THE CONSEQUENCES OF DISASTERS

Demographic, Planning, and Policy Implications

Helen James Douglas Paton

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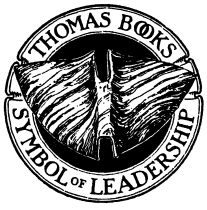
Edited by

HELEN JAMES, PhD

and

DOUGLAS PATON, PhD

(With 24 Other Contributors)



CHARLES C THOMAS • PUBLISHER, LTD.
Springfield • Illinois • U.S.A.

Published and Distributed Throughout the World by

CHARLES C THOMAS • PUBLISHER, LTD.
2600 South First Street
Springfield, Illinois 62704

ISBN 978-0-398-09097-5 (paper)
ISBN 978-0-398-09098-2 (ebook)

Library of Congress Catalog Card Number: 2015035854

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Printed in the United States of America
MM-R-3

Library of Congress Cataloging-in-Publication Data

Title: The consequences of disasters : demographic, planning, and policy implications / edited by Helen James, Ph.D. and Douglas Paton, Ph.D. (with 24 other contributors).
Description: Springfield, Illinois, U.S.A. : Charles C Thomas, Publisher, Ltd. [2015] | Includes bibliographical references and index. | Description based on print version record and CIP data provided by publisher; resource not viewed.
Identifiers: LCCN 2015035854 (print) | LCCN 2015030813 (ebook) | ISBN 9780398090982 (pdf) | ISBN 9780398090975 (pbk.) | ISBN 9780398090982 (ebook)
Subjects: LCSH: Disaster relief–Asia. | Natural disasters--Asia. | Emergency management--Asia.
Classification: LCC HV555.A78 C66 2015 (ebook) | DDC 363.34095–dc23
LC record available at http://lccn.loc.gov/2015035854

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FOREWORD

The demography of disasters should be focusing the minds of planners and policymakers across governments and nongovernment organisations alike. In our immediate region, more than 16 million people live in littoral areas exposed to tsunamis, storm surges or sea level rise. More than 200 million people live within 50 kilometres of a volcano. More than 480 million people live in areas of high earthquake risk.[1] While disasters have always been with us, where people live and how they live, means that the inhabitants of our region can expect to see events with the potential for higher death tolls, greater economic loss and greater burdens on infrastructure.

This book is the result of a cooperative effort between scholars and disaster response professionals that included an international conference at the Australian National University in September, 2013. Before you categorise this as the 'book of the conference,' think what 'cooperative effort' means. No one has a monopoly on dealing with the effects of disasters. To be of value, academic work needs to inform prevention, mitigation and recovery efforts. Policymakers need evidence-based recommendations to inform their work. Disaster responders need to be informed of current-best practice and the things to avoid. There needs to be more effort put into building bridges between those with the capacity for deep analytical work; those who work at the coal face of government policymaking; and those who deploy into the field to save lives.

What each of these groups has in common is reliance on shared intellectual capital, that body of knowledge and experience drawn from environmental awareness and an appreciation of the lessons of earlier disaster responses. Therefore, a focus on this 'shared space' is essential if we are to see cohesive disaster policies shape preventative and recovery efforts.

The need for this common awareness goes well beyond the immediate humanitarian objective of saving lives. Prepared and resilient communities are best able to continue to develop, to fight poverty and promote better

1. 'Disaster Risk Reduction', Department of Foreign Affairs and Trade, Australia, http://aid.dfat.gov.au/aidissues/drr/Pages/default.aspx, accessed 15 October 2014.

standards of living and good governance. Disaster-prone communities are trapped in a downward spiral of deprivation and are unable to meet fundamental standards of human security. It is telling that in 'rich countries, an average of 23 people die in any given disaster; in the least-developed countries 1,052.'[2] Evidence-based policy preparedness and responses are not just a numbers game, they are critical if we are to bridge the gap between states so that we can share in the benefits of common prosperity and security.

This book is an important contribution to that need. It is critical that we put greater effort into considering more cost-effective and efficient government policies on disaster mitigation, preparedness and recovery. We must evaluate the lessons of contemporary disasters and communicate them across government, with civil society groups and with international counterparts.

Finally, we must build a bridge between the excellent work that is done in the universities and the sometimes harassed and harried knowledgeable workers in government who are all too often focused on crisis management to the exclusion of the long view.

The news is not all bad. National and international responsiveness is definitely improving. The establishment of the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) in Jakarta is one recent initiative that has established a sound basis for regional crisis response coordination. Regional countries are sharing knowledge, conducting joint exercises and building connections with international organizations and nongovernment partners.

In my own organization we are responsible for that small part of the puzzle that is civil-military-police coordination. The Australian Civil-Military Centre (ACMC) was established in 2008 with the objective of supporting the development of national civil-military-police capabilities to prevent, prepare for, and respond more effectively to conflicts and disasters overseas.

While we have responsibility for subject matter ranging from conflict (generally peace and stabilisation operations) to natural disasters, the reality is that they are all about disasters–whether natural, man-made in terms of conflict or, increasingly, a combination of the two. During a disaster nowadays you are likely to see military, aid officials, emergency services, civil society groups, regional and international organizations pitched into a crisis response effort. Without preparation, planning, mutual understanding and most importantly respect, it is extremely difficult to ensure that their collective efforts are coordinated, efficient and effective.

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2. The Right to Survive, Oxfam International, 2009, p. 3, http://www.oxfam.org/sites/www.oxfam.org/files/right-to-survive-summary-eng.pdf, accessed 15 October 2014.

We perform this task by helping the many and varied government and nongovernment participants in disaster response to work together.

We do this by collecting lessons from crises responses; supporting research and publication; and assisting whole-of-government and civil sector education and development. We facilitate complex interagency exercises– from desktop exercises to big bilateral and multilateral exercises with real-time scenarios and sometimes involving tens of thousands of participants.

We build cooperative relationships with international organizations– including relevant UN agencies, international disaster coordination centres, tertiary institutions, nongovernment organisations and the commercial sector to further best practice.

There are no 'right' answers to disaster preparedness and planning. Different countries possess different capabilities and approach disasters in different ways. So this is where we speak of a spectrum of coordination which runs the range from coexistence, to communication, coordination, cooperation and collaboration. At the coexistence end of the spectrum, participants seek only to avoid competition and minimize inconsistency. This might happen, for example, in a conflict situation where humanitarian response organisations need to preserve their impartiality, neutrality and independence, and military forces may be embroiled in conflict. But there will be circumstances in which aid agencies can work more closely with the military and police without compromising their principles and purpose. These cases of pure humanitarian action will see sharing of assets, joint planning and closer liaison.

This book contains a varied selection of case studies drawn from recent disaster responses. It is best not to read them in isolation, but to consider them as part of an ongoing conversation between scholar and practitioner. Each example will illuminate different aspects of the challenge that is involved in promoting greater resilience.

In concluding, it is necessary to sound a cautionary note. Government staff desperately need the fruits of scholarship, but few public servants can honestly devote the sort of time to an analysis of scholarly work that it requires. Scholars need to be aware that publication in peer-reviewed journals or academic presses is not enough to influence policy and decision-making. They need to take their work to the end consumers, write think-pieces and follow-up articles to demonstrate why this work is important to practitioners. Our task between government and the academy is to bridge that divide and to make the excellent work in publications such as this book accessible to all who need it.

If you have picked up this book, then you have already embarked on this journey, in connecting scholarship with policymaking. Whether you are a

student, scholar or practitioner, you have an important part to play in building preparedness and promoting resilience. Please do not see this book as a work complete in itself. It is part of a broader and enduring conversation aimed at improving human security and ultimately saving lives.

Dr. Alan Ryan
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October, 2014

ACKNOWLEDGMENTS

The Australian Research Council (ARC) generously provided funding of $211,779 for a Discovery Project grant (DP120100606) undertaken 2012–2015 which was the inception of this volume. The title of the project was: Demographic Consequences of Asian Disasters: Family Dynamics, Social Capital and Migration Patterns. The research team (Helen James, Douglas Paton, Chris Manning, Siew-ean Khoo, Md. Jalal Abbasi-Shavazi and Meimanat Hosseini-Chavoshi) are profoundly grateful for this support without which this volume could not have come into being. Our research was enriched by the generous collaboration of our Partner Investigators who also were the International Collaboration Awardees on our grant: Professor Mark Pelling, King's College London, and Professor Josefina Natividad, Director of the Population Institute, University of The Philippines. Our personal thanks are extended to all in this vibrant team for their collegiality and generosity of spirit in sharing their experience and research on the demography of disasters.

In addition, to bring this to fruition, we also benefited from an International Seminar Support Scheme (ISSS) grant of $43,000 from the former AusAID which enabled us to bring 14 international scholars of disasters from a range of regional universities, Non-Government Organizations (NGOs) and Disaster Prevention organizations to give papers at our international conference 18–20 September 2013 on The Demography of Disasters: Implications for Future Policy on Development and Resilience, held at University House, The Australian National University (ANU); and a generous grant from the College of Arts and Social Sciences, ANU conference fund which provided support to enable us to bring our keynote speakers, Professor Elizabeth Frankenberg, Professor of Public Policy, Duke University; and Professor Susan Cutter, Carolina Distinguished Professor and Director of the Hazards Research Centre University of South Carolina.

Our project has also benefited from the wisdom of a number of senior colleagues at ANU who acted as advisors to our research team: Professor Peter McDonald, AM, Honorary President of the International Union for the

Scientific Study of Population (IUSSP) and now Professor of Demography in the Crawford School of Public Policy, ANU; Professor Zhongwei Zhao, The Australian Demographic and Social Research Institute (ADSRI), ANU; Professor Bryan Rodgers, ADSRI, ANU; Emeritus Professor James Fox, College of Asia Pacific, ANU; and Emeritus Professor Terrence Hull, ADSRI, ANU.

This is an appropriate point also to extend special appreciation to our former colleague, Dr. Siew-ean Khoo, whose retirement in 2013 meant the loss of a valued colleague. Dr. Khoo generously also provided support from her personal funds towards the cost of our research and the conference, which enabled us to host an initial workshop with AusAID at the ANU in April, 2012 to coincide with the visit to ANU by Professor Mark Pelling. We would like to thank Mr. Louis Henley from AusAID for his participation in this workshop, and also colleagues from the Australian Civil-Military Centre at Queanbeyan who joined our discussions; as well as Associate Professor John McCarthy, Crawford School, ANU.

Hosting an international conference is a major undertaking. Ours could not have been brought to its successful conclusion without the tireless efforts of many people. Our deep appreciation is extended to the ANU Senior Executives, Professor Richard Baker, Deputy Vice Chancellor ANU; Dr. Eric Lithander, Pro Vice Chancellor International, ANU; Professor Jenny Corbett, Pro-Vice Chancellor Research, ANU; for generously giving their time and support to hosting the initial reception for conference delegates, the ceremonial opening of the conference and the conference dinner.

We wish to thank also a number of our wonderful doctoral students at ANU: Ms. Shelby Higgs, Mr. Kwalimu Virobo, Mr. Thong Tran, Ms. Ladawan Khaikham, Mrs. Rizki Filailli, and Mr. Henri Sitorus, for all their excellent organizational arrangements which enabled those present to gain such a valuable set of insights from the conference discussions.

Our endeavours would not have been successful without the excellent administrative support over the lifetime of this project of a number of colleagues who provided unstinting advice on how to get things done: Ms. Christel Cools, Executive Officer of ADSRI; Mrs. Jenny White, Public Information Officer, ADSRI, Mrs. Louise Sims, ADSRI; Ms. Gemo Virobo, ADSRI; and the events staff at University House, ANU. Our deepest thanks go to all who made this research project a fulfilling journey and we hope to enjoy your company in the next phase.

Helen James, ANU, 2015
Douglas Paton, Charles Darwin University, 2015

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THE CONSEQUENCES OF DISASTERS

Chapter 1

INTRODUCTION: THE DEMOGRAPHIC, PLANNING AND POLICY IMPLICATIONS OF DISASTER RESILIENCE

HELEN JAMES AND DOUGLAS PATON

INTRODUCTION

It is just over ten years since the world watched in horror as the devastation of the 26 December, 2004 Boxing Day undersea earthquake and tsunami took the lives of around 235,000 people in ten countries around the Indian Ocean. The majority of these were in Aceh, Indonesia; Sri Lanka; Thailand; and India; but also countries as far away from the epicenter as Kenya, East Africa. Exactly twelve months previously, again on Boxing Day, 26 December 2003, an earthquake destroyed the ancient historical city of Bam in Kerman province, Iran, including the 2000 year-old citadel outside the city. Some 30,000 people died when the mostly mud brick construction of the homes in this area proved only too susceptible to earthquake shocks. Another 30,000 suffered severe injuries. In North Asia, Japan, 11 March, 2011, the Tohoku disaster arising from similar events to those of the 2004 Indian Ocean disaster–a large undersea earthquake and concomitant tsunami–claimed the lives of around 20,000 people. The Tohoku event is now referred to as the 'Triple Disaster' because the Fukushima Nuclear power plant on the coast of the disaster zone malfunctioned as a consequence of the tsunami, thus polluting the area with radiation from the reactors. Between the Bam earthquake (2003) and the Tohoku disaster (2011), Asia was also struck by a series of other major natural disasters: Cyclone Nargis which struck the low-lying Burmese Delta on 2–3 May 2008 took the lives of an estimated 140,000 people across 50 of the most heavily populated townships of Myanmar; it was closely followed by the Wenchuan earthquake of 12 May 2008 in Sichuan Province, SW China. Here somewhere between 80,000 (official figures) and 400,000 (Taiwan researcher) people died across ten counties. The fact that most of

the schools collapsed in this tragedy added to the traumatic experiences of survivors as it meant that among the victims were some 5,000 children as well as their teachers. Across the Taiwan straits, in southern Taiwan in 2009 Typhoon Morakot claimed over 700 lives, many of them of indigenous people when landslides enveloped their villages. While globally Asia with its large population also suffers the most natural disasters, during the time frame indicated above, similar large scale losses of life were suffered in the Haiti earthquake, January 2010; and the Philippines Typhoon Yolanda (Haiyan) of 2013. Although the Chilean undersea earthquake and tsunami of February, 2010 and the New Zealand Christchurch earthquake of early 2011 did not result in the same large scale human losses, the emotional, physical and financial losses of both these last two events were substantial. The table below illustrates the comparative human losses in selected natural disasters in Asia since the devastating Bangladesh cyclone of 1991. We agree with the early perception that there is nothing 'natural' about natural disasters; all are linked to some aspect of human activity (O'Keefe, Westgate, and Wisner, 1976: 566–567). For brevity sake, we shall employ the terminology 'natural disaster' to indicate those events of environmental origin, both hydro-meteorological and geological.

Table 1.1
ESTIMATED MORTALITIES FROM SELECTED NATURAL DISASTERS IN ASIA.

Year	Event	Estimated Mortalities
	Bangladesh Cyclone	130,000
1995	Kobe Earthquake	6,400
1999	Chi-Chi (921) Earthquake	2,494
2001	Gujarat Earthquake	20,000+
2003	Bam, Iran Earthquake	40,000
2004	Indian Ocean Earthquake and Tsunami	235,000
2008	Cyclone Nargis, Myanmar	140,000
2008	Wenchuan Earthquake, Sichuan, SW China	80,000+
2009	Typhoon Morokot Taiwan	724
2011	Gt East Japan (Tohoku) Earthquake and Tsunami	20,000+
2013	Typhoon Yolanda (Haiyan)	5,000

Source: CRED EM-DAT Accessed 20 August. 2014.

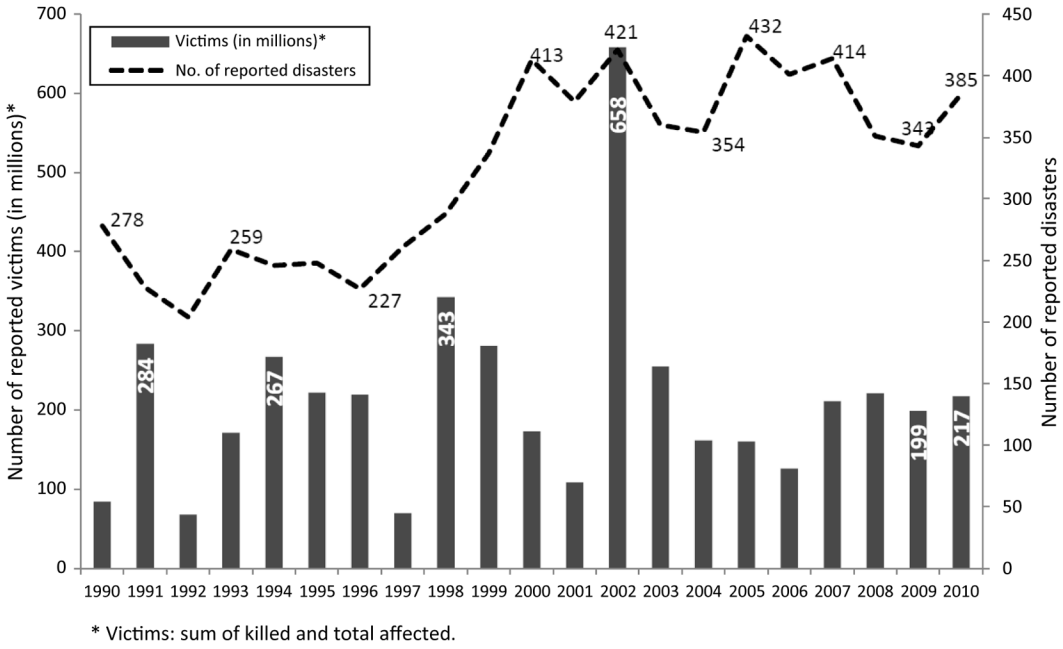

Figure 1.1. Trends in numbers of natural disasters, people killed/affected 1990–2010. Source: CRED EM-DAT/OFDA Accessed 20 August 2014.

Despite these daunting human losses, data held by the Centre for Research on the Epidemiology of Disasters (CRED EM-DAT) at the University of Louvain, Belgium, appears to suggest that both numbers of people killed and numbers of disasters reported have declined somewhat from a peak in 2002, perhaps a result of better preparation, mitigation and disaster risk reduction management in countries exposed to natural disasters.

Figure 1.2 below shows the types and numbers of natural disasters (3638) worldwide 2000–2010 divided into the discrete numbers per type according to the EM-DAT definitions.[1]

At Figure 1.3 below, the comparative numbers of disasters across the Asia Pacific, Europe, Africa, North America 1980–2010 illustrate that this region has the majority of both numbers of natural disasters and people killed/affected. This is a reflection of not only the Asia Pacific region's total overall population, but also its

1. CRED EM-DAT defines a disaster as 'a situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering.' To be included on the data base, at least one of the four following criteria must be fulfilled: ten or more people reported killed; 100 people or more reported affected; a declaration of a state of emergency; or a call for international assistance.

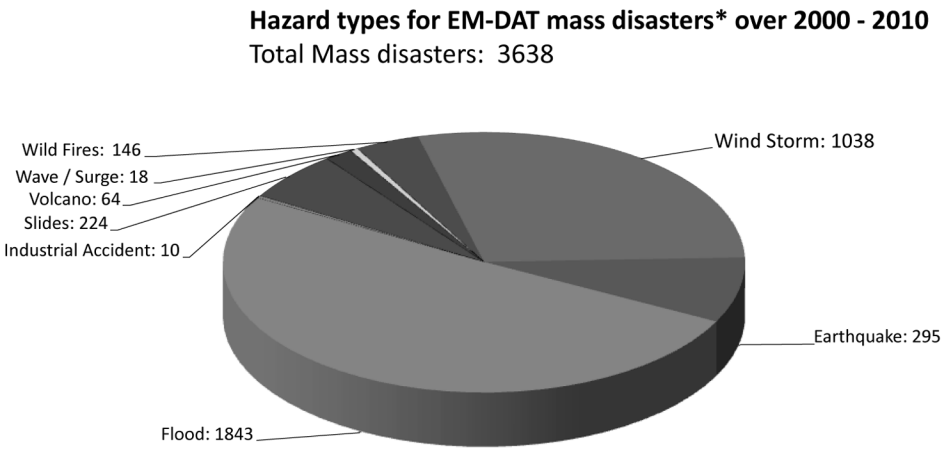

Figure 1.2. Hazard types and numbers of natural disasters 2000–2010. Source: EM-DAT: The OFDA/CRED International Disaster Database–www.emdat.be Université catholique de Louvian-Brussels-Belgium.

overall level of human development, and the socioeconomic, political, cultural, and environmental contexts which envelop the lives of people living in this region.

Globally, in the decade 2003–2013, earthquakes, tsunamis, windstorms and severe temperatures caused the greatest number of human losses. Some 81 percent of those affected by disasters lived in Asia, which accounted for 96 percent of people affected by mass movements of hydrological origin. Asia also constituted 94 percent

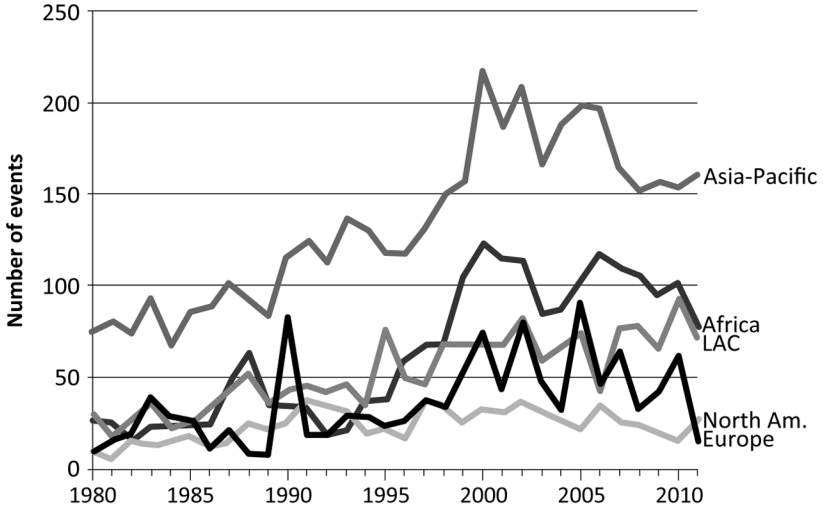

Figure 1.3. Numbers of disasters Asia Pacific, Europe, Africa, North America 1980–2010. Source: ESCAP (available at www.escap.org accessed 20 August 2014).