for Aceh should not see tsunami affected people as passive victims, which can create dependence. The tsunami was the driving factor for the unprecedented humanitarian aid flooding into Aceh, but this assistance should also empower the Acehnese and support peace and justice for *both* tsunami and conflict survivors. To echo a phrase we have heard several times in Aceh, "there is no justice without peace, and there is no peace without justice (for both tsunami and conflict survivors)".

9.7 Examples of Local Organizations

These underlying principles of how aid might operate more effectively might appear idealistic, but several examples can illustrate this good practice. The first example is the Pulih Foundation, a national NGO whose central office is in Jakarta, the capital of Indonesia. Prior to the tsunami, the Pulih Foundation managed a program of school-based psychosocial activities in Aceh, and in the aftermath, the foundation sent more staff and set up an office in the province. The Pulih Foundation received funding from a number of donors for post-tsunami programs.

As the cycle of the rehabilitation and reconstruction phase in Aceh progressed, funding from donors decreased, so the program and office operation were reduced. Most of the staff and volunteers who were deployed from Jakarta returned home. The Aceh office was mended by local Acehnese who ran the office and implemented the downsized programs. The central office had to make a decision about the continuation of the Aceh office, and closure of the Aceh office operation was likely. However, the majority of the staff and volunteers in the Aceh office, who were all locals, resisted this option. They felt that there was a continuous need to address mental health and psychosocial problems in Aceh, as the tsunami aid and assistance faded away and conflict-induced mental health and psychosocial problems had largely been neglected. Eventually, the decision was made to continue their operation, despite limited financial support from the central office as well as donors. The decision also aimed to retain a pool of developed and empowered Acehnese staff and volunteers who had built skills in psychosocial support programming.

A small but clever adaptation was achieved by modifying the name of the Aceh office. Only one letter was replaced by another letter ("e" replaced "i"); as a result, the new name had changed from Bahasa Indonesia-sounding (*Pulih*) to an Acehnese sounding word (*Puleh*). Even though literally the name had changed, the meaning –which is recovery– is exactly the same both in Bahasa Indonesia and Acehnese. This little change aimed to transform the sense of ownership from one that was Jakarta-oriented to one that was more locally Aceh-oriented. At the time of writing this chapter, the Aceh office was still running and had become an important resource organization for mental health and psychosocial issues in Aceh.

The second example is the Crisis Center (CC) of the Faculty of Psychology, University of Indonesia. CC was established in 1998 by the Faculty of Psychology, University of Indonesia, as a response to the May 1998 riots in Jakarta and several other big cities in Indonesia, following the political turmoil at the time. CC had sent faculty members, alumni, and students to participate in the provision of psychosocial support to communities in Aceh in the aftermath of the tsunami. Moreover, CC set up a field office in North Aceh.

A school-based psychosocial program was also implemented in the area where communities were affected by both the tsunami and the conflict. The program primarily focused on capacity building for school teachers. More specifically, through training, supervision, and case management meetings, it aimed to develop the

teachers' ability to effectively teach and provide psychosocial support for their students. CC staff and volunteers also worked directly with the students, conducting structured recreational activities and remedial teaching sessions after school.

By working with teachers and through the school structure, CC aimed to develop local capacities, realizing that it could not act like "a fire brigade" putting out fires for the local organizations. Rather, it supported the members of the community for themselves to do the work. In addition, partnering with midwives and cadres, CC also worked with the Integrated Service Post (*Pos Pelayanan Terpadu* or *Posyandu*), which provided community-based health services for mothers and children under five. Based on its academic standing as a university-based center and with expertise acquired from fieldwork experience, CC also provided training and consultancy services to government and non-government organizations based in Aceh.

Appreciating local context is of paramount importance. The third example shows collaborative work between international and national agencies in building capacity that goes beyond short-term needs. The example is a tripartite cooperation between the Indonesian Red Cross (IRC), the American Red Cross (ARC), and the Faculty of Psychology, University of Indonesia. It started in 2008 when IRC expressed their need to develop a group of personnel that had both practical and academic adequacy to tackle psychosocial impacts of a disaster. This need was seen as vital by ARC, which was one of the national societies that the Indonesian Red Cross had collaboration with in Aceh post-tsunami. After a series of meeting between IRC, ARC, and the Faculty of Psychology, Universitas Indonesia, a tailor-made 18-month masters degree program in Trauma and Disaster Psychology was established for IRC staff and volunteers.

Following a national selection conducted by IRC, 20 students from many disaster-prone areas were enrolled in the program in 2009. After graduating from the program, all 20 students added to both national and local capacity to mitigate psychosocial impacts of future disasters in Indonesia.

9.8 Conclusions

Our conclusion is that a "cookie cutter" model of intervention in disasters, a one-size fits all approach is not effective. Flexibility in adapting to local context is key. While outsiders may bring a high level of technical expertise, knowledge of local conditions is vital. Moreover, understanding the history of a community is important as history shapes identity and sense of worth. An intervention, in turn, should not undermine the identity and sense of worth of its participants but rather build on their strengths.

In the aftermath of a disaster, communities need to move on to adapt to the post disaster environment. The funds that come into a community have the potential to be highly beneficial. The gratitude that flows from receiving help when and how it is needed offers an opportunity to build stronger relations. However, if aid is insensitively given and is spent in ways that do not empower, the opportunity to ensure sustainability is lost.

Disaster-induced mental health problems can be prolonged or persist for a long time after the crisis. The relationship of man made and natural disasters is complex, but dual disasters inevitably pose a heavier burden of mental health. To intervene adequately to disasters, donors and aid planners need to strengthen post-aid and post-disaster systems and service channels. Furthermore, to respond effectively to disasters, we need to find ways to establish partnerships between local, national and international organizations, to respond with, not for, the people who need our help.

References

Aspinall E (2008) Peace without justice? The Helsinki peace process in Aceh. Centre for Humanitarian Dialogue, Geneva

Bass J, Poudyal B, Tol W, Murray L, Nadison M, Bolton P (2011) A controlled trial of problem-solving counseling for war-affected adults in Aceh, Indonesia. Soc Psychiatry Psychiatr Epidemiol 47:279–291

Bean J, Knezevic N (2008) Meta analysis vulnerability, stability, displacement and reintegration: issues facing the peace process in Aceh, Indonesia. International Organization for Migration, Jakarta

Doocy S, Gorokhovich Y, Burnham G, Balk D, Robinson C (2007) Tsunami mortality estimates and vulnerability mapping in Aceh, Indonesia. Am J Public Health 97:146–151

Goldberg DP (1978) Manual of the general health questionnaire. National Foundation for Educational Research, Slough

Good M-JD, Good B, Grayman J, Lakoma M (2007) A psychosocial needs assessment of communities in 14 conflict-affected districts in Aceh. International Organization for Migration, Jakarta

Grayman JH, Good M-JD, Good BJ (2009) Conflict nightmares and trauma in Aceh. Cult Med Psychiatry 33:290–312

McFarlane AC, Norris FH (2006) Definitions and concepts in disaster research. In: Norris FH, Galea S, Friedman MJ, Watson PJ (eds) Methods for disaster mental health research. Guilford, New York, pp 3–19

Musa R, Draman S, Jeffrey S, Jeffrey I, Abdullah N, Halim NAH, Wahab NA, Mukhtar NZM, Johari SNA, Rameli N, Midin M, Jaafar NRN, Das S, Sidi H (2014) Post tsunami psychological impact among survivors in Aceh and West Sumatera, Indonesia. Compr Psychiatry 55:S13–S16

Norris FH, Stevens SP, Pfefferbaum B, Wyche KF, Pfefferbaum RL (2008) Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. Am J Community Psychol 41:127–150

Pelupessy D, Bretherton D, Ride A (2011) Indonesia. In: Ride A, Bretherton D (eds) Community resilience in natural disasters. Palgrave MacMillan, New York, pp 19–50

Reid A (2010) Aceh and the Turkish connection. In: Graft A, Schröter S, Wieringa E (eds) Aceh: history, politics, and culture. Institute of Southeast Asian Studies, Singapore, pp 26–38

Ride A, Bretherton D (eds) (2011) Community resilience in natural disasters. Palgrave MacMillan, New York

Rist M (2010) The economic development of Aceh since 1945. In: Graft A, Schröter S, Wieringa E (eds) Aceh: history, politics, and culture. Institute of Southeast Asian Studies, Singapore, pp 99–119

Tadjoeddin MZ, Chowdhury A (2009) Socioeconomic perspectives on violent conflict in Indonesia. Econ Peace Secur J 4(1):39–47

Tsunami Recovery Indicator Package (2009) The third report for Aceh and Nias. Tsunami Recovery Indicator Package, Banda Aceh

Waizenegger A, Hyndman J (2010) Two solitudes: post-tsunami and post-conflict Aceh. Disasters 34(3):787–808

WHO (2001) Strengthening mental health promotion. World Health Organization, Geneva (Fact sheet, No. 220)

Zeccola P (2011) Dividing disasters in Aceh, Indonesia: separatist conflict and tsunami, human rights and humanitarianism. Disasters 35(2):308–328

Part III
Improving Preparedness

Chapter 10
Regional Business Continuity Management Through Public-Private Partnerships in Japan

Kenji Watanabe

Abstract In a modern networked society, most business operations are diversified and interdependent cross-regionally. This is a very efficient system in a normal situation but will cause many chain-failures through its interdependencies once large disasters hit any SPOF (Single Point Of Failure) in the networked structure. In order to assure an organization's business continuity at the time of disasters, BCM should expand its scope by including stakeholders and regional BCMs based on PPP (Public-Private Partnership). This will play a key role to enhance a local community's resilience. Based on the case studies on the three recent large earthquakes in Japan, the limitations of existing PPP are assessed and the importance of the intermediaries to provide economic incentives are recognized. Several BCM-related financial schemes are discussed as one form of effective economic incentives.

Keywords BCM (Business Continuity Management) • Economic incentive • Interdependencies • PPP (public–private partnership) • Regional/social resilience • Safety net • SPOFs (Single Point of Failures)

10.1 Introduction

In addition to a long history of natural disasters such as earthquakes, floods, or typhoons, Japan has experienced several large-scale earthquakes in recent years and several wide-area disruptions in critical social functionalities caused by interdependencies within supply chains. Considering the situation of a highly interdependent society, it is almost impossible for an organization to have substantial resilience in operations if it relies only on BCM (Business Continuity Management)[1] for its own

[1] ISO22301:2012 defines BCM as a "management process which provides a framework for building capability that safeguards the objectives of the organization including its obligations (International Standards Organization 2012)."

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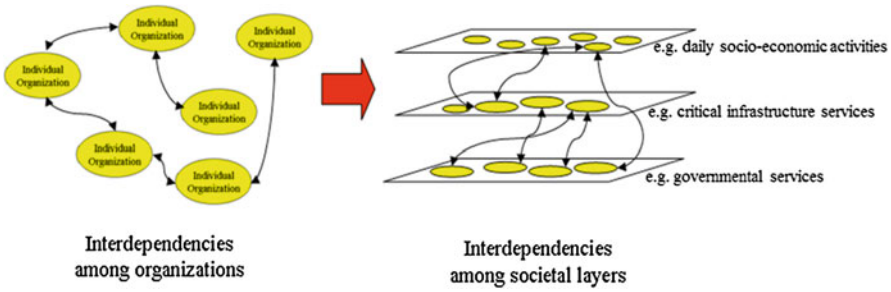

Fig. 10.1 Conceptual illustration of interdependencies among organizations and societal layers

limited scope. It is getting important to establish a community-based BCM with participation from all related organizations.

In the modern networked society, it is very rare for products and services to be provided by a single organization regardless of organizational form—whether public, private or NPO/NGO (non-profit organization/non-governmental organization). Most of the processes to develop and deliver products and services are divided vertically and horizontally throughout supply chains that spread not only nationwide but also globally. As a result, there are many interdependencies among organizations that compose a supply chain; and, if this supply chain is considered as one of societal layers, there are also interdependencies with other societal layers, such as critical infrastructure or government services (Fig. 10.1).

In normal conditions, this is a very efficient and effective system; however, due to the wide range of interdependencies that the system entails, disaster situations may result in a far-reaching chain of disruption to the delivery of products and services. In a highly interdependent society, an organization that fails to adopt a holistic approach to business continuity planning will find it almost impossible to have substantial business continuity. A simple grand sum of each individual organization's BCP (Business Continuity Plan)[2] does not necessarily ensure the resilience of the community[3] that each organization belongs to. It is therefore becoming increasingly important to establish a community-based BCM with participation from interested parties in the community.

10.2 Emerging Needs for Expanding the Scope of BCM and the Role of PPP

In order to ensure business continuity of an organization that has interdependencies with external organizations or stakeholders, it is important to expand the scope of its BCM to the appropriate level to assure viability of the BCP.

[2] A plan for BCM (Business Continuity Management)

[3] Definition of "community" includes various forms such as local community, business community, and governmental community.

10.2.1 Expanding BCM Scope in the Public Sector

To ensure its operational continuity, a local government, for example, should consider interdependencies with external entities such as local agencies, neighboring or remote local governments, the central government and its agencies, and the local community (Fig. 10.2).

(1) **Local agencies**

A local government must manage relations with the central/regional/local governmental agencies within its jurisdiction, and is responsible for the command, control and coordination of resources. Ineffective coordination among local government agencies has often been observed in previous disasters such as a lack of coordination in snow plowing arrangements in 2013 between the Yamanashi prefectural government and the local agency of MLIT[4] which resulted in several critically isolated areas following extraordinarily heavy snowfall.

(2) **Neighboring and remote local governments**

A local government must coordinate with both its neighboring and remote local governments before, during and after disasters, to protect and maintain operational continuity of the governing area and surrounding areas against shared risks or disasters. In a case of coordination between remote local governments, the Nagoya city government in Aichi Prefecture provided a disaster recovery team to the RikuzenTakata city government in the Iwate Prefecture which lost buildings, staff, and information systems as a result of the Tsunami caused by the Great East Japan Earthquake in 2011. Those two cities are separated by approximately 800 km; hence it was unlikely that the two cities would be simultaneously damaged by the same disaster. This arrangement gave them mutual back-up capability.

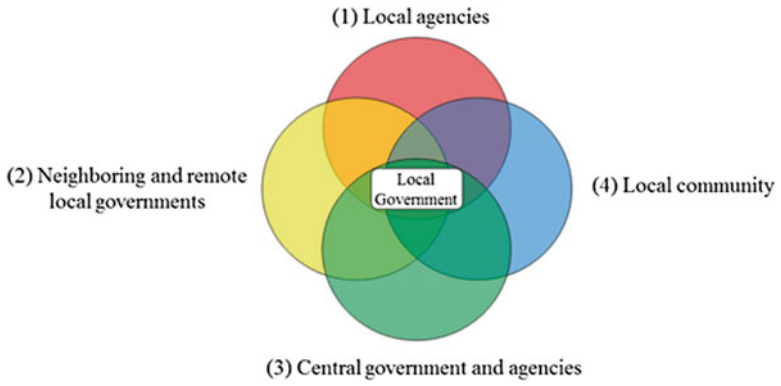

Fig. 10.2 Expanding BCM scope in the public sector (conceptual)

[4] One of the Japanese central government ministries. Ministry of Land, Infrastructure, Transport and Tourism.

(3) **Central government and agencies**

In Japan, a local government must report to and request any necessary support from the central government and its agencies. National governance with delegated authorities to local governments sometimes causes delays in providing a coordinated national-level response to a disaster. After the Great Hanshin-Awaji Earthquake[5] in 1995, the Hyogo prefectural government hesitated in asking the Japanese central government to dispatch the Japan Self-Defense Forces, which resulted in delays in rescuing people and recovery activities.

(4) **Local community**

A local government must monitor and take necessary action for residents and any organizations in the area. Actual cases are discussed in Sect. 10.3 (cases 1 and 2).

10.2.2 Expanding BCM Scope in the Private Sector

To ensure business continuity, private sector companies should expand the scope of their BCM to involve external stakeholders within their corporate group, supply chain, industry, and local community (Fig. 10.3).

(1) **Corporate groups**

To enhance group business continuity, companies within a corporate group must share and leverage resources with related companies or offices in the group. Actual cases are recognized in several global enterprises, especially in manufacturing industries that share and leverage materials and production

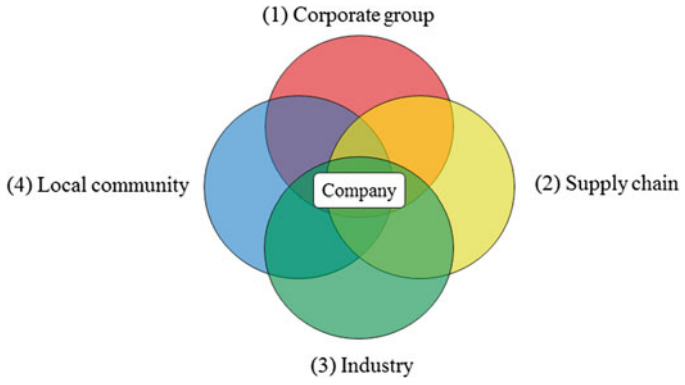

Fig. 10.3 Expanding BCM scope in the private sector (conceptual)

[5] Also known as the "Kobe Earthquake," it had a Richter-scale magnitude of 7.3 and caused 6,434 deaths, 3 missing, 43,792 injuries, and approximately 10 trillion Japanese Yen damage as of 2006, according to the Fire and Disaster Management Agency.

capabilities. In the Chūetsu earthquake in 2003, the operations of one of Panasonic's factories for facsimile machines in the affected area was disrupted, but they shifted their operations to another factory in the neighboring prefecture by sending workers and changing their production shifts. As preparation for disasters, Panasonic had executed cross-training to have backup flexibility between two remote factories.

(2) **Supply chain**

A company must discuss with its suppliers and buyers how to coordinate and manage operations as a whole supply chain and allocate costs of business continuity activities among participants in any emergency situations. Guidelines and best practices will differ across industries depending on the workflow and supply chain. For example, manufacturing in the semi-conductor industry is a global process, divided into multiple sub-processes at different sites, while the automotive industry depends on a huge range of suppliers.

(3) **Industry**

To gain intelligence for business continuity and a structure for mutual assistance, a company must share its experiences with other players in its industry. Regulated industries, such as financial services, have an information sharing and benchmarking mechanism in some countries.

(4) **Local community**

A company must work with local communities, including local residential and neighborhood associations, chambers of commerce, and local governments and agencies. Even large global enterprises have many offices or factories which are physically located in local communities and share local resources and infrastructure.

10.2.3 Local Community as a Shared Scope Between Public and Private Sector BCMs

As explained in the previous sections, in the expanding scope of BCMs for the both the public sector and the private sector, there is a common scope: the local community. In the scope of local community, a public–private partnership (PPP) has an important role to promote BCM for both sides and also to enhance regional resilience as a whole (Fig. 10.4).

10.3 Current PPP Challenges and the Necessity of Intermediaries as Drivers of Regional BCMs

In the long history of large-scale natural disasters in Japan, the public and private sectors have often been forced to put aside their differences concerning the allocation of resources and work together in the process of community recovery. To discuss the importance and challenges of PPP frameworks, this section presents case studies of three major earthquakes in Japan in the last decade.

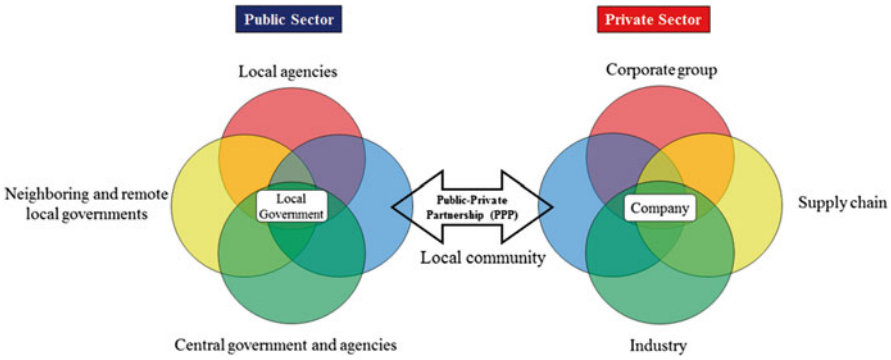

Fig. 10.4 The role of PPP (Public-Private Partnership) in the expanding BCM scope

10.3.1 Case Studies of Current PPP Challenges

(1) **Case 1: Chūetsu earthquake in Niigata, 2004**

Brief overview

On October 23, 2004, a powerful 6.8 magnitude (Richter scale) earthquake occurred in the Chūetsu area of Niigata Prefecture, Japan. There were 68 deaths and 4,805 injuries.[6] Major railways, including the Shinkansen bullet train systems, were affected; and major highways and arterial roads were closed due to severe damage. Estimated total economic loss was approximately 3 trillion Japanese Yen.

The PPP framework

Production operations at the Nippon Seiki's Nagaoka factories were disrupted; and the earthquake affected major motorcycle manufacturers, such as Yamaha, Kawasaki and Honda, which were based in geographically distant areas. Nippon Seiki's market share in instruments for the motorcycle industry was very high; as such, when it became impossible to fulfill the just-in-time delivery on which the motorcycle manufacturers were reliant, their production lines were forced to shut down for several days until deliveries could resume. After the earthquake, the central and local governments were very busy in restoring local peoples' lives and homes, while not actually supporting any specific company. Thus the disaster had a large impact on local employment and the economy.

The only exception was the Sanyo Electric Co., Ltd., which manufactured semi-conductors in a large factory located several kilometers from the epicenter of the quake. The factory lost one of its major production lines, resulting in a loss to the company of approximately 50 billion Japanese Yen in damage and additional 37 billion in the opportunity cost of sales. To fund its recovery, Sanyo Electric took

[6] As of August, 2007, the Japan Metrological Agency.

out a loan from a government bank. By way of assistance, Niigata Prefecture provided aid in the form of grants to cover the interest on the loan. Niigata Prefecture's main motivations were to maintain regional employment and to avoid unnecessary damage to the local economy (NUT Survey Missions 2006).

(2) **Case 2: Chūetsu offshore earthquake in Niigata, 2007**

Brief overview

Less than three years after the previous quake, another large-scale earthquake occurred in almost the same region on July 16, 2007—a powerful 6.6 magnitude (Richter scale) earthquake. This left 15 dead and over 2,345 injured.[7] Approximately 9,000 people needed emergency housing because of damage to their homes, and an additional 1,000 people were forced to leave their homes due to an accident at a nuclear plant located in the area. Estimated total economic loss was approximately 1.5 trillion Japanese Yen.

The PPP framework

Riken, a medium-sized motor-parts manufacturer, which covered a major part of the Japanese piston-ring market for engines, suffered severe damage to its production lines. The disruption continued for about a week and resulted in several days' disruption to the production of all Japanese automotive manufacturing companies, including Toyota, Nissan, Honda, Mazuda, Mitsubishi, Suzuki, and Isuzu. These disruptions contributed to a decrease of about 9 % in monthly car production of the automotive industry against the previous year. The steel and mining industry index also declined because of this.

As part of Riken's recovery, the Niigata Prefecture government provided assistance in repairing water pipes, arranging water tank trucks, and approving the use of emergency vehicles. Although initially reluctant to do so, the government also provided support to other stakeholders in the area, in order to protect local employment and support the economy. In total, the country's major automotive manufacturers provided about 800 man-days to support not only Riken's recovery but also small- to medium-sized suppliers to Riken; they provided refuge shelters for evacuated employees and their families, including non-employees, without any advance agreement with the related local governments (NUT Survey Missions 2008).

(3) **Case 3: Great East Japan earthquake in Tohoku region, 2011**

Brief overview

The Great East Japan Earthquake was a magnitude 9.0 undersea earthquake off the coast of Japan that occurred on March 11, 2011. It was the most powerful earthquake ever to hit Japan, and the fifth most powerful earthquake in the world since modern record-keeping began in 1900. The earthquake triggered powerful tsunami waves that caused 15,883 deaths, 6,149 injured, 2,652 people missing, 129,225 buildings totally collapsed,[8] and a major nuclear accident,, primarily the level seven meltdowns at three reactors at the Fukushima Daiichi

[7] As of July, 2007, the Japan Metrological Agency.

[8] As of September, 2012, the National Police Agency of Japan.

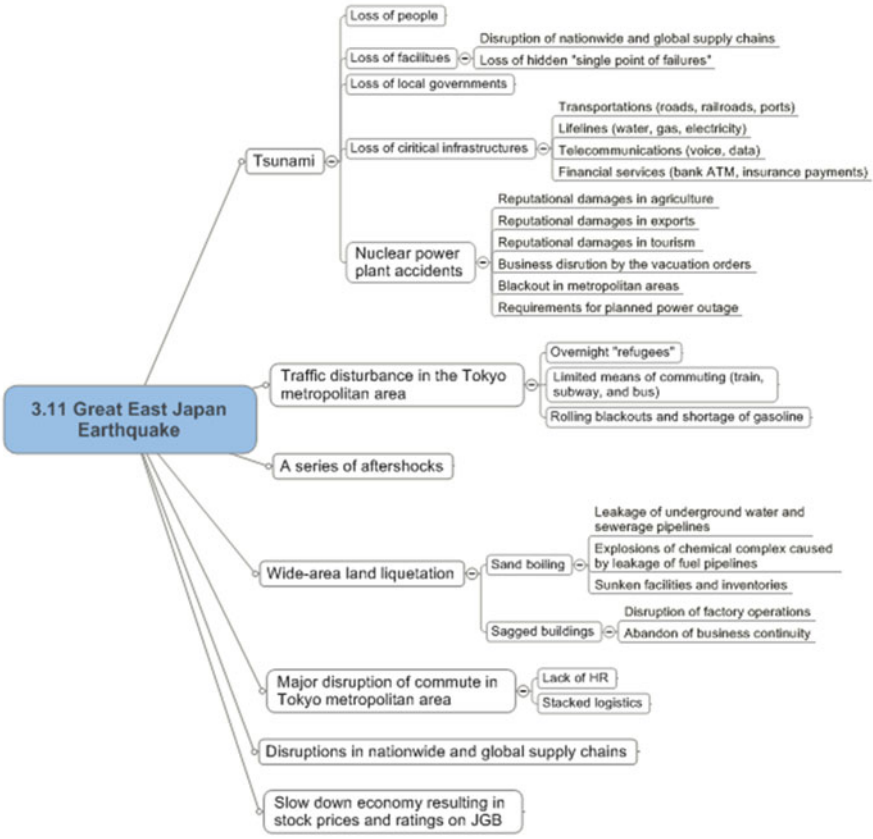

Fig. 10.5 The wider repercussions into the intangible social functionalities and values

nuclear plant. These chain disasters resulted in wide-area and long-term spread of operational disruptions through supply chains, not only in the distressed areas but also all over Japan and overseas (Fig. 10.5).

The PPP framework

Compared with the previous two cases, the damages from the earthquake, tsunami, nuclear accident, and chain-disasters were too big and widespread to be managed with the PPP frameworks, which did not work well because of a lack of interoperability and joint-preparedness within the private and public sectors.

Many supply chains that were specialized horizontally and vertically experienced major disruptions caused by the SPOFs (Single Point of Failures) in the automotive, chemical, electric parts, paper, and energy industries. Typical SPOFs occurred in SMEs (Small and Medium Enterprises) which have very special technologies and high market share in the specialized fields. Those SMEs were

positioned among the lower-tier suppliers (i.e., under 3rd tier suppliers) and not in the day-to-day supply chain management activities of final user companies of the SPOFs' products and services. They can be called "hidden risks" in the major supply chains.

Municipal governments and also central government agencies tried to rescue those SPOFs in their jurisdictions but could not fully comprehend the damage situations of SPOFs because they lacked contacts and communications in their normal relationships with SMEs before the earthquake occurred. As a result, many of the SMEs with relatively high market share with very special technologies lost or reduced their long-term business because of alternative production by competitors and product design changes by their user companies.

10.3.2 Implications from the Three Case Studies

The three case studies indicate the following three implications regarding the PPP challenges:

(1) Although public sector supports for private companies were observed in the three cases, their effectiveness was limited--and especially did not work in the third case, as it came too late for the damaged companies to mitigate the immediate impacts of disasters.
(2) Maintaining local employment and avoiding unnecessary depression in the local economy are major objectives and legitimate reasons for local governments to provide support to specific companies for their recovery. However, in order to justify their decision to rescue a specific company within a limited timeframe and resources in a disastrous situation, local governments will need to show accountability.
(3) Major companies that have suppliers in disaster-affected areas can support the affected local community through the provision of recovery support to local suppliers and the provision of refugee shelters. However, major corporations infrequently have any well-defined agreement with local governments rather than general MOUs.

10.3.3 Recognized "One-way" PPP Relationships and Their Limitations

Based on the implications of the previous section, one of the challenges of the PPP frameworks in the regional BCMs is a "one-way" PPP relationship that is established with minimal negotiations or agreements between the public sector and private sector.

(1) **Public-to-private "one-way" PPP relationships**

As discussed in the three case studies, the public-to-private relationship is sometimes very sensitive from the standpoint of fairness. Although many local governments prepare safety nets for the stakeholders in their local community, providing safety nets to a specific private company tends to be delayed and sometimes executed after the disaster response or business continuity phase. For example, the earthquake affected companies might borrow money for their business recovery from local banks with cheaper interest rates sponsored by local government. However, the timing of the lending is likely to occur at least a few days after the disaster—too late to cover immediate needs of the affected companies which are struggling with the shortage of cash flow caused by the disaster. When local governments provide support to a specific company, it is with the legitimate goal of keeping local business functioning in order to protect employment and minimize damage to the local economy. Nonetheless, questions regarding the choice of company or the timing of the intervention remain difficult to answer.

(2) **Private-to-public "one-way" PPP relationships**

Some corporations, such as grocery store chains or food-processing firms, have an MOU (Memorandum of Understanding) with their local government for the supply of goods and services in disaster situations. However, such agreements tend to be general and voluntary; they have a much lower expected 'service level' than one might expect in a typical private sector service level agreement (SLA). In the case studies, some companies provided products and services in line with their corporate social responsibility policies, but this was insufficient to meet all demands in the community with the right timing.

The Chūetsu area has experienced many types of severe natural disasters, including earthquakes, floods, heavy snow, and typhoons. Perhaps because of this, organizations within the region have recognized that traditional one-way PPPs are no longer sufficient, particularly given the recent increase in interdependency. The drawbacks of one-way PPPs include uncertainty regarding the partnership's effectiveness or actual competency. Within any partnership, both sides need motivations or incentives which should be carefully agreed upon and should assure competence to execute the agreed actions for each other.

10.4 Develop PPP-Based Regional BCMs with Intermediaries

In order to improve the feasibility of the PPP-based regional BCMs that are facing the challenges discussed in the previous section, "implementing intermediaries" which provide economic incentives can be effective in improving performance of PPPs (Watanabe 2009).

10.4.1 *Balancing the Levels of "Safety Nets" Availability and Self-Motivated organization's Efforts*

The general trend for central or local government has been preparation of "safety-nets" for future disasters in the nation or region. This sometimes decreases the level of motivation of organizations to prepare. Although it does not have much impact on companies with proactive preparedness efforts, it does have some negative impact on less-motivated, reactive companies.

As discussed in the introduction, interdependencies among organizations have increased rapidly in the modern networked society. Volatility in community resilience has also increased due to a growing difference in business continuity or resilience level between proactive, leading organizations and reactive, following organizations. This means that if the business continuity of a poorly resilient company fails under disaster conditions, it can easily disrupt a whole supply chain or networked socioeconomic activities in the local community (Fig. 10.6).

In order to reduce the volatility, economic incentives may push up the less-motivated, following companies by helping them recognize the economic rationality in enhancing their business continuity and resilience. As a result, the level of community resilience as a whole will rebound (Fig. 10.7).

Some financial incentives are already available in the market, and up-and-coming schemes can be seen in social responsibility investment, investment tax reduction, or governmental procurement. In those schemes, balancing the level of "safety net" availability and self-motivated organizations' efforts is important for the successful implementation of the PPP framework in regional BCMs.

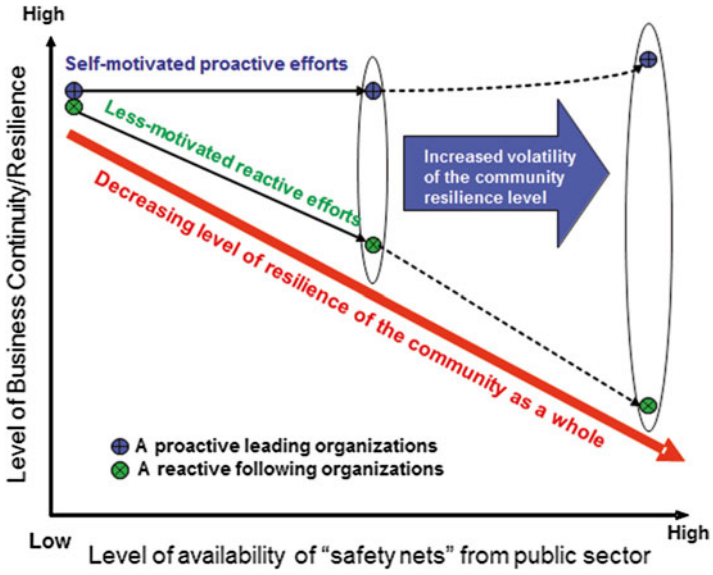

Fig. 10.6 Increasing volatility with expanding difference of business continuity or resilience levels

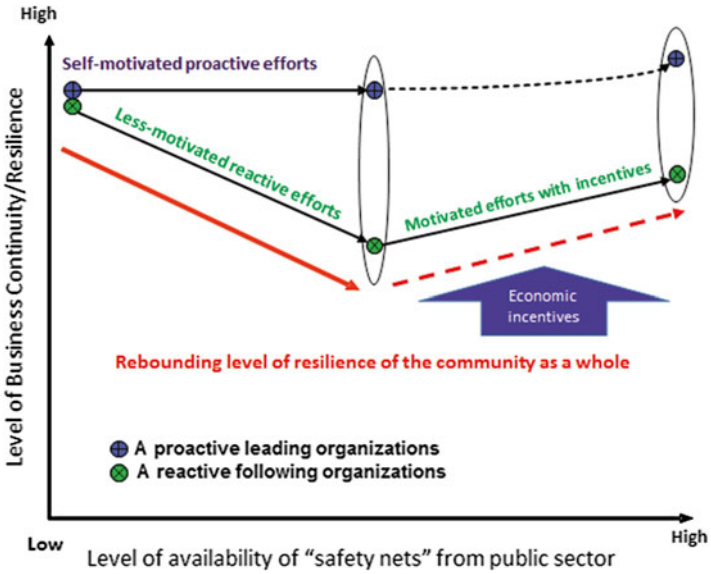

Fig. 10.7 Rebounding social resilience with economic incentives for reactive organizations

10.4.2 Implemented Scheme of Public Support to Intermediaries to Provide Economic Incentives

In addition to one-way relationships between the public and private sectors, there are several PPP schemes with intermediaries that provide economic incentives.

(1) **Public sector's support to intermediaries**

In various instances, the public sector has provided guidelines or suggestions to establish programs to support business continuity enhancement in the private sector. For example, in 2005 Japan's Cabinet Office released BCP guidelines with a self-assessment matrix. Based on these guidelines and the matrix, in 2006 the Development Bank of Japan (DBJ, a semi-governmental bank that is currently being privatized) started "Preparedness Finance,"[9] originally designed to provide semi-governmental financial support to organizations that were trying to enhance their business continuity against disasters. This became popular in the financial market among various industries because the candidate borrowers could ask DBJ to count disaster preparedness in DBJ's credit review and evaluation. As a financial institution, DBJ executes credit risk analysis and project risk analysis but additionally executes risk analysis on disasters that the candidate borrowers are facing and how much risks will be reduced by their further efforts with the financing. The borrowers include companies engaged in warehousing, data centers, freight forwarding, hotels, and retailing. In such cases, the DBJ plays an intermediary role in the PPP scheme (Fig. 10.8).

[9] A corporate loan product with rating evaluation on borrower's preparedness for disasters.

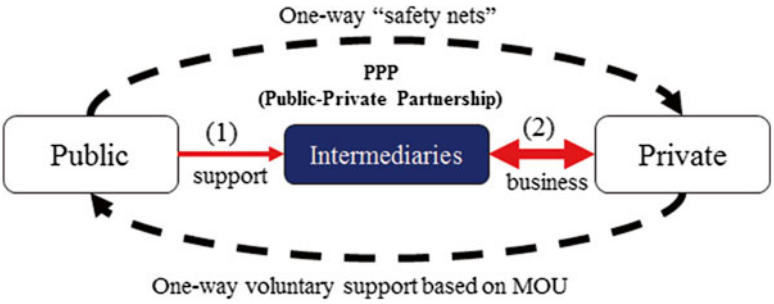

Fig. 10.8 Intermediaries' role in the PPP frameworks for the regional BCMs

As of the end of March, 2014, the accumulated balance of DBJ's BCM Preparedness Finance is approximately 130 billion Japanese Yen with 144 corporate borrowers.[10]

(2) **Financial incentives**

As described above, "Preparedness Finance" from the DBJ has been well accepted in the financial market, and other semi-governmental financial institutions and regional banks have introduced similar loan products to the market. In such cases, financial incentives work for both the lenders and borrowers. On the lender's side, they can reduce credit risk by focusing the purpose of the loan on improving the borrower's business continuity. On the borrower's side, they can enhance business continuity through loans with lower interest rates. In addition, some insurance companies have started reducing the premium for "Enterprise Revenue Insurance,"[11] if the DBJ has rated the company to be insured (Fig. 10.8). This model also offers the public sector sustainable tax income and employment even in the event of disaster.

Considering the success of these schemes, the promotion of financial incentives to the capital market represents a very effective and sound approach, providing a "win–win" situation for both public and private sectors.

Several financial products already have been developed in the Japanese financial market, and the market is trying to support private sector efforts to enhance business continuity to contribute to social resilience.

Currently, the BCM-related financial products cover three phases of an organization's disaster-related activities: (Fig. 10.9)

(1) **Preparedness phase: BCM Preparedness Finance**

The financial product indicates a new dimension in the decision process for corporate finance. The rating measures are based on the guidelines and self-assessment matrix provided by the Cabinet Office. This financial product mainly covers the preparedness phase.

[10] Confirmed DBJ in April, 2014.

[11] Insurance to cover the insured's revenue as an opportunity loss when their business disrupted.

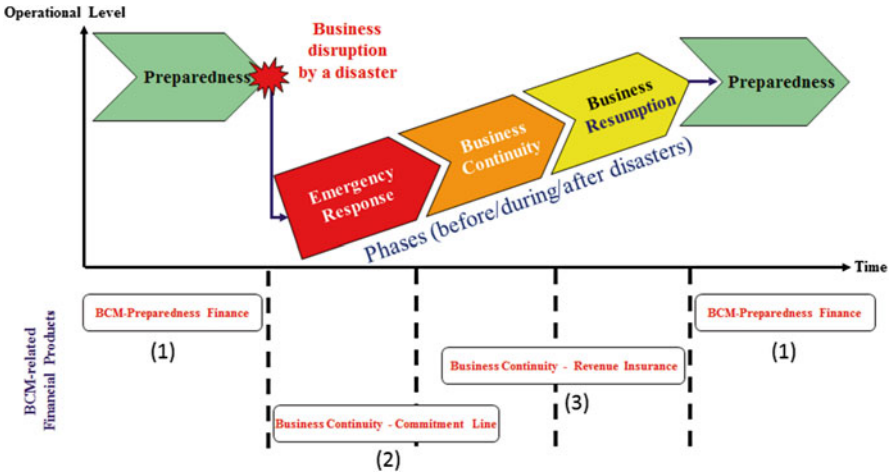

Fig. 10.9 Conceptual coverage of the business continuity related financial products

(2) **Emergency response phase and Business continuity phase: Business Continuity Commitment Line**[12]

The DBJ has also developed a disaster-triggered backup line for recovery from specified large-scale disasters. It has functional similarity with a catastrophe bond (CAT bond) and provides standby available cash. This product mainly covers the emergency response and business continuity phases.

(3) **Business continuity phase and Business resumption phase: Business Continuity Revenue Insurance**

Sompo-Japan, one of Japan's major insurance companies, has developed an insurance product which covers revenue decline by business disruption with a lower insurance premium if an applying company has a preparedness rating from the DBJ. The discount rate is 5–10 %.

If the financial market could combine these products to cover all phases before, during and after disasters, organizations could get seamless financial coverage at a lower rate (Fig. 10.7).

10.5 Conclusions and Next Steps

Management efforts to implement business continuity measures in organizations have been increasing gradually as Japan has experienced new types of socio-economic disruption because of interdependencies in society. In order to overcome

[12] A syndicated, structured financial instrument that provides an immediate cash amount automatically when an earthquake hits the contracted site (e.g. factory or headquarters) with over the predetermined threshold level of seismic intensity.

the limitations of separate BCM-related efforts of each organization in the society, management should expand the scope of BCM in consideration of interdependencies with external stakeholders. Economic incentives such as BCM-related financial products (loans with lower interest rate, commitment lines with pre-determined trigger events, and revenue coverage insurance), which are available from financial institutions, are effective in creating incentives for less-motivated, reactive organizations to enhance their business continuity and resilience. Those financial institutions will increasingly play an important role as intermediaries in the PPP frameworks for regional BCMs. Although most of the discussion in this chapter is based on the case studies in Japan, these considerations may be applicable to countries with similar types of highly interdependent social structures.

References

International Standards Organization (2012) Societal security, Business continuity management systems requirements. ISO 22301, Geneva

NUT Survey Missions (2006) The Chūetsu earthquake report [in Japanese]. Nagaoka University of Technology, Niigata

NUT Survey Missions (2008) The Chūetsu offshore earthquake report [in Japanese]. Nagaoka University of Technology, Niigata

Watanabe K (2009) Developing public-private partnership-base business continuity management for increase community resilience. J Bus Continuity Emerg Plann 3(4):335–344, Henry Stewart Publications

Chapter 11
The Rise of Disaster Risk Insurance and Derivatives

Gilles Carbonnier

Abstract This chapter deals with disaster risk insurance and risk-linked securities. It examines the potential of such instruments to strengthen disaster risk management. Since they are often not (yet?) commercially viable, these instruments have been developed in the context of public–private partnerships. Aid organizations and the insurance industry have teamed up to promote disaster risk insurance and derivatives in developing and emerging economies. These products face some of the political economy constraints that are well known in the insurance and foreign aid worlds. Asian governments may have a preference for free ex-post foreign aid over the alternative of paying ex-ante insurance premiums and interests on bonds. Yet, insurance and risk-linked securities offer the potential to transfer a substantial portion of disaster costs abroad irrespective of the humanitarian response. They can contribute to reducing dependency on foreign aid, consistent with national sovereignty claims.

Keywords CAT bonds • Disaster risk insurance • Microinsurance • Political economy • Risk-linked securities

11.1 Insuring Against Disaster Risks

When a disaster strikes in industrialized countries, losses are often insured. When the rich get hit, insurance payouts in many cases compensate for all property losses, or at least a large portion thereof.[1] Health insurance pays for medical care and rehabilitation. Life insurance and social security schemes support surviving family members in cases where the breadwinners have died or are incapacitated. By

[1] Earthquake losses often are not insured. For example, only about 11 % of homes in California are insured against earthquakes. Acts of terrorism are often excluded from insurance coverage. In the case of severe flooding, the coverage varies, depending in particular on the socioeconomic status of those who suffer the losses.

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contrast, insurance is a luxury that hardly anyone can afford in low-income countries. In 2008, virtually all of the losses caused by Cyclone Nargis in Myanmar went uninsured, while it seriously affected some 1.5 million people, killing over 84,000. The same year, a mere 0.4 % of the losses incurred in neighbouring China as a result of the Great Sichuan Earthquake were insured, with insurance claims totalling approximately US$300 million, against direct losses amounting to some US$80 billion (Wirtz 2013).

This chapter examines the rise of disaster risk insurance and risk-linked securities and its potential for strengthening disaster risk prevention and management. We look in particular at public–private partnerships that involve the insurance and reinsurance industry, states, multilateral organizations and institutional investors. The chapter finally dwells on the political economy constraints and the scope for cooperation and competition among the various stakeholders involved.

Insurance can be conceived as spreading disaster losses over time, in the form of premiums to be paid at regular intervals. Insurance thus comes at cost. In general, insured people pay more in the form of premiums than the average amount of losses to be expected, since premiums collected by insurance companies have to exceed future claims, in order to cover the industry running costs and generate a profit. If this fails to be the case, insurance is not commercially viable unless it gets support from governments or international organisations.

Disaster risk in the Asia-Pacific is exceptionally high. As countries in the region pursue strategies to better prepare for and respond to a variety of disaster risks, while simultaneously transitioning to (upper)-middle income country status, the potential to adopt disaster insurance schemes is high, as is the opportunity to learn from other regions. The Asian region has the greatest exposure to disaster risks in the world. It accounts for more than half of the global deaths from disasters over the last four decades. The region registers about one disaster-related death per 1,000 km^2 a year, which is twice the world's average (ADB 2014, p. 10). Regional disparities between industrialized and developing countries in terms of human losses and suffering are huge. As an example, it is estimated that Typhoon Haiyan killed more than 7,500 people in Southeast Asia in November 2013, injuring another 27,000. About a year earlier, Hurricane Sandy that hit the US East Coast took a total of 55 lives in North America. What is little known is that the human toll from the same hurricane was actually higher in the Caribbean, with an estimated 71 lives lost.

According to the reinsurance giant Munich Re, annual disaster losses over the last 10 years averaged US$184 billion. Thirty percent of the losses were insured, which corresponds to some US$45 billion in annual insurance payouts to compensate for disaster losses (Munich 2014). However, this global estimate must be considered with caution. First, the insured losses are systematically reported by the insurance industry, while uninsured losses tend to be grossly underreported, since they are not recorded in any systematic manner. Second, there are huge variations from one country to another when it comes to the insurance penetration rate, that is the share of total insurance premiums paid annually over gross domestic product (GDP). In 2011 for example, insurance penetration reached 13 % in Holland, against less than 2 % in Indonesia and 1 % in the Philippines. Asia accounted for

slightly more than half of the global death toll from disasters between 1970 and 2010, and suffered 40 % of the global economic losses, most of them uninsured (ADB 2014).

Humanity neither waited for insurance companies nor for aid organizations to address the risks associated with disasters. Solidarity mechanisms and mutual support have long played a central role in alleviating the plight of those community members facing extraordinary losses as a result of fire, flood, illness or death. In an ILO Compendium on Microinsurance for the Poor, Churchill (2006) reports the testimony of a Roman burial fund dating back from 130 AD. The fund served as a collective saving instrument that was seemingly popular within the military and poorer segments of the Roman society. The community members contributing to the fund were able to seek support from that fund to cover the costs associated with burying their loved ones in dignity.

When a large-scale scourge hits the community as a whole, or if the insured risk is too large, mutual support mechanisms collapse. The insurance industry started to develop with the expansion of world trade and the first industrial revolution. Mutual insurance companies became common as a scaled-up version of mutual support schemes. Weather-related insurance existed already by the end of the eighteenth century, for example a hailstorm risk insurance in Mecklenburg (Wirtz 2013). But primary insurers soon faced difficulties as large-scale disasters affected increasingly larger urban centres: many insurance companies were overwhelmed and simply went bankrupt.

Today's largest reinsurance companies—Munich Re and Swiss Re—emerged in response to disastrous fires that ravaged German cities and the Swiss town of Glarus in 1861. Reinsurance companies basically insure the risks borne by primary insurers, allowing insurance companies to rebalance their portfolios by spreading the risks across categories and countries. They invest the premiums paid by primary insurers in global financial markets and spread the risks onto capital markets. The premiums, together with the return on investments, enable reinsurers to honour the claims made by their clients while making a profit.[2] The industry longevity—over 150 years—bears witness of its success so far, knowing that uninsurable risks like nuclear accidents are excluded from the insured universe.[3]

Microinsurance has emerged over the past two decades as an alternative to traditional insurance geared toward developing countries. Schematically, microinsurance comprises insurance products targeting the poor. The latter are not attractive clients for regular insurers since they do not have the means to buy a standard insurance, or have other more pressing spending priorities. The term 'micro' refers to the

[2] We distinguish between the underwriting and investment sides, which insurance industry accounting rules keep separate. While the underwriting side generally generates only a small profit on insurance proper, larger profits come from investing the cash flow or 'surplus' built by the accumulation of investment income and a small amount from profits on underwriting. Any losses on the underwriting side, when claims exceed premiums and expenses, are typically covered by such surplus.

[3] Risks are not insurable if the premium would have to be set too high in order to cover the potential claims, the nature of the loss cannot be clearly defined and financially set, or if the loss is not random in nature because of the risk of adverse selection.

fact that the premiums and insured assets are sufficiently small to be affordable for the relatively poor. Between 2007 and 2012, the number of people who have contracted a microinsurance increased by more than 600 %, to reach 500 m, for a market exceeding 40 bn (Churchill and Matul 2012). Since a substantial share of global output in the developing world is subject to the direct influence of weather events, weather-index insurance and derivatives are quickly expanding, as discussed below. In addition, disaster risk financing involves a variety of instruments that go well beyond insurance products: sovereign catastrophe bonds (cat bonds), contingency credits made available by international financial institutions, not to mention the liquidity reserves that many developing countries have accumulated over recent years of budgetary and trade surpluses.

Despite adverse political economy dynamics that tend to discourage ex-ante investment in disaster risk prevention and management, insurance penetration is currently spreading in emerging economies under the combined impetus of economic growth (more to lose) and urbanization (greater concentration of risks). Emerging middle classes are becoming more aware about disaster risks and insurance options. The Association of Southeast Asian Nations (ASEAN) has taken a lead in disaster risk management. The region is among the most exposed to natural hazards, with yearly losses estimated above US$4.4 billion (World Bank and GFDRR, 2012). A majority of the members are middle-income countries with ever more sophisticated institutional and legal frameworks for dealing with disaster risks. The Organisation was instrumental in setting up the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) that entered into force in December 2009. The Agreement includes a binding instrument that relates to commitments taken under the Hyogo Framework of Action (HFA). AADMER also encompasses a regional framework for cooperation on disaster management that deals with issues such as funding, coordination and training (ASEAN 2013).

In this chapter, we discuss the role of disaster risk insurance as well as insurance- and risk-linked securities (RLS). These are financial instruments whose value is not primarily driven by fluctuations on financial markets, but rather by the occurrence of disasters and the severity of the ensuing losses. Risk-linked securities (RLS) have been defined by Cummins (2008: 23) as "innovative financing devices that enable insurance risk to be sold in capital markets, raising funds that insurers and reinsurers can use to pay claims arising from mega-catastrophes and other loss events." Catastrophic risk bonds or 'cat bonds' are one the most prominent RLS. We further distinguish between private insurance for individual homeowners and governmental insurance schemes and risk transfer mechanisms to cover public and private asset losses.

11.2 The Surge of Disaster Risk Insurance and Derivatives

When private insurance markets fail to provide affordable insurance, government subsidies or guarantees might be required. When the risks are simply too high for the private sector to provide an insurance coverage at all, the government may have

to step in and act as an insurance company. Modern nation states are expected to serve as insurer of last resort in the event of a disaster. Based on the principle of national solidarity, the government is expected to compensate the victims. If it is unable to do so, the very legitimacy of the state is at risk.

"Compulsory earthquake insurance is our primary social responsibility".[4] This quotes sounds like the perfect ad of a multinational insurance company. It actually features prominently on the homepage of the Turkish Catastrophe Insurance Pool (TCIP), a public insurance scheme to which Turkish house owners must subscribe. The stated aim is to ensure a nation-wide cover against quake-induced disaster risks, including tsunamis, landslides, and ensuing fires and explosions. The objective is to reduce the financial liability of the Turkish government in case of an earthquake, thus preventing a tax increase that the government would have to levy if it were liable for the reconstruction of uninsured private property. The premiums are meant to be affordable; but, in parallel, the sum insured is limited to 150,000 Turkish Lira, or just above US$70,000 (as of mid-2014). This may be sufficient to pay for the reconstruction of a modest accommodation in rural areas. But it would cover only a fraction of the losses incurred in cities that are highly exposed to quake risks, such as Istanbul or Izmir.

When a cataclysmic event strikes, the state may run into large deficit, debt and inflation. It may have to drastically increase taxation. The global insurance industry boasts to offer solutions that spread the risk and can transfer the potential disaster costs outside of the country. The same applied to catastrophe bonds, or 'cat bonds' that appeared in the mid-1990s out of a concern over the insurance industry to hedge against catastrophic events. Over US$40 billion cat bonds have been issued in the decade up to 2013. The amount of outstanding bonds increased from less than US$3 billion in 2002 to more than US$19 billion in 2013. It has been estimated that about 80 % of cat bond buyers are pension funds and other institutional investors, who find it attractive to diversify their portfolios with a reasonably high-yield asset class, dissociated from the vagaries of stock markets. A state may wish to issue cat bonds to ensure that it will have the means to provide post-disaster assistance to its people when need be, as an alternative to individual homeowners taking individual disaster-risk insurance. Cat bonds may also be issued by reinsurance companies as a means to spreading their risks. In practice, we often see mixed approaches.

When designing a cat bond, a parametric trigger is established in relation to the intensity of a natural hazard—for example, wind speed, air pressure, rainfall or quake magnitude and location. Some cat bonds use industry loss triggers instead, activated when losses reach a certain level. When a catastrophic event crosses a certain threshold, the cat bond trigger is activated; the investors then have to forgive the principal, in part or in full. The issuing insurance or state can use the loan—turned into a grant—to pay for insurance claims or for emergency relief and rehabilitation. The financial return on cat bonds is higher than for normal bonds where the principal is not at risk. Cat bonds yield can go as high as eleven points above US

[4] http://www.tcip.gov.tr/hakkinda.html. Accessed 9 Apr 2014.

treasury bond yield, while cat bonds issued in 2013 with an average maturity of 3.3 years pay about 5.56 % points above short-term lending rates.[5]

In October 2013, *The Economist* reported that, out of a total of 200 bonds issued over 15 years, only three cat bonds had been triggered so far.[6] Parametric triggers reduce transaction costs since insurance claim experts do not need to ascertain the veracity and amount of alleged losses. In addition, index-based insurance products arguably reduce moral hazard since payouts are triggered by the observation of objective indices that cannot be manipulated by the insured. In principle, the data provided by meteorological stations or seismographs suffice. Yet, the information must be available and credible, which greatly varies from one country to another. For example, Japan had over a thousand seismographs scattered around the country by mid-2000, while Indonesia had fewer than 160 of them for the whole Archipelago (Suwarni 2011). Actuaries need to have access to enough data to quantify the probability and amount of expected losses, in order to determine the appropriate level of the premiums. This is obviously very difficult in the case of exceptional catastrophic events or when there has not been sufficient data collected on the relevant parameters.

The case of Mexico illustrates well how cat bonds have developed over the past decade. In 2005, Mexico budgeted about US$50 million for disaster recovery. It eventually had to pay US$800 million (Michel-Kerjan et al. 2011:24). The Federal Government set up a Fund for National Disasters with the aim to be in a position to pay for emergency aid and post-disaster rebuilding. When several disasters strike in a row, the scheme appears largely underfunded. This is all the more the case as climate change, urbanization and economic growth all concur to push the cost of disasters up. This has prompted the Mexican government to issue earthquake cat bonds in 2006, followed by a 'multi-cat' securitization programme in 2009 that includes additional natural hazard risks such as hurricanes.

In a detailed account of the Mexican cat-securitization programme design, Keucheyan (2014a) notes that the Mexican finance ministry worked together with the World Bank, Goldman Sachs and Swiss Re Capital Markets. A US catastrophe modelling agency, Applied Insurance Research (AIR), was tasked with defining the level and nature of the parametric triggers. When a quake or a hurricane hits Mexico, the modelling agency examines whether the relevant trigger has been activated or not. If not, the investor keeps the principal and keeps cashing in hefty interest payments.

The case of Malawi provides another illustration of the recent catastrophe securitization boom that developed in disaster-prone countries. Paradoxically, this happened at a time when the 2008 financial crisis made risk securitization highly unpopular.[7] Malawi is affected by chronic weather events that regularly put food

[5] http://www.bloomberg.com/news/2013-06-06/drooling-cat-bond-investors-overlook-risk-montross-says.html. Accessed 27 May 2014.

[6] Catastrophe Bond: Perilous Paper. *The Economist*, 5 October 2013.

[7] This boom happened while hitherto unknown acronyms such as CDO (collateralized debt obligation), CDS (credit default swap) and MBS (mortgage backed securities) became top news as the 2008 financial crisis was unfolding.

security at risk. The country launched two flagship risk transfer pilot programmes, by the mid-2000s. Both were rainfall-indexed insurance schemes: a crop micro-insurance for individual farmers and a sovereign derivative for the Government, said to be the first of its kind in Africa. Such derivatives transfer a portion of the risks out of the drought-affected country onto international financial markets, spreading the risk broadly and transferring disaster costs abroad. Redistributing some of the financial liability of disaster damages to international reinsurance companies and global capital markets reduces the drain of an adverse weather shock on the domestic economy and the dependence on foreign assistance. Today, both types of weather-index insurance schemes are promoted in disaster-prone developing countries, with the priority going to sovereign derivatives that are deemed easier to market at scale and more cost-effective.

11.2.1 Obstacles

There are many challenges to the expansion of disaster risk insurance and securitization, involving technical and institutional or 'cultural' obstacles. When the two Malawi pilots were launched, there were fewer than forty weather stations in the whole country, making weather index monitoring virtually impossible in certain locations. In principle, this can be overcome with satellite imagery. Yet, low resolution and dense clouds in critical growing periods do not often allow for the collection of the required data. Automated weather gauges can be used as an alternative unmanned device, especially since they are becoming cheaper and more reliable (Wirtz 2013). Technical barriers to the expansion of disaster risk insurance are receding but can still hinder the scalability of such schemes.

Like in Turkey, several ASEAN countries have a large Muslim population for whom the compatibility of insurance and other financial products with Shari'a law is a real concern. The financial industry has developed a variety of instruments under the category of 'Islamic finance', which rests on a number of principles such as the sharing of profits and losses. It places constraints on financial instruments that involve the payment of interest or contractual arrangements deemed speculative when they rest on uncertainty. Hence, insurance does not appear to be Shari'a compliant.[8] In Asia and the Middle East, the insurance industry has worked with Islamic scholars to design a Shari'a version of conventional insurance, based on a cooperative system of contributions and payments in case of disaster losses called 'tafakul'. It rests on the principles of mutual assistance and voluntary contributions: a group of participants is pooled together and voluntarily shares the risks and surpluses from a mutual pool. The reinsurance industry has also developed Shari'a compliant

[8] In the case of Pakistan however, empirical evidence shows that the growth in demand for flood micro-insurance among the victims of the severe 2010 flood has not been significantly affected by doubts related to the compatibility of the insurance product with Shari'a law. See Turner et al. (2014).

products. With the help of a Shari'a advisory board, Swiss Re has launched 'retafakul' solutions in the Middle-East in 2006, that is a Shari'a compliant version of reinsurance. The company acquired a licence to set up retafakul operations in Malaysia in 2009. In a recent publication on Islamic insurance, Swiss Re noted that this segment had grown by 25 % annually between 2004 and 2007, well above 10 % growth for conventional insurance (Swiss 2008).

Weather-indexed micro-insurance is arguably tailored for 'the bottom of the pyramid'. Affordable premiums and low transaction costs are meant to target the poor. But just like microcredit, microinsurance is not an attractive option for the poorest; neither from the perspective of the insurer for whom demand is simply too low, nor for the insured, for whom there are more urgent priorities, and premiums are prohibitively high. It is rather geared to people just above the poverty line. Microinsurance helps them to withstand adverse, recurrent shocks that would otherwise bring them down in a poverty trap. Microinsurance further serves the purpose of 'educating the poor'. It contributes to raising awareness about risk and insurance. But such schemes are often not commercially viable. Premiums are often too high, and payouts not frequent enough to become attractive to the poor. Recent research on contract renewal of health microinsurance in India finds that the dismal renewal rate stems from a poor understanding of the notion of insurance combined with insufficient information provided to allow subscribers to collect insurance payments when eligible (Platteau and Ontiveros 2014).

The share of disaster losses covered by formal insurance remains marginal in many developing countries. Even if the market is developing fast, life and health insurance typically come well ahead of disaster risk insurance.[9] To overcome some of the obstacles, insurance companies are teaming up with development banks, philanthropists and aid agencies in the context of Public–Private Partnerships (PPPs). Lead aid organisations see a great potential for PPPs to strengthen disaster risk governance, increase disaster risk insurance coverage and promote risk-linked securities in developing countries.

11.3 Public–Private Partnerships

Insurers team up with governments and international organizations to insure against risks that most of the people at risk could not afford on a commercial basis. Rather then insuring individual homeowners, PPPs seek to allow the central government or regional state entities to meet disaster recovery needs. The state may seek to insure first and foremost public facilities and infrastructure, or to be able to act as an insurer of last resort for private property losses. Interestingly, this happens at a time when

[9] Insurance penetration varies greatly even within individual sub-regions. For example, 54 % of respondents in Hanoi reported having health insurance against 31 % in Manila and only 10 % in Jakarta. See Asian Trends Monitoring 2012—A Dataset on Poverty and Service Provision.

disaster risks in industrialised countries are increasingly deemed uninsurable, or with premiums becoming unaffordable. Just like terrorist acts, earthquakes, landslides and floods are moving out of the regular insurance market and are now most often covered either by government-run or with government-backed insurance programmes.[10]

In a 2012 report entitled *Advancing Disaster Risk Financing and Insurance in ASEAN Member States*, the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR)[11] lament that the penetration rate of property catastrophe insurance, agricultural insurance and disaster microinsurance remains very low in Southeast Asia. The report insists that greater insurance coverage would provide additional resources for timely relief and rehabilitation. This would require overcoming supply side constraints by broadening the marketing channels and the technical capacity of the different stakeholders involved. According to the report, in order to ease constraints on the demand side, there is a need to enhance insurance education and risk exposure awareness among the authorities and the wider public, and to improve the legal and regulatory systems (World Bank and GFDRR 2012, p. 2).

ASEAN member states may be able to mobilize sufficient funding for immediate response to 'regular' disasters. But additional resources are often required to pay for early recovery, in particular in poorer member states such as Cambodia, Laos and Myanmar. The report recommends developing disaster risk financing and insurance in the ASEAN region not only with national governments, but also with sub-national state entities that face great budget volatility risks in case of a disaster. To ensure that the funding made available matches post-disaster requirements, the report suggests blending public contingency budgets and the build-up of reserves with private insurance, cat bonds and contingency credits by international financial institutions.[12]

Typhoon Haiyan that hit the Philippines in November 2013 provided an opportunity to push these recommendations ahead. A few months after the typhoon killed over 7,500 people and destroyed more than a 1.5 m homes, the United Nations Institute for Disaster Risk (UNISDR) teamed up with Munich Re and Willis Re to present to members of the Senate in Manila a new product: the Philippines Risk and Insurance Scheme for Municipalities (PRISM). PRISM is a high-yield cat bond backed by state subsidy that the municipalities would sell to private investors. The latter would forgive the principal in case a catastrophic event reaches the predetermined threshold (Keucheyan 2014b). "In order to be successful, it will

[10] The States of Louisana and Florida have already become big actors on hurricane insurance market since private unsurers are unwilling to underwrite the risks (at affordable price).

[11] GFDRR is a partnerships involving states and international organisation. Established in 2006, its mission is to 'mainstream disaster risk reduction and climate change adaptation in country development strategies'

[12] By mid-2011, the World Bank granted a US$500 million contingent credit to the Philippines for natural catastrophe, which was already drawn down in December the same year following the devastation caused by the Tropical Storm Sendong.

require mandatory take-up by local government units, but it will make them masters of their own destiny when it comes to responding to relief and recovery needs in the wake of a major disaster event" said Margareta Wahlström, the Special Representative of the UN Secretary General for Disaster Risk Reduction, in a statement issued in January 2014.[13] Abano (2014), the UNISDR head of outreach and advocacy in Manila stated that "the number of people dying in disasters is going down, but the real challenge is economic losses. Insurance is a means of shifting the focus from saving lives to also saving money". She went on to express her wish "to see the Philippines to lead the world on this kind of innovation". Franklin Drilon, the Philippine Senate President, tempered the thrill down: while the scheme may help to reduce the financial pain imposed by disasters, it is not a silver bullet for risk management. Such a novel approach requires "a paradigm shift" that will take time (Abano 2014).

The logic of many such PPPs is that each partner contributes to spreading disaster risk insurance and securities. The public sector brings in its regulatory power and political clout to establish the institutional framework for the insurance market to flourish. The private sector brings in technical expertise and financial resources. The international aid community plays a critical role by bringing into the partnership its convening power and a legitimacy that helps market new products in developing countries, together with subsidies for pilot programmes that are not (yet) commercially viable or simply too risky.

Launched in 2007, the Caribbean Catastrophe Risk Insurance Facility provides insurance cover to 16 countries in a region swept by frequent storms and hurricanes.[14] This innovative way to engage in pre-disaster planning was developed under the World Bank's leadership and with financial support from Japan. The Facility was capitalised through contributions from Canada, the European Union, and many other donors, plus membership fees paid by participating states. The Mongolian Index-based Livestock Insurance is another pilot designed by the World Bank with Japanese and Swiss funding to protect Mongolian herders' productive assets against adverse weather and other events. Here again, tranches of the risks facing the cattle are transferred to capital market outside of the country (Skees et al. 2008). Kilimo Samala in Kenya is another weather-index microinsurance scheme that has been developed collaboratively between a Kenyan insurance company (UAP), the telecom operator Safaricom and the Syngenta Foundation. It is directed at farmers who are offered to buy a parametric insurance together with the purchase of seeds and fertilizers. Weather stations across the country register variations in rainfalls and activate a trigger in case of large drought or excess rain. Insurance payouts are directly transferred to individual farmers via mobile phone with M-Pesa.[15]

[13] http://www.unisdr.org/archive/36205. Accessed 13 Apr 2014.

[14] http://www.ccrif.org/content/about-us. Accessed 13 Apr 2014.

[15] http://kilimosalama.wordpress.com/about/. Accessed 28 May 2014.

11.3.1 Political Economy Constraints

Political economy dynamics that adversely affect ex-ante investment in disaster risk prevention and management are well known (Cohen and Werker 2008). Yet, addressing the typical moral hazard, asymmetric information and collective action problems preventing appropriate ex-ante investments remain a daunting challenge.

The provision of free relief and rehabilitation, government guarantees and subsidized insurance are all subject to moral hazard. Rationally, foreign aid remains the preferred option in many disaster-prone countries, which reduces the incentive to invest in prevention. A recent study shows that the anticipation of external assistance has a strong explanatory power on the low demand for disaster risk insurance in the case of the French Overseas Departments that are in hazard-prone territories where the supply of insurance products is strong (Grislain-Letrémy 2013). Along the same lines, evidence from a field experiment conducted in Pakistan after extensive flooding in 2010 provides interesting insights: while overall demand for flood micro-insurance increases among those who suffered direct losses, demand is significantly lower among those households who benefited from free post-disaster assistance to rebuild their homes or to replace productive assets such as livestock. If such assistance was limited to compensate for the loss of less valuable assets, the dampening impact on demand for flood micro-insurance appears much more limited (Turner et al. 2014). The study uses a sample of 192 individuals in flood-affected villages and 192 in non-affected ones, and combines post-disaster data with behavioural experiments. Households affected by the 2010 floods display higher demand for insurance than the non-affected, be it because they incurred direct losses or witnessed others' losses. Interestingly, considering insurance as non-Islamic does not seem to discourage insurance purchase in that interviewees did not express specific concerns with to regard to compliance with Shari'a law.

The situation is quite different in industrialized countries. In the aftermath of Hurricane Sandy that hit the US East Coast in October 2012, Congressman Ron Paul (Republican from Texas) criticised the moral hazard embedded in federal subsidies to the National Flood Insurance Program (NFIP), which makes it cheaper for people to settle, build and rebuild their homes in flood-prone areas. The congressman wrote in 2012: "NFIP disguises the real cost of flood insurance in flood-prone areas, which influences homebuilding and sales in such areas… The obvious and expected outcome is more danger to life and limb when disaster strikes".[16] Soon thereafter, the US Congress passed a Flood Insurance Reform Act in an attempt to reduce moral hazard. State subsidy cuts would result in higher insurance premiums. Less than 2 years later, as mid-term elections in the US were approaching, both the House of Representatives and the Senate overwhelmingly voted in favour of removing the 2012 provisions that made property insurance more costly. Expressing supporting for this 2014 Homeowner Flood Insurance Affordability Act, Senator Bob Menendez (Democrat from New Jersey) hailed: "we have averted the manmade perfect storm

[16] http://www.mortgageorb.com/print.php?plugin:content.12693.

that would have crushed thousands of families under the weight of skyrocketing flood insurance rates, forced many from their homes, plummeted property values and destroyed entire communities."[17] Politics obviously prevail over moral hazard concerns but leaves open the question of who should be held accountable if a "perfect storm" crushes the lives of those families who stay in hazardous locations as a result of the 2014 Act.

Revisiting the Samaritan dilemma embedded in the provision of free assistance, not much can be done to avoid moral hazard in the case of insurances that pools risks across a large population without imposing higher premiums on the more exposed. In California for instance, those living on the San Andreas fault line or a hundred miles away pay the same premiums for earthquake insurance. This means that the less exposed actually subsidise the insurance costs that should be borne by the more exposed, which provides an incentive to settle in riskier places.

11.4 Conclusion

Clearly, disaster risk insurance, catastrophe bonds ('cat bonds') and other risk-linked securities are set to expand fast in Southeast Asia. Yet, the implementation of pilot projects in developing countries shows that such products are often not (yet) commercially viable. Public–Private Partnerships involving the World Bank, UNISDR and aid donors (e.g. Japan, Switzerland) bring critical support to the insurance industry and states exposed to natural hazards. In Southeast Asia, this may offer an opportunity for governments to further assert sovereignty and reduce aid dependency in the wake of disasters. On its part, ASEAN seeks to hone its profile as an institution by investing in disaster risk management.

The relationship between the aid sector and the insurance industry is characterized by increasing cooperation, but also enhanced competition. A growing and vibrant humanitarian industry keeps pushing for effective, timely and generous delivery of post-disaster relief and recovery assistance. Governments and households with a strong preference for free ex-post assistance may welcome this compared with the alternative option of paying ex-ante disaster risk insurance premiums and interests on bonds. But this constrains the development of the disaster insurance market. Further research on the political economy and politics of disasters would help to shed light on the relative influence of the Samaritan's dilemma accruing from free disaster assistance for the uninsured and moral hazard resulting from pooling risks together. Having a subsidised insurance such as NFIP may arguably be a lesser of two evils compared with seeing the government forced to bail out uninsured homeowners.

The distributional impact of disasters deserves particular attention. The evolving mix between insured and uninsured losses—or between international and domestic

[17] http://www.insurancejournal.com/news/national/2014/03/13/323273.htm. Accessed 8 Apr 2014.

relief—determines how the costs and benefits of disaster are eventually distributed. A catastrophic event often causes substantial resource transfers over a short time span. Resources may flow from insurance companies to homeowners, or from foreign taxpayers to aid organisations. The latter then operate via a range of international and domestic contractors, who in turn tend to sub-contract the execution of reconstruction projects. In the case of cat bonds, resources would typically flow from foreign institutional investors to (re)insurance companies or, in the case of sovereign bonds, to central and local governments in disaster-hit countries. The very low frequency with which cat bond triggers have been activated so far may discourage governments who may rationally opt for foreign aid in the case of rare, extreme natural hazards. Yet, insurance and derivative products have the advantage to potentially transfer a substantial portion of disaster costs abroad irrespective of the humanitarian response (or lack thereof). More importantly perhaps, they contribute to reducing dependency on foreign assistance, thus supporting national sovereignty claims and ambitions.

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References

Abano I (2014) Philippines mulls disaster risk insurance for local governments. Thomson Reuters Foundation, 22 Jan 2014, London

ASEAN (2013) ASEAN Agreement on Disaster Management and Emergency Response (AADMER) work programme 2010–2015 (4th reprint), ASEAN Publications Print. http://www.asean.org/resources/publications/asean-publications/item/asean-agreement-on-disaster-management-and-emergency-response-aadmer-work-programme-2010-2015-4th-reprint. Accessed 27 May 2014

Asian Trends Monitoring (2012) A dataset on poverty and service provision. Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore

Asian Development Bank (2014) From aceh to tacloban: lessons from a decade of disaster. Development Asia Series, Asian Development Bank, Manila

Churchill C (ed) (2006) Protecting the poor: a microinsurance compendium. ILO and Munich ReFoundation, Geneva and Munich

Churchill C, Matul M (eds) (2012) Protecting the poor: a microinsurance compendium, vol II. International Labour Organisation, Geneva

Cohen C, Werker E (2008) The political economy of 'natural' disasters, Harvard Business School working paper. No. 08–040. 21 Nov 2008

Cummins J (2008) CAT bonds and other risk-linked securities: state of the market and recent developments. Risk Manag Insur Rev 11(1):23–47

Grislain-Letrémy C (2013) Natural disasters: exposure and underinsurance. National Institute of Statistics and Economic Studies, Working document economic synthesis. No. G2013/12

Keucheyan R (2014a) La nature est un champ de bataille: Essai d'écologie politique. Zones, Paris

Keucheyan R (2014b) Privatised catastrophe. Le Monde Diplomatique, pp 4–5

Michel-Kerjan E et al (2011) Catastrophe financing for governments: learning from the 2009–2012 Multicat program in Mexico, OECD working papers on finance, insurance and private pensions, No. 9, OECD Publishing, Paris

Munich Re (2014) Overall picture of natural catastrophes in 2013 dominated by weather extremes in Europe and Supertyphoon Haiyan. Press Release of 7 Jan 2014

Platteau J-P, Ontiveros D (2014) Understanding and information failure in insurance : evidence from India, Working paper. University of Namur

Skees J, Barnett B, Murphy A (2008) Creating insurance markets for natural disaster risk in lower income countries: the potential role for securitization. Agr Finance Rev 68(1):151–167

Suwarni Y (2011) After Japan disaster, government urged to revise mitigation system. The Jakarta Post 23 Mar 2011

Swiss Re (2008). 'Insurance in the emerging markets: overview and prospects for Islamic Insurance', Sigma No. 3/2008. Swiss Re, Zurich

Turner G, Said F, Afzal U (2014) Microinsurance demand after a rare flood event: evidence from a field experiment in Pakistan. Geneva Papers Risk Insur 39:201–223

Wirtz A (2013) Natural disasters and the insurance industry. In: Guha-Sapir D, Santos I (eds) The economic impacts of natural disasters. Oxford University Press, New York

World Bank, GFDRR (2012) Advancing disaster risk financing and insurance in ASEAN member states: framework and options for implementation. The World Bank, Global Facility for Disaster Reduction and Recovery, Washington, DC

Chapter 12
Building the Urban Community Disaster Relief System in China

Songyan Chu

Abstract This chapter examines the existing urban community disaster relief system in China. It is based on in-depth interviews and site visits in five urban communities, of which China's Ministry of Civil Affairs regards four as model disaster relief communities. The chapter finds that the present urban community disaster relief system in China has been roughly shaped yet is far from complete. The system has just begun to shift from administration-dominated to autonomy-dominated. It includes a relatively complete preparedness plan and provides mechanisms for resource sharing and civic engagement. However, there are still problems in building the urban community disaster relief system. For example, administrative mobilization is still the main operational model; there is no institutional channel for social force participation. Within the existing system, effective cooperation between the government and the community is still absent, and horizontal resource sharing mechanisms between communities have not yet been developed. These problems make the collaborative linkage between the government and the communities weak and inefficient. From the perspective of collaborative governance, the building of the urban community disaster relief system should shift from disaster management to disaster governance. The government and community play different yet complementary roles, which means that they should share technological and other resources, unify information management, and, through the support of the government and social forces, make volunteers more professional.

Keywords Disaster relief • Participation • Resource sharing • Social force • Urban community

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12.1 Introduction

For years, researchers have emphasized the importance of urban communities in disaster relief, emphasizing issues such as the character and problems of natural disasters at the community level (Xiaoshi and Rongfang 2002), community vulnerability indicators (King 2001), and community planning and public participation (Pearce 2003). Many countries—including the United States, Japan, Germany, the United Kingdom, and Indonesia—have encouraged the development of disaster relief capabilities in communities.

China has launched an accelerated urbanization process since the beginning of the twenty-first century. By the end of 2013, China's urban population has increased by 53.73 % since 2000, when fostering city clusters was adopted as the strategy of urbanization. This includes more than 289 million people from outside urban areas who moved into the city, usually for jobs, even though they lacked official resident status—or *hukou*—which remained linked to their home towns.[1] Without *hukou* in the urban areas they have chosen as their new residence, these 289 million people not only cannot enjoy equal citizenship rights with those people who have local *hukou*, but they are also neglected in urban planning, public services, and urban social welfare. Even more important, they are not considered stakeholders in the urban public decision-making process.

The separation of registered (*hukou*) and actual residence has become a complicated challenge for the disaster relief system in terms of the evaluation of risk, reservation of resources, and development and implementation of related urban institutions. With expansion of the cities, urban population density and intensification of man's activities are rising, and the enhanced possibility of catastrophe is making these larger cities more and more vulnerable. This is a hotspot in contemporary China. Building an effective urban disaster relief system to reduce social and economic loss requires raising the capacities of both the government and the public to defend against disasters of all types. This chapter examines the existing urban disaster relief system and its problems and analyzes possible future development of the system to sustainably mitigate hazards.

12.2 The Contemporary Urban Disaster Relief System

In China, according to *Opinions on Promoting Urban Community Development Nationwide*, released by the General Office of the CPC Central Committee and the State Council on November 19, 2000, "the urban community refers to a social life neighborhood composed of residents within a certain geographic territory." As the basic unit of urban society, an urban community has a residents committee elected

[1] Data released by the State Bureau of Statistics on January 20th, 2014. The official rate of 35.7 % excludes individuals who lack *hukou* in the city in which they are living.

by all the residents of the community to serve as the community's self-governing body; and the basic-level government (which may be a town or a sub-district office in a city), has the responsibility to support urban community development. This includes not only organizational operation of the residents committee and the other community-level organizations, but also providing the indispensable funds for the delivery of social services directly to residents, such as home-based care for the aged, which are organized or coordinated by the residents committee.

Because communities, with their self-governing bodies, the residents committees, are the bridges connecting urban government and the public, they are at the front line of disaster relief. The capacity of communities directly determines whether the urban government and the public can manage disasters rapidly, effectively, and properly. In China, as in other countries, communities are both the beneficiaries and the frontline executive bodies of the nation's policies on disaster relief. A community's emergency capacity consists not only of materials and human resources, but also includes relationship management among the people of the community, between the people and organizations, and among organizations; it is critical in the periods before disasters, during disasters, and after disasters.

Therefore, with communities regarded as the basic vehicle for resource integration in urban disaster relief, China has initiated a series of measures to strengthen communities' capabilities and prepare them for disaster relief functions. In 2005, China's National Disaster Reduction Commission (NDRC) and the Ministry of Civil Affairs initiated Action for Community Disaster Reduction and Safety (*shèqūjiǎnzāipíng'ānxíng*) and began to develop the concept of a Disaster Reduction Demonstration Community (DRDC). Five years later, in 2010, NDRC released *The Standard of National Comprehensive Disaster Reduction Demonstration Community (the Standard)*. This document covers ten essential areas, including the organization of disaster reduction, evaluation of disaster risks, disaster emergency rescue preparedness planning, information dissemination and training for disaster reduction, infrastructure of disaster reduction, awareness of disaster reduction methods, and skills of self-rescue in residences, community mobilization and participation, and institutions of management assessment. By May 2010, 875 localities had become comprehensive disaster reduction demonstration communities (DRDCs).

On November 26, 2011, the State Council issued the *Notice of the National Plan of Comprehensive Disaster Reduction and Prevention (2011–2015) (National Plan)*, committing "to build 5,000 DRDCs with at least one disaster information officer in each basic urban and rural community" and "to build comprehensive coordination mechanisms in every province, autonomous region, municipality, cities, and counties that are prone to natural disasters." These are among eight plan goals under the principle of "government domination with social participation." By the end of 2013, 5,405 communities have been named DRDCs,[2] which means that one of the goals set in the *National Plan* has been achieved ahead of schedule.

But does this mean that these communities as the basic units of the urban disaster relief system are ready and effective in raising urban capacity for disaster reduction,

[2] Data from the Ministry of Civil Affairs, http://www.mca.gov.cn/.

prevention, and relief? The following pages present findings based on in-depth interviews and site visits in five urban communities—four of which have been named DRDCs.[3]

12.2.1 The Structure of Urban Disaster Relief at the Community Level Is Changing from Government-Administered Bureaucracy to Community-Based Governance

Before the 1990s, communities were administered and closely linked with the *danwei* or unit system in urban areas. In the *danwei* system, a person's residence, welfare, and daily life were carried out in his or her workplace or work unit. He or she held a position in a highly inclusive social/economic unit in which both social and economic resources were organized, controlled, and allocated by the government according to work unit, such as a factory, school, cinema, or government agency. Since the 1990s, however, China has sought to accommodate the separation of the government from the market and society. Government therefore called for changing from the "unit person" to the "social person" by separating the community from *danwei*. Government began to emphasize communities in urban China as autonomous organizations of urban residents. After more than 20 years of experience, urban communities have been slowly changing from government-administered bureaucracy to community-based governance. But since the process is slow and still going on, urban communities today are characterized by a mixture of administration and autonomy.

According to Article 2 of the *Organic Law of the Urban Residents Committees of the PRC* (People's Republic of China), passed by the 11th Meeting of the 7th

[3] The four communities named DRDCs were recommended by the Ministry of Civil Affairs, two from Beijing, and two from Jinan City, the capital of Shandong province. The one community without DRDC designation was from Laiwu city of Shandong province. The communities recommended by the Ministry of Civil Affairs are all DRDCs that have practiced disaster relief for several years and are regarded as communities with well-prepared emergency plans and rich experiences in disaster relief. They represent two types of communities. One type is new-built communities with modern buildings and business centers, such as the Min'an community in Beijing and the Shunyuan community in Shandong province. The other type is the old city reconstruction area. These include the Gulouyuan community of Dongcheng District in Beijing, composed of *hutong* area with very old *siheyuan* (Chinese traditional courtyard house in the shape of a quadrangle) crowded by several families, and the Youth Park community in Shandong province, also crowded by 34,433 people within 0.78 km^2 by the end of 2012. The one community without DRDC designation is Daihuayuan in Shandong province. It is transforming from a rural village and was chosen to be a contrasting community to find out if there are obvious gaps between DRDCs and non-DRDCs. It is also expected to be DRDC in the future. The directors of the residents committees and/or the secretary of the communities' CPC branches were interviewed in the summer of 2012 by the author and her research team, sponsored by the Ministry of Civil Affairs, to find out the effects of the building of DRDCs.

National People's Congress (NPC) in 1989, "The people's government of a city not divided into districts or of a municipal district or an agency of such a people's government shall provide guidance, support and help for the residents committees in their work. The residents committees shall, for their part, assist the above people's government or agency in its work." Until recently, in fact, the residents committees of urban communities have always been executive-guided implementers or have even been dominated by basic-level local governments. These local governments offer help to residents committees with salaries and operational costs; and the sub-district offices of the government directly play the role of leaders and pushers in community disaster relief—for example, by formulating a community disaster relief plan, allocating community disaster reduction resources, or assigning related work. Such government-administered bureaucratic community involvement in the urban disaster relief system follows the leadership of basic-level local government; the community residents committees merely implement the government's assignments by mobilizing retired residents and retired Communist Party of China (CPC) members.

As further separation between the government, market, and society has developed during the reform period in China, the participants in community disaster relief have become more diversified. As more and more residents committees are becoming strong links between the government and residents, a form of community-based governance is forming. According to Article 19 of the *Organic Law of the Urban Residents Committees of the PRC*, "State organs, public organizations, units of the armed forces, enterprises and institutions shall not join the organizations of the residents committees in their localities, but they shall support the work of these residents committees." In the site visits to the urban communities, it was found that in addition to the sub-district offices of the government and the residents committees, other stakeholders also participate in the community disaster relief process. These include enterprises, public institutions (*shiyedanwei*) in these localities, the residents, property management centers, and committees of property owners.

These stakeholders have formed into either tight or loose networks to play several roles in different stages of disaster relief. For instance, for several years the Gulouyuan community of Dongcheng District in Beijing has tried to tightly link residents to the community under the idea of demand-oriented participatory governance. According to this concept, the community integrates government, NGOs, and residents to jointly undertake services. Disaster relief is one of the important programs since community disaster relief is listed in the *National Plan*. In the framework of participation, as shown in Fig. 12.1, the Jiaodaokou sub-district office of the government is supposed to organize, coordinate, and supervise the joint effort; and it must support the program financially if the funds offered by Evangelischer Entwicklungsdienst Church Development Service (EED), a foundation aimed at promoting community development, are not sufficient. The community residents committee coordinates and supports the activities of the residents who are encouraged to constitute different teams to design and implement related activities and programs. The teams are then called residents executive teams. The community at the same time appeals to outside support: for theory, to the China Center for

Fig. 12.1 Participatory governance in Gulouyuan community of Dongcheng District in Beijing

Comparative Politics and Economics (CCCPE) of the Central Compilation & Translation Bureau, which has a good reputation for research on governance; for technology and consultation, to an NGO called Shining Stone Community Action Center (SSCA), which has good participatory skills and a good reputation for supporting community development in Beijing; and the EED Foundation to sponsor SSCA's operational costs and even partially fund community programs.

The residents committee of Shunyuan community of Jinan City in Shandong Province organizes volunteers (for example, employees of the residents committee, residents who are CPC members, community voluntary workers who are CPC members, members of community voluntary patrols) to join community disaster relief. The volunteers broadcast information about disaster reduction, report emergencies to the government, and take part in stockpiling resources, emergency rescue, and evacuation. The residents committee of Min'an community of Dongcheng District in Beijing and the Youth Park community of Jinan City choose to share resources with companies, local *shiyedanweis*, schools, hotels, and public places in their locality, such as squares, to arrange disaster relief jointly.

Although practices in the four model communities show the same effort of integrating resources from the government, the society, the residents, and the other organizations on the platform of communities, it is also very clear that the government still dominates disaster relief even at the community level. This means the government, not the residents, takes the main task of disaster relief as a whole.

As to the Daihuayuan community of Laiwu City, it is the local government that leads the community in seeking the DRDC designation, which again shows government domination.

12.2.2 A Relatively Complete Preliminary Emergency Plan for Disaster Relief Has Been Required to Be Developed in Each Urban Community

Disaster relief is a complicated systems engineering process. It covers disaster monitoring and forecasting, disaster prevention, disaster preparedness, disaster rescue, and post-disaster reconstruction. These need many kinds of resources—funding, technology, information, transport, human resources—contributed by different sectors and government departments. A comprehensive disaster plan would offer a framework to coordinate actors and resources. Therefore, as a requirement of the *National Plan*, every community has made its disaster emergency plan either in detail or in brief. In the plan, a command system is designated at the sub-district office of the government. Also listed are procedures for preparedness, early warning, information management, emergency response, disaster relief, and post-disaster reconstruction to be apportioned among members and volunteers of the residents committees. For instance, in June 2002, the Youth Park community created a Safe Community Building Committee to be responsible for disaster reduction and relief. This committee is made up of the sub-district office, the residents committees, the community health service centre, the local police station, the traffic police brigade, the community legal aid centre, schools, organs in the community's localities and volunteers. As Fig. 12.2 shows, it has eight teams on different topics and an evaluation group to examine the work as a whole.

Shunyuan community also has the director of the residents committee as the head of its disaster relief leading group, and the membership includes staff of the committee and seniors from each building in the community. Under the leading group, there are six rescue teams: (1) An *emergency rescue team* composed of CPC members, mainly responsible for rescue and relief of the hardest-hit areas. (2) A *medical treatment team* organized by the community hospital, mainly responsible for treating the wounded and epidemic prevention. (3) A *community patrol team,* led by the director of the residents committee, mainly responsible for maintenance of public disaster relief facilities such as fire and survival equipment, delivery of publicity materials and protective equipment, and help to the disabled and elderly persons without family. (4) A *volunteer team* led by the community CPC branch, mainly responsible for helping wounded residents and transferring them to safe areas or nearby hospitals. (5) A *community rescue team* led by the staff in charge of civil affairs, mainly responsible for rescue in severely afflicted areas and organizing residents to do reconstruction after the disaster. (6) A *public security and fire control aid team* led by a principal member of the residents committee and made up of

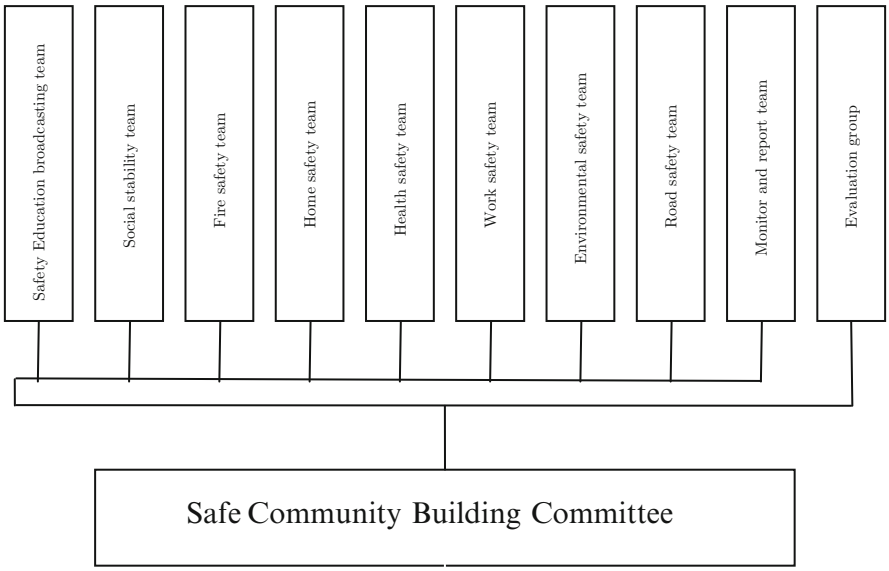

Fig. 12.2 Safe Community Building Committee Organizational Structure of the Youth Park community

community patrol members and CPC member volunteers, mainly responsible for security and traffic control. Since the Daihuayuan community is learning from the experiences of DRDCs, it is predictable that the disaster relief model will be similar to the four DRDCs in the future.

Looking across the five communities, the study found that a complete emergency plan has been drafted in preliminary form in each one, but the effectiveness of the written plans are seldom tested by exercises.

12.2.3 An Information Dissemination and Training System for Disaster Prevention Has Been Established in Preliminary Form in Urban Areas

Experiences in China and abroad show that the residents' awareness of disaster prevention and reduction may be specifically influenced by the distribution and frequency of common disasters. Right after the Wenchuan Earthquake, a national survey showed that about 80 % of the respondents did not join any formal systematic education of disaster prevention (Guolian 2010). During my investigation, I found

that the government and the urban communities pay considerable attention to information dissemination and training. Many communities use public facilities such as libraries, shop windows, and notice boards to broadcast vividly information about disaster prevention and reduction. In huge cities such as Beijing and Shanghai, the government and communities regularly send text messages to residents via the cellphone platform or upload tips online for residents to browse. Some communities also regularly invite experts or volunteers to offer training and exercises to residents, residents committee staff, and migrant workers living in the communities to improve their capacity of disaster relief. In urban communities, however, there is generally more information provided in pictures and words than through personal exercises.

12.2.4 Resource-Sharing and Social Participation Mechanisms for Disaster Relief Are Beginning to Be Established at the Community Level

As mentioned above, the main subjects of urban community disaster relief practices in recent years are the staff of the residents committees, property management centers, community health service centers or community hospitals, community volunteer associations made up of retired CPC members and residents, and local enterprises. Therefore, communities have become the platform for urban governments organizing disaster relief work and the network of social participation. For instance, communities in the Huaiyin District, Jinan City, in Shandong province have shared human resources far beyond their communities with help from experts from the Shandong Party School and other universities. In the Huaiyin District, communities established service centers to help vulnerable groups such as the disabled and low-income families to repair houses and apartments to prevent disasters free of charge, and the other residents also enjoyed similar services at cost.

More and more urban communities are exploring participatory governance of program operations to encourage civic engagement in disaster relief. For instance, in the Gulouyuan community in Beijing, a traditional narrow *hutong* area, the residents committee designed the Community Fire Safety Action and organized implementation and evaluation groups, a program broadcasting group, a flammable material cleaning group, and an environmental improvement group made up of residents within the community. In the stage of promotion and information dissemination, the staff of the residents committee and the representatives of the residents thought together and designed vivid broadcasting pictures and words targeting different residents groups. For example, the appeal of "Grandpa, please clean up the clutter, we'd like to play rubber band," featured smiling children, which not only have made the residents feel closer in a warm and sweet way, but also made the community more cohesive by stimulating more residents to join mutual assistance groups and contribute their ideas.

12.3 The Problems with the Urban Community Disaster Relief System

Although in recent years the urban community disaster relief system has been rapidly built up all over the country, guided by the *National Plan* and the Award of DRDCs, urban communities in the disaster relief system are still followers, not partners with the government. Due to path dependence and the habitual persistence of bureaucratic practices, the urban community disaster relief system still has several problems to be solved.

12.3.1 The Urban Disaster Relief System Is Still Operated by Administrative Mobilization

Although it is said that communities should be the principals of disaster relief in urban areas, since all residents are stakeholders, in practice, both the government and residents believe that disaster relief is mainly the responsibility of the government. The coordination between government departments, and coordination between government departments and social organizations, mainly depends on higher-level government. First, mechanisms for regular coordination among different government departments are imperfect, so coordination needs to be pushed forward by the higher level government, which affects departmental cooperation in disaster relief at the community level. Second, due to government emphasis on administrative efficiency and the relative weakness of social and community organizations, urban governments are still accustomed to extending their administrative operations in disaster relief to the social sphere. Therefore, government sees communities as requiring mobilization in order to become extensions of administrative operations; and social organizations generally are not considered and not included in the emergency planning and practices of the government. Third, the social forces are still not capable of participating in disaster relief effectively. On the one hand, communities lack active horizontal cooperation with each other, and they depend on the sub-district office to coordinate them. In fact, administrative mobilization can play an important role immediately after a disaster and at the beginning of disaster rescue; but it is of little effectiveness in disaster relief, especially in disaster prevention and disaster reduction. A director of a community residents committee spoke without reserve and described the residents' ignorance of the information graphics and posters of disaster relief with the metaphor of "aesthetic fatigue". On the other hand, the linkage between community organizations and social organizations is also relatively weak, which means that social forces are scattered without integration. In the interviews and site visits, the study found that Gulouyuan community and Min'an community in Beijing more actively interact with NGOs; however, generally the idea that social organizations join and contribute to disaster relief at the urban community level is not yet popular in China.

12.3.2 Institutional Arrangements for Social Organizations to Participate in Urban Disaster Relief Are Still Lacking

The institutional arrangements for social forces to participate in the whole process of urban disaster relief lack operability and are not consistent with each other, which makes it difficult for the public to reach a cohesive, common view on disaster relief. For instance, the *Emergency Response Law of the People's Republic of China* stipulates that citizens and organizations that have the status of "legal persons" have the duty to participate in emergency response; it also stipulates that the residents committees where the emergency happens should follow local government's decisions and commands to inform, mobilize, and organize the people to do self- and mutual help, and to assist the government in maintaining social order. However, existing institutions lack procedures and linking mechanisms to enable the citizens and legal persons to do their duties, and for social organizations to assist government in rescue efforts and maintenance of social order. Moreover, there is still a lack of durable measures to encourage social organizations' participation—for example, procedures for outsourcing to social organizations relief supplies, technology, skill training. Insurance security for residents who join disaster relief as volunteers is also not clear.

12.3.3 Effective Mechanisms for Cooperation Between the Government and Society Are Still Absent in the Disaster Relief Framework

The character of mobilization by the government in disaster relief makes cooperation between the government and society inconsistent. First, information sharing mechanisms between government and social forces have not been formally established, and social organizations and community organizations cannot synchronously get clear ideas about hazards. This is not only bad for disaster relief information dissemination and simulation exercises in advance of a disaster, but also negatively influences coordination and cooperation in information sharing and rescue when disaster actually happens. Second, coordination mechanisms between government and social forces have not been established yet, which results in a situation of "responding separately and acting separately." Without adequate communication, social forces cannot find the right point to match up the government's action. For example, on the night of July 21, 2012, a heavy rainstorm struck Beijing and many travelers were stranded in the Capital Airport. Some citizens voluntarily organized the so-called "Double Flash Motorcade" made up of private cars to transfer the travelers for free; within six hours, at least 200 private cars joined the rescue, and more than 500 travelers were picked up from the airport.[4] But ironically the toll-

[4] "Rainstorm Night in Beijing: Double Flash Motorcade with Love VS Taxi Drivers Multiple Price", *The Beijing News*, July 23, 2012, A12–A13.

station on the highway still charged car by car, which increased the number of stalled cars in long lines. Third, many enterprises, *shiyedanwei*s, and government agencies are often not willing to cooperate with communities since they see little linkage of their interests with those of communities. Localization of disaster relief does not mean that communities as mass autonomous organizations have the authority to constrain or direct enterprises, *shiyedanweis,* and government agencies in disaster relief. Again, this makes effective coordination hard to achieve.

12.3.4 Communities' Capacity for Self- and Mutual Aid Remains Low Since Horizontal Resource Sharing Mechanisms Between Communities Have Not Been Established

Community building is still in process in China. Communities have established tight connections with local government by serving as a link between government and residents. But communities have not sufficiently enhanced social capital by connecting with each other. For instance, right after the Wenchuan Earthquake, one important reason that self- and mutual aid in urban and rural communities was chaotic was the lack of prior horizontal coordination between communities on any service; the bond between the community residents committees and the residents was so weak that it could not support routine exercises and preparedness of disaster relief (Xihua and Yanmin 2009; Biao 2009).

Generally speaking, disaster relief has not yet become an indispensible part of community development; it remains just one of the work tasks for urban communities. The current weak connection between communities should be vitalized to reduce the lag effect in relief when disasters occur.

12.4 The Direction of Urban Community Disaster Relief in China

Rapid urbanization in emergent and outspreading cities in China has created a society of strangers. People in communities are busy working, and community shrinks to be just a place to stop and sleep. Although the Wenchuan Earthquake rang a bell to the Chinese people on urban disaster relief, and community disaster relief has been emphasized by the central government ever since, the preparedness and practices of disaster relief at the community level in cities still needs to be improved. In November 2013, the 3rd Plenary Session of the 18th Central Committee of the CPC released an important *Decision on Some Major Issues Concerning Comprehensively Deepening the Reform*, which called for "giving full play to the leading role of the government and encouraging and supporting the participation of all sectors of the

society, so as to achieve positive interaction between the government management on the one hand and social self-management and residents self-management on the other." Therefore, completion of the urban community disaster relief system in the future requires the government and society to interact with each other on the basis of changing from government-dominated disaster *management* to community-dominated disaster *governance* with the engagement and participation of residents at the community level. But in the transition, it still would be dominated by the government. In time, with the emphasis and specific actions on changing to governance, more and more engagement and participation of the residents would be encouraged and appear. Step by step, the community would really turn into a place in which the residents cooperate and help each other and at the same time cooperate with the local government.

12.4.1 Urban Communities Should Be Clearly Regarded as Both the Focal Point of the Disaster Relief Network and the Platform for the Government and Society to Coordinate

Communities as the first responder to disasters should be the focal point of resources and information. The organizational network within the communities mainly connects enterprises, *shiyedanweis*, the property management centers, the fire departments, community volunteers, the community health service centers, and others. Communities also need an outside network to link them with other communities, social organizations, and local governments. First, the disaster relief system should cover all de facto residents regardless of where they have *hukou* (i.e., where they are registered residents). Communities should be the basic unit for internet, the SMS platform, and traditional broadcasting tools to form a seamless information network to signal residents about emergencies in a timely manner. Second, disaster relief materials should be shared across communities, with the communities as the basic unit for planning purposes. This should mean that community residents, not the staff of the residents committees or retired residents, are the principal reliable force in disaster relief. Third, to encourage improved coordination among social forces, collaborative disaster relief contracts between communities, and between communities and social organizations, should be encouraged. In the event of a disaster, a social communication team should be set up within the government's disaster relief headquarters to connect and coordinate with the communities and other social forces. Fourth, residents-oriented disaster preparedness should be put into practice instead of put into archives. Urban governments need to offer training and guidance to residents. This can be done either directly or by outsourcing training to social organizations according to different seasons, different arenas, and different populations. To ensure that all urban residents are well prepared, the emergency preparedness plan should be practiced through exercises and simulations that take the urban

communities as basic units. Since disaster relief is a matter for everyone in the community, not only the retired, all residents, including the young, should be encouraged and mobilized to join these exercises.

12.4.2 The Urban Disaster Relief Resource-Sharing Mechanism Should be Completed

The first important resource that needs to be shared is the human resource. Because disaster relief to some degree concerns experts and expertise, urban communities should be encouraged to share human resources with professional institutes, social organizations, and other associations. The second important resource is information. In disaster relief, it is well known that information isolation should be avoided. Information sharing mechanisms within the government should be integrated among different departments; and information sharing mechanisms among social organizations and community organizations should be encouraged. Overall, information sharing mechanisms between the government and the social forces should be linked. For instance, at the national level, the National Disaster Reduction Committee Office can act as the information port of the government, while the Red Cross Society of China can act as the information port of society, and certain information sharing and communication mechanisms can be discussed by the two sides.

12.5 Conclusion

As a huge country with frequent occurrence of hazards, China, like other countries, emphasizes cooperation between the government and the society. Especially after the Wenchuan Earthquake, both the government and the public have recognized the importance of building a strong disaster relief system, and in both urban and rural areas in China the enhancement of the disaster relief system has speeded up. In urban areas, the community has been established as the basic unit of the disaster relief system; and the central government has not only set down the *National Plan*, but also set standards for communities to reach in disaster relief. Therefore, in contemporary China, the structure of urban disaster relief at the community level has been established, but still is in the process of changing from a government-administered bureaucracy to community-based governance. In each urban community, a relatively complete preliminary emergency plan for disaster relief has been developed, an information dissemination and training system for disaster prevention has been established in preliminary form, and resource-sharing and social participation mechanisms for disaster relief are being encouraged at the community level.

Thus, the concept of disaster governance with community domination is taking the place of disaster management with government domination. But with the rapid

urbanization and yet slow reform of matching social security policies and mechanisms, the urban disaster relief system is still operated by administrative mobilization instead of by community residents' activities From the side of the government, institutional arrangements for social organizations to participate in urban disaster relief are still lacking, and effective mechanisms for cooperation between the government and society are still absent in the disaster relief framework. From the side of communities, their capacity for self- and mutual aid remains low since horizontal resource sharing mechanisms between communities have not been established.

Problems always lead the way to solutions. Therefore, with the national strategy of further separation between the government and the society set by the national leaders, the urban disaster relief system based on communities needs to catch up with the pace of urbanization and the demands of urban residents. Communities should be clearly regarded as both the focal point of the disaster relief network and the platform for the government and society to coordinate. On the one hand, the existing preparedness documents in the emergency plan should be effectively disseminated and practiced. On the other hand, related network and supporting capacities also need to be promoted, including the horizontal connections between communities and social organizations; and information and resource-sharing mechanisms between the government and communities should be completed.

References

Biao W (2009) Rural community and post-disaster reconstruction. J Southwest Petrol Univ (Soc Sci Edn) 2(5):35–38

Guolian F (2010) Some thinking on natural disaster and the education of disaster prevention and reduction in China. J Neijiang Normal Coll 25(10):95–99

King D (2001) Uses and limitations of socioeconomic indicators of community vulnerability to natural hazards: data and disaster in South Australia. Nat Hazards 51(2):147–156

Pearce L (2003) Disaster management and community planning, and public participation: how to achieve sustainable hazards mitigation. Nat Hazards 53(2):211–228

Xiaoshi Y, Rongfang S (2002) Natural disaster in communities and the problem of disaster management in Shanghai. Catastrophology 17(4):72–75

Xihua Q, Yanmin LH (2009) Disaster relief and community development against vulnerability. Tian Fu New Idea 145(1):94–97