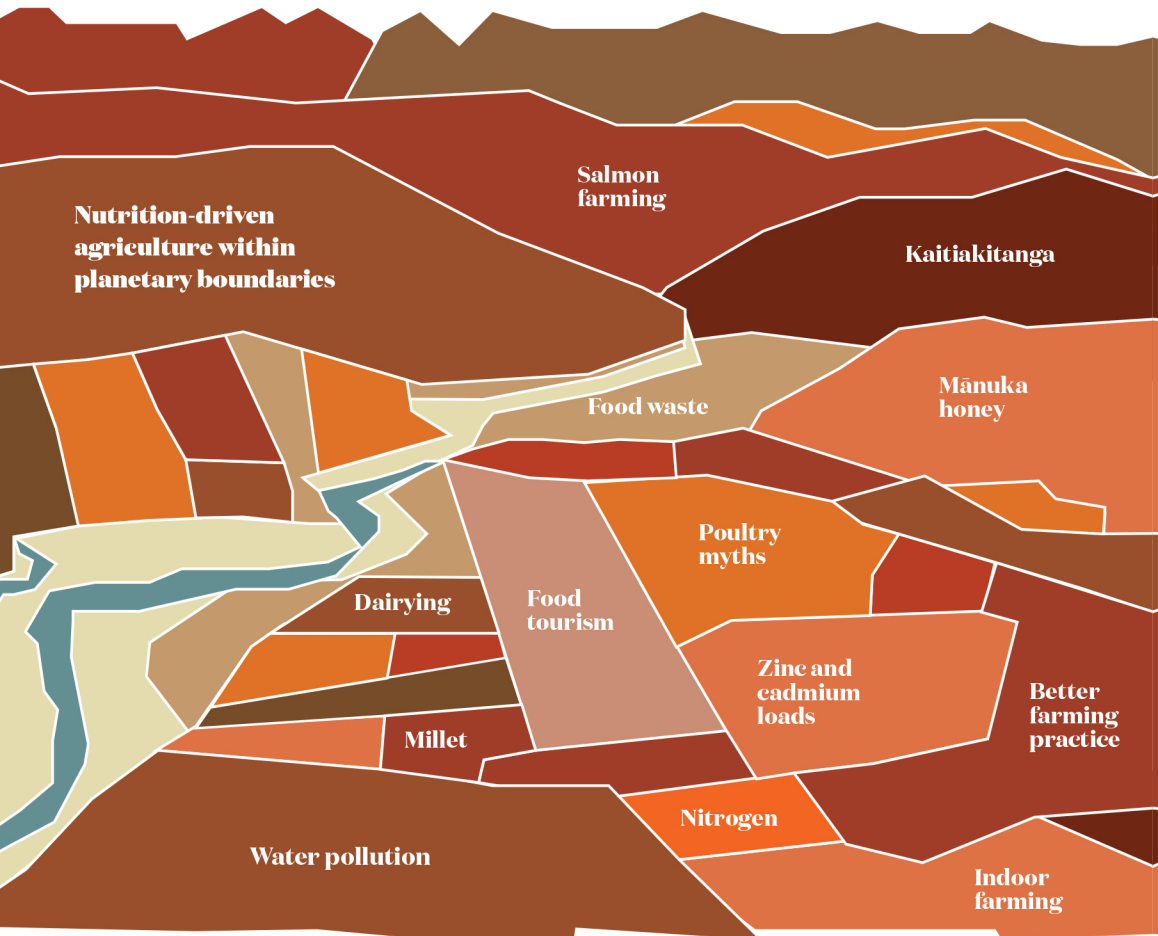


The New Zealand Land & Food Annual

No free lunch
Can New Zealand feed
the world sustainably?



Edited by Claire Massey

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**Can New Zealand feed the
world sustainably?**

Volume editor: Barbara Burlingame
Series editor: Claire Massey



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Foreword: No Free Lunch

Claire Massey

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WHEN WE LAUNCHED the *New Zealand Land & Food Annual* in 2016 we had a clear view of what we wanted to achieve. We wanted to bring together a set of essays that would inform debate and be of value to experts and policy-makers. We wanted it to be of interest to everyone with a stake in Aotearoa New Zealand and be a book that we would be proud to share with friends and family because it would help them make sense of the world around us. We hoped it would be read and argued over and that it would go some way to helping us with some of the most crucial conversations of today: the choices facing us around land and water use; the way we balance our economic and social objectives; and the way in which we think about the future of New Zealand, its people and our place in the world.

Our aim was to fill in some of the gaps in the conversations we have every day — those conversations we *need* to have with our families, our communities and those we share this land with. Our hope was that by providing useful facts and informed commentary we would help readers participate in these conversations with confidence and credibility.

One year on, this is still the aim. This second volume retains its focus on land and food, and while last year we examined the crisis facing the dairy industry in some detail, with chapters looking at all aspects relating to dairying, from water use to free trade, this year the lens is on food. The question posed by the subtitle is ‘No free lunch: Can New

Zealand feed the world sustainably?’ The correct answer, of course, is no, but posing the question in this way offers a way of talking about food and its costs, and the way in which we balance our responsibilities to people and the planet. It also hints at what we think New Zealand *can* do: while we can’t feed the world ourselves, we can lead the thinking on how to do this.

While all the material in Volume 2 is new, much of what was included in Volume 1 remains valid and is worth reading. As John Brackenridge, CEO at NZ Merino and mover and shaker of the Te Hono movement, said last year, we need joined-up thinking across the sector in order to move our collective thinking from commodities to value. Mike Petersen, in his position as New Zealand’s special agricultural envoy, is well placed to outline how important agri-food is to our nation, and his chapter is as useful today as it was last year. Food fraud is still a real issue in our export markets, and Peter Chambers from PWC talked about this in depth. To mention just one other of the 20 or so contributors to the 2016 edition, Ian Proudfoot from KPMG examined the fourth industrial revolution and its impact on the industries that generate wealth in New Zealand. This will continue to pose challenges for New Zealand firms and the people that lead them.

Much of what I said in my introduction also remains true one year on: producing food is a complex operation and at every step of the process there are multiple inputs and overlapping forces, many of which cannot be controlled. The most obvious of these uncontrollable forces is the weather, which has impacts that can only be minimised, not avoided.

The weather is one of the many factors that need to be considered in delivering food to consumers. Producers at all points along the complex food value chain also need to understand the international economy, have a feel for societal changes and be willing to engage in the complex world of geopolitical dynamics. If this sounds complicated, it is worth reflecting that these are exactly the same factors facing those responsible for the first shipment of frozen meat which sailed from Otago to Britain

in 1882. The only difference lies in the changing expectations of what gets sent: instead of whole sides of beef, we now have the technology to tap into the changing demands of a wealthier consumer base as our markets cry out for products that are ready to eat — or as near to it as possible.

Also the same is the continued prominence of the terms ‘value added’ and ‘niche market’, used as shorthand to describe the reality that a prosperous New Zealand depends on retaining as much economic value as possible from every single sale. Some years ago in New Zealand we coined a phrase for this increase in value — the ‘export double’ — as a way of talking about the goal to increase exports from food and beverage to double the 2012 export earnings from the primary industries by 2025. This would see it grow from around NZ\$33 billion to somewhere in the vicinity of NZ\$66 billion.

Complementing this target was one drawn from the government’s Business Growth Agenda: to increase exports as a percentage of GDP from 30 per cent to 40 per cent — a target that can be achieved only by strong performance in the primary sector and others that depend on our land and water. Recent analysis by the team at KPMG offers another option in what they call a ‘new value focus’: based on some detailed calculations of the value to be gained from what they call additional value levers, they estimate the potential target could be in excess of NZ\$90 billion.

The last and most important factor I included in the introduction to last year’s edition is also still true: New Zealand’s land, and the value it can deliver, is still the most important asset we have. One key way of estimating this value is by examining exports. During the year ending June 2017, it is projected that primary industry exports will be worth NZ\$37.5 billion. At the same time domestic and international tourism earns a further NZ\$34.7 billion (international alone is NZ\$14.5 billion). Taken together, this means the dollar value generated by our land is somewhere between 30 to 40 per cent of GDP. While this can’t be

compared directly to the target in the previous paragraph, the picture it paints is a consistent one: the economic value earned for New Zealand from our land is considerable.

WHILE THESE NUMBERS are significant, there are increasing concerns about issues that affect us all and that need to be considered at the same time as we focus on increasing exports as a means of improving New Zealand's prosperity. While the concerns are not new in themselves, the discussions about natural resources and their ownership and use are different from those which took place a generation ago. A hot topic of today relates to water and who can commercialise it, with many different voices clamouring for an immediate solution to an issue that is new, in that it has emerged from a new consumer trend to purchase bottled water.

Similarly, we are still engaged in a debate about whether the current level of dairying is sustainable and if we have an appropriate mix within our overall export portfolio. There is no easy answer to this or to any of the other similar questions that find their way into virtually any conversation about the future of our country, and in this volume there are those who present arguments that can be used to support different conclusions.

In part, this debate continues because our society is a different one from that of a generation ago. With more immigrants, a greater proportion of urban dwellers and with fewer individuals with links to primary production, one of the principal tensions within our broader community is around what has come to be called 'social licence'. It refers to practices that gain broad approval from the community at large, and even when this term is not explicitly used it offers an insight into many of the debates that New Zealanders hear about every day — whether the topic is animal health and welfare or the use of a vital resource such as water.



Cows in the spotlight: Has intensive dairying jeopardised farming's social licence? Massey University Archives

The degree to which a community supports the specifics of the practice depends on whether the operator has ‘earned’ a licence — an image that carries with it a clear implication that the granting of a licence to operate comes with rules that need to be observed, and the assumption that there will be a renewal process of some kind. This process may not be straightforward or explicit. Although we speak about social licence at the level of the community, it is based on the beliefs, perceptions and opinions held by those individuals who make up the community — and, as their views change, so too do the rules. As New Zealand has changed, so have the practices that are ‘allowed’, or at least tolerated.

This, of course, is not unique to New Zealand, and as we have understood more about the way mankind has damaged the environment, our view of what is acceptable has changed. In many areas there truly is no going back, and it is now clear that current practices cannot continue without repercussions.

There is no free lunch — no matter what food is grown and how it is processed and transported to the consumer, there is an impact on the planet. This impact creates consequences for individuals, societies and communities, and although this is not a difficult idea to grasp, it is harder to quantify the scale of the impact. It is harder still to decide what to do about it and how to make the best choices as individuals, within communities and for a country. But it is one which we all have a responsibility to grapple with to the best of our ability, for the sake of our grandchildren and those who follow them.

WHAT CAN BE DONE? In this volume you will find no shortage of ideas and no lack of intelligent commentary from passionate people who have given their energy to finding solutions to the problems that affect us all.

As guest editor of this volume, Barbara Burlingame sets the scene by arguing that talking about sustainable diets (rather than food) allows

a more sophisticated way of connecting health and agriculture in the context of environmental and societal sustainability.

Volker Kuntzsch mounts a convincing case about how more fish farming could and should be used to complement the protein produced by conventional farming.

Jason Wargent talks about the potential for vertical farms to provide products that complement those grown in more traditional ways. With the increasing availability of cheaper technology this is now a more practical solution than ever before.

A different approach is taken by Kerensa Johnston and Rachel Taulelei, who talk eloquently about the Kono NZ story, and explain how the values of *manākitanga* (the quality of care and generosity towards people) and *kaitiakitanga* (the need to ensure that balance is maintained, whether between people and the land, or the land and the sea) have influenced their business.

In the same way, Tracy Berno looks at how we can build value for our products by telling the story of products grown on New Zealand soil, by thinking about the link to the land in terms of *terroir*. She explains: ‘*Terroir* refers not only to the place itself, but also to the relationship that exists between the land, people and culture. *Terroir* has both a tangible manifestation — that which can be smelled, tasted and touched — as well as an intangible element — one that evokes an affective response.’

Mike Joy offers a brief history of the way we have come to depend on nitrogen to increase production and presents data that is of interest to all who are concerned with the need to feed a growing population while maintaining the health of the planet.

Ralph Sims is a passionate advocate for changing the way we look at the problems of food in the context of the agri-food system. His conclusion is clear: ‘The current debate over the environmental impacts resulting from increasing the intensity of many agri-food systems (such as mussel farming on the seabed, dairying on waterways, and monocultures on biodiversity) clearly shows that our present farming

and food-processing practices are not sustainable.’

But he goes on to say this: ‘As energy-smart, resource-smart and climate-smart agri-food practices evolve around the world in an endeavour to provide food security while improving lifestyles and minimising social and environmental impacts, there are lessons to be learned for New Zealand. Presently we are not leading by example — but we could.’

NO ONE OF these individuals provides the ‘answers’ to the situation we are in — the situation is far too complex to be solved by an individual, or even a group of commentators, no matter how intelligent, committed and thoughtful they are. Taken as individual chapters they might even be seen as offering no hope about the way forward at all.

But these individuals do offer glimpses into what the answers might be, once we solve the biggest issue of all: how to engage us all in a collective effort to change.

This sounds as if it should be the simplest part of the overall conundrum, but, as anyone who has worked to change organisations and societies will confirm, moving groups of people in the same direction is hard. Scores of researchers, consultants and community leaders work at the forefront of ‘organisational change’ and there are dozens of books that deal with ways of mobilising people to act. In his 1995 book *Leading Change*, John Kotter, emeritus professor of leadership at Harvard Business School, outlines his eight-step model which talks about the need to create urgency as the first step.

Management consultant Daryl Conner is known best for a phrase he coined in 1988 following a fire on an oil rig in the North Sea: his metaphor of the ‘burning platform’ has entered the vocabulary of change agents everywhere. He explains its origin by quoting a survivor of the disaster, who said after he jumped from the platform into the sea, ‘It was either jump or fry.’ While the phrase has immediate impact, more

valuable is the way Conner has refined the initial idea and presented it more recently with four different types of burning platforms: a current problem; a current opportunity; an anticipated problem; and/or an anticipated opportunity.

While not as immediately captivating, by identifying four different starting points for change this approach offers a way to begin which does not depend on the need to look for (or even create) a disaster before taking action.

No matter which model is used (and I could list many more), action is needed and we all have a role to play. The contributors to this volume have deliberately been chosen to represent all the sectors that need to be involved: producers, bankers, scientists, economists, manufacturers and exporters. Some have offered a personal viewpoint of the way forward for New Zealand; others have given insights into a particular industry or firm.

Some of the authors are full-time researchers, and their contributions are based on long-running research programmes as well as their responsibilities under the Education Act of 1989, which outlines the role of researchers as those who are active in advancing knowledge and who ‘accept a role as critic and conscience of society’. In carrying out this role, the researcher’s job is to pose questions, to undertake projects that allow different ideas to be tested and conclusions to be drawn, and to offer these conclusions to the various stakeholders in a way that encourages and guides debate. The objective is to have the community engage with the questions and the answers — research, after all, is about changing behaviour.

So in closing the introduction to this second volume in the series, it is worth returning to its original purpose: to stimulate and inform, but above all to inspire action.

This book is for all those New Zealanders who are prepared to engage in this challenge and who are prepared to respond to the eloquent words of Ban Ki-moon, former Secretary-General of the United Nations:

Saving our planet, lifting people out of poverty, advancing economic growth — these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security, and women’s empowerment. Solutions to one problem must be solutions for all.