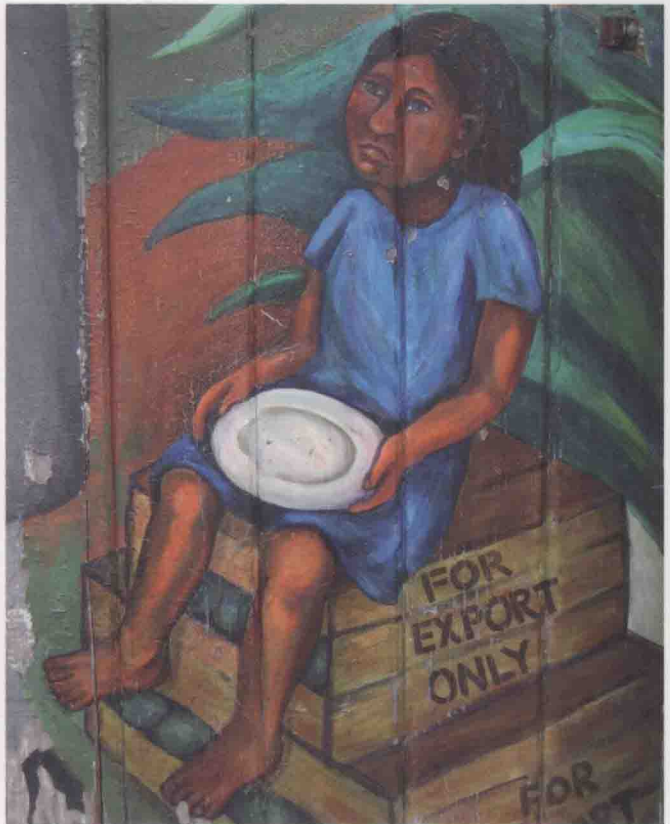


Food Security, Nutrition and Sustainability



Edited by
Geoffrey Lawrence,
Kristen Lyons and
Tabatha Wallington

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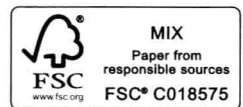
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Food Security, Nutrition and Sustainability

*To our friend and colleague
David Burch*

List of Contributors

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Jayson Benge is the Field Research Manager for kiwi fruit in the Agriculture Research Group on Sustainability project – a six-year programme of research studying agricultural sustainability on New Zealand farms and orchards. This role primarily involves facilitating and undertaking research on participating orchards. He is a graduate of Massey University and gained a PhD from working on the nutritional aspects of kiwi fruit production. He is based in Tauranga, New Zealand.

Gianluca Brunori is Professor of Rural Development at the Faculty of Agriculture in Pisa, Italy. His research is focused on issues of rural governance, innovation processes in agriculture and in rural development, the survival strategies of small farms, and the link between food and rural development. He has published on a range of topics, including social representations and governance patterns in rural areas, local food and alternative food networks, and the relationships between multifunctionality, changing rural identities and institutional arrangements. Recent co-authored papers have appeared in the *Journal of Rural Studies*, *Anthropology of Food* and the *International Journal of Agricultural Resources, Governance and Ecology*.

David Burch is a Professor in the School of Biomolecular and Physical Sciences, Griffith University, Brisbane, Australia, teaching in the area of science and technology studies. He has published widely on agriculture and social change in Australia and Southeast Asia. His most recent works includes *Agri-food Globalization in Perspective: International Restructuring in the Processing Tomato Industry* (Ashgate, 2003), co-authored with Bill Pritchard, and

Supermarkets and Agri-food Supply Chains: Transformations in the Production and Consumption of Foods (Edward Elgar, 2007), co-edited with Geoffrey Lawrence.

Hugh Campbell is Associate Professor and Director of the Centre for the Study of Agriculture, Food and Environment (CSAFE) at the University of Otago, Dunedin, New Zealand. He is a member of the Project Executive which leads the Agriculture Research Group on Sustainability project – a six-year programme of research studying agricultural sustainability on New Zealand farms and orchards. His specialist research areas are rural sociology, sustainable agriculture, new forms of agri-food governance, and the emergence of food audits and quality assurance.

Peter Carey is a soil scientist with over 25 years' experience in analytical and applied research. He began his own company in 2004 (LRS – Land Research Services Ltd.) in Christchurch, New Zealand. He is currently leading the analysis of soils in the Agriculture Research Group on Sustainability project studying sustainability in New Zealand farming systems. Current research interests include sustainability of New Zealand farming systems, farm run-off and water quality, improving water quality of dairy effluent, nitrification inhibitor field trials and development of new soil test procedures.

Susan Cleary is a PhD candidate at the School of Land and Environment at the University of Melbourne, Australia. She studied gastronomy at the University of Adelaide. Her research is focused on understanding the relation between producing food and everyday practice and innovation. She also works on topics as broad as entrepreneurship and creativity, the ethics of agriculture and artisanal cheese-making. She has recently helped to develop and teach the graduate unit Transdisciplinary Thinking and Learning at the University of Melbourne.

Jane Dixon is a Fellow at the National Centre for Epidemiology and Population Health at the Australian National University, Australia. Her research interests focus on food sociology and the public health impacts of food system transformations, including the socio-cultural determinants of obesity, along with resilient food systems for population health in a changing climate. She has published in numerous international journals, including the *Journal of Sociology*, *British Food Journal* and *Critical Public Health*. Her most recent co-edited book is *The Seven Deadly Sins of Obesity: How the Modern World is Making Us Fat* (University of New South Wales Press, 2007).

Jago Dodson works as a senior research fellow in the Urban Research Program at Griffith University, Australia. He has published widely in the areas of urban planning, housing, transport and infrastructure. His recent research has focused on the problem of urban oil vulnerability and the distribution of adverse impacts of higher energy prices on urban households. He is also leading a major project

funded by the Australian government which is examining Australian rural and regional oil vulnerability, and the implications for regional systems, including agriculture, of an energy-constrained future.

Kelly Donati is a PhD candidate at the University of Melbourne in the School of Land and Environment and a member of the teaching staff for the Gastronomy Program at the University of Adelaide, where she also completed her MA on the ethical, ecological and political dimensions of the Slow Food movement. Her research interests include gardening, cooking, and the politics and ethics of urban food practices. She is also the President of Slow Food Victoria.

Sharon Friel is a Fellow at the National Centre for Epidemiology and Population Health, the Australian National University, and Principal Research Fellow and Director of the Global Health Equity Group at the Department of Epidemiology and Public Health, University College London (UCL). She was Head of the Secretariat of the World Health Organization Commission on Social Determinants of Health (2005–2008), and a lead writer of its final report. She has been involved for many years in research and policy relating to global health – including social determinants of health inequities, food systems and food security, climate change, urbanization and health equity.

Angela Guarino is a sociologist with a research focus on rural development and food movements. She has a PhD in International Cooperation and Sustainable Development Policies from the University of Pisa in Italy. She is currently working at the Department of Agronomy and Agro-ecosystem Management at the University of Pisa. Angela is a member of the Laboratory of Rural Studies ‘Sismondi’. She has previously been a visiting scholar with the School of City and Regional Planning at the University of Cardiff.

Libby Hattersley is a doctoral candidate at the National Centre for Epidemiology and Population Health at the Australian National University. She is researching the community health impacts arising from supermarket engagement in Australian food supply chains. She has previously worked with the New South Wales Centre for Overweight and Obesity. Recent co-authored papers have been published in *Public Health Nutrition*, *Australian and New Zealand Journal of Public Health* and *Health Promotion International*.

Megan Jennaway is a medical anthropologist specializing in women’s health, climate change and social dislocation, in several Asian contexts, including Bali, Indonesia, East Timor, Vietnam and South Asia. She has been a lecturer in the School of Population Health, and in the Department of Asian Languages and Studies, at the University of Queensland. She is currently writing an ethnographic novel set in Afghanistan.

Helen Johnson holds degrees from Monash University and lectures in Anthropology in the School of Social Science at the University of Queensland,

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Tim Lang is Professor of Food Policy at City University's Centre for Food Policy in London. He was appointed Natural Resources and Land Use Commissioner on the UK Government's Sustainable Development Commission in 2006, and led the 'Green, Healthy and Fair' report on the government's relations with supermarkets in 2008. He has been a regular adviser to the World Health Organization at global and European levels, and a special adviser to four House of Commons Select Committee inquiries. He is co-author of 180 articles, reports, chapters and papers. His eight books include *Food Wars* (Earthscan, 2004) and *The Atlas of Food* (Earthscan, 2008).

Geoffrey Lawrence is Professor of Sociology and Head of the School of Social Science at the University of Queensland. His work spans the areas of agri-food restructuring, globalization and localization, rural and regional governance, and social aspects of natural resource management. In 2003, and again in 2009, he was appointed by the Federal Government to the Scientific Advisory Panel of the Lake Eyre Basin Ministerial Forum. During his career he has raised some AUS\$10 million in research grants and has published 25 books. Recent co-authored and co-edited books include: *Supermarkets and Agri-food Supply Chains* (Edward Elgar, 2007), *Rural Governance* (Routledge, 2007), *Going Organic* (CAB International, 2006) and *Agricultural Governance* (Routledge, 2005). He is an elected Fellow of the Academy of Social Sciences in Australia.

Mark Lawrence is Associate Professor of Public Health Nutrition at Deakin University, Victoria, Australia. He has 25 years' experience working in food policy at local, state, national and international levels. He is currently a member of the Council of the World Public Health Nutrition Association and the National Health and Medical Research Council's Dietary Guidelines Working Committee. He is also a technical adviser to the World Health Organization. His research interests include the analysis of policies to protect and promote the nutritional health of populations from environmental, social, political, biological and economic perspectives. He has published extensively, including co-editing the reference book *Public Health Nutrition: From Principles to Practice* (Allen and Unwin, 2007).

Wieslaw Lichacz is an Accreditation Auditor with the United Nations Framework Convention on Climate Change Clean Development Mechanisms Accreditation Team, and Principal of WiseLaw Consulting and Trading. His interests include natural, indigenous and historic heritage, renewable energy strategies on a local and global scale, climate change impacts abatement,

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Stewart Lockie is Professor of Sociology in the Research School of Social Sciences at the Australian National University. His research addresses the governance and management of social and environmental impacts in agriculture and other resource-based industries. He is co-author of *Going Organic: Mobilizing Networks for Environmentally Responsible Food Production* (CABI, 2006) and co-editor of *Agriculture, Biodiversity and Markets: Livelihoods and Agroecology in Comparative Perspective* (Earthscan, 2009).

Kristen Lyons has been engaged in social research, advocacy and education on topics related to food, agriculture and the environment, as well as new technologies and social justice, for the last 15 years. She currently teaches food politics and science and technology studies in the School of Biomolecular and Physical Sciences at Griffith University, Australia. In her current research, Kristen is analysing the impacts of organic agriculture, along with the meaning of food sovereignty, in Africa. She is one of few social scientists examining the social and environmental implications of emerging agri-food nanotechnologies, including questions of governance, public participation and regulation.

Henrik Moller is Associate Professor and Co-Director of the University of Otago's Centre for Study of Agriculture, Food and Environment in Dunedin, New Zealand. Over the past 30 years he has applied population and community ecology principles to wildlife and conservation management in natural and production landscapes for sustainable agriculture and wild-food gathering. He currently leads the Environment objective of the Agriculture Research Group on Sustainability.

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Solis Norton has a background in agricultural science and veterinary epidemiology. He also has a growing interest and involvement in energy-related research, particularly with respect to Peak Oil. He is based at the Centre for the Study of Agriculture, Food and Environment at the University of Otago,

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Lucinda Pike is a research assistant and a graduate student in Landscape Architecture at the Melbourne School of Design. Her research interests are based on the social dimensions of food production, and range from community gardens, contract farming and catchment management, to the relationship between governance structures and the realities of food production practices. She is particularly interested in the role of landscape design in creating sustainable and productive urban environments.

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Gyorgy Scrinis is a research associate in the Globalism Research Centre at RMIT University in Melbourne, Australia. His research focuses on the ways that the technosciences shape structural, cultural and ecological relations, particularly across the food system. This includes the new biotechnologies and nanotechnologies of food production, and the way nutritional reductionism (or nutritionism) within the nutrition and food sciences frames the scientific and public understanding of food and the body, along with the production and marketing practices of food companies.

Rosalind Sharpe has an MA in English from Somerville College, Oxford, and an MA in Food Policy from Thames Valley University. After working for many years as a journalist, she now researches and writes on various aspects of food supply. Her contribution to this book is based on research into UK food security, self-sufficiency and sustainability conducted for the Centre for Food Policy at City University. She has also worked on food poverty for Sustain – the alliance for better food and farming – and on food and social justice for the new economics foundation (nef).

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Sean Sloan is a PhD candidate in the School of Resource Management and Geography at the University of Melbourne, where he is undertaking research investigating rainforest regeneration processes in Panama. Prior to commencing his PhD studies Sean worked as a Senior Research Assistant at Griffith University, where he contributed to a major project investigating rural and regional oil vulnerability.

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Tony Weis is Assistant Professor of Geography at the University of Western Ontario, London, Canada. His research is principally concerned with the political economy of agriculture and the struggles of small farmers. He is the author of *The Global Food Economy: The Battle for the Future of Farming* (Zed Books, 2007), which examines the structural imbalances, social tensions and ecological instabilities in the global system of agricultural production and trade, and how these features have been institutionally entrenched.

Susan Williams is a Research Fellow in the Institute of Health and Social Science Research at Central Queensland University, Australia. Key research interests include bridging gaps between research, policy and practice through collaborative research with stakeholders, and understanding food consumption, food behaviours and health. Her research has focused on socio-ecological factors associated with adolescent obesity and associated behaviours. She has previously held academic teaching positions in the area of public health nutrition.

Acknowledgements

The idea for this book emerged from the 2007 annual meeting of the Australasian Agri-food Research Network. Formed in 1992, the Network is a loose affiliation of over 100 political scientists, sociologists, geographers, anthropologists, agricultural scientists, food policy experts, public servants and postgraduate students – all bound by a shared commitment to build theory, inform policy and shape practice in relation to agriculture and food futures. Through the presence of guest speakers, Network organizing committees have sought to provoke and enthuse conference participants and to bring new ideas to the Australasian agri-food table. Notable among past speakers have been Philip McMichael, Harriet Friedmann, Brian Wynne, Patricia Allen, Brian Ilbery, Reidar Almas, Katherine Gibson, Tim Lang and the late Fred Buttel. All have introduced fresh concepts, theories and debates to the group and most have penned chapters in the various collected volumes that have appeared, post-conference. Books that have emerged over the last two decades have included: *Globalization and Agri-food Restructuring* (Avebury, 1996), *Australasian Food and Farming in a Globalised Economy* (Monash University, 1998), *Restructuring Global and Regional Agricultures* (Ashgate, 1999) and *Consuming Foods, Sustaining Environments* (Australian Academic Press, 2001), along with a special Australasian edition of the influential US-based journal *Rural Sociology*.

On top of this, members of the Network – including David Burch, Hugh Campbell, Jane Dixon, Ian Gray, Richard Le Heron, Barbara Pini, Stewart Lockie, Bill Pritchard and Roy Rickson – have produced their own books dealing with topics as diverse as social dimensions of the ‘triple bottom line’; cross-continental food chains; the cultural economy of the humble chicken; global restructuring in the processing tomato industry; masculinities and management in agricultural organizations; the social aspects of genetic engineering in agriculture; global governance of farming; organics and environmentally responsible production; the place of supermarkets in contemporary agri-food supply chains; and the future of rural communities in a globalizing world.

At the Agri-food XIV meeting held in Brisbane in 2007, the invited speaker was the internationally renowned scholar and food activist Professor Tim Lang from the Centre for Food Policy at City University, London. Not only were his talks at the conference inspirational, but he also made a concerted effort to speak with the many academics and postgraduate students in attendance,

providing them with the most up-to-date ideas in the field of food and nutrition, and supporting their studies by helping them to make contact with leading scholars in their subfields of research. He encouraged the conference organizers to consider producing an edited book based on material presented at the conference – and then went one step further, talking to his friend and publisher, Tim Hardwick, the Commissioning Editor for Earthscan, based in London. We therefore acknowledge, and thank, Tim Lang for, ultimately, assisting us to publish what we hope will be a very important collection of papers on topics pertinent to the future of agri-food industries.

Tim Hardwick examined our initial proposal and provided some excellent feedback in relation to the focus of the book, the order of chapters, as well as some detectable weaknesses in our earlier draft outline. As a consequence – and along with Philip McMichael's assistance – we directly approached a number of new writers for various sections of the book. We trust that this collection will not only provide insights into the issues of food security, nutrition and sustainability, but will also discuss these issues on a global plane and thereby help to explain and unravel some of the 'big' issues of our time.

Given that the genesis of this book was the Agri-food meeting in Brisbane, we acknowledge the sponsors of that conference – the University of Queensland, Griffith University and Central Queensland University. We also thank the other members of our organizing committee – David Burch, Samantha Neal, Brendon Radford and Kiah Smith. Carol Richards provided some excellent comments on a number of original drafts of papers. Claire Lamont, Editorial Assistant at Earthscan, assisted us in the early preparation, and later production, of the book, while Sarah Thorowgood gave invaluable support during the editing phase. We would also like to acknowledge the support of Food First/Institute for Food and Development Policy for providing a supportive environment for Kristen Lyons during the compilation of this collection. Our partners and family members provided strong support and, from the beginning, backed our efforts in compiling this book – allowing us the 'space' to undertake the editing at nights and on weekends. In particular, Kristen's partner Sean assisted in the preparation of the index – at a time when both were supposed to be enjoying vacation fun along the sunny coast of California.

We also thank the many contributors to this volume. All delivered their manuscripts to us in a timely manner and in a form that allowed for ease of editing. They accepted our comments in a positive and collegial way – making the production of this volume a great pleasure. The book has a specific purpose: we trust that readers will, in assimilating the contents of this volume, recognize the many contradictory, harmful and destructive elements of current global agri-food production and seek – as we have, albeit in a limited way – to identify new alternatives to production regimes that undermine food security, polarize the world in terms of nutritional availability, pollute the environment and, ultimately, undermine attempts to move world agriculture onto a more sustainable footing.

We dedicate this book to Professor David Burch, the co-founder of the Australasian Agri-food Research Network, who will be retiring from Griffith

University at the end of 2009 after some 30 years of service. David not only helped to pioneer critical agri-food studies in Australia, but also introduced many of its important conceptual and theoretical underpinnings. He also inspired a generation of agri-food scholars to produce research which has become known internationally for its incisiveness and global relevance.

List of Acronyms and Abbreviations

ABS	Australian Bureau of Statistics
ACC	UN Administrative Committee on Coordination
ACF	Australian Conservation Foundation
ADM	Archer Daniel Midland
AGPS	Australian Government Publishing Service
AGRA	Alliance for the Green Revolution in Africa
AIHW	Australian Institute of Health and Welfare
AMAPs	Associations pour le maintien de l'agriculture paysanne
ANZFA	Australia New Zealand Food Authority
AoA	Agreement on Agriculture
ARGOS	Agriculture Research Group on Sustainability
BMI	body mass index
BSE	bovine spongiform encephalopathy
CAP	Common Agricultural Policy
CDCP	Center for Disease Control and Prevention
CLBA	Country Land and Business Association
COAG	Council of Australian Governments
DAA	Dietitians Association of Australia
Defra	Department for Environment, Food and Rural Affairs
DFID	Department for International Development
EC	European Commission
ECLAC	Economic Commission for Latin America and the Caribbean
ECOSOC	Economic and Social Council of the United Nations
EFFP	English Food and Farming Partnerships
EIA	Energy Information Administration
ER	energy ratio
EROEI	energy return on energy invested
ETC Group	Action Group on Erosion, Technology and Concentration
ETP	European Technology Platform
EU	European Union
EurepGAP	Euro Retailer Produce Working Group's Good Agricultural Practice – now GlobalGAP
FAO	Food and Agriculture Organization of the United Nations