

# Why being true to *brand New Zealand* is the best option for New Zealand agriculture

Dan Steele

March 2016



## Disclaimer

---

This publication has been prepared in good faith on the basis of information available at the date of publication without any independent verification. New Zealand Nuffield Farming Scholarship Trust (Nuffield New Zealand) does not guarantee or warrant the accuracy, reliability, or completeness of currency of the information in this publication nor its usefulness in achieving any purpose.

Readers are responsible for assessing the relevance and accuracy of the content of this publication.

Nuffield New Zealand will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in this publication.

Products may be identified by proprietary or trade names to help readers identify particular types of products but this is not, and is not intended to be, an endorsement or recommendation of any product or manufacturer referred to. Other products may perform as well or better than those specifically referred to.

Nuffield New Zealand encourages wide dissemination of its research, providing the organisation is clearly acknowledged. For any enquiries concerning reproduction or acknowledgement contact the Secretariat of Nuffield New Zealand ([Nuffield.org.nz](http://Nuffield.org.nz))

### AUTHOR'S DETAILS:

Dan Steele  
Blue Duck Station,  
RD2 Owhango,  
3990, New Zealand  
+64 7 895 6276  
[dan@blueduckstation.co.nz](mailto:dan@blueduckstation.co.nz)



**NUFFIELD**  
NEW ZEALAND

---

*Global Vision, Leadership  
and innovation in Agriculture*

# Executive Summary

---

We have inherited a brand. New Zealand was the last major land mass on earth to be colonised by humans, it is distant from most of the world's population and has beautiful scenery and biodiversity. This brand is about a safe, unspoiled last paradise, or to quote a Rudyard Kipling poem: the "last, loneliest, loveliest, exquisite apart --". Brand New Zealand has been used for many years to sell our products and services around the world and in recent times Tourism New Zealand has built a marketing strategy around it, 100% Pure.

This study has come about because of a genuine belief that New Zealand is the greatest country to live in on earth. We are however regressing in some critical ways. The author believes we can stop the regression and build a robust and resilient economy without significant environmental loss. People are realising more and more the interconnectivity of all things on earth, human health with environmental health, our actions on environmental health and at the same time becoming globally connected within an instant by modern media. We are still perceived as clean and green by most of the world, and compared to many countries we are. Because of our position in the world, our brand and our demonstrated conservation leadership, we have a huge opportunity to leverage our economy into a higher value sustainable space that could be the envy of the rest of the world.

A Nuffield Scholarship has enabled the author to investigate this vision – including two international research tours, a study of international visitors and a survey of business and environmental leaders. It has helped him to learn, grow and gain a perspective, and now he can share what he has learnt. This report studies the reasons why being true to Brand New Zealand is the best option for New Zealand agriculture. The aim of this study is to show that New Zealand, and particularly our farmers, need to be ahead of the game, stay relevant and have products in high demand in order to survive in a rapidly changing and sophisticated global marketplace. This report looks at the advantages as well as possible pitfalls this approach could entail.

The author was raised in backcountry New Zealand, travelled the world as a young man and learnt how lucky we are to live in this country. He built an eco-tourism farm in the backcountry and realised that we need to unite to look after New Zealand. Individual conservation efforts will never achieve as much as a combined and collaborative strategy will. From the world study and surveys conducted we know that New Zealand's environment is hugely important to everyone; it is in fact the backbone of our economy.

Based on all that has been learnt or gleaned from the scholarship study, the following recommendations are made to help kiwis build a healthier, wealthier, more sustainable future:

1. New Zealand should develop a positive and engaging environmental vision that consolidates the aspirations of multiple key industries and the public in protecting what makes us famous.
  2. New Zealand's 100% pure image is our competitive advantage. As a nation we must strongly question anything that is counter-productive to our brand.
  3. The world is not short of food but healthy, quality products are in demand. New Zealand must align with what the world wants.
  4. We can adopt and adapt best practices from other parts of the world. A more formal study should be completed of nations that are managing their environments well and strengthening their brands.
  5. We need strong industry leadership to build some collaborative goals between agriculture and tourism. For example Federated Farmers and Tourism Industry Association could build a combined strategy that is mutually beneficial to the New Zealand story.
-

6. An economic shift towards value-add food and beverage production and visitor experiences should be developed.
7. As international tourism to New Zealand continues to grow, we need to ensure that these visitors become customers of our produce and then go onto become ambassadors telling our story on our behalf.
8. Agriculture needs an education plan showing farmers what the affluent of the world are demanding: traceable, higher quality products with a story.
9. Educate New Zealand to realise that complacency is the biggest threat to the future health and prosperity of our nation. Every farm needs a conservation strategy that is being put into action.
10. As a nation, we need to find innovative ways to increase our environmental spend by exploring more diverse sources of revenue for conservation.
11. New Zealand should implement visionary conservation programmes such as Predator Free New Zealand that will demonstrate our commitment to safeguarding our natural assets and engage people from all walks of life.

In summary we have a huge opportunity to lead the world in clean green living and to leverage serious economic benefit from this. The author believes these recommendations would strengthen our brand and start steering us in the right direction to supplying affluent consumers healthy products and experiences. The world is waiting for leadership around global issues such as climate change, resource use and safety. New Zealand can do it, let's pull our socks up!

# Acknowledgements

---

I would like to thank everyone that has been involved with my journey so far. I will do my best to keep learning, growing and endeavour to make a positive contribution to Aotearoa New Zealand.

Nuffield for the opportunity to broaden my horizons and to join the team to try to make New Zealand as good as it can be.

Bob Jordan, Margaret Christie for everything you have given to Blue Duck & this report.

Thanks to Marie Brown, Erica van Reenen and Patrick Aldwell for editing and advice.

My wife Sandy for her love and support.

My children Blue and Snow who missed bedtime stories from their Dad. I will make up for it.

My family Richard, Rachel, Rich, Anna and the rest of our family and friends for their support.

The Blue Duck Team who held the fort while I was away: Wendi, Mel, Bentley, Flake, Toby, Jaden, Tash, Dante, Andrea and all those that have gone before them

Eco-warriors for the time they spend looking after New Zealand's environment.

People in the Department of Conservation (DOC) – not just DOC.

All our marvellous hosts and guides on our global tours.

Everyone who is trying to make New Zealand all it can be!



Figure 1: Overlooking Blue Duck Station: thank you Mother Nature for this canvas

---

# Table of Contents

---

Foreword	1
1 Introduction	2
1.1 Background	2
1.2 Why being true to brand New Zealand is agriculture's best option	3
1.3 Aims and objectives	5
2 Methodology	6
2.1 International travel	6
2.2 Case studies	7
2.3 Surveys	7
3 Findings and Discussion	8
3.1 International study tours	8
3.1.1 Finding: The world is not short of food	8
3.1.2 Finding: Inconsistent connection with food & agriculture	9
3.1.3 Finding: Social media impacts on food and farms	11
3.1.4 Finding: Farms struggle to be profitable	12
3.2 Case studies	13
3.2.1 Finding: We can learn from other countries	13
3.2.2 Finding: Relationships between farmers, customers and the public	15
3.2.3 Finding: The environmental and production battle	16
3.3 Surveys	17
3.3.1 Finding: The environment is important	17
3.3.2 Finding: Traceability branding and quality are dominant	19
3.3.3 Finding: The environment is our unique branding	20
3.3.4 Finding: New Zealand needs a vision	21
3.3.5 Finding: New Zealand needs a collaborative strategy	22
4 Conclusion	24
5 Recommendations	25
Definitions	27
Bibliography	28
Appendix 1: Indian agriculture and the environment	31
Appendix 2: Wyoming wolves vs. agriculture	32
Appendix 3: Ireland's Origin Green programme	33
Appendix 4: Guest survey questionnaire	34
Appendix 5: Business leader survey	36

---

# Foreword

---

This report was composed by Dan Steele, during his year as a Nuffield Scholar. It was written after extensive overseas trips and research by the author. This research is complemented by extensive prior travel and business experience and a lifetime of living in a rural community.

The author was raised in rural New Zealand by parents Richard and Rachel Steele, contractors and farmers in Mamaku, Lake Taupo and eventually at a backcountry station in Retaruke. Farm work was a part of the author's youth and a passion for the bush quickly developed.

Being out in the bush and being part of the ecosystem is a powerful thing. It has culminated in the author and his wife dedicating their lives to protecting the environment and everything that makes New Zealand special.

The author doesn't claim to be an expert on any of the issues discussed in this report nor is this a quantitative report. Many of the views within this report are personal opinions of the author based on his research travelling the world and at the coalface of a tourism business and backcountry farm.

The author really cares about Aotearoa, its environment, its people and its global reputation so this report is about passion and aspirations for the beautiful country.

**People don't care how much you know until they know how much you care.**



# 1 Introduction

---

## 1.1 Background

Following a period of university study the author undertook the typical young kiwi 'Overseas Experience' through America, Europe, Africa, Australia and Asia. The effect this had on the author was more profound than most: an understanding that New Zealand is the best place on earth to live and be in business, that New Zealand has massive potential and some unique selling points and that there is opportunity to leverage capabilities off these. So evolved the author's business: Blue Duck Station – a diversified backcountry sheep/beef farm, honey business, carbon farm and tourism destination incorporating an ecosystems approach and strong environmental awareness.

Blue Duck Station covers 1400 hectares of mostly steep terrain, with some river flats and sensitive wetlands, in one of New Zealand's more remote backcountry locations, made up of several blocks originally broken in by WW1 returned service men. It is located at the confluence of the Retaruke River flowing into the Whanganui River, and is surrounded by the Whanganui National Park. The farming operation is based on traditional hill country production but the steep nature of the terrain, difficult access and the unstable nature of the 'papa' rock base limits the available land area that can be sustainably farmed. Land reverting from the WW1 clearances is being reclaimed by the Manuka bush and Manuka and native bush honey makes up a proportion of the farm's income.

Blue Duck Station's tourism operation receives 8000 domestic and international visitors a year. Along with some new buildings, old shearers quarters have been transformed into visitor accommodation and abandoned buildings from the post WW1 era have been restored and are now utilised by tourists. The same visitors spend money on experiencing farm life so farm based activities have evolved: bush walking, kayaking on the Whanganui River, horse trekking, bush safaris/farm tours, guided hunting, clay target shooting, jet boating to the historic Bridge to Nowhere. Many dine at Blue Duck Station Café and leave with Blue Duck Manuka honey.

Currently Blue Duck Station runs a large pest control programme, managing over 450 small mammal kill traps used in conjunction with bait stations and the government aerial 1080 poisoning. Controlling the numbers of cats, stoats, possums, goats and rats is crucial to protecting native flora and fauna. Managing this operation has become part of the station's eco-tourism operation with visitors staying to see and take part in the programme.

It was whilst setting up his business that the author realised that everything New Zealanders love and everything New Zealand sells is tied to the environment. That passion for the country and a desire to enhance it is what all customers want to see:

*"people don't buy what you do, people buy why you do it" (Sinek 2009)*

The author's desire to change the way land is looked at, and the ways to make a living from it, has led to him giving talks around the country and ultimately to seeking a greater learning journey; a Nuffield Scholarship





Figure 2: Author and another Nuffield scholar, Ben Allomes pay their respects to those lost at Passchendaele – returned soldiers from these events were settled in the Blue Duck Station area.

## 1.2 Why being true to brand New Zealand is agriculture's best option

New Zealand has a majestic coastline, stunning mountain ranges, complex river networks, vast lakes, an abundance of unique flora and fauna and a great climate to ski, swim and grow a variety of produce. New Zealand is an internationally recognised biodiversity hotspot, these hotspots cover only 2.3% of the Earth's surface but support nearly 50% of the world's endemic plants and animals (Sharrock, Oldfield and Wilson 2014) but the ecosystem has been, and is, changing quickly. Pests threaten native flora and fauna with possums, rats and stoats covering 94% of this country. There were 25 bird extinctions between the 14<sup>th</sup> and 19<sup>th</sup> centuries and a further 20 extinctions since then (Wikipedia 2016). In addition, eight of 30 indigenous marine mammals are threatened with extinction (Statistics NZ 2012). Water quality is regressing and 74% of freshwater fish are threatened or at risk (Goodman, et al. 2013).

*"New Zealand, one of the last places on earth to be settled by humans, has one of the worst records of indigenous biodiversity loss. While biodiversity varies in natural cycles, nothing since the extinction of the dinosaurs (65 million years ago) compares with the decline in indigenous biodiversity in New Zealand over the last century." (DOC 2000)*

Drawing on these images, a marketing strategy was developed in 1999 in an attempt to represent and present New Zealand around the world in a single message; '100% pure'. This strategy was developed by Tourism New Zealand (TNZ). The 100% pure campaign was undoubtedly successful, with visitor numbers increasing by 10% in the first year (Tourism NZ 2015). Since its launch the 100% pure brand has crossed boundaries; reaching not just travellers but consumers worldwide and, as a result, the 100% Pure brand markets not only New Zealand the destination, but also New Zealand's agricultural produce. Words like 'healthy', 'clean', 'green', 'trusted' and 'safe' are foremost in people's minds and therefore have a powerful link with New Zealand products.

If New Zealand is seen as genuinely striving to achieve that vision, it will bolster our reputation and better link our choices in environmental management with our international brand. This demands that we recognise that economic development and environmental protection are not mutually exclusive.

*"We consistently fail to recognise the link between healthy, vibrant ecosystems and our economic prosperity." (Marie Brown, Survey respondent)*

There is no doubt about the economic impact, and potential benefit, of New Zealand's international image to the primary sector: 3.1 million visitors arrived in the country in 2015 (Statistics NZ 2015) and in the year ending March 2015 total tourism expenditure (international and domestic) reached 29.9 billion dollars (TIANZ 2015). In the same year New Zealand earned \$NZ67.5 billion from exports. (Statistics NZ 2015)

*"Dairy and travel are New Zealand's biggest export earners." Jason Attewell - International Statistics Senior Manager (Statistics NZ 2015)*

### **It is inevitable therefore, that New Zealand's tourism brand and agricultural exports have become inextricably linked.**

The 100% pure brand has largely environmental connotations: fresh water, clean landscape and unadulterated environment, but New Zealand holds weakly to its claim of 100% pure due to poor past and present land use and other activities.

*"I believe it [the environment] is less important than it should be and less important than many people think. The informed understand the environmental and conservation catastrophe that afflicts the country, the ill-informed see what Government and Tourism New Zealand want them to see, '100% Pure'. The façade of the whole environmental image is set within that marketing catchphrase and the overwhelming majority believe it, travelling through the country enjoying the scenery, the greenness, the 'wilderness' without having the remotest understanding of what has been lost and what is still being lost." (Paul Carberry, Survey respondent)*

The environment is New Zealand's most important asset; the entire primary industry suite relies on functioning ecosystems and tourism capitalises on the resources Mother Nature provides. Both agriculture and tourism will be most resilient and sustainable where they protect the environment. Traditionally agriculture has been called the backbone of the New Zealand economy but the author would argue that a more accurate macroeconomic view is:

### **The environment is the backbone of the New Zealand economy**

The environment includes our unique biodiversity and the ecosystem services upon which farming, tourism and many other aspects of our lives rely on. Without plants to purify the air, wetlands to act as nature's kidneys and many other natural processes, sustaining our economy would be very difficult. Ensuring economic development does not cause environmental degradation is therefore strategically important for New Zealand.

*"Our biodiversity – a rich, interwoven tapestry of plants and pollinators, smells, sights and sounds – has, for countless generations, underpinned our entire food production system." (Dunford 2015)*

In recent years, '100% pure' has come under scrutiny. In 2012 the New York Times published an article, *New Zealand's Green Tourism Push Clashes with Realities* (Anderson 2012). The article, as its title outlines, discusses the disparity between New Zealand's image and reality with some sobering statistics. The decline in our environment, partly as a result of a production focused agricultural system, must be stopped and reversed. "One of New Zealand's main priorities should be giving legitimacy to the 100% pure branding" (Pure Advantage 2015)

New Zealand is lucky to have a dedicated national conservation agency, the Department of Conservation (DOC). DOC is tasked with conserving New Zealand's natural environment: 270,000 sq. km of land area, over 600 islands and a 15,000km coastline (DOC 1987). DOC directly overseas the public land (approximately 30% of New Zealand) whilst working in partnership with owners on private land and in business and philanthropy. DOC cannot possibly do this task alone and protecting our native species and ecosystems demands that everyone play their part. Privately owned farmland makes up 58% of the New Zealand countryside, so farmers must get more involved (MacLeod, et al. 2008).

It is for the above reasons that the author would argue that:

**Being true to brand New Zealand is agriculture's best option for a sustainable and profitable future.**

To demonstrate why this is the case, the author will seek to draw on his experience as a Nuffield scholar, farmer and tourism operator. The methodology will outline details of what the author has learned from his overseas Nuffield trips, surveys and reading. The information garnered will be analysed in section 4 of this report. As a conclusion, the author will seek to make a number of recommendations that can be rolled out to New Zealand farmers and potentially beyond.

## **1.3 Aims and objectives**

The aim of this report and study is to gather information and knowledge from a variety of sources for ways to make New Zealand a better place. Specifically:

- To establish if we have a problem with our brand;
- To consider how important people's perceptions of us are;
- To question whether or not we have a robust plan around this; a plan that is understood and which will gain widespread buy-in;
- To ask what gap in world demand is New Zealand trying to fill;
- To think about what our future world will want and need.

## 2 Methodology

---

The methodological approach of this study was a combination of grounded research, surveys, and the analysis of key case studies. The purpose of using a range of methodologies was to draw information and inspiration from a wide variety of sources and strengthen the basis of the conclusions and recommendations.

### 2.1 International travel

In 2015, the author undertook two world tours, visiting 12 countries to gather data on the relationship between agriculture, tourism and the environment. The first was the Nuffield Contemporary Scholars Conference and the second was the Global Focus Programme, both coupled with personal study components. A variety of places were visited including farms, corporations, supermarkets, farmer's markets and tourism businesses. During these visits the author conducted interviews and digitally recorded information relevant to the topic, and provided regular monthly reports to Nuffield. Upon return, the data was written up in the form of three case studies where the author sought to create a coherent story of the locations visited. These case studies are summarised in the Appendices to this report.

In March, as part of the Nuffield Contemporary Scholars Conference (CSC), the author travelled to England (London, Somerset and Cheddar), France (Reims and Paris), Belgium (Menin Gates), and Ireland (Kildare, Galway, Connemara, Limerick and Cork).

In addition to the prearranged schedule, the author sought out and visited:

- rural tourism businesses in Ireland, where there were some very positive leadership initiatives;
- farm tourism businesses in the UK, Ireland, Australia and America;
- vertically integrated agricultural business that grow, process and sell directly to consumers in Australia and Ireland.

In July, as part of the Global Focus Programme, the author selected to travel in the group visiting the following countries: Australia (Sydney, Orange and Canberra), Singapore, India (Chennai, Tekkudy, Delhi, Punjab and Amritsar), Qatar (Doha and Desert), Turkey (Bursa and Gallipoli), USA (Washington DC, Colorado, Wyoming, New York and Pennsylvania) and Canada (British Columbia and Alberta).

The author selected this Global Focus Programme for a number of reasons. The Middle East was an area the author knew little about and yet felt that the obvious contrast of the region with New Zealand would offer some interesting comparisons. India, as a major agricultural producer, is faced with a number of challenges, including pollution, and the author aimed to get an understanding how that country is dealing with these. The author hoped to learn a lot visiting the United States, as the biggest agricultural importer and exporter on the planet, and with a population that has a growing awareness of food production. In addition Wyoming showed similar environmental, farming and political challenges to New Zealand, and the author was keen to see how the state was coping with these.

The author also elected to visit Canada. Its culture is similar to that of New Zealand and, like New Zealand, has a large agriculture and tourism industry. The author hoped to draw some ideas for New Zealand from this visit

## 2.2 Case studies

Research focusing on three key case studies was undertaken during the author's overseas trips:

- Indian Agriculture and the environment;
- Ireland's Origin Green programme;
- The Wyoming wolves versus agriculture conflict.

India was selected as an example of a 'worst case'. India is a country whose agriculture is off balance with the environment, resulting in serious and widespread degradation. Origin Green in Ireland was selected as the only example the author had seen of a nation tackling the problem of sustainability with a collaborative approach. Wyoming was selected because its agricultural and biodiversity challenges are in some ways similar to New Zealand. In addition, the author noticed similarities between the opinions of Wyoming and New Zealand farmers around biodiversity and sustainability issues.

## 2.3 Surveys

Two written surveys were undertaken at the beginning of 2016; one of Blue Duck Station's international guests and one of New Zealand business and environmental leaders. The results were analysed by entering the data into tables and comparing answers side by side.

Sixty of Blue Duck Station's international guests completed a 17-question survey (Appendix 4: Guest survey questionnaire), and provided details of age and nationality to use in analysis. All respondents were visiting the station and had completed some activity there (e.g. horse-trekking, canoeing, hiking etc.) The questions were designed to gauge their thoughts on New Zealand: what they liked about it and their perception of its environmental management. From this the author hoped to gain an 'outsider's' perspective.

Fifteen business and environmental leaders, who have had some interaction with Blue Duck Station, were asked to complete a nine-question survey (Appendix 5: Business leader survey). The questions asked about their thoughts on the state of New Zealand's environment and reputation, and solicited some thoughts on key opportunities for the future. From this the author hoped to garner perceptions, views and ideas from a broad range of strategically thinking New Zealanders. Permission was gained in all cases to publish their responses.

## 3 Findings and Discussion

---

The author developed 14 key findings during his year as a Nuffield scholar. These findings lead to the author selecting this report's topic. The findings are discussed under the research branches in which they became apparent:

- International study tours;
- Case studies;
- Survey.

### 3.1 International study tours

This section discusses the author's key findings while travelling with Nuffield and on personal study trips abroad. The plan was to see what New Zealand could learn and how to position ourselves for the future.

#### 3.1.1 Finding: The world is not short of food

**The world is not short of food or places and innovative ways to grow it.**

The world is becoming better at producing food, with more innovative methods and extreme growing locations are being utilised. However, an estimated 40% of food is wasted; from production and storage through to retail and consumption (Edwin Van Raalte, Rabobank Manager) and food is not distributed evenly across the world.

*"There is no such thing as a shortage of food now. There are problems with distribution." (Morgan 2013)*

The Middle East is short of food, (currently 97% of their food is imported), but they are not short of salt water or sunshine. Investment in solar desalination plants in Qatar has enabled the country to create farms in desert lands and will allow the country to produce more and more of its own food. Using this technology, a \$US one billion sheep milking and lamb finishing operation has just been set up outside Doha. Qatar is also investing worldwide in food production having recently bought farms in Australia. Ireland, on the other hand, produces enough food to feed 30 million people and enough alcohol to keep 100 million people drunk (Joe Burke Pers. Comm., 2015).

Slick high output farms are springing up all over the world, driven by innovative people doing amazing things. Examples of rapidly growing farming output can be found in Turkey. 25% of Turkey's population is involved in agriculture but this is mainly subsistence based (82% of Turkish cow herds have less than five cows). In 2009 Sencer Solakoolu, a businessman not from a farming background, put in a dairy farm in the Bursa region of Turkey. Wanting the best animals he could find in the world, he chose Friesians from USA. To get cows from US back to Turkey was looking prohibitively expensive, but Sencer ingeniously used empty aid planes on their return to Europe from the Haiti earthquake missions. He got his cows flown in from a New York airport for \$US300 per head. Sencer milks 1000 cows, producing 12,800 litres per cow per year. With a guaranteed minimum price of \$US0.55 cents per litre and receiving a \$US0.10 cent subsidy per litre, Sencer's milk income is \$US8325 per cow/per year. So successful was this operation, that he plans to set up another herd soon (from author's visitation and notes).

Prices in real terms have fallen over the years and costs of inputs and services, such as fuel and grain, are inflating steadily (Statistics NZ 2008). Commodity prices are low and farming is getting more difficult due to diminishing returns. The use of inputs such as palm kernel for stock feed,

**significant inputs of fertilisers and high stocking rates have had a lot of negative environmental impacts here and around the world.** Farmers have become more efficient in many ways, for example, the New Zealand sheep population has halved (60 million to 30 million since the 1980s) (Statistics NZ 2015) yet production of lamb has remained similar. New Zealand is presently trading short-term profits for long-term environmental damage and there is a lack of industry resilience to price volatility (such as the milk powder situation that is occurring now).

Once prices are high and environmental costs are accounted for, only then should New Zealand produce more. What is the point of producing more of a low value commodity when the cost of producing it outweighs the income from it? Why is New Zealand producing more when the world has enough food? This is not a sustainable business or environmental model. New Zealand can however form alternate plans on how best to utilise resources.

## **Summary: The world is not short of food**

The implications for New Zealand of this are that as there is no shortage of food or ways to produce it, simply producing a higher volume from New Zealand is unlikely to fill any great world demand.

- The world is not short of food.
- New Zealand is a high intensity producer, using high inputs, but so are many others.
- Constant Intensification is not a sustainable model and does not fit into the brand New Zealand image.

### **3.1.2 Finding: Inconsistent connection with food & agriculture**

**Across the world there are divergent trends in the understanding of food and its production. One group is buying cheap, fast or unhealthy food and another is researching and buying natural, local, healthy food and caring how it is grown.**

Agriculture and the environment and food production are becoming increasingly common topics in the news and on social media worldwide. Whilst travelling abroad, the author observed two 'movement trends' of interpretation of these stories, particularly in the United States:

1. Those who disconnect and don't care;
2. Those who seek out more information and understanding.

The author's survey of international guests at Blue Duck Station shows that visitors almost exclusively make up movement '2'. When asked: what are your thoughts on New Zealand food production now that you have visited a New Zealand farm? The answers, mainly positive, showed a broad awareness of food production, and included words such as 'sustainability', 'chemicals' and 'monoculture'.

A recent survey undertaken by Rabobank showed that New Zealand teenagers perceived farming and food production as "extremely" or "very important" to the nation (Key Research 2016). Despite this 81% admitted to knowing only "a little" or "nothing at all" about farming and food production (Key Research 2016). Gone are the days when most kiwis had an uncle with a farm where the kids could go on holiday - the Rabobank survey showed that 35% of the children had only visited a farm three or less times in their life. This is no surprise with 86% of the New Zealand population living in urban areas (New Zealand Beef & Lamb 2015). In a recent visit to Blue Duck Station by an Auckland college only five of the 40 adult students had ever been south of Auckland and the students elected to stop at MacDonald's for lunch on their drive to the station.

A similar disconnect is taking place in the UK. The author visited Lye Cross Farm in England, which operates a conservation and education programme on a farm called Farmlink 'a classroom in the countryside'. Shortly before the Nuffield scholars' visited, the Farm had offered to demonstrate sheep



shearing to a junior primary school. The teacher initially refused the offer, as she did not want the children to 'see a lamb slaughtered' (from author's visitation and notes). The author was concerned about this as it is important that children are connected to nature and where their food comes from. If conservation is integrated into the education system, the next generation will see big improvements. Conservation was not part of the curriculum when the author was at school, but other activities played an important part in children's learning. For example, rural schools in New Zealand commonly have farm field trips and 'pet day' (an opportunity for children to bring a pet or farm animal that they have reared) is an annual feature.

*"No one will protect what they don't care about; and no one will care about what they have never experienced". David Attenborough*

One of the impacts of the disconnection process is that people have misconceptions about the state of the environment. In 2013, 73% of New Zealanders surveyed believed the state of their environment was 'adequate to good' (Hughey, Kerr and Cullen 2013). A lack of clear monitoring by government agencies and an excess of good news stories have also meant that the public has not had a good understanding of the real state of the environment in the past, but this is changing.

A good example is water quality and its decline (especially in the lowlands). Water quality, an important indicator of the health of an environment, is regressing with many freshwater sources now graded only as moderately safe to wade in (let alone swim) (MfE 2013). With swimming a popular pastime in New Zealand the public are noticing the degradation of their water and how it is happening (e.g. Choose Clean Water Tour – a small private team addressing clean water issues who are supported by the Tourism Export Council, Freshwater for Life, and Freshwater Foundation). Recent public campaigns against government spending on irrigation schemes have had a lot of media attention and demonstrate a population that is 'waking up' to the impacts of the economy on the environment. The author suspects that the 73% figure might be lower if the survey was conducted today. Educating everyone about the importance of the environment is an important step in achieving the author's vision.

Businesses can assist in educating the public by being transparent, sustainable and welcoming of public involvement in their activities. In New Zealand and abroad there are an increasing number of businesses inviting the public to be a part of their agricultural business, such as Lye Cross Farm's Farmlink programme. Lye Cross understands the importance of increasing public curiosity about food origins and the positive benefit of a public face. Lye Cross also operate a farm shop and demonstrate transparency through their website listing the Royal Society for the Prevention of Cruelty to Animals' (RSPCA) '5 freedoms' on their website. Blue Duck Station undertakes conservation field days and takes local and international visitors on farm and conservation tours.

There is broad disconnect between people and their food: what is in it, where it comes from, how it is produced and how its production affects the surroundings. Having said that, many people are beginning to understand agriculture's impact on the environment and are becoming more interested, and demanding of, greater clarity around food production. These people are often tourists and are the type of people that can be targeted for higher priced products.

## **Summary: Inconsistent connection with food & agriculture**

- Public disconnection with food has led to public disconnection with agriculture.
- Education is imperative to ensure future generations protect New Zealand's greatest asset: the environment.
- Need more awareness of what is important to overseas visitors to keep their business.

### 3.1.3 Finding: Social media impacts on food and farms

#### Social media is affecting attitudes towards farming and how people eat.

Across the world there are more mobile devices than people (Spencer Trask & Co. 2014) and the average person has 5.54 social media accounts (Mander 2015). It is estimated there will be 50 billion online devices by 2020. (Nuffield 2015) Modern media, including social media offers the biggest opportunity to promote products. Customers are increasingly seeking a story and media can empower consumers with an understanding of where the products they consume come from. Product information can be linked to the site of purchase with the click of a button, allowing a strong provenance story to be told.

It is important to be aware however, that social media can have a detrimental effect on the reputation of products. In China New Zealand received negative publicity around the melamine found in infant formula and in 2015 a video of workers mistreating bobby calves went viral on social media. New Zealand must protect itself from negative publicity by increasing the robustness of its brand. In the author's opinion this can be done by spending more on the environment and having a strategy to look after it.

Agricultural education of the urban population, throughout the world, often comes through the media. Whilst there are plenty of positive stories (Country Calendar, a popular agricultural television show in New Zealand has been running for 50 years) evidence shows that people have a 'negativity bias', more commonly choosing to read negative over positive stories and respond more quickly to them (Stafford 2014). Urbanites, who make up the majority of the voting base and can dictate what happens through policy, are learning this way.

With increased tourism comes increased risk. People are viewing us with a world media kit in their hands. A smart phone can quickly create and transmit multimedia copy; stories, photos, sound-bites and videos that can go viral across the globe if they push the right buttons for the viewers, good or bad. Backcountry New Zealand is increasingly in the spotlight as people venture away from main tourist centres to experience these new and authentic visitor assets. Visitors will judge, and are influenced by, what they see in backcountry New Zealand.

Therefore, modern media will be the biggest opportunity to connect products with consumers using such things as QR codes in supermarkets, and can tell stories to the world. Positive well-planned stories must be prepared and be kept true. Farmers and the wider agricultural industry need to be acutely aware of the importance of reputation and that the world is watching.

### Summary: Social media impacts on food and farms

There is an impact on the agricultural industries from social media.

- The world is becoming incredibly connected through modern media.
- Stories good or bad can reach the world with the click of a button.
- Planning, integrity and training is required for the agricultural industry to put its best foot forward to the world.

### 3.1.4 Finding: Farms struggle to be profitable

Farmers in general are struggling to be profitable, sustainable and intergenerational. Why is this? Everyone needs food each day, the world is wealthier and world population is increasing?

It became apparent early on in the author's travels, that farmers from countries who are protecting their environment, and sharing their provenance, are maintaining a sustainable farming sector. Where countries are over-using their natural resources, they are challenged economically, as is the case in India with dropping water tables and pollution. Populations are growing and resources are declining: farming within natural limits is becoming a necessity.

All over the world corporations are squeezing farmers for money for inputs and outputs. The author saw this in action in India where the high costs of genetically modified (GM) crops and the overuse of chemicals is pushing up input costs causing serious farmer debt.

*"the farmer, is the only man in our economy who has to buy everything he buys at retail - sell everything he sells at wholesale - and pay the freight both ways." John F Kennedy (Speech of Senator Kennedy 1960)*

In a 2012 census of its 2.1 million farmers, the United States Department of Agriculture found the age of farmers increasing and the number of farmers declining over a 30-year trend. It also found that in 2012 only 46% of its farmers were making a cash surplus with the majority of farmers working off-farm at least part time. (USDA 2012)

Technology improvements have removed or minimised the need for manual labour, particularly within the dairy industry and the change from sheep and beef to production forestry almost completely removes the need for families (or indeed people) to be living on the land.

*This is a worldwide problem, the number of farmers globally is halving every 20 years (Edwin Van Raalte, Rabobank Manager, Pers. Comm., 2015).*

New Zealand's rural communities and landscapes are a huge part of what makes New Zealand special. They are the hub and service centres of remote picturesque regions and countryside. But many regions are stagnating or regressing because it is becoming harder to make a living by farming the land due to rising costs of production.

*"We are now putting too much technology into producing commodities. A commodity by definition does not require high energy and technology input. If we couple these inputs with our high (and rising) land values, the 'capital effort' put into producing a commodity is far too high." (Rowan Cambie, Survey respondent)*

Putting New Zealand's agriculture on a more sustainable footing will require diversified income streams and a movement away from single-focus production.

*"The volatility of climate and commodity price fluctuations make it even more critical for some farming systems to change and adapt." (Tipu Whenua 2016)*

There are a number of highly profitable farming businesses, many of which are achieving this while working with the land, not against it. New Zealand needs to showcase and replicate these. Lye Cross Farm in Southwest England is an example of a successful vertically integrated farm system in the UK. Run by the Alvis family, the farm milks dairy cows, produces their own cheese and has sheep, cattle and pigs (fed on the by-product of cheese making). The Alvis family have a successful farm shop with an annual turnover of £GB1.4 million, a business focus of 'total recognition of adding value', and an ambition to be a marketing and public relations tool for the area. In doing so, they have shifted from a commodity producer reliant on volatile world prices, to a producer of high value products with a total farm turnover of £GB30 million (from author's visitation and notes). By diversifying on farm activities,

income streams are less affected by global crises and the drop in commodity prices of things such as wool or lamb.



Figure 3: Nuffield scholars visit vertically integrated agricultural businesses around the world

## Summary: Farms struggle to be profitable

While there are examples of farm businesses doing well, there are many more that are not. This is resulting in a struggle to get young people into the industry demonstrated by an aging farmer population and the number of farmers decreasing alarmingly worldwide.

- Many farms are becoming more productive but not more profitable.
- Farming needs to find ways to attract young talented people.

## 3.2 Case studies

Nations around the world are at many different stages of environmental management and branding. Three of the countries or areas visited during 2015 were 'singled out' as offering serious lessons that New Zealand could learn from. India was selected as an example of a 'worst case' scenario, Wyoming because of its parallels with New Zealand and Ireland due to its innovative national food and drink strategy.

### 3.2.1 Finding: We can learn from other countries

**New Zealand agriculture can learn a lot, good and bad, from other countries.**

As New Zealand is a young country, many nations have developed earlier and more extensively. There are successes and failures that can and should be scrutinised. Some interesting things have been learned and parallels observed during the author's world travels and could be transferred to New Zealand even if they need some modification.

Across the world many comparisons can be drawn with New Zealand including large scale subsidised irrigation schemes and intensification of lowland farms. To encourage more environmentally friendly

practices there are sometimes local government subsidies for riparian planting. The dairy industry's 2003 Clean Streams Accord and the more recent 2013 Sustainable Dairying: Water Accord (there is no initiative for the sheep and beef industry (van Reenen 2012)) are good examples of this. However, despite these efforts, water quality in lowland areas continues to decline (Hackwell 2008). New Zealand also continues to increase production driven by synthetic fertilisers, chemicals, imported feeds, and debt. In the years between 2003 and 2012 the level of dairy sector debt increased by \$15 billion, representing more than a doubling of dairy debt (Hickey 2012).

This intensification can also be seen in India where lowland agriculture has gone through a relatively quick change from subsistence farming to intensification, with little or no 'umbrella' thinking or guidance. This has caused Indian farmers to move from permaculture to monoculture; opting for GM crops and the overuse of chemicals. In turn this has pushed up input costs causing serious farmer debt and is contributing to the degradation of rural communities. Free or subsidised electricity has resulted in extensive irrigation use and there has been a national drop in the water table of half a metre a year (Earth Policy Board 2003). Water is becoming very polluted and cross-farm contamination is so extensive that there may never be such a thing as an organic standard in India. This poor environmental management is in turn limiting India's underdeveloped national economic contributor; tourism.

Wyoming agriculture is slowly addressing its conflict with the environment. The removal of the gray wolf by early ranchers had a clear snowball effect on the environment as an increase in grazing animals around waterways which then led to plant loss and riverbank instability (for more details see case study in Appendix 2). So, erosion and loss of water quality was ultimately brought about by the loss of the wolf, detrimentally affected farming within the state. These negative effects and their cause were finally recognised by the state. With ranching worth one billion US dollars to the state, the Wyoming Business Council was tasked with trying to keep ranching viable and protecting farms from environmental change. One of the strategies is to grow agricultural tourism such as rodeos. A governmental officer has been put in charge of agricultural marketing and tourism and finding new product markets (author's visitation and notes). Similarly, Ireland has suffered a loss of biodiversity. However, as discussed in section 3.2.2 , Ireland is successfully redressing this balance through countrywide initiatives.

## **Summary: We can learn from other countries**

New Zealand's environmental health is regressing, other countries have been through this before and it is important to learn from their mistakes.

Intensive agriculture has negative environmental, financial and community costs

- Environmental impacts can have snowball effects with unknown consequences.
- Our environmental health is regressing, other countries have been through this before, we must learn from their mistakes.
- With increasing demand for agricultural produce, profitability and succession must be balanced.
- Around the world the environment is starting to be recognised by agriculture as a partner not a slave.



### 3.2.2 Finding: Relationships between farmers, customers and the public

Ireland is a nation striving for vision in the food and drink industry and gaining agricultural buy-in.

An Irish initiative, Origin Green, was developed by a group of industry leaders with expert advice and has been very successful. A model for adding value to food and drink products. Origin Green is gaining urban buy-in. Customers are embracing the story, which is crucial to a farmer's economic survival and Origin Green members now account for more than 90% of total food exports.



The aim of the Origin Green programme is to create a point of difference around Irish products using sustainability, and to demonstrate the commitment to this through performance assessment. In 2011, Bord Bia (the Irish Food Board and founders of Origin Green), introduced carbon footprint monitoring for all 45,000 Bord Bia Quality Assured Beef farms. To date this is the only such programme in the world that operates on a national basis and that commits to actively measuring and reducing the carbon footprint of each producer. Similar programmes are now being implemented across the entire range of Irish primary production sectors including dairy, lamb, pork, poultry and horticulture. Measurement and performance criteria have also been introduced around water and biodiversity, with all the programmes collectively forming a platform for Origin Green.

Smaller schemes, endorsed by Origin Green, are also making a difference in Ireland. Burren Life (a pioneering agri-environmental programme which aims to conserve and support the heritage, environment and communities of the Burren region of County Clare in the Republic of Ireland) encourages agricultural protection of biodiversity through grants. This is enhancing the environment; preventing the spread of scrub and preserving history (grants are given to groups to protect old stone walls and pathways which are visually appealing), which in turn benefits tourism, agriculture and agricultural product sales.

*"Incentivisation - at a very basic level, the food sector needs to take a much stronger lead in communicating the fundamental importance of biodiversity in ensuring the quality and long term security of our food. But biodiversity needs action right now, so the food sector needs to drive innovative, targeted schemes to support biodiversity. Through such schemes farmers must be incentivised to sustain or enhance biodiversity on their land, and be rewarded – through direct payments and through certification and marketing support – in relation to their success in achieving this". (Dr Brendan Dunford, Programme Manager, Burren Life Programme)*

Could value be added to farm (or other New Zealand) products by a voluntary scheme for grading or assessing the environmental outcomes from farming operations? This might parallel the Heart Foundation tick scheme, a programme that helps New Zealanders make better food choices through package labelling. The obvious overseer of such a scheme would be DOC. However DOC is already struggling with its primary objective of looking after New Zealand's biodiversity. Other national governing organisations may be able to step up to the mark such as the Land and Water Forum, a body which brings together a range of stakeholders consisting of industry groups, environmental and recreational NGOs, iwi, scientists, and other organisations with a stake in freshwater and land management. To be effective however widespread buy-in would be required, as has taken place in Ireland with Origin Green.

## Summary: Relationships between farmers, customers and the public

From travelling in Ireland, and noting the response from Irish guests in the author's surveys, it is clear that the Irish are proud of their farmers and their industry. With an overarching strategy like Origin Green the Irish are making good progress toward a sustainable future.

- Industry leadership is required to ensure New Zealand agriculture has a sustainable future.
- Farmer and public buy-in are crucial and can be encouraged by demonstrating a strong commitment to the environment and social wellbeing.
- Ireland agriculture appears to have a strong social licence to operate, does New Zealand?

### 3.2.3 Finding: The environmental and production battle

#### Farms the world over are battling with the balance of co-existing with the environment.

Technological developments, while generally welcome, have in many instances outstripped nature's capacity to respond, resulting in a well-documented decline in biodiversity around the world. In the lead up to the 2002 Convention on Biological Diversity, a report (Global Biodiversity: Indicators of Recent Declines) was composed that showed species' population trends, habitat extent and condition, and community composition to have all declined while extinction risk, has risen (Butchart 2010).

India is an extreme example of agricultural massacre of the environment with no broad objectives to redress the balance. Whilst Wyoming's agricultural battle with the environment is ongoing, this is now beginning to be addressed. Wyoming's agricultural industry is, however, missing out on some opportunities. The state sells beef as a commodity, much of which goes to other states as live exports into feedlots for finishing. With so much of the US market demanding grass-fed beef, places like Wyoming could add a lot of value by finishing their beef animals for marketing inter-state, by telling a good story and then selling top end product into New York. To create the demand however, they must get the balance right between production of livestock, and maintenance of the sensitive environment.

New Zealand's agricultural land is certainly in a better state than that of India and initiatives such as Land and Environment plans (LEP), introduced by Beef and Lamb New Zealand, are a good step forward. But LEPs lack incentive and widespread buy-in - the author has never been approached by anyone suggesting or recommending the scheme.

Ireland still has a relatively rich biodiversity and government led initiatives are working to protect it. The author noticed the people of Ireland have good respect for their farmers which comes at a time when farmer attitudes towards the environment are also changing:

*"Investing in biodiversity need not, as many fear, undermine our production systems, but will actually help to sustain them"* (Joe Burke, Survey respondent)

Farmer attitudes are also changing in New Zealand although the author would argue that there is a long way to go and the path forward requires a fundamental shift in attitude. The author considers that 100% of Blue Duck Station land is being put to effective use: eco system services, producing honey, educating visitors about hunting, providing an authentic accommodation experience, in addition to sheep and beef farming. This goes against the traditional farming definition, which defines 'effective use' as 'the quantity of land used for pasture production'.



## Summary: The environmental and production battle

The production of food uses natural resources. It always has and always will. It also comes into conflict with nature for range and land use. It is how New Zealand addresses the balance of production with the use of these resources that affects the environment. Farmers worldwide can be divided into two groups, those trying to coexist in harmony with the environment and those who are not. The affluent consumers have made up their minds, they want healthy, sustainably produced products.

- For farms to be sustainable, a good balance between production, resources and the environment needs to be found.
- A fundamental shift in attitude and the opening of minds is required by farmers and the agricultural industry as a whole to facilitate this change and make it work.

## 3.3 Surveys

Many international guests and local business people visit Blue Duck Station so it was decided to survey these two groups, the responses were analysed for relevant data around the main question: being true to brand New Zealand. The following findings stood out.

### 3.3.1 Finding: The environment is important

**The environment is important to New Zealanders, to our trading partners, and to international visitors. New Zealand is still perceived positively from an environmental point of view.**

You do not need to travel far in New Zealand to see how passionate New Zealanders are about their environment. New Zealand owns more boats per capita than any other country, hunting magazines line the shelves of bookshops, and stories with subjects ranging from kiwi populations to mountain bike trails are in the media daily.

*"We New Zealanders take great pride in our environment, in its beauty, its bountiful natural resources, and the lifestyle opportunities of the great outdoors. Our natural and physical environment is central to our way of life, identity, and economic prosperity. It is also precious in its own right." (Wright 2015)*

International guests visiting Blue Duck Station were asked: why did you visit New Zealand? 23 of the guests used the words 'nature', 'scenery', 'countryside' or 'environment' in their response, 19 said they came for a specific reason; to attend a conference or hike the length of New Zealand (it is assumed that hikers fall into the nature category) and one mentioned JRR Tolkien. Māori heritage was also mentioned as a reason for visiting.

*"I've been dreaming about New Zealand since I was little, saw pictures and it looked like paradise"*  
(Swedish personal trainer Survey respondent)

When speaking with guests, Blue Duck Station staff often hear that the stunning scenery, as seen on Lord of the Rings and Hobbit movies, is an influencing factor. Tourism New Zealand statistics state the hobbit movies are an influencing factor for one in five guests from the USA to visit (Tourism NZ 2015). Friendliness, safety, English speaking, and ease of travel are also often mentioned to staff by visitors.

Guests were also asked: what did you think about New Zealand's environmental image before you arrived? 47 respondents thought positively or very positively about New Zealand, seven hadn't really considered it and four thought it would be full of sheep (perhaps a common misconception!).

This was followed by the question: what are your thoughts now whose responses are summarised in Figure 4 below.

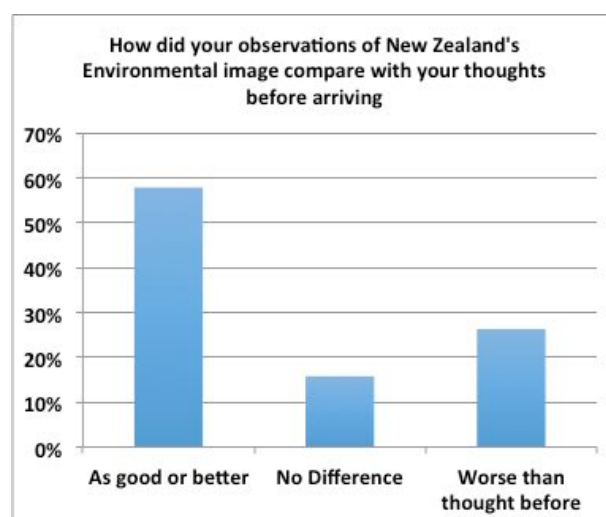


Figure 4: Comparative thoughts on New Zealand's environmental image before and after arriving.

58% of respondents said New Zealand is as good or better or still very good compared with expectations. 16% thought New Zealand was working hard on issues. 26% responded that things are worse in New Zealand than they had expected. Reasons cited for this were over-farming, dirty water, deforestation, loss of wildlife and the overabundance of introduced species. Tourism New Zealand reports that only 1% of visitors to New Zealand are not happy with the environmental management or thought it was worse than expectations (Tourism NZ 2015) This could suggest that international guests are becoming more aware that New Zealand's branding is not matched by reality once they have been here.

It is no surprise that the environment is by far the biggest draw-card for visitors to Blue Duck Station, which hosts a pool of tourists that are a nature-loving subset of total visitors. Whilst it is evident that overall New Zealand is still perceived positively by international visitors, evidence suggests however, that more visitors are beginning to doubt New Zealand's 100% pure image. It must be remembered that travellers go on to be consumers and worldwide ambassadors for New Zealand. Failing to meet their expectations may have broader consequences.

Business leaders, both in New Zealand and overseas, were asked: how important is New Zealand's environmental image in regards to trading with the rest of the world? Almost all (13 of 15) respondents suggested that it was extremely important, or was critical to New Zealand trade and needs to be carefully managed. The remaining two rated the importance 'medium'.

*"Very important. Much more important than we realise or acknowledge! We consistently fail to recognise the link between healthy, vibrant ecosystems and our economic prosperity". (Marie Brown, Survey respondent)*

Whilst visitor perceptions of New Zealand's environment remain positive, business leaders surveyed perceive that our image is declining overall. When asked, "is our environmental image getting better or worse?" two cited 'better' eight 'worse' and five 'the same'.

When asked: why do you think this? Media was the factor cited as being responsible. Heavy reporting of 'bad' news stories, accentuating the negatives and beating up on farmers were all mentioned in conjunction with social media acting as the vehicle for stories that went 'viral'.

*Our image is declining over time; we are more often in the international press for bad things than good. That's somewhat anecdotal of course, but my sense is that we have 'got away with it so far', but time is running out. The image is getting worse because while we are still seen to be trading off our image, we are not investing in having that image match reality. (Marie Brown, Survey respondent.)*

## Summary: The environment is important

So it is evident how important the environment is to those living in it, visiting it and consuming the products and services from it. It is also evident that environmental health is regressing and people are becoming increasingly aware of this. The logical path forward is for New Zealand to try to live up to its 100% pure brand.

- The environment is a key reason people visit New Zealand and is the main point of difference for trade.
- New Zealand's environment is perceived positively, however questions around it are beginning to arise.
- Public pressure through new media forums is gaining momentum and could influence policy.

### 3.3.2 Finding: Traceability branding and quality are dominant

International travellers love 'farm to fork' traceability, small farms, food stories, quality and healthy products.

Visitors to Blue Duck Station were asked: what are your thoughts on New Zealand food production now that you've visited a New Zealand farm? The responses were overwhelmingly positive and demonstrated an interest in produce that was 'fresh', 'tasty', and 'healthy' and production where there was 'no waste' and stock that were 'well cared for' and 'grass fed'.

*"Good, but I think more New Zealand produce should be made available in New Zealand markets and that the process should be made more transparent to the public."*  
(European student, Survey respondent)

The author observed the popularity of food tourism in Australia. Orange, in New South Wales, is the centre of Australia's longest running annual food festival. Farms around Orange have set up wineries, restaurants, cafes and shops and are busy year round. The author observed this having an impact on producers - as they are able to relate directly to their consumer. This has resulted in farmers taking more pride in what they produce, showcasing sustainable eating and drinking in an environment of public awareness in food production.

The author observed the growth of agricultural tourism in the UK. Farm stays are popular with visitors and more and more farm shops are springing up (the author visited Lye Cross Farm shop in North Somerset, England). Similarly in Ireland, farm stays are increasingly common and 'farm parks' such as Leahy's Open Farm in County Cork are popular.

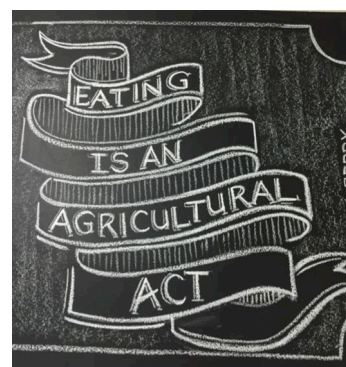


Figure 5: photograph taken by the author at a café in Orange.



Figure 6: Ireland, Delphi lodge – urban and rural interaction.

Through Origin Green, the Irish food and drink industry can now effectively add proof and commitment to its sustainability claims, and provide the evidence that retailers and food service providers around the world are increasingly looking for. Tourism is the biggest most effective marketer of produce. Word of mouth still beats everything. New Zealand Farmers are missing out on this largely because of tenuous links to the end consumer.

There is one exception to the rule however, Manuka honey. Currently New Zealand's hero product, Manuka honey is a natural medicine coming from the unpolluted beautiful hills of backcountry New Zealand. The market for Manuka honey is growing exponentially, particularly internationally, having become hugely popular due to its medicinal benefits. This is a somewhat accidental industry, brought about by removal of much native bush through Land Development Encouragement Loans in the 1970s (Tyler and Lattimore 1990). Much of that land, unsuitable for traditional farming or industry, is now regenerating with the Manuka plant. As well as providing a significant revenue stream, this regrowth is having a positive effect on native species and on honeybees that have suffered decline in part due to habitat loss.

*"Manuka is a prime example of back country investment, complementing sheep & beef. Carbon forestry is another, models suggest sustainable returns can be generated". (Simon Perry, Survey respondent).*

Business leaders agree that small industries such as these have greater potential. When asked: can New Zealand move from being a commodity producer to creating demand for higher value niche products? 11 of those surveyed agreed and none disagreed:

*"I think our future depends on it – but that doesn't mean it will happen". (Sully Alsop, Survey respondent)*

Visitors to New Zealand love and demand New Zealand food products and yet as they enter the arrival hall of Auckland International airport they are greeted with McDonalds and other international fast food outlets. Surely a united front or ambassador is needed, like the Irish Food Board, to link the various arms of the food and drink industry in New Zealand such as Beef and Lamb Incorporated, Dairy New Zealand and Horticulture New Zealand to create first impressions that are better than this.

## Summary: Traceability branding and quality are dominant

So with demand for quality and traceability of healthy naturally grown products, there lies an opportunity for New Zealand, to align these using branding, and meet this world demand. A lot can be learned from Ireland.

- New Zealand needs to demonstrate product sustainability to satisfy the consumer. This has been achieved in Ireland through the Origin Green initiative.
- New Zealand needs to unite its food and drink producers and manufacturers and present a unified front as the Irish Food Board does.

### 3.3.3 Finding: The environment is our unique branding

**The environment is New Zealand's Unique Selling Point and needs better management.**

New Zealand's tourism industry already heavily leverages off the environment and products such as Manuka honey are closely following. Business leaders were asked: what opportunities do you see for New Zealand to have a more robust economy? What role do you think backcountry New Zealand could have in this? Back country New Zealand's role was noted in all cases as playing an integral and in some cases a growing part in the economy.

*"[the environment is] very important, as it is our only point of difference."* (Rob McNab, Survey respondent)

*"Back country New Zealand comprises some of the most spectacular vistas & most unique stories of New Zealand. This is our opportunity to extract the value from our products and we need to make the most of the 'story' that Back Country New Zealand gives us".* (David Kidd, Survey respondent)

*"We've got all the opportunity to be the world's most environmentally conscious destination and producer."* (Joan Gilchrist, Survey respondent)

*"Our point of difference could be clean/green/naturally produced/grass fed. When we get around to this way of thinking our environmental image will be everything."* (Sully Alsop, Survey respondent)

As stated above, the massive task that DOC have is well recognised. Business leaders were asked: should we increase DOC's budget? Why do you think this? Answers were an interesting mix of yes (5), no (5) and maybe (5). All respondents stated that environmental spending should be increased but were divided on how and by whom. Business input and a more/higher charges for users of DOC facilities were strong themes. Over taxation, bureaucratic inefficiency and whether DOC is best suited to expand environmental work were regular themes within the maybe and no categories.

*"The cost of making Stewart Island predator free was estimated at \$NZ25 million. The flag debate has cost \$NZ26 million. Sobering and very uncomfortable numbers".* (Paul Carberry, Survey respondent)

The fact is that DOC's current budget is smaller than that of Hamilton City Council (a New Zealand city with a population of 141,612) (Statistics NZ 2015). It is unrealistic to think DOC can do their mammoth job on their own with such limited resources. Is New Zealand hanging its destiny on DOC's success or failure to keep it pure? Complacency is the biggest threat to this country and its environment. The attitude that 'it's DOC's job' or 'someone else will sort it' has to go!

All New Zealanders, particularly businesses that trade or benefit from New Zealand's environment, need to help to look after everything that makes this country special, including its flora and fauna. If you benefit from nature, you must give back.

*"Sustainable agriculture is our (and the planets) greatest opportunity".* (Simon Perry Survey respondent)

## **Summary: The environment is our unique branding**

New Zealand is a unique country but there is nothing extraordinary about the way food is produced here. It seems the environment is New Zealand's best option as a unique selling point. Better management coupled with a strong provenance story are essential ingredients in pursuit of this objective.

- New Zealand does not need to invent a Unique Selling Point – it already exists – the environment.
- The environment is New Zealand's competitive advantage.
- The environment needs more protection and new ways to achieve this.

### **3.3.4 Finding: New Zealand needs a vision**

**New Zealand is lacking a vision that will unite and get widespread buy in.**

New Zealand does not have a clear strategic plan or vision; economic, environmental or any other. In India a lack of strategic agricultural or environmental plan has led to widespread degradation of the environment whilst in Ireland a strategic plan by the Irish Food Board has led to a successful national



sustainability programme for the food and drink industry. To build a robust economy Humphry Rolleston would argue:

*"...it is all about the vision and quality planning driven by a set of sound agreed-to guidelines not by officials" (Humphry Rolleston, Survey respondent).*

Business leaders were asked: is New Zealand doing well with its strategic long-term plan? Do we have one? Who is creating it? Government or business? Answers were broad and varied and only two of the respondents thought the government had a strategic plan. There was obvious confusion however as to who should implement a plan, who should be responsible for it, and what it should be.

*"We don't have one. Government is relying on individuals & companies to develop their own long term plans". (Laurie Copland, Survey respondent)*

*"Not really. As I've said above, our long term future is dependent on selling food to rich people – but why are they going to buy our food? Why not Australia's or South Africa's. We need to spend more money on marketing NZ to get a higher price. I don't think anyone is doing it really well. In business, companies like Silver Fern Farms are trying but they are always at risk of getting dragged down into the meat industry quagmire. The government have their goal of "Doubling NZ export value by 2025" but they seem to spending more money on increasing production than selling the NZ story." (Sully Alsop, Survey respondent)*

## Summary: New Zealand needs a vision

If business and environmental leaders think New Zealand does not have a meaningful strategic plan or are doing a poor job of it, then New Zealand has a major issue here. The public are becoming more concerned about the state of their nation and its resources.

- Within New Zealand, a lack of vision and public buy in means agriculture is at risk of losing the social licence to operate.
- A lack of strategy and direction means it is difficult to draw together everyone's efforts and maximise their value at a national scale, in a way that will be visible to overseas markets.
- These issues must be addressed.

### 3.3.5 Finding: New Zealand needs a collaborative strategy

**New Zealand needs a collaborative strategy to manage the environment, tell a story and maximise value from goods and services.**

World population is increasing and we will no doubt reach 9 billion people by the middle of this century. This will not necessarily result in an increase in demand for New Zealand produce. Why? Because world population has doubled since 1970 and it nearly quadrupled in the 18th century from 1.65 billion to 6 billion (worldometers 2016), and these massive increases have not resulted in good returns for our produce. In the law of supply and demand, we have focused on supply and neglected to create demand. Resulting in an oversupply of low value products rather than maximising value from niche products.

Those that have an interest in rural New Zealand are wide ranging: land owners, DOC, farmers, Iwi, industry and lifestyle block holders, to those who use it recreationally: special interest groups, hunters and international tourists to name but a few. There can be only one way to manage it, collaboratively!

As well as undertaking public education through its National Parks and offices the DOC currently operates a Public Private Partnership Scheme actively involving people in projects that sustain and improve the natural environment. New Zealand has a well-established tradition of community involvement in conservation. Non-government agencies, community groups and individuals are active in a wide range of day-to-day conservation management activities, examples include the National Trust,

Native Forest Restoration Trust, local Lions and Rotary clubs and the Royal Forest and Bird Protection Society.

Another group working towards protection of our native species is Predator Free New Zealand, a New Zealand charitable trust who are committed to dramatically reducing this country's predator populations, including rats, stoats, possums, weasels and ferrets. It is one of the most ambitious conservation projects undertaken in New Zealand – ambitious, but achievable – and they call it their 'Man on the Moon' mission: to see these iconic populations increase in **our** lifetime (Predator Free New Zealand 2016).

DOC should play a larger role in overseeing the multitude of these community conservation projects and initiatives to steer them in the right direction and provide a network of support for them. Partnerships are often the best way to achieve this but, in the author's opinion and experience as a DOC partner, DOC's limited budget and a lack of strategy means there is a lack of skilled people on the ground to deliver meaningful results.

There are many environmental initiatives already in place specifically for landowners and farmers such as the Emissions Trading Scheme and local government riparian planting schemes but an overall vision for the environment, particularly in relation to farms and farming is lacking.

This collaborative strategy must also be considered to maximise value from goods and services. A clear message must be delivered to overseas buyers - a New Zealand story. This is where New Zealand can learn a lot from Origin Green.

*"I've never known why we don't focus on added value instead of taking the quick dollar for the raw materials". (Joan Gilchrist Survey respondent)*

## **Summary: New Zealand needs a collaborative strategy**

The environment has many stakeholders whom are becoming more concerned about man's effects on nature. New Zealand can leverage off its strength of being a recognised world leader in some conservation efforts, such as the use of off shore islands to create biodiversity sanctuaries (Ballance 2016)

*"New Zealand is clearly the world leader in both [pest animal] eradications and the number of native species documented to benefit [as a result]". (Ballance 2016)*

This not only adds value to what New Zealand produces through closer alignment to nature but creates exportable intellectual property, technology and paves the way for New Zealand to become an education and research and development base for green technology and natural food, beverage and health products. This will then have further positive benefits for the economy and the environment.

- An overall vision for the environment, particularly in relation to farms and farming is lacking, one must be developed. This must be run by a non-government multi industry think tank with government support. The Land and Water Forum could be an ideal body to develop and implement such a vision.
- As long as New Zealand acts as a commodity producer the potential of New Zealand products will not be maximised. Lessons can be learned from New Zealand businesses that are successfully adding value to their products. First Light Foods is such an example; advertising its meat as grass fed and of excellent quality whilst demonstrating high animal welfare standards.
- Environmental vision must be linked to good and services. A win win situation can be gained by leveraging off current strengths to add real value to the brand.



## 4 Conclusion

---

Being a Nuffield Scholar has allowed the author a broad, world view and his experience as a New Zealand farmer has allowed him to apply findings from his extensive travel to New Zealand's agricultural sector. New Zealand has a huge opportunity to learn from other countries; to follow the good examples such as those that can be found in Ireland and take heed from the bad.

It is clear that countries that over-use their natural resources suffer economically. How long will it be before New Zealand falls into this trap? Further intensification and higher yield is neither necessary nor healthy for New Zealand agriculture.

The environment is important to New Zealanders. There is a growing interest in food sustainability as people are becoming more aware of food origins and the impact of food production on the global environment. With this awareness comes opportunity; it is the environment that is New Zealand's unique selling point and should be leveraged to gain maximum value from goods.

Yet New Zealand does not have a vision for the environment, nor any form of collaboration that unites those that use and profit from the environmental resource. New Zealand must show a united front to the world to both market and protect itself, from aggressive modern media and negative publicity, by being true to its brand: 100% pure.

Agriculture and tourism, New Zealand's two main export industries, are inherently linked and both will live or die on our environmental health and reputation, but our environment is regressing and unless this is addressed now, our economy will regress.

New Zealand is facing a challenge: how can we be a productive and sustainable society without harming the environment? There will be no silver bullet but there is a Golden Goose; our environment, which, if we care for it, it will care for us. It is our environment: mountains, hills and plains that are our backbone; lakes, rivers and streams that are our arteries; and veins and coastline and oceans that are our skin, separating and protecting us from the rest of the world. The Golden Goose is not a quick fix like the silver bullet, but a long-term collaborative approach to address agriculture's balance with the environment and develop an integrative strategy for New Zealand's suitable economic future.

New Zealand is facing an opportunity: to lead the world in environmental management, to be an innovator and an educator. Let us turn New Zealand into the biggest conservation project on earth and the Golden Goose will keep giving.

The author wishes to start conversations and actions towards this goal and vision.

*"It is not the strongest of the species that survives, nor the most intelligent.... It is the one that is most adaptable to change". (Meggison 1963)*

## 5 Recommendations

---

On the basis of the findings in this report following a year's focus on this topic, global travel, domestic travel, two surveys and years of experience in running an eco-tourism and farming business, the author makes the following recommendations:

1. New Zealand should develop a positive and engaging environmental vision that consolidates the aspirations of multiple key industries and the public in protecting what makes us famous. This requires political and industry leadership and broad public support. This vision needs to make it clear that economic development and environmental protection cannot be mutually exclusive.
2. New Zealand's 100% pure image is our competitive advantage and we must protect it. The environment is important to visitors but questions around our management of it are starting to arise. The world is watching and they have smart phones in hand. Farmers must front foot environmental and ethical issues as bad news stories will travel faster than good ones.
3. The world is not short of food but healthy, quality products are in demand. New Zealand must align with what the world wants. Value could be added to farm (or other New Zealand) products by a voluntary scheme for grading or assessing the environmental outcomes from farming operations. This could be partly assessed by DOC or the Land and Water Forum and a collaborated industry food board.
4. We can adopt and adapt best practices from other parts of the world. A more formal study should be completed of nations that are managing their environments well and who are strengthening their brands. Initiatives such as Origin Green of Ireland can be emulated and adapted.
5. We need strong industry leadership to build some collaborative goals between agriculture and tourism. Agriculture and tourism must be partners and both these major industries will prosper if we are true to our brand: 100% pure New Zealand.
6. Tourism and agriculture need a combined strategy that is mutually beneficial. Can we use the Land and Water Forum who already have representatives from across the economy to establish a vision and a direction, as well as to agree on some key messages that can be used to create the New Zealand story?
7. An economic shift towards value-add food and beverage production and visitor experiences should be developed. This will create a story to tell. A story of environmental caring, sustainability, animal welfare and a culture of integrity. This can then be tailored to individual products within each industry (e.g. dairy, tourism, meat, wool, honey). This creates a consistency of brand and a shared direction. Some of this work is already underway but could be strengthened and made broader.
8. Visitors entering New Zealand should be leaving as ambassadors. Happy travellers become consumers of our products and go on to become ambassadors for our country. Agricultural and tourism advocates need to create a strategy to achieve this. Beef and lamb, dairy NZ and horticulture NZ should come together to replace McDonalds at our airports with healthy home grown food options that will resonate with world travellers.
9. Agriculture needs an education plan showing farmers what the affluent of the world are demanding: traceable, higher quality products with a story. Farmers learn from looking over the fence at operations that work. We need farm open days, field days and think tanks

involving our urban cousins, educating and learning from them, to maintain our social licence to operate.

10. Educate New Zealand to realise that complacency is the biggest threat to the future health and prosperity of our nation. It's not just DOC's job to look after the environment. Every farm needs a conservation strategy that is being put into action. There are thousands of people trying to engage in making New Zealand a better place. Farmers can capitalise on this by having an environmental plan and utilising this willing workforce. Farmers need to leapfrog urban expectations of environmental management and lead the change that is required.
11. As a nation, we need to find innovative ways to increase our environmental spend by exploring more diverse sources of revenue for conservation such as through public-private partnerships and commercial opportunities such as Blue Duck Station.
12. New Zealand should implement visionary conservation programmes such as Predator Free New Zealand that will demonstrate our commitment to safeguarding our natural assets and engage people from all walks of life. This will require more investment in predator control, more collaboration and better science but the outcome will demonstrate great leadership and protect our unique selling point.

# Definitions

---

The following terms are used throughout this report and are defined here.

## Definition – Aotearoa

*Land of the long white cloud as translated from Māori. A common reference to New Zealand, based on the supposed first observation of the country by ancient Māori navigators.*

## Definition – Backcountry

*Backcountry New Zealand generally refers to the remote, isolated and difficult to access parts of New Zealand, including small rural settlements and sparsely populated coastal areas.*

## Definition – Blue Duck Station

*Blue Duck Station (also referred to as BDS) is owned by Dan Steele and his wife Sandy, and is situated on the banks of the Whanganui River and surrounded by Whanganui National Park. It is the base of an ecotourism/farming venture that inspired this report.*

## Definition – Eco Systems Approach

*“The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. ... based on ... appropriate scientific methodologies focused on levels of biological organisation that encompasses the essential processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems.” (Convention on Biological Diversity 2016)*

## Definition – Sustainability

*Meeting the needs of the present without compromising the ability of future generations to meet their own needs. (Brundtland 1987)*

# Bibliography

---

- Anderson, Charles. "New Zealand's Green Tourism Push Clashes with Realities." *New York Times*, 16 November 2012.
- Ballance, Alison. "New Zealand leads the world in island conservation." *Radio New Zealand*. 22 march 2016.  
<http://www.radionz.co.nz/national/programmes/ourchangingworld/audio/201794085/new-zealand-leads-world-in-island-conservation> (accessed march 28, 2016).
- Brown, Lester R. *Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble. Chapter 2. Emerging Water Shortages: Falling Water Tables*. Earth Policy Institute, 2003.
- Brundtland, G H. *Our Common Future, Chapter 2: Towards Sustainable Development*. United Nations, 1987.
- Burren Life Programme. *Burren Life Programme home*. 2016. <http://burrenlife.com>.
- Butchart, Stuart H. M. "Global Biodiversity: Indicators of Recent Declines." *Science*, 28 May 2010: 1164-1168.
- Convention on Biological Diversity. *Ecosystem Approach*. 2016. <https://www.cbd.int/ecosystem/>.
- Dewes, Alison. [www.tipuwhenua.com](http://www.tipuwhenua.com). 2015.
- DOC. "Conservation Act 1987." 1987.
- . *New Zealand Biodiversity*. 2000. [www.biodiversity.govt.nz](http://www.biodiversity.govt.nz) (accessed March 15, 2016).
- Dr Jan Wright. "Annual Report of the parliamentary Commissioner for the Environment." 2015.
- Dunford, Dr Brendan. *Origin Green Sustainability Report 2015*. Ireland: Bord Bia, Irish Food Board, 2015.
- Earth Policy Board. "Rescuing a Planet Under Stress and a Civilization in Trouble Chapter 2. Emerging Water Shortages: Falling Water Tables." *Earth Policy Board*. 2003. [http://www.earth-policy.org/mobile/books/pb/pbch2\\_ss2](http://www.earth-policy.org/mobile/books/pb/pbch2_ss2) (accessed March 15, 2016).
- Goodman, J, et al. "Conservation status of New Zealand freshwater fish." *New Zealand Threat Classification Series 8* (Department of Conservation), 2013.
- Hackwell, K. *Why has the Dairying and Clean Streams Accord not delivered cleaner streams?*. Forest and Bird, 2008.
- Hickey, Bernard. *RBNZ warns dairy debt now more dangerous than before 2008; says 64% of debt in farms that would be losing money with payout at NZ\$5kg*. 7 November 2012.  
<http://www.interest.co.nz/rural-news/61914/rbnz-warns-dairy-debt-now-more-dangerous-2008-says-64-debt-farms-would-be-losing>.
- Hughey, KFD, GN Kerr, and R Cullen. *Public Perceptions of New Zealand's Environment*. Christchurch: EOS Ecology, 2013.
- India Online. [www.indiaonlinepages.com](http://www.indiaonlinepages.com). 2016.
- Speech of Senator Kennedy*. Performed by JF Kennedy. National Plowing Contest, Sioux Falls. 1960.
- Key Research. *Rabobank Farm Experience Urban Youth Research*. [www.ruralnewsgroup.co.nz](http://www.ruralnewsgroup.co.nz), 2016.
- KPMG. "Agribusiness Agenda 2013: Media Embargo." 2013.
- MacLeod, Catriona, G Blackwell, H Moller, J Innes, and R Powlesland. "The Forgotten 60% Bird Ecology and Management in New Zealand's Agricultural Landscape." *New Zealand Journal of Ecology* 32, no. 2 (2008): 240-55.

- Mander, J. *Global Web Index*. 2015. <http://www.globalwebindex.net/> (accessed 3 16, 2016).
- Megginson, Leon C. "Lessons from Europe for American Business." *Southwestern Social Science Quarterly* 44, no. 1 (1963): 3-13.
- MfE & Statistics NZ. *Environment Aotearoa 2015*. Ministry for the Environment and Statistics New Zealand, 2015.
- MfE. *Suitability for swimming indicator update*. July 2013. <http://www.mfe.govt.nz/environmental-reporting/fresh-water/suitability-for-swimming-indicator/suitability-swimming-indicator.html>.
- Morgan, Gareth, interview by Susan Wood. *Q&A Interview with Gareth Morgan* TVNZ, (2013).
- National Crime Records Bureau of India. "Farmer Suicides." *National Crime Records Bureau of India*. 2014. <http://ncrb.nic.in/StatPublications/ADSI/ADSI2014/chapter-2A%20farmer%20suicides.pdf> (accessed March 30, 2016).
- New Zealand Beef & Lamb. *Farm Facts*. Beef & Lamb New Zealand, 2015.
- Nuffield. "Nuffield Contemporary Scholars Conference ." Nuffield, 2015.
- Origin Green. "Bord Bia." *Sustainability Charter*. 2015. <http://www.bordbia.ie/industry/manufacturers/origingreen/pages/sustainabilitycharter.aspx> (accessed March 15, 2016).
- Parliamentary Commissioner for the Environment. "Growing for Good: Intensive farming, sustainability and New Zealand's Environment." 2004.
- Predator Free New Zealand. 2016. <http://predatorfreenz.org/> (accessed April 15, 2016).
- Pure Advantage. [www.pureadvantage.org](http://www.pureadvantage.org). 2015. [www.pureadvantage.org](http://www.pureadvantage.org) (accessed Mar 15, 2016).
- Rush, Michelle. *From Seed to Success: A Guide for Community Conservation Projects*. DOC, 2003.
- Sharrock, S., S. Oldfield, and O. Wilson. *Plant Conservation Report 2014: A review of progress towards the Global Strategy for Plant Conservation*. CBD Technical Series, Secretariat of the Convention on Biological Diversity, Montreal: Secretariat of the Convention on Biological Diversity in collaboration with Botanic Gardens Conservation International., 2014.
- Sinek, Simon. "How great leaders inspire action." *TED Talk*. 2009.
- Spencer Trask & Co. [http://www.bizjournals.com/prnewswire/press\\_releases/2014/10/06/NY30877](http://www.bizjournals.com/prnewswire/press_releases/2014/10/06/NY30877). 2014.
- Stafford, Tom. *Why is all the news bad?* 29 July 2014. <http://www.bbc.com/future/story/20140728-why-is-all-the-news-bad>.
- Statistics NZ. *Conservation status of marine mammals*. 2012. [http://www.stats.govt.nz/browse\\_for\\_stats/environment/environmental-reporting-series/environmental-indicators/Home/Biodiversity/conservation-status-marine-mammals.aspx](http://www.stats.govt.nz/browse_for_stats/environment/environmental-reporting-series/environmental-indicators/Home/Biodiversity/conservation-status-marine-mammals.aspx).
- . *Dairy and travel still our largest export earners*. 2015. [http://www.stats.govt.nz/browse\\_for\\_stats/industry\\_sectors/imports\\_and\\_exports/GoodsServiceTradeCountry\\_MRYeJun15.aspx](http://www.stats.govt.nz/browse_for_stats/industry_sectors/imports_and_exports/GoodsServiceTradeCountry_MRYeJun15.aspx).
- . *Goods Services Trade Country Year Jun15*. 2015. [http://www.stats.govt.nz/browse\\_for\\_stats/industry\\_sectors/imports\\_and\\_exports/GoodsServiceTradeCountry\\_MRYeJun15.aspx](http://www.stats.govt.nz/browse_for_stats/industry_sectors/imports_and_exports/GoodsServiceTradeCountry_MRYeJun15.aspx) (accessed March 15, 2016).
- . *Industry sectors imports\_and\_exports*. 2015. [http://www.stats.govt.nz/browse\\_for\\_stats/industry\\_sectors/imports\\_and\\_exports/GoodsServiceTradeCountry\\_MRYeJun15.aspx](http://www.stats.govt.nz/browse_for_stats/industry_sectors/imports_and_exports/GoodsServiceTradeCountry_MRYeJun15.aspx) (accessed March 15, 2016).

- . *International Travel and Migration: December 2015*. 2015.  
[http://www.stats.govt.nz/browse\\_for\\_stats/population/Migration/IntTravelAndMigration\\_HOTPDDec15/Commentary.aspx](http://www.stats.govt.nz/browse_for_stats/population/Migration/IntTravelAndMigration_HOTPDDec15/Commentary.aspx).
- . *New Zealand is home to 3 million people and 60 million sheep*. 2015.  
[http://www.stats.govt.nz/browse\\_for\\_stats/population/mythbusters/3million-people-60million-sheep.aspx](http://www.stats.govt.nz/browse_for_stats/population/mythbusters/3million-people-60million-sheep.aspx).
- . "Status marine mammals." *Statistics New Zealand*. 2012.  
[http://www.stats.govt.nz/browse\\_for\\_stats/industry\\_sectors/imports\\_and\\_exports/GoodsServiceTradeCountry\\_MRYeJun15.aspx](http://www.stats.govt.nz/browse_for_stats/industry_sectors/imports_and_exports/GoodsServiceTradeCountry_MRYeJun15.aspx) (accessed March 15, 2016).
- . *The rising cost of food in New Zealand*. 2008.  
[http://www.stats.govt.nz/browse\\_for\\_stats/economic\\_indicators/prices\\_indexes/rising-cost-of-food-in-nz.aspx](http://www.stats.govt.nz/browse_for_stats/economic_indicators/prices_indexes/rising-cost-of-food-in-nz.aspx).
- . *www.stats.govt.nz*. 2015.
- The Cattle Range. *The Cattle Range home*. 2016. [www.cattlerange.com](http://www.cattlerange.com).
- TIANZ. *Tourism Industry Association New Zealand*. [www.tianz.co.nz](http://www.tianz.co.nz), 2015.
- Tipu Whenua. *One World One Health*. 2016. <http://www.tipuwhenua.com/page/one-world-one-health/>.
- Tourism NZ. *www.tourismnewzealand.com*. 2015. [www.tourismnewzealand.com](http://www.tourismnewzealand.com) (accessed March 15, 2016).
- Tyler, Laurence, and Ralph. Lattimore. *Assistance in Agriculture*. Edited by Ron. & Reynolds, Russell. Sandry. MAF, 1990.
- USDA. "2012 Census of Agriculture." 2012. [agcensus.usda.gov](http://agcensus.usda.gov).
- van Reenen, Erica. "Increasing uptake of environmental practices on sheep and beef farms." *Lincoln University. Faculty of Commerce. Kellogg Rural Leaders Programme*. 2012.  
<http://hdl.handle.net/10182/6316>.
- Wikipedia. "List of extinct animals of New Zealand." *Wikipedia*. 2016.  
[https://en.wikipedia.org/wiki/List\\_of\\_extinct\\_animals\\_of\\_New\\_Zealand](https://en.wikipedia.org/wiki/List_of_extinct_animals_of_New_Zealand) (accessed March 15, 2016).
- . *Virtuous circle and vicious cycle*. 2016.  
[https://en.wikipedia.org/wiki/Virtuous\\_circle\\_and\\_vicious\\_circle](https://en.wikipedia.org/wiki/Virtuous_circle_and_vicious_circle).
- worldometers. 28 april 2016. [www.worldometers.info](http://www.worldometers.info).
- Wright, Jan. *Annual Report of the parliamentary Commissioner for the Environment*. Annual, NZ Govt., 2015.



# Appendix 1: Indian agriculture and the environment

---

India is a mind-blowing place with a population of 1.3 billion people packed into an area one-third the size of China. It has an emerging economy experiencing good growth.

India was visited by the author in June 2015. Like New Zealand, India has a large percentage of good farmland and a temperate climate and is moving from small-scale traditional agriculture to small-scale high input agriculture. For this reason, and with India's heavy agricultural toll on the environment, the author considered this an example New Zealand can learn a lot from. While there, the author travelled through southern, central and northern India, spending most time in the Punjab region, and met with many farmers, universities, agricultural companies and government officials.

There is a wide variety of dairy and meat production, aquaculture and horticulture throughout India. Currently buffalo meat is India's biggest export. Buffalo are generally only fed waste from cropping causing quality issues. Freshwater fish farming is an agricultural growth industry and with some farms feeding their stock exclusively on bovine effluent waste (the author was invited to drink carp wine, produced from cow manure fed fish stocks. It tasted alright but is probably not very marketable in New Zealand). Whilst arable farming relies on the use of GM crops and high chemical use.

There is large-scale pollution of ground water and aquifers across India. The government provides electricity free of charge to agribusiness resulting in intensive irrigation and, partially as a result of this, the water table across India is dropping by half a metre per year (author's visitation and notes).



Figure 7: Water is scarce



Figure 8: Rubbish litters water sources

Agriculture is becoming less profitable; farmers are now heavily indebted due to high input costs; GMO seeds are selling for thousands of percent more than traditional seed resulting in massive increases in costs. There are skilled labour shortages and increasing competition for land with industry. This is leading to many farmers leaving their land and resorting to begging for much of the year. There has also been claimed, a huge increase in rural suicides; from 1995 to 2013 a total of almost 300,000 Indian farmers took their own lives, although this figure may be disputed with 5650 officially reported farmer suicides in 2014, the first year that the National Crime Records Bureau of India started collecting such data (National Crime Records Bureau of India 2014).

## Appendix 2: Wyoming wolves vs. agriculture

---

Wyoming is an agricultural state - the ninth largest in the US but with the smallest population (584,153). In July 2015 the author visited ranches, feedlots, conservation projects, farmers' markets and supermarkets, and spoke to cowboys and politicians in Wyoming to see how their agriculture was contributing to the economy, and relating to other industries, the environment and the people.

Over 80% of the agriculture economy in Wyoming is from livestock and is worth \$US1 billion a year for the state. Beef is sold as a commodity, much of which goes to other states as live exports to feedlots for finishing. Commodity price volatility is hitting Wyoming ranches hard. Since July 2015 beef prices have plummeted by 25% to \$US2 per pound for a 550 pound animal (The Cattle Range 2016).

Early ranchers came into conflict with the state's apex predator - the gray wolf in the 1800s. To protect stock, the farmers set about hunting, trapping and paying bounties until wolves were eradicated by the mid-1930s. This had a classic trophic cascade effect on the environment. Elk and deer numbers rose and their behaviour changed, grazing riverbanks, killing off riparian growth. Riverbanks started to erode and the native beaver could no longer find suitable timber (usually riparian) affecting its ability to build dams. This in turn changed the river flow, encouraging further erosion and water pollution.

In 1929, when parts of America became a dustbowl, the need to establish conservation practices was recognised by the federal government. They commenced soil conservation services, water shed planning, reintroduced native creatures, protected their habitat and ran tree-planting workshops. In 1973 the U.S. Endangered Species Act was introduced to protect the grizzly bear and wolves and in the mid-1990s wolves were reintroduced into Yellowstone National Park and Idaho by the government under pressure from environmental groups.

Wyoming Game and Fish Department is responsible for managing the challenges of wildlife and ranches whilst maintaining wildlife populations. The only tool for wildlife management is hunting, there is no state harvest or culling. Stock losses due to predators are compensated for by payments to ranchers at a multiplier of seven to one e.g. for every one cattle beast lost due to a grizzly bear, the rancher is paid for seven.

The Wyoming Business Council is responsible for agricultural marketing, tourism, and finding new product markets. The Business Council is trying to keep ranching viable, one of the strategies is to grow agricultural tourism and this is preventing many farmers from folding. Anecdotally the author discovered that the farmers' biggest perceived challenge around this is liability.

Wyoming has conservation problems and farming/nature conflicts with New Zealand parallels. The initial unwillingness of farmers to coexist with nature had major effects on the environment that were not fully understood at the time. The state is beginning to turn this around however with smart initiatives such as putting agricultural marketing, tourism, and finding new product markets under one umbrella and straightforward action such as 'seven for one' cattle.



Figure 9 Author visits Wyoming

## Appendix 3: Ireland's Origin Green programme

---

The Republic of Ireland was visited by the author in March 2015 as part of the Nuffield personal travel. The author developed interest in the national sustainability programme adopted by the Irish food and drink industry called Origin Green. Information was gathered about Origin Green during the author's visit to Ireland and through interviewing Joe Burke, fellow Nuffield Scholar and employee of the Irish food board, Bord Bia.

Like New Zealand, Ireland is a food, fibre and drink-exporting nation with a good grass-growing climate. Whilst population size is comparable, Ireland occupies a land mass approximately a quarter the size of New Zealand of which about 5.25 million hectares is used for agriculture and forestry (compared with 15 million hectares in New Zealand) (New Zealand Beef & Lamb 2015). Ireland exports about 90% of their agricultural produce at a value of \$NZ16 billion.

### Origin Green



Origin Green is a unique sustainability programme developed by Bord Bia. The ultimate intention is the creation of a significant point of differentiation for the Irish food and drink industry around the area of sustainability. The Origin Green initiative was started by a think-tank of industry leaders trying to create a long-term plan and industry focus. This think-tank employed Mary Shelman, an Engineer and MBA by training and currently the Director of the Agribusiness Program at Harvard Business school. The outcome was the sustainable initiative that everyone buys into.

At the heart of Origin Green is a sustainability charter (Origin Green 2015) that commits participants to engage directly with the challenges of sustainability: reducing energy inputs, minimising their overall carbon footprint and lessening their impact on the environment.

Farms and manufacturers sign up to developing and implementing a multi-annual action plan. This sets out clear targets in the key action areas identified by the company, which will then be required to commit to deliver a progress report on an annual basis. Assessment is conducted by evidence-based performance on a number of criteria including greenhouse gas emissions (carbon footprint), energy conservation, water management, biodiversity, community initiatives, health and nutrition.

Whilst it is not obligatory for Irish food businesses to join the programme it has been greeted with widespread acceptance and enthusiasm by producers and processors alike, who recognise the benefits of operating more sustainably.

In general, the measures that are being adopted as a result of sustainability navigators and Origin Green plans also make good business sense, resulting in cost savings and efficiency benefits, for example; better grassland management and reduced chemical fertiliser and concentrated feed use. Similarly, at industry level, companies have already achieved significant reductions in waste, packaging and transport related costs. Already, Irish companies which have Origin Green verified membership account for more than 90% of total food exports (valued at over €10 billion in turnover).

Ireland enjoys a strong and enduring international reputation as a source of natural, high quality food, drink and ingredients. Recent research shows that their dairy industry has the lowest carbon footprint in Europe. However, a good beginning is only part of the journey. Through Origin Green, the industry can now effectively add proof and commitment to its sustainability claims, and provide the evidence that retailers and foodservice providers around the world are increasingly looking for.



## Appendix 4: Guest survey questionnaire

In this appendix, the list of questions asked of each of the 58 guest-survey respondents are listed. Each respondent filled out the forms on paper and subsequently responses were entered into an Excel file by Blue Duck Station staff. Summaries of the responses are provided in the body of the report. Full survey details are available from Blue Duck Station.

**Help Blue Duck Station change the world.....**

*It's voluntary and anonymous*

Nationality: \_\_\_\_\_ Age: 18-30 ( ) 30-45 ( ) 45-60 ( ) 60+ ( )

Profession/Occupation: \_\_\_\_\_

Highest level of education: High School ( ) College ( ) University ( )

**Why New Zealand?**

1. Why did you choose to visit New Zealand?

\_\_\_\_\_

\_\_\_\_\_

2. Why did you choose to visit Blue Duck Station? Or if you came as a bus passenger – why did you choose this bus company?

\_\_\_\_\_

\_\_\_\_\_

3. What things do you most like about Blue Duck Station?

\_\_\_\_\_

\_\_\_\_\_

4.a. What did you think about New Zealand's environmental image before you arrived?

\_\_\_\_\_

\_\_\_\_\_

4.b. What are your thoughts now?

\_\_\_\_\_

\_\_\_\_\_

4.c. How long have you been in New Zealand?

\_\_\_\_\_

\_\_\_\_\_

4.d. How long will you stay in New Zealand on this trip?

\_\_\_\_\_

5.a. Is looking after the environment important to you?

Yes ( )                      No ( )

5.b. If you answered Yes, why is it important to you?

\_\_\_\_\_

\_\_\_\_\_

6. How have the Blue Duck Station staff made you feel?

---

---

*The Future....*

7. What do you think Blue Duck Station could do to have improved your stay?

---

---

8. What are you most looking forward to doing next in New Zealand?

---

---

9.a. What could Blue Duck Station learn environmentally from your country?

---

---

9.b. What could your country learn from Blue Duck Station?

---

---

10. What are your thoughts on New Zealand food production now that you've visited a New Zealand farm?

---

---

11. What other eco-tourist activities or farms have you visited in New Zealand?

---

---

12. Are you going to visit any other eco-tourist activities or farms during your stay in New Zealand?

---

---

*Thank you for your time and helping us to change the world!*

*Dan Steele*

## Appendix 5: Business leader survey

---

In this appendix the survey questions are listed, and the details of the 16 respondents are provided. The survey was conducted by email and summaries of the responses are provided in the body of the report. Full responses are available from Blue Duck Station.

### List of survey participants and their occupations

1. Matthew Pickering - Life coach and businessman. Tauranga NZ
2. Rowan Cambie - Rural valuer. Taranaki NZ
3. Simon Perry - Businessman and philanthropist. Hamilton NZ
4. Derek Daniel - Ram Breeder and global farmer. Masterton NZ
5. Fiona McHardy - Marketing specialist. Wellington NZ
6. Joan Gilchrist - Journalist. Auckland NZ
7. Sully Alsop - Farmer and farm advisor. Masterton NZ
8. James Rolleston – CEO, Spaceships. Auckland NZ
9. Martin Coup – Farmer and Beef and Lamb elected council member. North Island NZ
10. Rob MacNab - Farm advisor. Waikato NZ
11. David Kidd – Farmer and young farmer of the year. Kaipara NZ
12. Laurie Copland – Farmer and Beef and Lamb elected council member. North Island NZ
13. Humphry Rolleston - International entrepreneur. Christchurch NZ
14. Paul Carberry – Owner, New Zealand in Depth. UK.
15. Marie Brown – Senior Policy Analyst, Environment Defence Society, Upper Hutt



## Business leader survey questions

1. How important is New Zealand's environmental image in regards to trading with the rest of the world?
2. Should we increase DOCs budget? Why do you think this?
3. Is our environmental image getting better or worse? Why do you think this?
4. Is New Zealand doing well with its strategic long term plan? Do we have one? Who is creating it? Government or business?
5. Can New Zealand move from being a commodity producer to creating demand for higher value niche products?
6. As a businessperson, what are your thoughts on investing in nature? How would you get a return on this?
7. Would you consider investing in Back Country New Zealand? And why?
8. What opportunities do you see for New Zealand to have a more robust economy?
9. What role do you think Back Country New Zealand could have in this?