

States and Nature

Under what circumstances might climate change lead to negative security outcomes? Over the past fifteen years, a rapidly growing applied field and research community on climate security has emerged. While much progress has been made, we still don't have a clear understanding of why climate change might lead to violent conflict or humanitarian emergencies in some places and not others. Busby develops a novel argument – based on the combination of state capacity, political exclusion, and international assistance – to explain why climate change leads to especially bad security outcomes in some places but not others. This argument is then demonstrated through application to case studies from sub-Saharan Africa, the Middle East, and South Asia. This book will provide an informative resource for scholars and students of international relations and environmental studies, especially those working on security, conflict, and climate change, and on the emergent practice and study of this topic; it identifies where policy and research should be headed.

JOSHUA W. BUSBY is author of numerous studies on climate change, national security, and energy policy that have been published by peer-reviewed academic outlets and various think tanks. He was a leading researcher on two multi-million-dollar grants on climate and security from the US Department of Defense under its Minerva Initiative and has consulted on the topic for international organizations and think tanks.

The Politics of Climate Change

Climate change may be the most important political challenge of our time. This new series will address large questions about the politics of climate change and feature scholarship that is problem-driven, crosses traditional subfield boundaries, and meets the discipline's highest standards for innovation, clarity and empirical rigor. Although focused on political science, it will incorporate empirical work on climate politics from across the social sciences.

Series Editor

Michael Ross, UCLA

Editorial Board Members

Thomas Bernauer (ETH, Zurich)
Xun Cao (Penn State)
Navroz K. Dubash (Center for Policy Research, New Delhi)
Kathryn Hochstetler (London School of Economics)
Robert O. Keohane (Princeton University)
Matto Mildemberger (UC Santa Barbara)
Helen Milner (Princeton University)
Megan Mullin (Duke University)
Barry Rabe (University of Michigan)
Kenneth Scheve (Yale University)
Leah Stokes (UC Santa Barbara)
Dustin Tingley (Harvard University)

States and Nature

The Effects of Climate Change on Security

JOSHUA W. BUSBY

University of Texas at Austin LBJ School of Public Affairs



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press
978-1-108-83246-5 — States and Nature
Joshua W. Busby
Frontmatter
[More Information](#)

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
103 Penang Road, #05-06/07, Visioncrest Commercial, Singapore 238467

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/9781108832465
DOI: 10.1017/9781108957922

© Joshua W. Busby 2022

This publication is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without the written
permission of Cambridge University Press.

First published 2022

Printed in the United Kingdom by TJ Books Limited, Padstow Cornwall
A catalogue record for this publication is available from the British Library.

ISBN 978-1-108-83246-5 Hardback
ISBN 978-1-108-95846-2 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of
URLs for external or third-party internet websites referred to in this publication
and does not guarantee that any content on such websites is, or will remain,
accurate or appropriate.

Cambridge University Press
978-1-108-83246-5 — States and Nature
Joshua W. Busby
Frontmatter
[More Information](#)

*To my wife Bethany and son Will who have endured my anxious
efforts to finish this book in the middle of a global pandemic.
Looking forward to a long holiday when we can safely celebrate.*

Contents

<i>List of Figures</i>	<i>page</i> viii
<i>List of Maps</i>	x
<i>List of Tables</i>	xii
<i>Acknowledgments</i>	xiii
1 Introduction	I
2 Conceptualizing Climate and Security	19
3 The Argument, Method, and Mechanisms: State Capacity, Institutional Inclusion, and International Assistance	37
4 Droughts and Famine in Somalia and Ethiopia	71
5 Drought in the Middle East: Contrasting Fortunes in Syria and Lebanon	120
6 Cyclones in South Asia: The Experiences of Myanmar, Bangladesh, and India	176
7 Beyond Internal Conflict: The Practice of Climate Security	222
8 The Next Decade of Climate Security Research	244
9 Conclusion	266
<i>Bibliography</i>	272
<i>Index</i>	323

Figures

3.1	Simple pathway to loss of life	page 61
3.2	A complex emergency pathway to loss of life	63
3.3	Pathway to civil/communal conflict	64
3.4	Extended pathway to conflict through migration	67
4.1	Somalia <i>gu</i> rainfall deviations, 1980–2016	81
4.2	Somalia <i>dayr</i> rainfall deviations, 1980–2016	81
4.3	Ethiopia <i>belg</i> rainfall deviations, 1980–2016	82
4.4	Ethiopia <i>kiremt</i> rainfall deviations, 1980–2016	83
4.5	Somalia <i>gu</i> average temperature change, 1980–2016	83
4.6	Somalia <i>dayr</i> average temperature change, 1980–2016	84
4.7	Ethiopia <i>belg</i> average temperature change, 1980–2016	85
4.8	Ethiopia <i>kiremt</i> average temperature change, 1980–2016	85
4.9	Interannual variability in rainfall, Lower Shabelle, Somalia	88
4.10	Interannual variability in rainfall, Oromia region, Ethiopia	92
4.11	March to September rainfall in central/eastern Ethiopia, 1960–2015	93
4.12	Government effectiveness in Ethiopia and Somalia, 1996–2017	96
4.13	Bureaucratic quality in Ethiopia and Somalia, 1985–2017	97
4.14	Social exclusion in Ethiopia, Somalia, and Denmark, 1980–2018	105
4.15	Foreign assistance to Somalia, 1999–2013	108
4.16	Foreign assistance to Somalia, 2007–2017	110
4.17	Official development assistance, 1980–2016	110
4.18	Mortality, funding, and aid recipients, 2010–2012	112
5.1	Syria growing season rainfall deviations, 1973–2016	135
5.2	Syria average growing season temperature change, 1973–2016	135

List of Figures

ix

5.3	Lebanon growing season rainfall deviations, 1973–2016	136
5.4	Lebanon average growing season temperature change, 1973–2016	136
5.5	Wheat production in Syria, 1972–2017	141
5.6	Wheat production in Lebanon, 1972–2017	141
5.7	Government effectiveness in Lebanon and Syria, 1996–2018	145
5.8	Bureaucratic quality in Lebanon and Syria, 1984–2017	146
5.9	Tax revenue as share of GDP, Lebanon and Syria	152
5.10	Social exclusion in Lebanon, Syria, and Denmark	154
5.11	Development assistance as share of government expenditure	160
5.12	Personal remittances as share of GDP, 2002–2017	160
6.1	Bureaucratic quality in Myanmar, Bangladesh, and India	198
6.2	Social exclusion in Myanmar, Bangladesh, India, and Denmark, 1970–2018	207
6.3	Net official development assistance in Myanmar, Bangladesh, and India	208
6.4	Aid per capita in Myanmar, Bangladesh, and India, 2000–2019 (constant 2016 US\$)	209
6.5	Humanitarian funding, Myanmar, Bangladesh, and India, 2000–2018	210
6.6	Real GDP per capita, Myanmar, Bangladesh, and India, 1990–2017 (constant 2011 US\$)	220
6.7	GDP growth (annual %), Myanmar, Bangladesh, and India, 1990–2019	221

Maps

4.1	Rainfall deviations in East Africa, October–December 2010	<i>page</i> 86
4.2	<i>Dayr</i> three-month anomaly (October, November, December 2010) (mm)	87
4.3	<i>Gu</i> three-month anomaly (April, May, June 2011) (mm)	87
4.4	Rainfall deviations, East Africa, February–September 2015	90
4.5	<i>Belg</i> three-month anomaly (February, March, April 2015) (mm)	91
4.6	<i>Kiremt</i> three-month anomaly (June, July, August 2015) (mm)	91
4.7	World Bank and African Development Bank projects 2009–2010 and climate security vulnerability	107
5.1	Agricultural stress in Syria, 2008	138
5.2	Agricultural stress in Lebanon, 2008	139
6.1	Storm tracks of 2008 Cyclone Nargis and 2010 Myanmar population density	189
6.2	Storm tracks of 1970 Bhola Cyclone and districts of East Pakistan	191
6.3	Storm tracks of 1991 Bangladeshi cyclone and Bangladesh population density	192
6.4	Storm tracks of 2007 Cyclone Sidr and 2000 low elevation coastal zone population density	193

List of Maps

xi

- | | |
|---|-----|
| 6.5 Storm tracks of 1999 India cyclone and 2000 population density | 194 |
| 6.6 Storm tracks of 2013 Cyclone Phailin and 2015 population density | 195 |
| 6.7 Storms tracks of Cyclone Fani and projected 2020 population density | 196 |

Tables

1.1	Somalia and Ethiopia	<i>page</i> 11
1.2	Syria and Lebanon	12
1.3	Myanmar, Bangladesh, and India	15
3.1	Weak capacity states – configurations 1–4	68
3.2	Strong capacity states – configurations 5–8	69
4.1	Comparing Somalia and Ethiopia	77
4.2	Governance indicators for Ethiopia and Somalia	96
5.1	Comparing Syria and Lebanon	129
5.2	Governance indicators for Syria and Lebanon	145
6.1	Comparing Myanmar, Bangladesh, and India	179
6.2	Notable cyclones in Myanmar, Bangladesh, and India	186
6.3	Comparison of major cyclones in Bangladesh	216

Acknowledgments

The research that forms the basis of this book was supported by the Skoll Foundation and the University of Texas. Draft versions were presented at the Resource Competition, Environmental Security, and Stability (RECESS) Group at the US Department of Defense, the Austin Forum on Diplomacy and Statecraft, the 2020 Southern Political Science Association Annual Conference, the Center for International Security and Cooperation at Stanford University, the London School of Economics, the Peace Research Institute of Oslo, and the Norwegian Institute of International Affairs.

I would like to thank Konstantin Ash, Halvard Buhaug, Joel Campbell, Tom Deligiannis, Lara Eid, Robert Falkner, Cullen Hendrix, Colin Kahl, Florian Krampe, Kevin Mazur, Emily Meierding, Jason Miklian, Malin Mobjörk, Jonathan Monten, Clionadh Raleigh, Sam Rowan, Ken Schultz, Peter Schwartzstein, Ole Jacob Sending, Ken Shadlen, Nina von Uexkull, Christian Webersik, and Emily Whalen for their comments and direction on the project. Special thanks to Shelby Bohannon for helping with child care during the pandemic.