Disaster Security

This book is for a broad audience of practitioners, policy makers, scholars, and anyone interested in scenarios, simulations, and disaster planning. Readers are led through various planning scenarios that have been developed over several years under the auspices of the US Department of Energy and the US Air Force, and through continued work at GlobalInt LLC. These scenarios present different security challenges and their potential cascading impacts on global systems – from the melting of glaciers in the Andes to hurricanes in New York and Hawaii and on to hybrid disasters, cyberoperations, and geoengineering. The book provides a concise and up-to-date overview of the lessons learned, with a focus on innovative solutions to the world's pressing energy and environmental security challenges.

CHAD M. BRIGGS is Strategy Director at GlobalInt LLC and global security lecturer at Johns Hopkins University. He has been a Fulbright professor in Budapest and Berlin; a senior advisor to the US Department of Energy; and Minerva Chair and Professor of Energy and Environmental Security at the Air University of the US Air Force at Maxwell Air Force Base. Dr. Briggs specializes in the use of scientific information in environmental and security policy. In recent years, he has been a defense and security consultant in Kosovo, and he cooperates with the Ukrainian Army on hybrid war strategies.

MIRIAM MATEJOVA is an economic advisor at Canada's Ministry of Environment. She holds a PhD in Political Science from the University of British Columbia. She is a Vanier Scholar, Killam Laureate, Liu Scholar, and previously Kovler Fellow at the John F. Kennedy Presidential Library. She is a recipient of numerous awards for research and leadership and the editor of *Wherever I Find Myself*, an anthology that was long-listed for the 2018 George Ryga Award. Matejova has worked in academia, policy making, and the nonprofit sector. She has published articles on foreign intelligence, international conflict management, energy and environmental security, and global environmental activism.

"Briggs and Matejova clearly demonstrate that complex scenario planning and simulations, familiar tools for the security community, provide real value for better understanding and preparing for environment and energy disasters. In *Disaster Security*, the authors draw upon their extensive experience in this field to make clear the utility, and one might even say necessity, for both security and environment communities to pursue these tools jointly to reap mutual benefits."

– Geoff Dabelko, Ohio University

"The nature of the emerging security risks from climate change and environment is complex. The authors paint a clear picture of how grave and vulnerable the situation is and also show how best to use some of the existing planning tools of the military to perform strategic foresight planning to meet the challenge. Drawing on their experience of leading energy and environmental security teams in US government, they explain how correct advance forecasting can mitigate disaster risk."

– Major General Muniruzzaman, Bangladesh Institute of Peace and Security Studies

"Simply put, there is no security without climate security. We all need to prepare for future climate disasters—from deadly heat waves and raging wildfires to violent storms. In this fascinating study, Chad Briggs and Miriam Matejova reveal how military and intelligence communities have pioneered catastrophic risk assessment. *Disaster Security* is a must read for anyone interested in finding ways to prepare for the growing security risks posed by climate change."

– Alice Hill, Stanford University

"Briggs and Matejova provide a concise and accessible guide to how disaster scenarios and wargaming can improve management of climate risks and other large-scale environmental risks, as well as some of the common pitfalls of these approaches."

– Robert Kopp, Rutgers University

"This book is essential reading for all disaster planning, and climate and energy security practitioners who should be integrating wargaming and scenario development into their work. The authors share their real-world experience helping the inner sanctum of government decision makers make better decisions about preparing for today's most pressing security challenges, from cyber to climate risks."

– Sherri Goodman, Woodrow Wilson International Center for Scholars

Disaster Security

Using Intelligence and Military Planning for Energy and Environmental Risks

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CAMBRIDGE UNIVERSITY PRESS

CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre,
New Delhi – 110025, India

79 Anson Road, #06–04/06, Singapore 079906

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781108472357
DOI: 10.1017/9781108560023

First published 2019

Printed and bound in Great Britain by Clays Ltd, Elcograf S.p.A.

A catalogue record for this publication is available from the British Library.

Library of Congress Cataloging-in-Publication Data
Names: Briggs, Chad M., 1972– author. | Matejova, Miriam, author.
Title: Disaster security : using intelligence and military planning for energy and environmental risks / Chad M. Briggs, Johns Hopkins University; Miriam Matejova, University of British Columbia, Vancouver.
Description: Cambridge, United Kingdom ; New York, NY, USA : Cambridge University Press, 2019. | Includes bibliographical references.
Identifiers: LCCN 2018049864| ISBN 9781108472357 (hardback : alk. paper) | ISBN 9781108459372 (paperback)
Subjects: LCSH: Emergency management – Planning. | Energy security – Planning. | Environmental management – Planning. | Risk management.
Classification: LCC HV551.2 .B75 2019 | DDC 363.34/6–dc23
LC record available at https://lccn.loc.gov/2018049864

ISBN 978-1-108-47235-7 Hardback
ISBN 978-1-108-45937-2 Paperback

To the many unnamed victims of disasters and conflict
around the world

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Preface

In November 2016, the Netherlands Foreign Ministry sponsored a Planetary Security Conference in The Hague. It brought together a relatively small collection of environmental security experts to help assess the increasing risks from climate change. One session, organized by the Skoll Global Threats Fund and located in a back room, discussed intelligence methods to deal with uncertain futures. Although the topic is often only of niche interest even within environmental security, this time the room was packed to overflowing with people from across North America and Europe. Many were motivated in the wake of the US presidential election to learn how to deal with uncertain futures and how to grapple with what could seem like overwhelming risks. With the USA poised to step back from the UN Paris Accords on climate change, what would happen in the future? How could governments plan when, not only were hazards worsening, but the world was becoming more fragmented, more conflictual, and the former key player in climate security was now about to shift policies drastically?

This book was partly motivated by colleagues who asked for a more complete story about the approaches to climate security, learned over the past ten years inside certain agencies that are often opaque. While numerous media stories over the years had commented on the US military's and intelligence agencies' interest in climate change and increasing risks from disasters, often these stories only described the summary conclusions. Offices and programs dedicated to assessing climate change, energy security, and environmental security had grown since the mid-2000s (notably, this began before the 2008 US election), but beginning in 2017, the programs and their data began to disappear. The environmental pressures did not. A wave of migrants and refugees was entering southern Europe, the Lake Chad region of Africa was torn by drought and terrorism, record wildfires burned from California to

British Columbia and Alaska, and Hurricanes Harvey, Irma, and Maria hit the USA. By August 2018, the death toll from Hurricane Maria alone stood at just under three thousand, making it one of the worst disasters in US history.

The work described in this book only covers a small selection of the military and intelligence efforts to assess energy and environmental security (EES) and disaster risks in recent years. Much of that work will likely remain classified. Certain projects, however, were intentionally kept unclassified in order to involve outside experts and the public and to ensure that research could be quickly disseminated. One of those projects, which began in the US Department of Energy in 2008, was tasked with determining the security risks of abrupt climate change. The project was transferred to the US Department of Defense under the Minerva Initiative in 2010. While only part of a larger picture, the lessons from the climate security research may provide some guidance on how to deal with an increasingly uncertain and hazardous world.

On a personal level, this work began in the 1990s with the earlier wave of environmental security research. In 1995, during my master's program, I wrote a paper that called for more attention to complexity and working across disciplines. I argued that political experts had failed to predict the fall of the Berlin Wall in large part because they simplified too much. Yet, it is far easier to complain about simplification than to tackle complexity. I spent most of my grad school and early faculty years researching risk and the use and communication of scientific data, struggling with how to rework security policies. I was greatly assisted by geographers (especially my wife, Tracy) and the experts in the field of public health. It was the work of conducting postconflict vulnerability assessments in Bosnia-Herzegovina and Serbia that led me to the US Department of Energy and later to the US Air Force.

I am in the debt of the many who taught and influenced me along the way, and those who then worked collaboratively on these EES and disaster security assessments. From Mark Bassin's course on environmental risks in the former Soviet Union while I was an undergraduate student at UW-Madison to my current colleagues in Kosovo and Ukraine, it has been difficult at times not to be overwhelmed with all the information and knowledge available.

While spouses are usually referred to last in acknowledgments, in this case, Tracy Briggs was central to all the work described in this book. We met in an environmental security seminar taught at Carleton University in 1996, and we have influenced each other's work ever since. Although Tracy was not formally involved with the Department of Energy between 2008 and 2010, her work with the Swedish Defence Research Agency (FOI) starting in 2009 was the basis for what became Global Interconnections LLC (GlobalInt) the

following year, when she was picked up by the Air Force to be the deputy Minerva chair. We worked together 24/7 for two and a half years, which is a testament to her expertise – and says many positive things about our marriage.

The work described here was a large, collective effort, and the editorial "we" used throughout is meant to refer to the efforts of team members, directors, and the various experts who helped throughout the years. For early influence on risk, complexity, and environmental security, I thank Luke Ashworth, Simon Dalby, Joan DeBardeleben, David Tarr, Kristin Shrader-Frechette, Geoff Dabelko, Betsy Hartmann, and Sharon Sutherland. The US Fulbright program and its commissions in Hungary, Germany, and Belgium helped spark some of this work, and the Regional Environmental Center (REC) in Hungary, and Stephen Stec in particular, helped lead me to my introduction to the US Department of Energy. My colleagues at the Institute for Environmental Security in The Hague were also instrumental, particularly Ron Kingham.

At the Department of Energy, my thanks go most to Carol Dumaine but also to the formal team, including Anita Street, Dan Milstein, Larry Lanes, and others, and the wider network with Cleo Paskal, Jennifer Gonzalez, David Robson, Sean Costigan, and those who continued to support us even after the program was disbanded in spring 2010. I owe a great deal to my coauthors during that time, who, besides Tracy Briggs and Miriam Matejova, include Inka Weissbecker, Stacy VanDeveer, Jennifer Bath, Lucy Anderson, Moneeza Walji, Shannon O'Lear, and COL (ret) Mike Denning.

At the Air Force, the program would not have been possible without COL (ret) Dan Henk, with Robert Sands and the rest of the Air War College and Spaatz Center. From General Dynamics IT (GDIT), we thank LTC (ret) Blair Ellis, LTC (ret) Katie Veazie, and COL (ret) Robyn Read, who provided the bulk of support for the USAF Minerva work at Air University. At the Department of Defense was Erin Fitzgerald, CDR (ret) Esther McClure, Dan Chiu, Sharon Burke, Amanda Dory, and Rachel Posner-Ross. From the wider defense field, we owe thanks to Sherri Goodman, RADM (ret) Neil Morisetti, MGEN (ret) A. G. Muniruzzaman, BGEN (ret) Chris King, COL Michaelle Munger, Cheryl Rosenblum, and RADM (ret) David Titley. We also remember LTC (ret) Kent Butts and MAJ Shannon Beebe, both of whom are no longer with us and who left a critical gap in US military expertise in environmental security and Africa.

Many thanks must also go to the various people who volunteered to work as facilitators during the various scenario creation workshops from 2011 to 2014, including Miriam Matejova, Laura Deutsch, Lauren Herzer-Risi, Louise Shaxson, Alun Rhydderch, Chiara de Franco, Andrew Holland, Jennifer McKee, Rebecca Ng, COL Mark Read, Kevin Kelly, Robert Weiss, and Kate

Diamond. And although we cannot list everyone, many thanks as well to the dozens of people who participated in the workshops and follow-up activities and to the hosts of the various events (NATO Headquarters, University College London, International Polar Year, Woodrow Wilson Center, Johns Hopkins University, the University of Hawaii, Air University, Virginia Tech University, National Council for Science and Environment, and International Institute for Strategic Studies).

In Ukraine, our thanks to Tatyana Malyarenko, whose Jean Monnet project helped fund earlier meetings and cooperation, and thanks to my coauthors MGEN Yuri Danyk and Tamara Maliarchuk, as well as others who helped instruct me on the Ukrainian security environment and Russian language, such as Alexander Benz, David Galbreath, Olga Danchenko, and Stefan Wolff. Other countries deserving thanks include Sweden (FOI, and particularly Annica Waleji and Birgitta Liljedahl), Australia (David Connery and Sarah Logan), Singapore, Iraq, Canada (Conference of Defence Associations), and the UK.

A special note should be made for Victoria Herrmann, whom I first knew as a first-year undergraduate but who then became an expert herself in climate security, including as a Fulbright scholar at Carleton University, a Gates scholar at Cambridge, and president of the Arctic Institute in Washington, DC.

Miriam Matejova I met early during the Air Force project, and she has remained a valuable and extremely intelligent colleague and coauthor. Her research at the University of British Columbia and Oxford University contributed greatly to the book, and I was very fortunate to have her as a coauthor.

We must also thank Matt Lloyd and Zoë Pruce at Cambridge University Press for their professionalism and encouragement as well as the reviewers of the original proposal.

A final thanks to our parents, who often didn't know where Tracy and I were or what we were doing – and maybe still aren't completely sure.

Chad Briggs
August 2018
Prishtina, Kosovo

I met Chad at an intelligence conference in Wales, UK, more than seven years ago. I was a graduate student at Carleton University in Ottawa, researching issues in international peacebuilding and foreign intelligence. Shortly after the conference, I became involved in the energy and environmental security work, first as a volunteer with the USAF Minerva Project and later as a doctoral student at the University of British Columbia. Over the years, Chad and I have collaborated on several papers and facilitated workshops across the world. For a short while, we both called Ottawa home. There we would meet at an obscure café called Mad Hatter, where I drank oversized lattes after work (at the time, I was an economist at Canada's Ministry of Environment) and where we talked about anything from travel plans to disaster hotspots to apocalyptic futures. My academic career would eventually lead me to the University of Oxford, where I wrote parts of this book, pondering the nature of risk, disasters, and resilience. Chad and Tracy Briggs have introduced me to ideas that have fundamentally shaped my view of the world. Our work is not about predicting the future. It is about adapting, learning to think about where we want to go, acknowledging that we cannot have a perfect view of any path, and accepting that we may end up somewhere else. Knowing how to walk that path nonetheless is what our work – and this book – calls for.

Miriam Matejova
August 2018
Vancouver, BC, Canada