

FOOD or WAR

Ours is the *Age of Food*. Food is a central obsession in all cultures, nations, the media and society. Our future supply of food is filled with risk, and history tells us that lack of food leads to war. But it also presents us with spectacular opportunities for fresh human creativity and technological prowess. Julian Cribb describes a new food system capable of meeting all humans' needs on our hot, overcrowded planet. The book is for anyone concerned about the health, safety, affordability, diversity and sustainability of their food – and the peace of our planet. This book is not just timely – its message is of the greatest urgency. Audiences include consumers, 'foodies', policymakers, researchers, cooks, chefs and farmers. Indeed, anyone who cares about their food, where it comes from and what it means for them, their children and grandchildren.

Julian Cribb FRSA FTSE is an Australian author and science communicator. His career includes appointments as scientific editor for *The Australian* newspaper, director of national awareness for the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO), editor of several newspapers, member of numerous scientific boards and advisory panels, and president of national professional bodies for agricultural journalism and science communication. His published work includes over 9000 articles, 3000 science media releases and ten books. He has received 32 awards for journalism. His previous books include *The Coming Famine* (2010), *Poisoned Planet* (2014), and *Surviving the 21st Century* (2017). As a science writer and a grandparent, Julian Cribb is deeply concerned at the existential emergency facing humanity, the mounting scientific evidence for it and the deficit of clear thinking about how to overcome it.

'Food, like air, water, soil and biodiversity, is one of humankind's most fundamental needs, a source of joy and creator of community. The eco-crises of climate change and loss of biodiversity reveal the total unsustainability of the current global food system. This book is an urgent call for recognition that the inescapable need for change also brings enormous opportunities.'

David Suzuki

'Food or War targets an issue that touches every human life, every day: food. And that, without it, people fight. It shows that our "jawprint" is the heaviest of all our impacts on our finite planet – and that, for civilisation to survive, how we produce food must change . . . Anyone with an interest in either the human future or food should read this clear, authoritative, scary book. So should all first-year college classes.'

Paul R. Ehrlich, co-author of *Jaws: The Story of a Hidden Epidemic*;
Bing Professor of Population Studies, Emeritus;
President, Center for Conservation Biology;
Department of Biology, Stanford University

'Throughout history, food has been both a tool and a consequence of conflict and migration, which continues today exacerbated by arable land lost to cities, unreliable climate and excess consumption in rich nations while millions remain malnourished elsewhere. Cribb's analysis is urgently apposite, as is his practical call for a sustainable, nourishing and resilient global food system.'

Professor Lindsay Falvey FTSE, FAIAS, University of Melbourne,
and Life Member of Clare Hall, University of Cambridge

'Wars rage on in Syria, Yemen and elsewhere, in part driven by food shortages. What to do? . . . We can turn this imbalance around. Cribb points the way in this must-read book.'

Tim Fischer, AC, former Deputy Prime Minister of Australia, and
Chair of the Global Crop Trust with Seed Vault in Svalbard and
HQ in Bonn, Germany

'Julian Cribb's comprehensive and thoughtful plan to deal with an impending global food security disaster deserves coordinated and urgent consideration by the UN FAO and all national governments.'

Major General Michael Jeffery, former Governor General of
Australia

'Access to this book will enrich deliberations on critical issues of global food supply, dealing with refugees and poverty, and the food/land/water nexus. The evidence-based approach, integration across issues, and presentation of opportunities for the future make this text stand out from the crowd. It is highly recommended.'

Kath Bowmer, former Deputy Chief of CSIRO Land and Water
and Deputy Vice Chancellor of Charles Sturt University

'On an increasingly crowded planet that is itself subject to an existential threat, Julian focuses this book on the "Food Challenge", its magnitude and urgency. We have much to think about and prepare.'

John Hewson, Crawford School of Public Policy, Australian National
University, and former Federal Liberal and Opposition Leader

'Food or War details the consequences for the global food supply that humanity faces due to the cascading impacts of climate, resource scarcity, toxicity and other threats – and provides workable solutions. I am convinced that this is going to be one of the most cited books and will be an important source of guidance for future generations. I recommend this book to every single person who loves the planet they live on and cares for the future of their grandkids.'

Razia Shaik, Charles Sturt University

'Drawing on his extensive scientific and historical knowledge, Cribb takes us on a grim and tightly argued odyssey to the edge of the Earth. He holds our hand while we stare into the abyss. Frightening. Having outlined the reality of our tenuous hold on the supports of life, he offers creative and imaginative solutions. A must-read for anyone who cares about the future of humanity.'

Bruce Haigh, former Australian diplomat and refugee advocate

'In a time when we are absorbed in populist, political nonsense, Julian brings us to heel with the existential threat we face, in simple language; he joins all the dots.'

The Hon. John Kerin, former Australian Minister for
Primary Industry

'Unputdownable. Dealing with the multiple threats to humanity's most basic need – food – it unceremoniously pulls your head from the sand – but empowers you with the knowledge to do something. An absolutely essential read. This masterful work articulates clearly humanity's future and may just be warning enough for globally connected communities to avert the avalanche of existential threats bearing down.'

Brad Collis, Editorial Director, Coretext; CSIRO, Australia;
author of *Fields of Discovery*

'Human nature meets human need when the red and black horsemen ride in the ultimate existential food fight. At once perceptive and persuasive, Julian Cribb delivers another science-based study of the human condition at its most basic. Food or War is exceptional.'

David Hulme, Publisher, Vision.org

'A compelling case for turning swords into ploughshares and building a sustainable global food supply in this century of existential climate risks.'

David Spratt, Washington College of Law, and author of
Climate Code Red

'Food or War is a provocative title for a book that delves into the depths of the relationship between global peace and our future capacity to produce and distribute food that is healthy, efficiently produced and equitably enjoyed. An urgent lesson we must all learn before it is too late to do so.'

Ms. Christiana Figueres, Founding Partner, Global Optimism and
Former Executive Secretary, UN Climate Convention (2010-2016)

'Cribb argues that a fair and equitable global food system based on ecological principles is the key to peace and future prosperity in an era of multiple environmental crises and growing population.'

Stephen Leahy

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DEDICATION

*This book is dedicated to Emeritus Professor Paul Ehrlich,
Major General Michael Jeffery and Emeritus Professor
Bob Douglas, whose wisdom enables them to see further
into the human destiny than most of us.*

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PREFACE

For as long as humans have fought one another, food has been a pivotal element in their struggles, yet one that is often ignored – or else footnoted in histories and reportage. In recent centuries, more people have perished during wars from hunger than have died through direct military action. And more wars have originated in the fear and hatred which lack of fair access to food, land and water generates among contending cultures, creeds, classes, tribes and nations, than from other causes.

Despite these well-evidenced facts people, scholars and the media have a tendency to focus on the political, religious or nationalistic differences between warring factions – seldom on the underlying drivers that thrust them into conflict with one another in the first place. This book presents evidence that food – or fear of its lack – plays a central role in the genesis of human conflict, and that the opposite is also true: that ensuring a reliable, sustainable and nutritious food supply is a sure way to lower the tensions that lead to conflict. Indeed, it argues that food is one of the greatest, least recognised and most affordable ‘weapons of peace’ available to humanity.

Ours are perilous times. As human numbers lurch towards 10 billion, all expecting highly varied diets rich in protein, today’s farming systems are starting to crumble. For reasons that will be made clear, the modern food system has never been more vulnerable or at greater risk of compound failure.

If we humans truly want a peaceful world, free from warfare and vast refugee tsunamis, it follows that we must eliminate, one by one, the factors that are conducive to war. And hunger, or the fear of it, is among the greatest.

This book is the fourth in a science-based series I have written on the existential emergency facing humanity in the present and coming generations, and what we need to do to avoid it:

- *The Coming Famine* (UCP 2010) explored the drivers behind growing global food insecurity amid the illusion of plenty, and what should be done about them;
- *Poisoned Planet* (A&U 2014) assessed the human chemical impact on the planet and our health, finding it far larger than most people imagine. It offered solutions;
- *Surviving the 21st Century* (Springer 2017) surveyed the scientific evidence for the ten great existential threats to humanity, their integrated nature, and what we can do about them both as a species and as individuals.

This book, *Food or War*, zeroes in on an issue that touches every single human life, every single day: food. And the fact that, without it, we usually fight.

If issues such as climate change, mass extinction, weapons of mass destruction (WMD) or pandemic disease sometimes seem a bit large and intractable to the average citizen as they go about their daily life, food most definitely isn't. Its lack, or fear of its lack, are a frequent cause of alarm – but even its abundance, and the poor quality of the world diet that accompanies it, are disturbing in other ways. Our 'jawprint' is, of all the human impacts, by far the heaviest on our finite planet.

Furthermore, food is one way that individuals can have a powerful impact on global issues such as climate, conflict, extinction and mass toxicity. Choosing carefully how and what we eat empowers every one of us to decide the kind of world we want our children to inherit: one that is verdant, resilient and abundant with life – or a smouldering toxic slagheap, devastated by wars and ruinous technologies.

My main purpose in writing this book is not only to document the intimate connectivity between food and war so that people appreciate it better, but also to help further the essential understanding that our fate is in our own hands – not merely those of the politicians, plutocrats and potentates who claim to rule over us. We get to decide what sort of world we want – not they. And a key part of the decision lies in our food choices.

This book is intended to empower each and every one of us to make wiser, more informed, decisions, so we may together

survive to fulfil our destiny as a wise species, wherever that may take us.

I wish to acknowledge, with my sincere thanks, the advice, inspiration, criticism, feedback, ideas and wisdom of: Paul Ehrlich, Lindsay Falvey, Robyn Alders, Bruce French, John Kerin, Bob Douglas, Ravi Naidu, Terry Hughes, Michael Jeffery, John Hartley, Bill D'Arcy, Brad Collis, David Hulme, Pennie Scott, Lars Charas, Sue Radd, Mark Bittman, Shenggen Fan, Robyn Williams, Ian Chambers, Suzette Searle, Bruce Haigh, Karalyn Hingston, John Schmidt, Michael Brown, Ta-Yan Leong, Richard Davies, Oscar Rodriguez, Will Steffen, Sister Corrie Evidente, Martha Mundy, Virginia Gorsevski, Cynthia Gharios, Peter Robinson, Félix Pharand-Deschênes, Danielle Nierenberg, Jon Foley, Ken Drummond, Paulie Higgison and Tilly's Devine Café Gallery. In particular, I wish to express my gratitude and appreciation to Matt Lloyd and the team at Cambridge University Press, including Zoë Pruce, 'Raj' Rajmohan, Charlotte Porter and Beverley Lawrence, for their skill and professionalism in helping to arouse a sleeping world to one of the many perils it faces.

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Albrecht Dürer's famous woodcut of the Four Horsemen of the Apocalypse, 1498. Left to right: Pestilence and Death; Famine; War; and False Saviours. Metropolitan Museum of Art, NY.