



Our Food Story:

Understanding the market dynamics of
fruit and vegetable production,
distribution and produce outlets in Northland

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Executive Summary

We all eat it, and food has been fundamental to our economies for millennia. This report reveals opportunities to reshape our local food system with strong economic and social benefits. It is difficult to think of another industry as pervasive as the food industry. On the production side, it provides an economic base across our region, rather than being concentrated in Whangarei and Northland's towns. On the consumption side it feeds whanau, but also patients in health facilities and customers in cafes, restaurants and hotels.

We are currently far from optimising the potential of the food system. Food distribution is dominated by corporations who primarily operate here to extract dividends for their shareholders, rather than support a "sticky economy". Fast Food chains (also here to extract dividends) and supermarkets sell food that is often nutritionally deficient generating a plethora of diet based disease. The average weekly spend of New Zealand households is \$61.90 on alcoholic beverages, tobacco and ready to eat foods, but only \$22.60 on fruit and vegetables. Shifting this equation even minimally will have positive impacts.

This report focuses on food produced for local consumption. It integrates data from desktop research and interviews of 32 people involved in food production, consumption and outlets. It reveals opportunities to improve returns to growers while creating a stronger value proposition for food outlets. There are also exciting opportunities for added value processing. Data from two U.S. locations identify actual and potential new jobs generated by a re-invigorated local food system equating to between 233 and 477 jobs for Northland. The economic benefit of substituting 20% of produce imported into the region with local food sold through local food distributors and outlets, this would equate to additional economic benefits of \$27.7 to \$55.4 million annually for Northland.

The synergies between employment and enterprise generation, social cohesion and the potential to revolutionise positive health outcomes remain largely unexplored in Northland centres. We offer this report as a platform to generate momentum towards a more robust food system.

Our recommendations are:

1. Investigate the feasibility of food hubs in Whangarei and other Northland Centres.
2. Convene a regional discussion on the local food economy.
3. Promote local food.

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Introduction

This research is a collaboration between *Local Food Northland*, and NorthTec. *Local Food Northland* is a new organisation established to promote and establish community-led sustainable food systems for Northland. Amongst its aspirations are to contribute to a connected and cohesive, prosperous Northland by:

- building local resilience back into the Northland economy
- stemming the leakage of wealth from the region
- rebuilding local economies
- addressing food security and poverty at a community level
- providing and distributing healthy locally based fresh food at a community level through a range of channels
- enhancing employment opportunities at a local community level
- creating stronger supply and processing capability for value-add and export.

Our food systems are very complex. A better understanding of these dynamics is foundational to enhance any improvements. Initial observations are of a system that is largely devoid of any system-level planning, enabling the profit-motive to shape the commercial landscape. This has negative impact on those growers at the base of the supply chain, and frightening downstream impacts on the health of consumers.

To help us understand the system, we started with desktop analysis as a first step to developing interview processes for growers, distributors and outlets. These interviews happened from December 2015 to February 2016 and stimulated themes for further research. Data analysis and discussion is threaded through each part of the report.

This report was first distributed as a draft to interviewees as an additional validity check.

We welcome feedback on the recommendations presented. You can provide feedback by email to pbruce@northtec.ac.nz.

Part one: The Food system and value network

Food systems in Northland

[The Oxford Martin Programme](#) (2015) defines a food system as “all those activities involving the production, processing, transport and consumption of food”. For the purposes of this document our focus is on production, distribution and consumer outlets. In the Northland context, the consumption of produce is also of special interest to health professionals ([Carne & Mancini](#), 2012).

Along with the issues of sustainability, health, nutrition and food safety, the Oxford Martin Programme (2015) also recognises governance and economics as important dimensions of the food system. Northland’s food system appears to have evolved without any collective conscious design enabling market dynamics to shape it.

In her book, [Trading Cultures](#), Adrienne Puckey (2011) asks how did the Far North “start out as a bread basket in the late 1700s and become an economic basket case by the 1900s?” Both Māori and Pākehā have strong gardening heritage. Māori successfully faced the challenge of adapting tropical crops to Aotearoa and then centuries later quickly mastered the production of crops introduced by Europeans. Early European arrivals often depended on Māori food production for their very survival.

Over 100 years ago my (Peter’s) great-grandfather in Te Kopuru produced his own milk, eggs and produce, and sold some. For most of the twentieth century, home gardens and orchards were significant sources of produce. In the first half of the century, local growers supplied the majority of the retailed produce that could be grown here.

With the advent of supermarkets and more sophisticated supply systems, the proportion of locally grown produce has declined as much produce is sourced out of region.

This trend has disadvantaged local growers. Returns are not much better than they were 20 years ago in dollar terms, but when inflation adjusted, grower’s returns are eroded significantly. Consequently, the number of growers in the region has sharply declined.

Up until the late 1930s, most distribution was local. In 1938 Tom Walder was a private agent and commission buyer for Whangarei retailers making twice weekly trips to Auckland. He joined with Auckland’s Turners & Growers to create subsidiary

company Turners & Walder. Auctions began in 1956 according to Ron Corder (1989, pg 5 & 6)

...as the protective regulations to rail were removed and with more relaxation in the regulations to road transport which also coincided with the advent of supermarkets and the demise of the old greengrocer so did business at these depots decline with buyers coming to attend the auction at Whangarei.

Now distribution systems are dominated by the supermarket supply chains, South African company [Bidvest](#) and 73% German owned [Turners & Growers](#). Locally owned distributors Penguin Wholesalers have been operating in Northland for 40 years, remaining steadfast in the face of increasing multinational corporate competition.

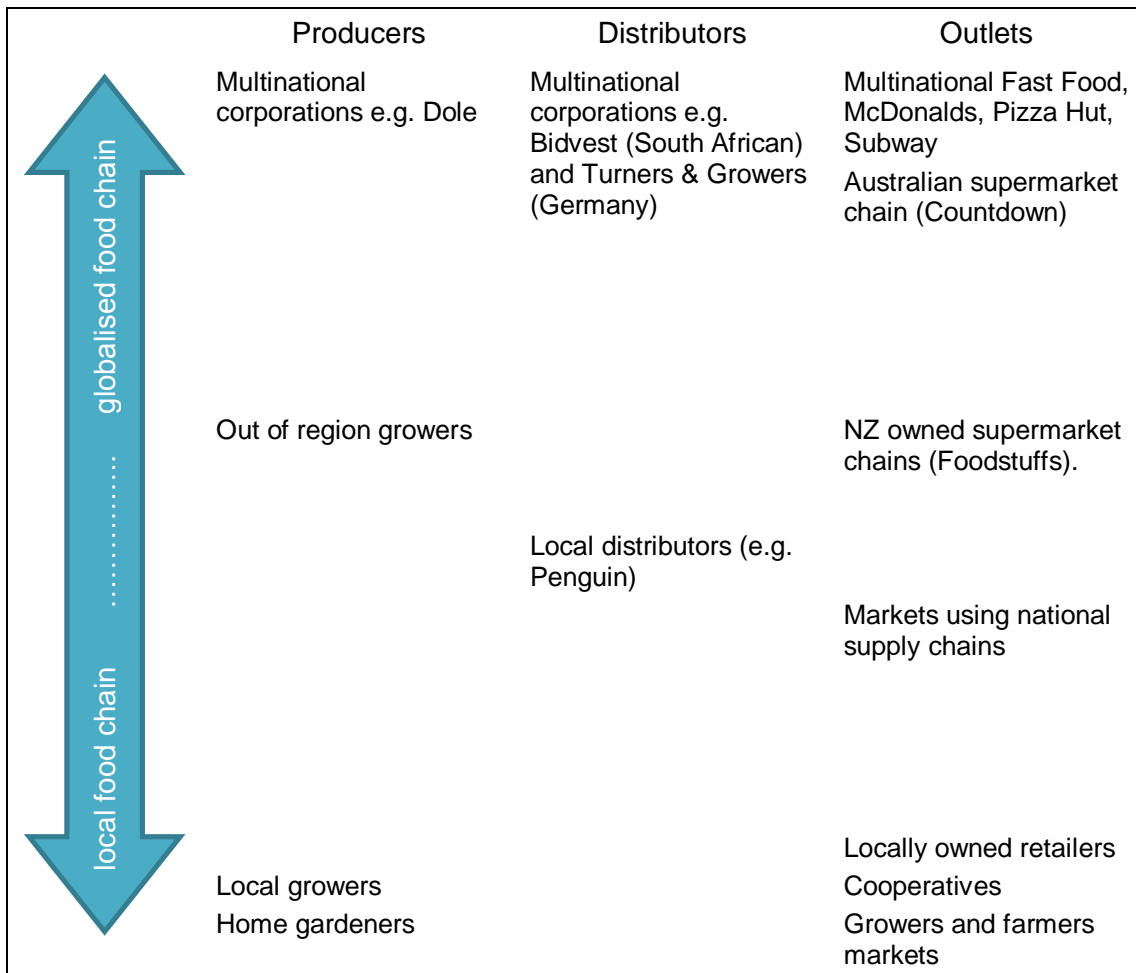


Table 1: Examples of producers, distributors and outlets in Northland's food system

The Supermarket duopoly dominates produce retailing. [Countdown](#) is owned by the Australian owned Progressive Enterprises. The dominant position of supermarkets has enabled them to dictate terms to growers. Thus, an increasingly globalised food

chain has emerged characterised by power-differences, complexity, “capital concentration, spatial and temporal independence, dependence on symbols and reliance on expert systems” (Feagan, 2007, pg 25).

Food chains

Food chains are the food system manifestation of supply chains. Globalised food chains are long food chains (LFC), while localised food chains are short food chains (SFC).

SFCs generate closer relationships between producers and consumers enabling the re-socialising of food. SFC offer consumers food with known provenance and enhanced quality. Critically, SFCs open opportunities for revitalising rural communities (Marsden, Banks, & Bristow, 2000). Face to face interactions between producers and consumers collapse the power-differences inherent in complex, globalising LFCs. (Feagan, 2007).

A common characteristic, however, is the emphasis upon the type of relationship between the producer and the consumer in these supply chains, and the role of this relationship in constructing value and meaning, rather than solely the type of product itself (Marsden, Banks, & Bristow, 2000, pg 425).

From the 1980s the significance of supply chains in globalised commerce spawned the development of supply chain management disciplines characterised by the linear and sequential metaphor of the chain. Another metaphor is the upstream (supplier) and downstream (customer) characterisation of the supply chain, with its inference of a one-way flow (Sherer, 2005).

As an example, the home garden is an example of a very short food chain. By contrast a fast food multinational importing avocado from Mexico typifies a long food chain.

By contrast, reconceptualising the supply chain as a value chain shifts the focus from the extraction of value to sharing value. LFCs are typically more extractive.

Participants in the value chain, from the producer through to the retailer strive to create value, by finding economies in the value chain and delivering greater value to customers. Some of the created value can be shared among value chain partners. To achieve this, parties in the value chain need to develop trust, learn to collaborate and be more transparent. Purchasers tend to develop longer-term relationships with suppliers rather than pursue the cheapest price.

Susan Sherer (2005) suggests a move from a supply chain focus to value networks enabling a fuller expression of the value equation. Reconceptualising the supply chain as a value network shifts the focus from the exchange of goods and services to a broader consideration of relevant elements of sustainability, financial, social and environmental. For example respondents in the Whangarei Growers Market research found value in the “atmosphere”, social contact, in the freshness of the food and availability of organic or spray free food (Bruce, Patrick, & Romer, 2014). In this case, the value network extends to health and health providers, local government and those promoting Whangarei, and those wanting to support local producers and the local economy.

The food system, dominated by LFCs has created a food environment deleterious to health.

Currently takeaways and dairies cluster around schools, particularly in the poorest neighbourhoods. In fact there are more fast food outlets and convenience stores (like dairies, whose sales overwhelmingly comprise pies, soft drinks and sweets) in poor areas generally. Primary schools seem to attract more stores, although secondary schools were surrounded by higher levels of unhealthy food advertisements. The upshot of this is that the average child in Auckland has to walk less than 350 metres from the school gate to the nearest dairy, and under 400 metres to the nearest fast food outlet. Given what we know about the impact of sugary, fatty and salty food on the developing brain, it is hard not to draw a comparison with drug lords targeting the youngest and most vulnerable members of our society to get them hooked. It reminds you of the stated goal of one of the largest cola bottlers in the world, articulated in the 1990s, to ensure that there was cola for sale within 100 metres of every consumer on earth (Morgan & Simmons, 2013).

Coca Cola’s marketers aspire to make their brand even more ubiquitous. “Through the stories we tell, we will provoke conversations and earn a disproportionate share of popular culture” (Forward Marketing, 2012).

Marketers are now using the fragrance of food to attract consumers adding the olfactory channel to the audio and visual (Michail, 2015).

The environment influences people’s diet. Inuit eat a lot of Arctic wildlife. From a young age, most of the food children are exposed to in the media is nutritionally deficient. [A 2007 study of television advertising in New Zealand](#) found that 66% of

food advertisements featured high fat, salt and sugar foods (Jenkin, Wilson, & Hermanson, 2009). [A U.S. study](#) found that 3 to 5 year olds “have emerging knowledge of brands that are relevant to their lives”. In the U.S. [four out of five children recognise the McDonald's brand](#) by the time they are three.

As these children enter the adult world, and they become responsible for preparing food other drivers emerge. In 1953 the first T.V. dinners came on the market in the United States. A [U.S survey](#) found a rapidly increasing number of convenience foods entering the market. Sixty-one percent of consumers surveyed indicated that “reduced time” and “less effort” to prepare were the primary reasons for purchasing convenience foods (McAlister & Cornwell, 2010).

Our food environment features prominent brands, promoted by persuasive marketing, and an increasing diet of processed and convenience foods. There may also be an addictive aspect driving consumption. [Caroline Davis calls this](#) a “modern and “toxic” food environment and therein the ubiquitous triggers for over-consumption” manifesting binge eating disorders (Davis, 2013).

Trenton Smith (of Otago University) and Attila Tasnádi identify [deep capture](#) as the discursive practices of the food industry that shape public opinion in the industry’s favour. They link this to the obesity epidemic (Smith & Tasnádi, 2014).

Part two: Production and market dynamics in Northland

This section attempts to first provide an overview of vegetable and fruit production in New Zealand. Next comes a section on consumption. Most of this data is sourced through desktop research.

Following this is a section using primary research based on interviews of growers to help us understand market dynamics.

1. Production

Of four key climatic factors for optimal growth, Northland leads the country in two, heat units (expressed as degree days) and freedom from ground frosts. Northland has 551,397ha of arable land (Harmsworth, 1996) with 9,000 ha of elite free draining soils (Currie, 1986).

	Heat units		Ground frost days		Rainfall (mm)		Sunshine hours	
	rank		rank		rank		rank	
Northland	1	1997	1	2	3	1759	7	2162
BoP	2	1905	3	24	4	1266	3	2420
Hawke's Bay	3	1807	11	63	12	747	4	2329
Gisborne	4	1748	5	28	8	1029	5	2294
Auckland	5	1736	2	12	6	1142	8	2149
Waikato	6	1518	10	53	5	1192	10	2047

Table 2: Comparison of key climatic data of Northland and selected regions (adapted from Horticulture New Zealand, 2013)

[This video](#) from Northland Inc (2005) summarises Northland's horticultural production

The following three tables summarises the main crops grown here.

	Northland (m ²)	Auckland (m ²)	NZ (m ²)	Northland as % of NZ production
Tomatoes	108,791	482,674	1,180,883	9.2%
Lettuce/salad greens	21,405	63,107	238,103	9%
Other	20,863	101,668	269,331	7.7%
Cucumbers	17,933	144,404	268,525	6.7%

Table 3: Indoor vegetable production for Northland, Auckland and New Zealand 2012 (Statistics New Zealand, 2013a)

We can assume that Northland's heat supports strong production of indoor vegetable crops.

	Northland (ha)	Auckland (ha)	NZ (ha)	Northland as % of NZ production
Kumara	1,204	14	1,228	98%
Melons (water, rock)	53	5	273	19.4%
Other	64	220	1,781	3.6%
Pumpkin	31	239	1,048	3.0%
Sweet corn	84	38	4,664	1.8%
Cabbage	7	269	793	0.9%
Cauliflower	7	240	852	0.8%
Broccoli	14	431	1,977	0.7%
Carrots	6	194	2,047	0.3%
Cooking herbs	1	88	314	0.3%
Green beans	2	53	1,186	0.2%
Potatoes	22	1,444	11,578	0.2%
Tomatoes (outdoor)	1	6	669	0.1%
Squash	5*		6501**	
Onions	5*	1621	5,718	0.09%

Table 4: Outdoor vegetable production for Northland, Auckland and New Zealand 2012 (Statistics New Zealand, 2013a)

* 2011 figures

** 2014 figures

Given that Northland's population is 3.6% of the New Zealand population (2013 census figures), using a crude per capita calculation we grow more than enough kumara and melons for local consumption, but the other main crops, with the probable exception of sweet corn are undersupplied and probably imported.

	Northland (ha)	Auckland (ha)	NZ (ha)	Northland as % of NZ production
Avocados*	1450		3893	37.2%
Mandarins	211	62	691	30.5%
Macadamia	56	65	195	28.7%
Persimmons	28	25	154	18.2%
Olives	201	250	1,657	12.1%
Oranges	76	9	696	10.9%
Tangelos	6		67	9.0%
Other fruit	29	29	396	7.3%
Grapefruit/goldfruit	2	6	32	6.3%
Chestnuts	6	37	142	4.2%
Kiwifruit*	472		12,081	3.9%
Blueberries	21	15	579	3.6%
Strawberries	1	121	220	0.5%
Apples*	25		8417	0.3%
Wine grapes*	82		33761	0.2%

Table 5: Fruit production for Northland, Auckland and New Zealand 2012 (Statistics New Zealand, 2013a)

* 2014 figures from Statistics New Zealand

Northland's natural assets also support adequate local supplies of most fruits. Apples are a notable exception.

	Northland 1994	Northland 2014	Change
apples	118	25	-93
kiwifruit	715	472	-243
avocados	331	1450	1,119
wine grapes	27	82**	55
citrus		295**	
olives	146*	150	4
onions	38	5***	-33
potatoes	102	22**	-80
squash	952	5***	-947
totals	2429	2506	-77****

Table 6 from : Comparison of area (ha) planted in selected crops in Northland between 1994 and 2014 (adapted from Statistics New Zealand, 2015)

* 2002 figures

** 2012 figures

*** 2011 figures

**** excluding citrus

The figures in table 6 indicate limited growth in the area of land in horticultural production over a period of two decades. A notable exception is the huge increase in avocado plants. This has been almost balanced by the collapse of squash exports. No figure was available for citrus in 1994, but anecdotally, areas planted have declined. Over the same time period the area planted in these crops in New Zealand grew by 22,280 ha to a total of 80,208 ha - 38% growth (Statistics New Zealand, 2015b).

2. Consumption in Northland

Table 7 and 8 reveal the top selling vegetables and fruits in New Zealand. We can assume that consumption patterns are similar in Northland.

Rank		Comments
1	Potatoes	volumes grown in Northland are declining
2	Tomatoes	
3	Lettuce	
4	Mushrooms	very small quantities are grown locally
5	Kumara	Northland is the largest producer by far
6	Carrots	
7	Capsicums	
8	Onions	volumes grown in Northland are declining
9	Broccoli	
10	Cucumbers	
11	Pumpkins	
12	Spinach	
13	Fresh veg combos	
14	Cabbage	
15	Cauliflower	
16	Beans	
17	Courgettes	
18	Fresh herbs	
19	Asparagus	no evidence of commercial crops in Northland
20	Sweet corn	earliest corn in the summer grown in Northland

Table 7: adapted from Top 20 vegetables based on household expenditure (Vegetables New Zealand, 2015)

Rank		Comments
1	Bananas	very small quantities are grown locally for sale
2	Apples and pears	volumes grown in Northland are declining
3	Berryfruit, kiwifruit and grapes (fresh or chilled)	
4	Citrus fruit	volumes grown in Northland are declining and have had to compete with cheap imports
5	Stone fruit	a marginal crop in Northland
6	Canned, bottled and frozen fruit	
7	Other fresh or chilled fruit	
8	Dried fruit	

Table 8: Ranking of top selling fruits (Statistics New Zealand, 2013b)

Commercial sensitivities make quantifying consumption levels in Northland problematic. Using data in the public domain from Statistics New Zealand we can extrapolate levels of consumption. This also provides insights to the household spend on fruit and vegetables relative to other purchases.

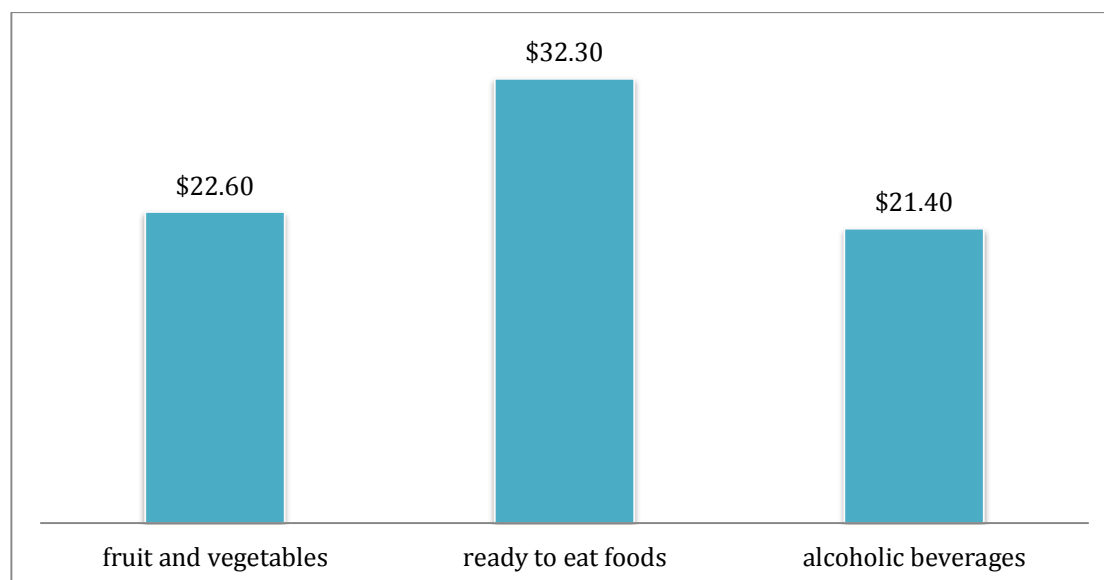


Figure 1: Selected items of NZ weekly household expenditure, 2013

Average weekly household expenditure data for 2013 reveals that weekly expenditure of fruit and vegetables was \$9.30 and \$13.30. The total spend, \$22.60 represents two percent of net household expenditure. The data also exposes high levels of expenditure on ready to eat food (\$32.30) and alcoholic beverages (\$21.40). See Appendix two for more detail. This data is New Zealand data, as data for Northland is not available on the Statistics New Zealand website.

Household expenditure data enables an estimation of the annual expenditure on fruit and vegetables in Northland. Table 9 reveals annual household expenditure of \$69.3 million on fruit and vegetables.

	No. of Dwellings	Weekly vegetable spend	Weekly fruit spend	Weekly total F&V spend	Annual total F&V spend
		\$13.30	\$9.30	\$22.60	
Northland	58,947	\$783,995.10	\$548,207.10	\$1,332,202.20	\$69,274,514.40
Far North	21,369	\$284,207.70	\$198,731.70	\$482,939.40	\$25,112,848.80
Whangarei	29,778	\$396,047.40	\$276,935.40	\$672,982.80	\$34,995,105.60
Kaipara	7,800	\$103,740.00	\$72,540.00	\$176,280.00	\$9,166,560.00

Table 9: Estimation of expenditure on fruit and vegetables in Northland (Statistics New Zealand, 2015a)

This is an approximation that can be either inflated or deflated by further consideration and refinement of the data. As Northland's income levels are 80.4% less than the national average, it can be assumed that consumption is proportionally less.

With the exception of large export crops, horticulture production has been diminished in Northland over the last five decades with the establishment, then dominance of supermarkets in horticulture supply chains. Supermarkets import a high proportion of produce into the region.

Further research can quantify existing and potential horticultural levels. This will consist of:

- The estimated \$69.3 million of fruit and vegetables consumed, minus the crops not produced commercially here (e.g. bananas)
- Crops exported further south or internationally
- Fruit and vegetables used by restaurants, cafes and fast food outlets
- Fruit and vegetables consumed by non-residents.

The potential for horticulture in Northland is significant.

3. Market dynamic insights from growers

So far, our desktop analysis explores Northland's productive capability, its current production levels of the size of the market. This reveals a significant ongoing opportunity for local growers. But what is the marketplace reality?

We interviewed 15 Northland growers in December 2015 and February 2016. Most were from the Whangarei District, with a few from the Far North and Kaipara

Districts. They grow a wide range of fruit and vegetables. Some specialise in a limited number of products, while others grow a wide range of fruit or vegetables, with some producing both.

The focus of our interviews was to achieve a better understanding of market dynamics. Market outlets for the growers include gate sales, farmers/growers markets, direct sales to wholesale customers, distributors, supermarkets and the Auckland auctions. There was also a small quantity of processed product.

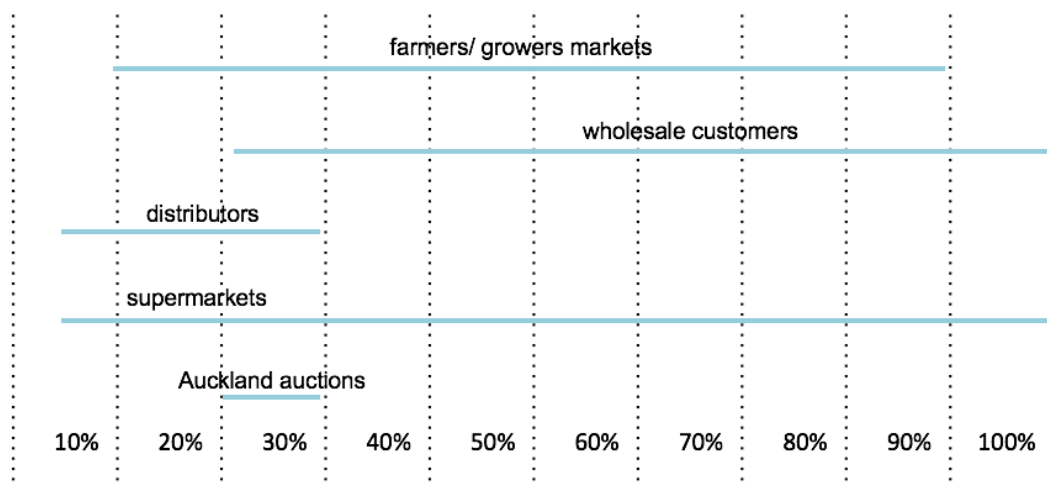


Figure 2: The range of produce destinations

This figure illustrates the range of percentages of produce going to each of major markets identified above. For example the top row indicates that for the growers that sell through the markets the grower with the lowest percentage of their total production sold there is 10% and for the highest, 90%.

Only one grower relies on a single market channel. Others have 2 to 4 channels.

Determining returns

We asked growers to approximate the percentage they received of a typical retail price for the items they sell through these market channels. The typical retail price is a nominal price – for example a \$2 head of broccoli as sold at a supermarket.

This is problematic. Prices vary with the seasons and availability. Recent New Zealand research (Pearson et al., 2014) identified that produce from farmers/growers markets was significantly cheaper than supermarkets. A further complication is that prices at supermarkets near farmers/growers markets were marginally cheaper than those more distant from markets, inferring the dynamics of competition. Prices also vary from supermarket to supermarket. Growers generally appeared comfortable with

sharing information about margins, but there was some hesitation, especially around the “wholesale” prices paid by distributors. The researchers are confident, that while the returns reported are approximate, they help to illustrate comparisons of market channels.

A draft of this report has been circulated widely to enable critique of these assumptions.

All of these outlets have some associated costs. These are summarised later.

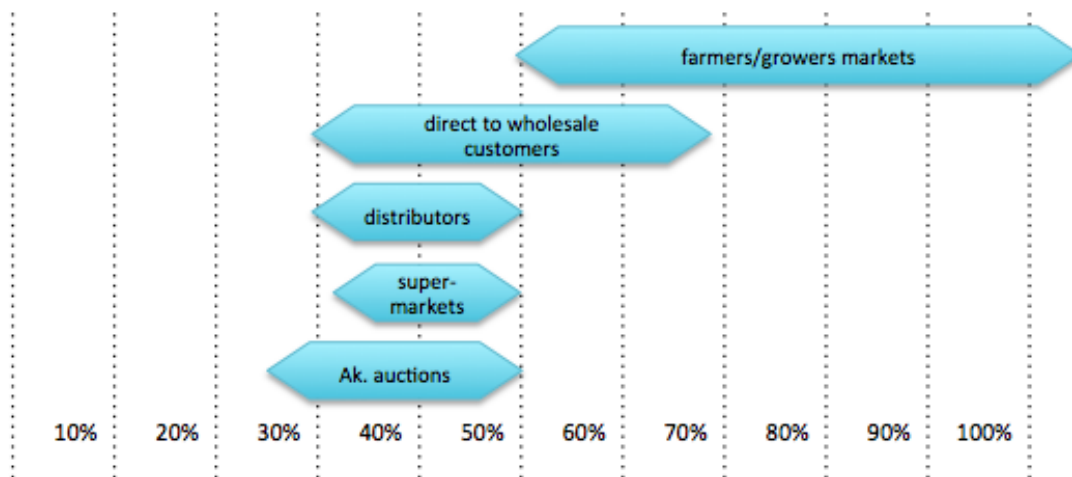


Figure 3: Approximate range of returns through the main marketing channels

Gate sales

Gate sales did not feature prominently. One grower sold approximately 3% of produce through the gate at approximately 60% of retail value.

Farmers/growers markets

Most of those interviewed sold produce through farmers or growers markets. Approximated returns were reported between 50% and over 100% of a typical retail price. Amber Pearson’s research (2014) determined an ideal weekly “food basket” cost \$76 from farmers or growers markets and \$124 at nearby supermarkets. Research based on the Whangarei Growers Market (WGM) identified a range of pricing strategies with the market servicing different demographics, ranging from bargain hunters to those prepared to pay premium prices for the values they are seeking in their food (Bruce et al., 2014).

Stallholders are also comfortable selling seconds – a practice not seen at supermarkets. One grower sells his premium niche produce at double the typical supermarket price.

The direct contact between growers and purchasers at markets enables feedback on pricing strategies and quality. One grower reported starting at the WGM with a low cost pricing strategy, but raising that price from \$1.50 to \$2.50 over time, enabling a far better return on costs. In this manner the grower is able to gauge the appropriate price point directly from customer responses.

The market also self-regulates on price. For example prices charged for produce with relatively short peak harvest periods such as blueberries or sweet corn may fluctuate depending on grower competition within the market itself

Direct sales to wholesale customers

Wholesale customers for growers are mostly cafés and restaurants. This was the market category growers appeared most reluctant to report. Returns are approximated at 30 to 70% of typical retail price. Some growers described their returns as “wholesale plus”.

Cafes and restaurants require targeted marketing. Some growers have established close and trusting relationships with cafés and restaurants enabling a stable market to develop.

Some growers are wary of this outlet based on previous experience. They were especially concerned about slow or defaulted payments and erratic ordering patterns.

Distributors

Distributors include Turners and Growers, Bidvest and local distributors such as Penguin. Returns approximate from 30 to 50%. Distributors have the advantage of being able to take large quantities. Sometimes there are two businesses involved in the distribution chain.

Supermarkets

Supermarkets both in Northland and as far south as Wellington return between 35 and an estimated 50% to the grower.

Dealing with supermarkets is problematic for growers given the power imbalance. A grower with an established relationship with a supermarket was told the price he would receive would drop by 23%. As he had other market channels open to him, he was able to refuse the price drop. The supermarket relented and maintained the original price. This grower has two main products. The supermarket has hundreds but was clearly prepared to compromise the grower's chances making a reasonable return from his labours.

Auckland auctions

The auctions are used primarily used to sell surplus produce as returns are generally lower and transport costs are high.

Co-ops and Community Supported Agriculture (CSA)

Only one interviewee sold a small volume of produce through a co-op. We are not aware of any CSAs in Northland. These appear to be good options to generate new market channels for growers.

Market channel	Advantages	Disadvantages
gate sales	low sales costs, outlet for seconds, no middle men	low volumes
markets	direct contact with customers, good returns and potential to increase returns, no middle men	time commitments on weekends or evenings, cost of sales including staff and vehicles
wholesale	opportunity to create longer term supply relationships, no middle men	lower returns than markets, often requires delivery, bad debts are a major demotivator
distributors	no marketing investment required, may collect produce enabling grower to focus on core business	lower returns than markets
supermarkets	potential to create a long term supply agreement, no middle men	supermarkets have a reputation for using their market dominance to dictate terms to growers, lower returns
auctions	good option for surpluses	low, unpredictable returns, crate, transport and commission costs

Table 10: Advantages and disadvantages of the main market channels

Logistics

Delivery provides an additional logistical challenge for growers. Of the twelve interviewees, seven delivered produce typically with limited frequency. Another two were open to delivery if it was economically justified. Some growers, more remote from larger markets will struggle to justify regular deliveries.

Social and economic impacts

While it is not the core purpose of this investigation, we are aware that growers are embedded in their communities and have an interest in the well-being of those communities. Growers were asked about the impact of their operations on the community. Responses included employment, including the ability to generate work for their children and the economic benefits flowing from growers spending locally.

Most growers commented on the quality of their product, emphasising freshness and taste.

Health was a strong motivator. Several of the interviewees grow organically, spray free, or are conscious of minimising chemical inputs. These growers enthused about growing nutritionally optimal food and its impact on customers facing health crises.

Discussion

This research has surfaced two themes inviting further exploration – the marketing strategies developed by growers and the fragmentation of the industry.

Marketing strategies

Growing fruit and vegetables are very complex operations. The various parameters that need to come together including weather, soil, nutrition, water requirements, pests and diseases, plant genetics and cultural practices create technical challenges that are typically unappreciated. Add to that the complexity of handling perishable produce and hostile market dynamics and you have an industry that requires exceptional skills just to survive.

Successful growers have to master crop culture, harvesting and post-harvesting and marketing embedded in the generic business requirements of planning, managing human resources, regulatory requirements and finances. These demands require resources often beyond a small family business.

The growers we interviewed ranged in their approach from focussing mainly on production and harvesting, to those that had developing marketing strategies and relationships to optimise returns. Either approach can be successful. Larger growers

are more likely to have greater surpluses and therefore a greater need to rely on market channels that are less lucrative.

There was evidence that some growers had experimented with direct marketing but had abandoned it.

In asking how growers can be better supported leads us to the second theme, industry fragmentation.

Industry fragmentation

Given the complexities facing growers, how have they organised themselves for collaborative support and how have other agencies supported them? This report cannot answer these questions, but can pose questions for further research.

There are three factors that, we believe, lead to fragmentation:

- The complexity of the industry as outlined above.
- The dynamics of power in the market place.
- The survival imperative.

The dynamics of power

Power imbalances distort communication. If we perceive we have less power, our communication will be more guarded and we will be inclined to accept less than is fair. The following extract is from a paper exploring power in the context of fair trade with developing economies. While our growers don't suffer the same privations as commodity producers in developing world economies, the underlying human and institutional dynamics are the same.

Fairness and justice in trading is partly about price, which for commodities is influenced partly by the balance of supply and demand. But price is not the only ingredient of fair trading practices. Other trading practices reflect gross imbalances in market power between producers and their customers, especially the large retail chains. These include a lack of any commitment to long- term trading relations, or demands for fees, discounts and credit terms, or compliance with costly standards without a price premium, all of which favour suppliers with deep pockets (Tallontire & Vorley, 2005, page 4).

Policy and policy changes from large companies can reshape the business landscape. An interviewee talked about the impact of policy changes by a distributor.

“[the distributor] instituted an 80/20 rule, that is 80% of produce is bought by 20% of outlets so just focused on them and didn’t allow small grocers to survive through bringing in minimum orders of \$3,000 per week.”

Grower efforts to organise

Market dynamics over the last four or five decades have shaped the current food system. How have growers responded? While exporters tend to have strong industry structures, the local produce scene remains more fragmented. Notable exceptions include the various kumara growers’ collectives and the New Zealand Tamarillo Growers Association Inc.

Case study 1: Tamarillo Growers Association

Tamarillos are grown commercially in Ecuador, Colombia and New Zealand, with approximately 45% of the national crop grown in Northland. The red variety was developed in New Zealand and we are the only country where it is grown commercially.

The tamarillo industry suffered a body blow when the tomato/potato psyllid arrived from America in 2006. The psyllid is a vector for a bacteria that kills plants, causing some orchards to lose 90% of their trees. This crisis and relatively poor returns for growers gave impetus to the development of the Tamarillo Growers Association, an incorporated society operating as a co-operative.



Figure 4: Tamarillos

Maungatapere grower, Robin Nitschke is the chair of the association. Robin is passionate about the development of the industry and the efficacy of co-operatives in advancing the interests of members. The TGA is active in developing marketing opportunities, based on its increasing control on the national crop. Its subsidiary is

adding further value by developing a range of processed products, sauces, jams, relishes and vinegars. Heather Nitschke is continuously innovating to improve recipes and face-to-face feedback from customers at the Whangarei Growers Market, as they return their empty jars and bottles, is invaluable for ongoing refinements. These processed products have excellent export potential with the TGA on the verge of lucrative export contracts.

The TGA displays an impressive capability for learning. Conversations between growers surface new thinking. They then experiment themselves and engage with institutional support to research solutions to improve crop culture and market opportunities.

The Whangarei Growers Market (WGM) was initiated 17 years ago in response to the demise of local Whangarei auctions. The WGM has grown significantly and provided growers with better returns, a venue for retail and wholesale customer engagement and association with a strong local brand (Bruce et al., 2014).

The [Northland Natural Foods Cooperative](#), described later provides another example of how other growers can organise.

The survival imperative

An interviewee suggests there has been a large decline in the number of growers, not only in Northland but New Zealand wide. Those remaining are resilient, but under increasing pressure as returns generally fail to keep up with inflation. When business people are under pressure they tend to be drawn more into operations at the expense of the business development focus. They will have even less energy to lend to industry collaboration. As the dynamics in the wider system becomes dominated by monopolies or duopolies, power displaces trust in the supply chain. Supply chain participants may well respond by competing with other suppliers and attempting to guard advantage, rather than collaborate.

Support for growers

If the broader community values locally produced food and its consequent benefits, how might they better support growers? A direct support is to purchase food from local growers and ask food sellers if they support local growers. It is beyond the scope of this research to identify current support initiatives, but recommendations will follow at the end of the report.

Part three: Distribution systems

Distribution systems range from roadside stalls at small scale, through to multinational distribution specialists. In the Northland context, we define distribution systems as conduits to the business or retail consumer. Any sales outlet for a grower can be regarded as a distribution system.

1. Grower to customer distribution

Roadside stalls provide growers with an on-property retail space with low running costs. Many of these still run on trust. The customer deposits money and takes their goods, often when there is no staff present.

On property retailing scales up the roadside stall with the addition of retail staff. An example is the Huanui Orchard store.

Direct sales to business customers enable growers to bypass middlemen.

2. Co-operatives, markets and “vege box” initiatives

Cooperatives - in true co-operatives the producer and consumer work together to create value for each other. They are characterised by transparency and cooperation.

Farmers and growers markets

Farmers markets are defined as “direct agricultural markets, based on face-to-face links between producers and consumers” (Hinrichs, 2000, pg. 295). The Localise website lists 26 markets in Northland (McKegg, 2014, p. 2015).

Community supported agriculture (CSA) groups are well established in the United States with an estimated 4,000 to 6,000 CSA farms in the US (Ernst, 2013). There is no evidence of CSAs in Northland.

In basic terms, a CSA consists of a community of individuals who pledge support to a farm operation so that the farmland becomes, either legally or vicariously, the community’s farm. Growers and consumers partner together to share the risks and benefits of food production. Members (or shareholders) of the farm or garden pledge in advance to cover the anticipated costs of the farm operation, including the farmer’s salary. In return, members receive shares in the farm’s bounty throughout the growing season, plus the satisfaction gained from reconnecting to the land (Ernst, 2013, pg. 1).

“**Veggie box**” enterprises have emerged recently, most notably [Ooooby](#), operating out of Auckland. Nadia Lim extended her “[My Food Bag](#)” into Whangarei. Laura Cate’s [Fresh Food Collective](#), started in Whangarei in 2014 and now has over 1200 members. They can opt for a \$10 or \$20 box of produce weekly.

3. Corporate distributors

Supermarkets have complex supply chains, that in some cases they operate themselves. Countdown (Progressive Enterprises) is an Australian owned company. The Auckland Produce Centre is operated by another Australian Company, Freshmax (Maurer, 2013). Foodstuffs operate New World, Pak n Save and Four Square supermarkets. The company is New Zealand owned and operates as “several independent cooperatives” (Foodstuffs, 2015). Produce is distributed out of Foodstuffs Fresh in South Auckland.

Discontent with supermarket produce supply chains is well documented. In 2014 Member of Parliament Shane Jones accused Progressive Enterprises of extorting their grower suppliers (Foreman, 2014). Following investigations based on Mr Jones’ and approximately 90 other complaints, the Commerce Commission found no evidence of intimidation (Bennett, 2014).

To deal with similar issues, the UK Government appointed Christine Tacon as the first Groceries Code Adjudicator in 2013. She commented that "It's quite a big responsibility, trying to represent the direct suppliers and making sure they've got fair contracts with the retailers," (BBC News, 2013).

In a recent investigation, Chistine Tacon found extensive evidence the Tesco supermarket chain had acted unreasonably when delaying payments to suppliers (Simpson, 2016).

In Australia, Four Corners produced a documentary [Slaving Away](#), revealing widespread labour abuses in supermarket supply chains.

Four Corners has also found farmers and suppliers who play by the rules and pay workers correctly are being dropped by the supermarkets, who are instead awarding contracts and sourcing food from cheaper suppliers using grossly exploited labour. (Meldrum-Hanna, Russell, & Christodoulo, 2015)

A pattern of behavior emerges from some publicly owned companies, privileging profit over ethical concerns to generate sufficient dividends for shareholders.

Foodstuffs offer a different business model to some of the supermarket chains mentioned above. According to its website:

Foodstuffs (NZ) Ltd acts as the Federation body for the two regional co-operatives, which it is jointly owned by. Foodstuffs (NZ) Ltd is based in Wellington, and owns the intellectual property in Foodstuffs brand names, but does not trade in its own right and is not a holding company (Foodstuffs, 2015).

It services the New World, Pak'n'Save and Four Square franchised stores. The franchise model enables local ownership providing the storeowner more freedom to create more ethical value chains.

While supermarkets can use their market presence to bully growers, enlightened independent store owners have the ability to make better choices.

Case study 2: New World Remuera

Owner Adrian Barkla prefers a diet of healthy, raw, fresh produce, so where better to purchase it than his own supermarket? He states:

“I believe organically grown fresh fruit and vegetables eaten raw as much as possible should be the mainstay of a healthy diet.

My vision is to offer top quality organic produce at the same or nearly the same price as conventional produce. I am passionate about giving my customers quality organic produce at a fair price. The more we support our growers, the more they will be able to offer our customers competitive prices and a wider range of fruit and vegies.

In this way I can support my excellent organic suppliers and keep making the best, healthiest fresh produce available to my valued customers. (New World, 2013)”



Figure 5: New World Remuera

By 2015, Adrian had increased the proportion of organic produce in his store by up to 50%. Achieving this level has not been easy. He has made it happen by creating direct relationships with organic growers. By cutting out the middlemen, he has been able to deliver organic produce to customers at a similar price to conventional produce, and pay fair prices to growers. Adrian says that it is about treating others as you would want to be treated (Twose, 2015).

A consequence of his pursuit of organic produce is creating a market that gives organic producers the confidence to scale up as a platform to venture into other markets. As other supermarkets see customers bypassing them in the pursuit of organic produce, they may also ramp up efforts to stock more organic produce.

Customers will support New World for stocking organic produce – but Adrian Barkla also deserves support for being a catalyst for change.

Corporate distributors

Turners and Growers (T&G Global) is now 73% German owned (Companies Office, 2015). The company was started by Edward Turner, an Auckland green grocer and tomato grower 1883. Over 100 years later, in 2004 the company was listed on the New Zealand Stock Exchange, a step that would inevitably open the doors for international shareholdings. The company is one of the largest orchardists in New Zealand, with extensive holdings in apples, citrus and kiwifruit (T&G Global, 2015).

Bidvest is a South African company that established a foothold in New Zealand with the purchase of Crean Foodservice in 2000. In Whangarei their acquisition pathway included Table Talk Ltd (2003), Mana Wholesale Produce (2008) and Harvest Wholesale (2012) (Bidvest, n.d.).

Gleanings from interviewees

Five distributors were interviewed. They presented a diverse range of business models and operated on margins from minimal to 40%. With a very small sample size, and the diversity of business models analysis of the data is of limited value. However some insights have emerged.

1. Diverse business models

The five interviewees represented two co-ops, two fruit and vegetable retailer/wholesalers and a distributor. These had diverse business models based on distribution. Two either grew their own produce or accessed it directly from growers while the three others sourced the majority, or all of their produce from a large distributor.

Three of the five interviewees have initiated new business models for produce distribution in Northland. Two are featured below in brief case studies.

2. Links with local growers

Generally, these local distributors like the idea of working with local growers, but there are some barriers. They require reliable and regular quantities supplies. One distributor has approached local growers but was unable to secure adequate supplies. A low margin aggregation system could enable smaller growers to supply quantities required by distributors.

“We would love to work with local producers but would need consistent supply and they would all need to be co-ordinated so there could be a single pick up / drop off point.”

Case study 3: Northland Natural Foods Co-operative (NNFC)

Sean and Rowan Stanley established an online co-operative in 2014. The website and shopping cart facilitate a close link between the grower and customer. Growers (and farmers) are able to list produce at a price they specify. The co-op takes 10%. As the NNFC is still in its development stage and the business model is designed to optimise returns for growers, it may take some time, at current growth rates to be viable. It is currently fuelled by the energy of its founders.

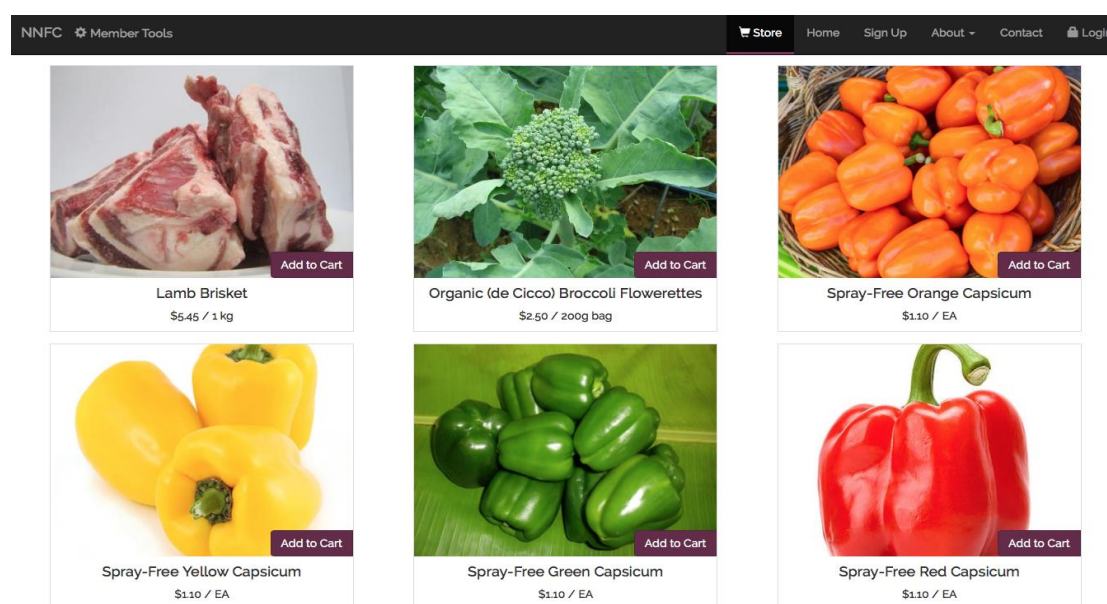


Figure 6: Screenshot of the [NNFC website](#)

A strength of this model is the ability of a grower to sell small crops, thus enabling them to establish a foot hold in the market and to scale up. The 10% co-op margin applies to growers regardless of their size.

The NNFC is leveraging Internet tools to reshape the food system.

Case study 4: Fresh Food Collective

Also established in 2014, Laura Cate's [Fresh Food Collective](#) has grown dramatically with over 1200 members. The \$10 or \$20 boxes provide great value .

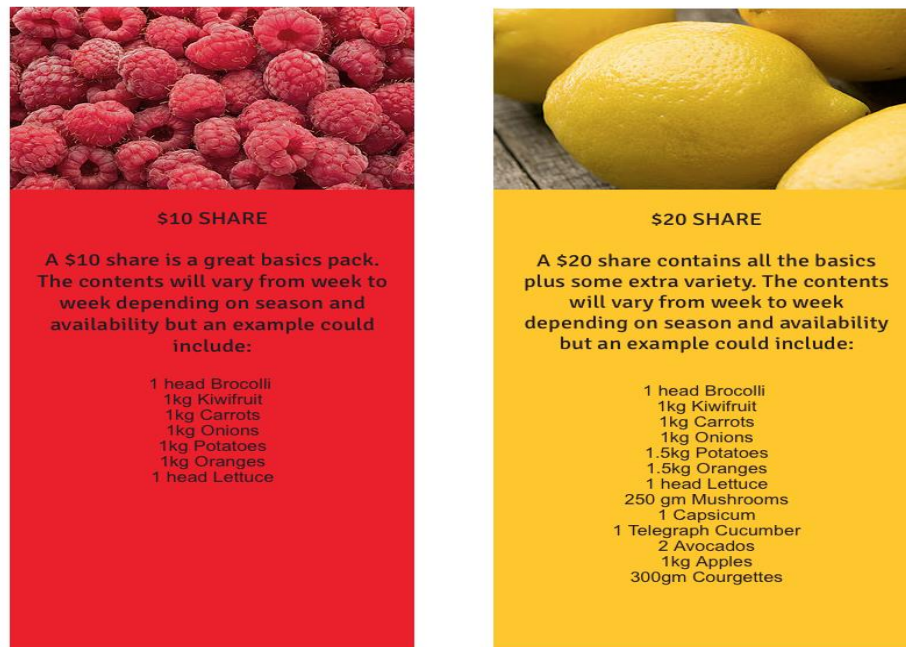


Figure 7: Screenshot from the Fresh Food Collective

Laura established the collective when her family's discretionary income reduced when she stopping working after having a baby. She empathised with low-income families who find fruit and vegetables expensive through other outlets. She aims to:

“Improve the diet of Northlanders through making healthy food available to all irrespective of income”.

In addition to making fresh fruit and vegetables more accessible for clients the collective has created partnerships with Manaia Health and Oranga Kai where food identification, storage and preparation is taught in some locations where there is a predominance of mainly processed and takeaway foods consumed. Most produce is accessed from a large distributor.

At the time of writing Laura is about to divest The Fresh Food Collective. Her intention to get more fruit and vegetables into lower income families was frustrated, even when she established nearby outlets. Reinforcing the need for education about basic food identification and preparation is a major outcome of her initiative and hopefully this will continue in the partnerships she has created. Laura has handed her initiative over to others and will remain involved as a consultant.

Case Study 5: Local Distributor Penguin

The history of locally owned and operated Penguin Wholesalers (Whangarei) Ltd, mostly known as Penguin, spans 40 years since Patsy and Dave Walters bought their first refrigerated truck, delivering mainly ice and frozen goods. Although the truck motor blew up the following week the business is still going strong and the next generation of this family business is now working alongside 40 other employees, some who have been loyal members of the team for more than a decade.

The Walters have seen many changes in the food production industry during their tenure and have entered into several partnerships and collaborations with local firms both to extend their business interests and assist others. One of these resulted in the extension of the business from operating solely from their Port Road premises, mainly servicing those in the hospitality industry, to operating Penguin Direct on Porowini Ave, making their bulk products available to the general public at wholesale prices.



The Walters say it is a changing landscape in the distributor environment with at least three Auckland companies now coming to Northland, as well as multinational corporation Bidvest, who have bought out a few local businesses, some of whom Penguin had worked alongside for many years. They are open about the struggles in competing in the current market, especially against a large multinational company

with far greater resources than them; “if we hadn’t been so established, we probably would have shut our doors by now”. They believe they are keeping their competitors honest and that prices would almost certainly increase if there were no competition.

They credit their longevity in the business to tenacity and their loyal customer base, built up over many years. “We try and give back to the community, support local business and provide employment for Northland people. We support people that have supported us and believe in money staying in the region.”

Recently they donated bamboo plates and cutlery to the Whangarei Growers Market food demonstrations with little fanfare, a fact only discovered through our research with local growers.

Penguin’s competitive advantage is based on local ownership and knowledge, providing local employment and giving back to the community, operating a large fleet of vehicles, and their membership of Foodfirst (New Zealand’s largest foodservice network) provides additional benefits to customers, while also dealing with real people who understand their business needs, (Penguin, n.d.)

Part four: Outlets

Outlets in Northland range from large supermarkets to small retail outlets, cooperatives and markets. Food is also produced in a range of venues including restaurants, cafes, hotels, schools, workplaces and hospitals.

	Far North	Whangarei	Kaipara
Food retailing	99	102	30
Supermarkets and grocery stores	54	51	21
Specialised food retailing	45	54	18
Meat, fish and poultry retailing	12	9	6
Fruit and vegetable retailing	6	6	
Cafes, restaurants, takeaways	165	189	51
Pubs, taverns and bars	27	18	6
Clubs (hospitality)	6	9	6

Table 11: Food related outlets in Northland by district (Statistics New Zealand, 2014)

Cafes, restaurants, takeaways, kitchens and caterers

Locally owned and operated cafes, restaurants and takeaways are typically small businesses operating across the region. Statistics New Zealand record 405 in 2014 in Northland employing 2300 people.

The Yellow Pages list 21 **caterers** in the Northland region.

Commercial kitchens include large kitchens such as the Whangarei Hospital kitchen and hotel kitchens – those servicing clients rather than casual customers.

Food retailers

Supermarkets have become dominant players in produce retailing. Green grocers are not as prominent as they were before the proliferation of supermarkets. Two are listed in the Yellow Pages, but there are more.

Gleanings from buyer interviewees

Of the thirteen buyers interviewed, eleven were either cafes or restaurants and two were health facilities.

Sources of produce

In aggregate, the buyers accessed produce from wholesale distributors, the Whangarei Growers Market, supermarkets and green grocers and other minor sources. The graph below reveals that the majority of produce was accessed from wholesale distributors.

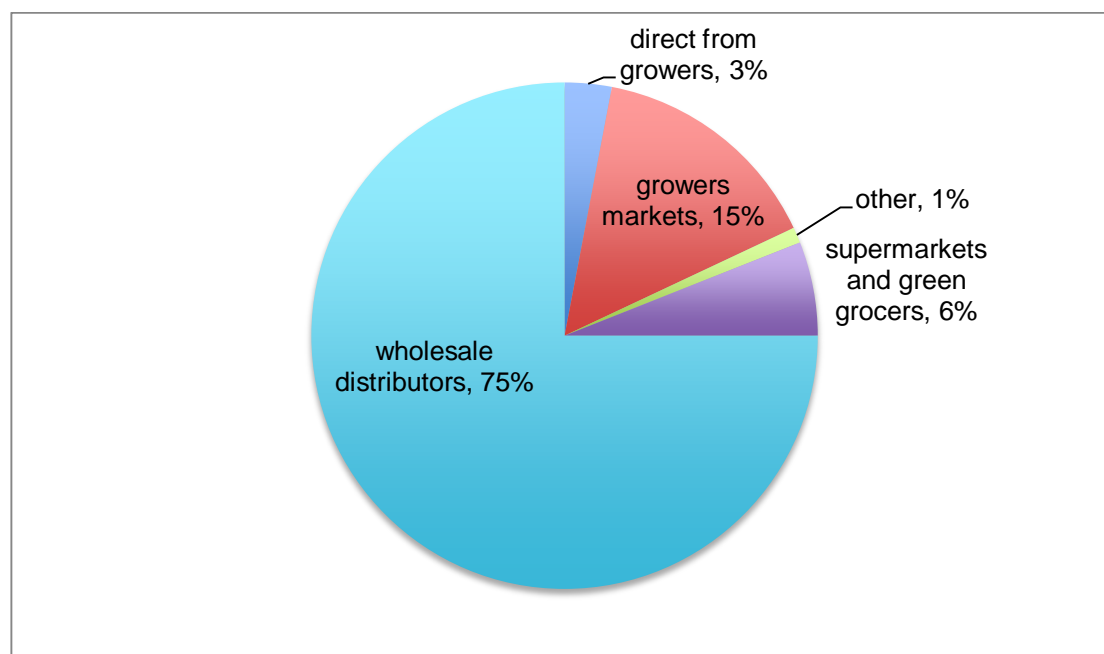


Figure 8: Aggregated sources of produce for buyer interviewees

These figures cannot be generalised across the whole population of cafes, restaurants and health facilities in Northland, but we are confident that they are indicative.

The wholesale distributors selling the greatest proportion of the 75% were corporate distributors. The small percentage sold directly from growers appears to result from entrepreneurial growers developing strong relationships with their customers.

The “other” sources included a buyer that grew some of their own produce and another buyer that sourced produce from a petrol station.

Popular purchases

When interviewees were asked to list their top five produce purchases, most were vegetables, with salad greens, potatoes, kumara, carrots and tomatoes the most popular.

salad greens	12	mushrooms	2
potatoes	7	apples	1
kumara	6	baby cress	1
carrots	5	beans	1
tomatoes	5	coriander	1
onions	3	courgettes	1
bananas	2	fruits	1
broccoli	2	micro greens	1
cabbage	2	parsley	1
capsicums	2	pumpkin	1
cauliflower	2	seasonal greens	1
cucumbers	2	silverbeet	1

Table 12: Top produce requirements reported by interviewees (numbers indicate the interviewees nominating each produce line.

Most of these can be produced in Northland. We are not currently growing bananas or mushrooms in sufficient quantities to meet regional demand.

The value proposition

Our interviews asked questions to elicit a generalised value proposition desired by interviewees.

In its simplest terms, a value proposition is a **positioning statement that explains what benefit you provide for who and how you do it uniquely well**. It describes your target buyer, the problem you solve, and why you're distinctly better than the alternatives. (Skok, 2013)

Interviewee responses can be grouped into three main value categories, produce quality, price and service quality.

Produce quality

All thirteen interviewees cited quality as important indicating it is the dominant value. Produce quality encompasses the attributes of freshness (9 responses), organic or spray free (3 responses) consistency (2 responses) and local (2 responses). Other quality attributes were appeal and taste.

Price

Of the three value categories, price followed produce quality. Some commented that price was important, but quality was more important.

When asked of the discount received from their suppliers in relation to typical supermarket prices three of the thirteen interviewees did not have sufficient information to respond. Of the other ten, six reported that discounts were zero,

minimal or up to 10%. A seventh reported that prices could be 30% dearer than supermarket sources. This purchaser did take time to shop around and appeared to have a sound knowledge of prices. Of the remaining three, one purchased from an organic supplier from Auckland and found that produce significantly cheaper than organic produce at supermarkets. A buyer purchasing the majority of his produce from the Whangarei Growers Market, found the produce there to be always cheaper. One buyer stated that her suppliers were competitive.

We conclude that many cafes and restaurants are buying produce at prices not too dissimilar from supermarket prices.

Service quality

Three interviewees nominated aspects of service quality as important, including factors of hassle free, replacements for defective produce and prompt service. Two interviewees specified delivery as an important value. In a related question, eleven of the thirteen interviewees required delivery for all or most of their produce. Delivery appears to be a default value for interviewees. Their requirements ranged from once weekly to at least daily delivery, 7 days a week.

Restaurants and cafes are busy. Typically the owner or manager is closely involved in operations and has little time to pursue diverse sources of produce. One café owner related how she had attempted to purchase produce herself from the markets before work, but had to abandon the effort as she was too busy.

Any supplier who can perform satisfactorily or better in two of these three value categories, will probably retain customers. As examples of this, one interviewee referred to a grower who delivered produce at a good price, in great quality and presented it in ordered stages of maturity to ensure the produce was in optimal condition.

One of the corporate distributors has also earned customer loyalty by producing good quality produce delivered with excellent customer service. They also delivered dry goods. This level of service addresses a key logistical problem for food service operators and enables them to focus on their core business.

Food with a story – organic, spray free and local

A case study that follows in part five briefly tells the story of Judy Wicks' White Dog Café in Philadelphia. Her business was one of the first to develop local supply and related attributes as a key platform of her value proposition for customers. Three interviewees valued organic or spray free produce and two valued local supply.

We are not aware of a Northland café or restaurant leveraging their interest in organics or local supply by clearly communicating this to customers. Nectar Café on Bank Street is impressive as it sources supplies from an organic distributor in Auckland, sells Fair Trade coffee, mostly organic beverages, and uses organic milk but this is only likely to be noticed by those interested. One of the owners has started producing food for the café in his permaculture garden. This is a story waiting to be told.

If we look further south, Auckland has organic cafes based on this extract from an article from the [Concrete Playground](#).



1. [Little Bird Organics Summer Street](#)

Ahh, Little Bird... my unprocessed hero of tasty triumph, my knight in shining organic sustenance. As someone so wisely put it, this isn't just a café – it's a culture. Little Bird Unbakery is sustained by an avid devotion to providing ethical, organic fare that blows a raspberry in the face of the ridiculous adage that healthy and bring-the-house-down scrummy cannot fit in the same sentence. This place is packed to its beautifully exposed rafters with food that is organic, free of gluten, dairy and refined sugar and is largely vegan, too. My only advice is to time your visit aptly – Little Bird's colossal following means that it's off the chain busy, pretty much all the time. (Todd, 2013)¹

¹ Reproduced with permission from [Concrete Playground](#)



Figure 9: Conscious Consumers badges

In Wellington (another metropolitan centre) [Conscious Consumer](#) has established an accreditation system recognising steps cafes and restaurants take to become more sustainable. The badge system enables cafes to develop their sustainability story over time as badges are accumulated. An app is available to enable potential customers to find an eatery that suits their needs.

In *Blue Ocean Strategy*, Kim and Mauborgne (Kim & Mauborgne, 2005) identified blue oceans as market spaces that open up new dimensions of the value proposition and reduce costs by de-emphasising dimensions no longer so relevant. This contrasts with the red ocean where everybody is competing.

Using their blue ocean strategy canvas we can identify how a blue ocean might be developed by ramping up the local food story thus creating community endorsement and greater brand loyalty. The values expressed are approximate. For example, some existing distributors (the “business as usual” model) deliver great customer service.

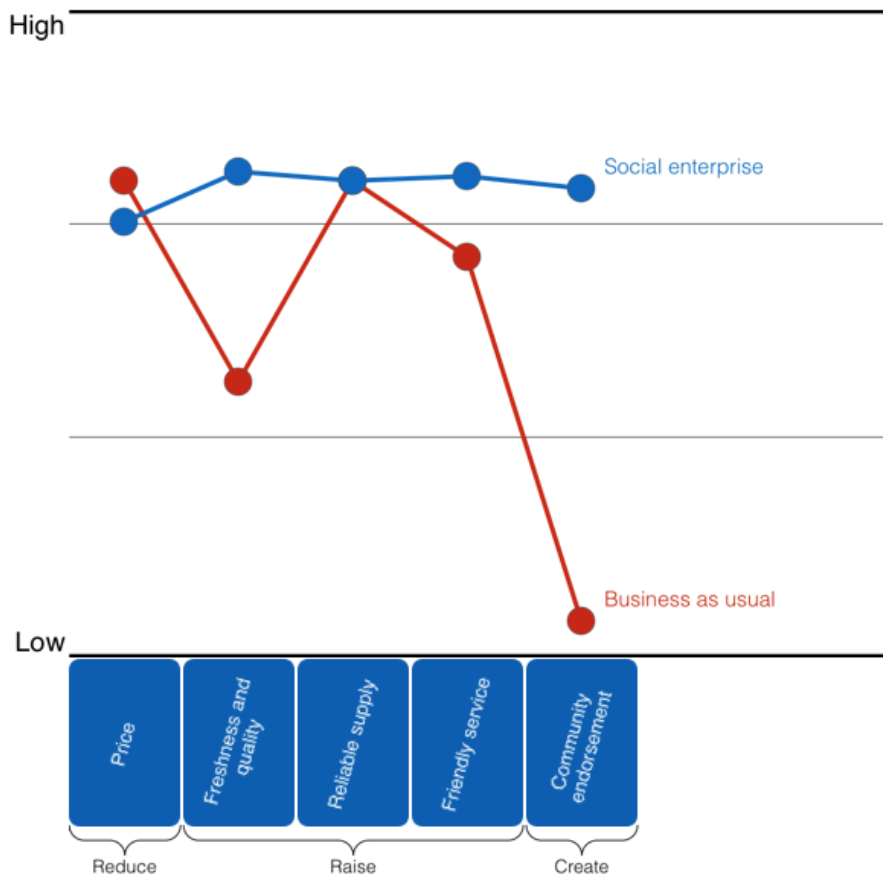


Figure 10: A strategy canvas revealing the "blue ocean" advantages of a social enterprise model²

A local certification?

Interviewees were asked – “would you be interested in a Northland Fresh/Supporting Local Growers Certification?” Seven out of thirteen responded positively with two others giving a qualified positive response.

It appears that there is enthusiasm for supporting locally grown produce.

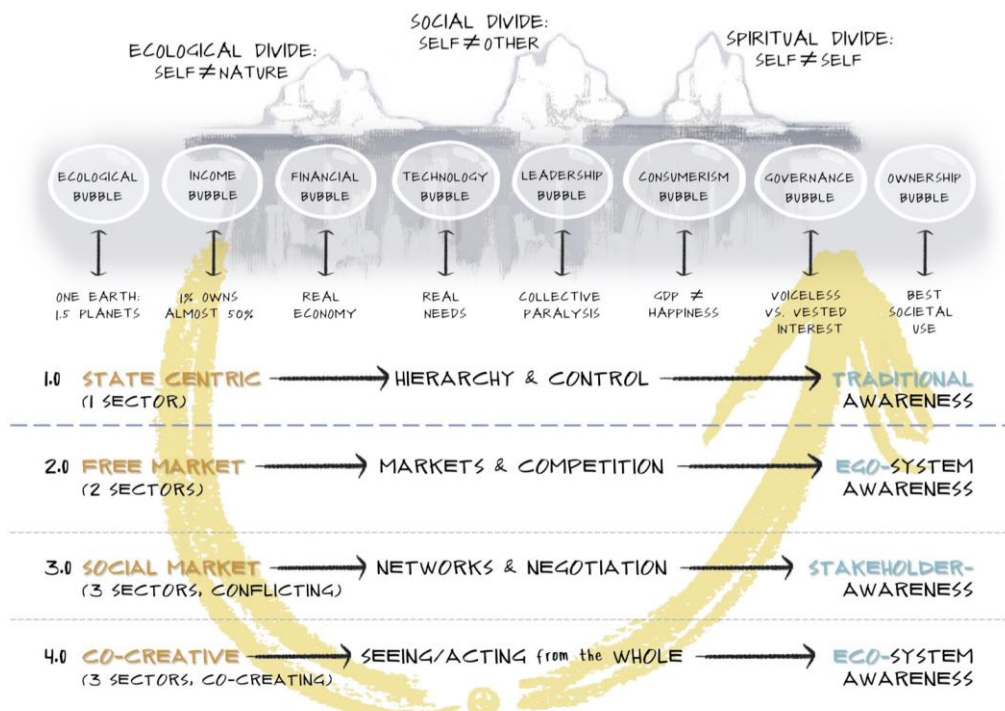
² Diagram developed with the [Blue Ocean Strategy Canvas App](https://www.youtube.com/watch?v=Kuq02Cy8RkE). For more explanation of the strategy canvas see: <https://www.youtube.com/watch?v=Kuq02Cy8RkE>

Part five: Reshaping Food Systems

Northland's food system over time has become shaped by the profit motive. It appears that over time survival imperatives and diminishing grower returns have contributed to this. If we apply Sherer's value network concept to food system design, where the interests of a diverse range of stakeholders are considered, price becomes one of the drivers but not the dominant one (2005).

According to Godfray et al, it appears that in general farm gate prices may not reflect the true cost of production, when other external factors are included in the calculations (2010). The British Ecological Society suggested in 2011 that the true value of resources we get from nature, "ecosystem services" is \$125 trillion per year but that figure diminishes to \$75.2 trillion of the common output measure of Gross Domestic Product GDP, (2014).

Otto Scharmer's framework may provide a guide to an evolutionary process where stakeholders' awareness expands and they become an integral part of the food system in Northland.



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Figure 11: The evolution of society and economy (Massachusetts Institute of Technology, 2015)

This framework traces the dominant design elements of economy and society. In "Society 1.0" the state is the dominant actor. With the emergence of "Society 2.0" the

free market and the dynamics of competition dominate. To counter the more extreme impacts of free market “Society 3.0”, the social market develops with non-governmental organisations (NGOs) introducing stakeholder awareness as an element of design.

Over time these developments help to generate value, but sooner or later come up against the limits of their usefulness. Today’s social and economic landscape is shaped by the interaction, often conflictual, of these three forces. Advocates for each of these “societies” believe a return to their dominant values will solve the problems they perceive. Otto Scharmer identifies the co-creative society, “Society 4.0” as the next stage of our collective development. It is characterised by an awareness of the broader needs of the society and economy and seeks to find synergies. In “Society 3.0”, the larger corporations strive to dominate the economic ecosystem, while in “Society 4.0”, the dominant drive is ecosystem stewardship (Scharmer & Kaufer, 2013).

	Primary societal challenge	Response: Coordination mechanism	Primary sector / players	Primary source of power	Dominant ideology	Primary state of consciousness
Society 1.0 State-driven mercantilism, socialism	stability	commanding hierarchy	state/ government	coercive (sticks)	Mercantilism: socialism (state centric) thought	Traditional awareness
Society 2.0 Free market-driven laissez-faire	growth	competing markets	capital/business: state/ government	remunerative (carrots)	Neoliberal and neoclassic (market-centric) thought	ego-system awareness
Society 3.0 Stakeholder-driven social-market economy	negative domestic externalities	negotiating: stakeholder dialogue	civil society/ NGOs, capital/business, state /government	normative (values)	social democratic or progressive thought	stakeholder awareness
Society 4.0 Eco-system driven, co-creative economy	global disruptive externalities, resilience	presencing: awareness-based collective action (ABC)	cross-sector co-creation, civil society/NGOs, capital/ business, state/ government	awareness: actions that emerge from seeing the emerging whole	eco-system-centric thought	eco-system awareness

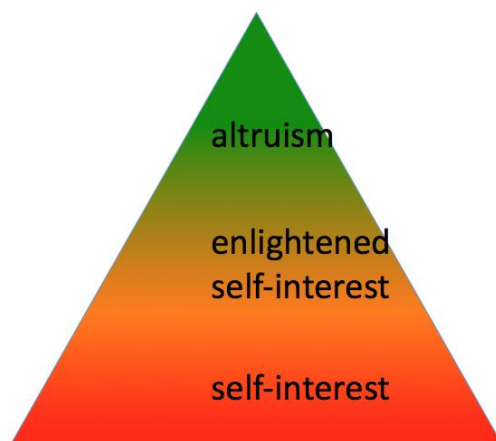
Table 13: Characteristics of the four societies (Scharmer & Kaufer, 2013)

Based on this understanding of social and economic drivers, food system design will be based on awareness of externalities, will strive for resilience, aspire to collective action be driven by wider societal needs rather than narrow economic drivers and value and expand the assets of the commons.

Food systems in society 4.0

An unavoidable conclusion is that damage is done to local economies by large corporations. Public corporations can be owned by shareholders from anywhere on the globe. Shareholders invest primarily to realise a dividend from investments creating short term, dividend-production drivers. Why should we expect that a corporation based in, say London, would have any interest in the Northland's economy, communities or ecosystems? The profit motive is typically privileged over these interests.

There are an encouraging number of exceptions becoming apparent as the awareness of the sustainability imperative grows, but these are still very much in the minority.



This image identifies a continuum of the drivers that motivate business. Those operating from **self-interest** are driven primarily by the profit motive. They may make some concessions to wider societal and environmental concerns, but often this is driven by responses to regulation or reputation damage.

Figure 12: Business motivators

Those operating from **enlightened self-interest** are aware that the company's interests and those of the wider community can align.

A small, but growing number of businesses appear to be altruistic. They are still profit-driven, as profit strengthens financial sustainability, but the profit and purpose motives are in greater harmony. Examples globally are the late Ray Anderson's [Interface](#), Judy Wicks' [White Dog Cafe](#) and Elon Musk's [Tesla](#). Examples in New Zealand are Ray Avery's [Medicine Mondiale](#) and Malcolm Rand's [Ecostore](#). Locally, the two case studies featured above, the NNFC and the Fresh Food Collective are examples.

Food systems are an ideal place to start regenerating local economies. Contributing factors are the advantage of proximity when dealing with perishable produce, the potential ubiquity of producers, and the fact that access to food is an essential and

universal need. For Northland, another driver is our benign climate. The advantages of eating locally grown produce provide another collaborator in those genuinely motivated to improve health outcomes for Northlanders.

Case study 6: the White Dog Café

Judy Wicks founded the White Dog Café in Philadelphia in 1983. From very humble beginnings, it has grown to become a central component of a food ecosystem. Driven by her discomfort with the way animals may be treated in factory farming, Judy took initially pork off the menu until free-farmed pork was available. She moved on to replace all factory farmed meat and dairy with ethically farmed product. Judy states “When living creatures are treated like machines, the industrial system has reached a pinnacle of perversion”(Wicks, 2013). Both meat and produce suppliers are identified as White Dog suppliers, often with Judy Wicks assisting their development.

She combined social activism with her business interests. For example she developed a business alliance to support indigenous Mexicans, under threat by paramilitary forces, by helping them to export coffee. Her food comes with a story that engages a loyal customer base.

Judy was a pioneer in social initiatives, such as paying the living wage.



Rather than keep these initiatives to herself as a brand advantage, Judy then went on to help other restaurants to strengthen the local food movement. She argues “After all, there is no such thing as one sustainable business, no matter how great our practices are; we can only be a part of a sustainable system” (Wicks, 2013).

Figure 13: The White Dog Cafe mission

The food system and regional development

Driving her decision-making in the development of the White Dog Café was Judy's awareness of the impact of corporations on local communities.

Human-scale businesses foster close and meaningful relationships, but when companies grow too big to be purchased by a new owner within the community—employees, a family member, or a local entrepreneur—they are most likely bought up by a distant corporation. Then profits are drained from the community; local procurement of supplies and services typically decreases, as do contributions to local charities; and if the company is moved out of town, jobs and local tax payments are lost—ultimately decreasing community wealth and weakening the local economy (Wicks, 2013).

Research reveals a correlation between the development of small businesses and job growth (Long, 2015, Glaeser & Kerr, 2010).



Figure 14: More small firms means more jobs (Glaeser & Kerr, 2010)

Glaeser and Kerr's research revealed a jobs dividend from the growth of the numbers of small business. We believe the local food approach mastered by Judy Wicks could be adapted and applied in Northland to grow small businesses and increase well-being here.

Economic impacts

Based on data from NZ Stats, table nine on page 15 calculates the annual total fruit and vegetable spend in 2013 at \$69.3 million for northland (calculated on the number of Northland households by average national spend on fruit and vegetables).

According to Michael Shuman (2015):

More than two dozen studies over the past decade have compared the economic impacts of locally owned businesses with their nonlocal equivalents, and they consistently show that local businesses generate two to four times the multiplier benefits.

The multipliers calculated for the Whangarei Growers Market was almost exactly in the middle of this range at 2.99 (see table 14 below).

Based on this data, if 20% of produce consumed in the region can be moved from external sources to local food sold through local food distributors and outlets, this would equate to \$13.86 million. Applying multipliers within Schumans' (2015) parameters would see additional economic benefits of between \$27.7 to \$55.4 million annually for Northland.

The food chain dynamics are complex. These figures can only be approximate. Note that they do not include the value of produce purchased by organisations (cafes, restaurants, hospitals, etc), neither do they include enhanced exports nor meat, fish and dairy.

Social enterprise as a transitional tool

We have many corporations and SME's operating in Northland, and many Government agencies and NGOs. It is difficult to identify any social enterprises in operation. They occupy a space between profit driven business and taxpayer funded organisations and charities. Although it is a limited liability company, the Whangarei Growers Market is an example of what a successful social enterprise might look like.

Professor Muhammad Yunus, Nobel Prize winner and the developer of micro-credit developed the social business concept. He claims that social businesses, businesses that run alongside commercial enterprises, can solve many social problems (Yunus, 2010). The concept is being adapted to a New Zealand context. A report by Mary Jo Kaplan of Brown University outlines social entrepreneurship in New Zealand and anticipates its development.

Boundaries between public, private and non-profit sectors are blurring in the quest for better, faster, cheaper solutions. Government has a critical stake in new business models that provide public benefits. Not-for-profit organisations are becoming more market-oriented while businesses are working harder to benefit communities as well as stockholders. Scholars and practitioners are observing the convergence of market and mission throughout the world and are trying to find a common language to describe this burgeoning area of activity so it can be better understood and harnessed.

Bill Gates, founder of Microsoft, called this shift, 'creative capitalism.' He stated, "We can make market forces work better for the poor if we develop a more creative capitalism – if we can stretch the reach of market forces so that more people can make a profit, or at least a living, serving people who are suffering from the worst inequities." Harvard Business School professor Michael Porter advocates that capitalism has betrayed its promise by focusing on a narrow equation of value with short-term economic returns.

Businesses should pursue “shared value,” generating both economic value and creating a value for society by addressing its challenges (Kaplan, 2013).

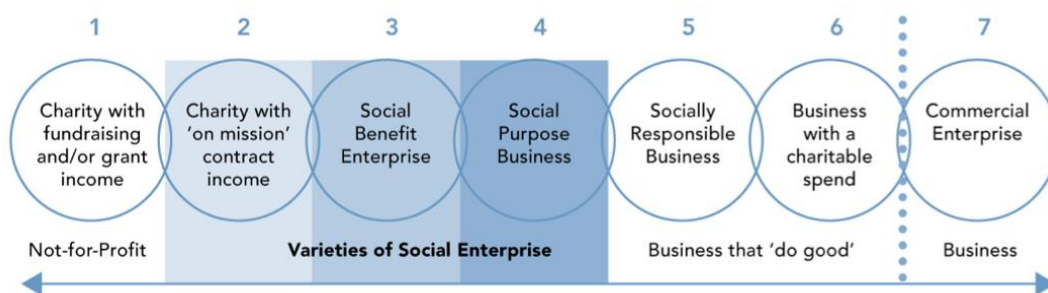


Figure 15: The continuum from not-for-profit to business enterprise models (Kaplan, 2013, pg 6)

This diagram from Mary Jo Kaplan’s report identifies a range of enterprise models. Social enterprises aspire to generate wealth, but the pursuit of profit is balanced by strong purpose (Akina, 2015). Pursuit of the profit motive tends to distort the purpose motive. Social enterprise may provide a vehicle to redesign the food system with governance and policy protections to optimise value creation for producers and consumers.

Food systems and health

Our food and health systems will both benefit from tighter integration and co design. Health is enhanced by increased consumption of vegetables and fruit. Long Food Chains (LFCs) are complicit with the increase in food-related health issues with their preference for highly processed foods over fresh food.

Many factors combine dynamically to create the growing global health crisis that sees nearly 870 million people suffering from chronic undernourishment (Food and Agriculture Organisation, 2012) and 1.9 billion people overweight (World Health Organisation, 2015a). In New Zealand rates of overweight and obese people are growing.

At the other end of the spectrum, but sharing a common condition of poor nutrition, are those who have insufficient food. According to the [Child Poverty Monitor](#) in 2014, 24% or 260,000 New Zealand children suffered from income poverty, with 17%, or 180,000 going without the things they need.

According to the [Northland District Health Board](#) (2012, page 8)

Northlanders have higher rates of health risk factors including:

- Tobacco use – 26% of Northland adults smoke compared with 19% for New Zealand. The smoking rate is extremely high for Māori (55%).

- Nutrition and physical activity – 30% of Northland adults are obese compared with 19% for NZ. The rate is higher for Māori (47%).
- Alcohol use – 23% of Northland adults report hazardous alcohol consumption patterns compared with 20% nationally.

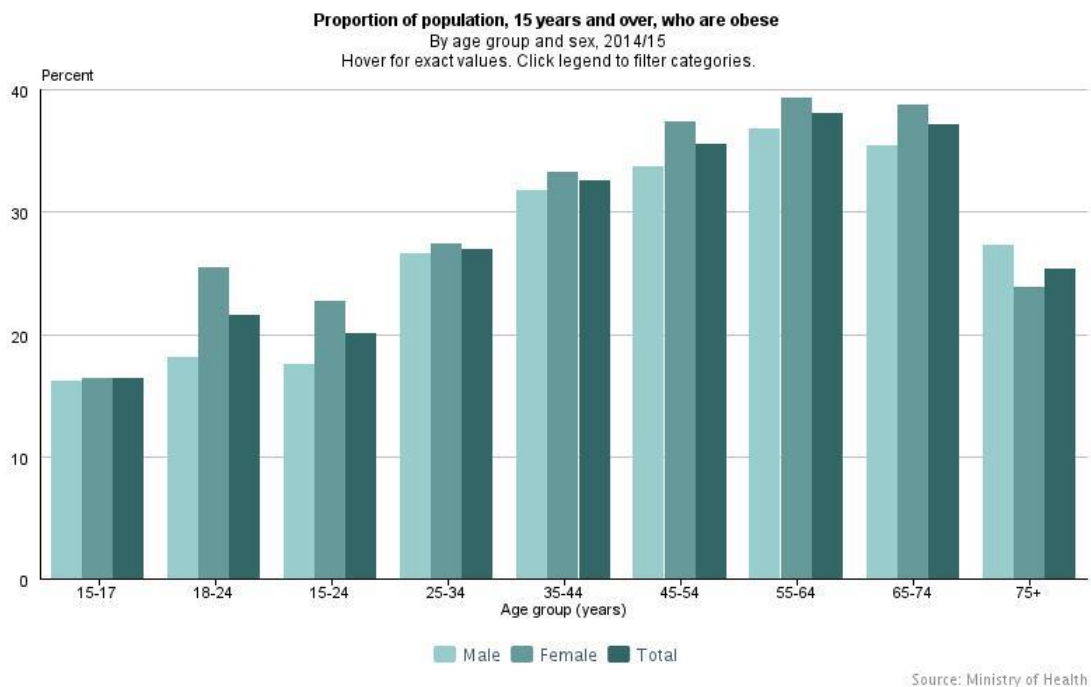


Figure 16: Proportion of population, 15 years and over, who are obese (Statistics New Zealand, 2015c).

These factors support the prevalence of cardiovascular disease, diabetes and cancer. The prevalence of Type 2 diabetes mellitus is increasing. According to the [New Zealand Medical Journal](#) “ (Derraik, de Bock, Ruffell, Ahlsson, & Cutfield, 2011) “while 20 years ago T2DM was rare among adults in the second and third decades of life, young adults now constitute a significant proportion (up to 30%) of newly presenting diabetics.” Globally, health authorities speak of a diabetes “tsunami”.

While poverty limits access to food, those with more resources can also suffer health impacts through time scarcity - the sense that there is insufficient time for food preparation. This leads to the consumption of convenience and ready-prepared food, choices associated with cardiovascular disease, diabetes and cancer (Jabs & Devine, 2006).

Poor diet is widely correlated with negative health impacts. The [World Health Organisation](#) (World Health Organisation, 2015b) attributes approximately 1.7 million deaths annually to low fruit and vegetable consumption. Closer to home, Clair Mills,

Medical Officer of Health, Northland DHB in the publication [Empty Food Baskets](#) states:

Food insecurity and its consequences of poor nutrition, obesity, and nutrition related health conditions are affecting families on low incomes. One of the factors contributing to our obesity epidemic is simply that families cannot afford good healthy nourishing food (Carne & Mancini, 2012, page 2).

[Pearson and Wilson](#) of Otago University referenced some weighty studies including meta-studies in a paper linking improved health outcomes to increased access to fruit and vegetables through farmers markets.

The adequate consumption of fruits and vegetables (FVs) is an important way to prevent a wide range of health problems, including lung cancer, colon cancer, breast cancer, type 2 diabetes, stroke, coronary heart disease, and cognitive decline and dementia. In fact, inadequate FV consumption were ranked as the fifth and 17th highest risk factors for disease, respectively, in the 2010 Global Burden of Disease Study. Differential intake of FVs by social groups may also contribute to health inequalities (Pearson & Wilson, 2013, page 1-2).

[Van Duyn and Pivonka](#) (2000) identified significant health benefits of vegetables and fruit including a “substantial” protective role in cancer prevention, the prevention of coronary disease, strokes, cataract formation, chronic obstructive pulmonary disease, diverticulosis, and possibly, hypertension. Their evidence supports “increased consumption of a wide variety of vegetables, in particular, dark-green leafy, cruciferous, and deep-yellow-orange ones, and a wide variety of fruits, in particular, citrus and deep-yellow-orange ones”.

Leveraging Internet capabilities to enhance food systems

Internet technologies can ease some of the logistical challenges involved in getting produce to buyers. And as market channels are enhanced and better facilitated, opportunities will open up for producers. Software can also enable aggregation of smaller volumes to meet supply thresholds. The NNFC initiative referred to earlier enables marketing of lower volumes of produce, as there is no volume or frequency threshold to participate in the market.

Darren Sharp outlines the role of software in building food systems.

“The [Open Food Foundation](#) has been established to accumulate and protect a commons of open source knowledge, code, applications and platforms to

support the proliferation of fair and sustainable food systems in Australia and beyond” (Sharp, 2014).

The founders Kirsten Larsen and Serenity Hill are applying the principles of open access and peer-to-peer networks to create resilient food systems of the future.

The three components here align with those explored in this report. It reinforces the potential diversity of the food system.



Figure 17: This [screenshot](#) outlines the three components of the food system (Sharp, 2014)

The first of the three segments of the system (farmers/growers) are established and have potential to scale up based on proven production systems. The buyer segments are also well established. The distributor segment has gaps. The co-ops featured earlier are recent additions, but this research has revealed potential to enhance market channels.

The Open Food Foundation has developed open source software to facilitate food systems, including transaction capabilities.

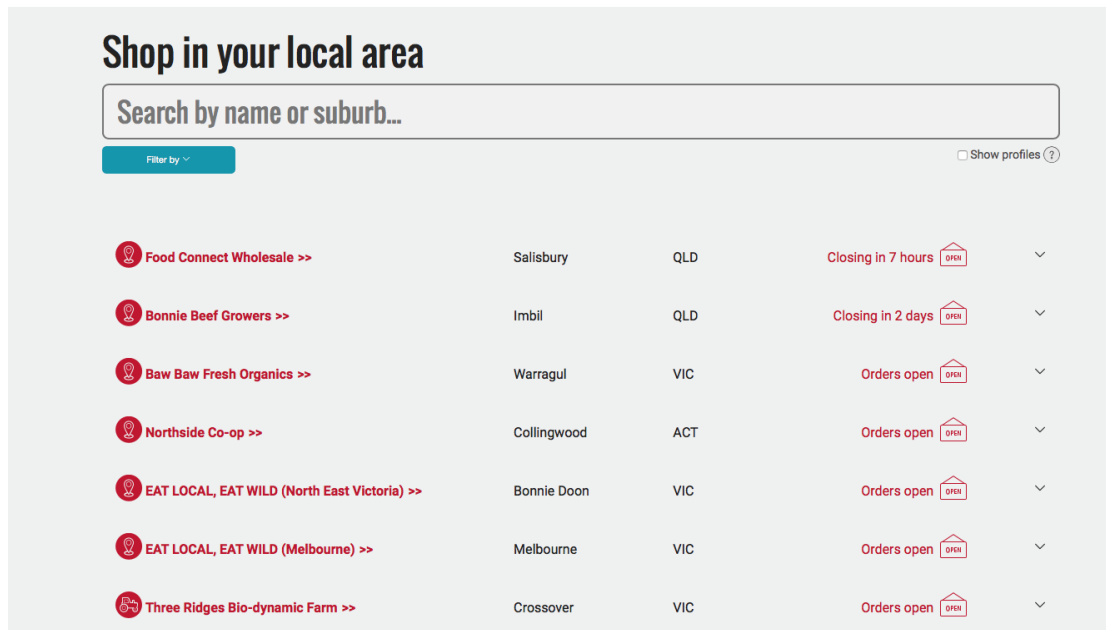


Figure 18: A screenshot of the [Open Food Network website](#)

Food hubs

Our research revealed how closer connections between producers and buyers may be of mutual benefit. From a design perspective, the distribution system is not the conduit it could be. Almost a decade ago Welsh research identified the distribution system as the “missing middle”.

More specifically, it asks whether there is a ‘missing middle’ in the local food infrastructure in Wales, a mechanism by which small producers can collectively access a middleman facility that enables them to trade with large customers – be they supermarkets, food service vendors or public procurement consortia – that none of them would be able to trade with by acting alone. (Morley, Morgan, & Morgan, 2008, pg 2)

Australian advocates for food hubs claim that food hubs represent

A conscious effort to build on the many thriving and highly popular examples of emerging local food economies, such as farmers’ markets and community-supported agriculture enterprises, by identifying and meeting key gaps in local circuits of food production, distribution and consumption. (Eaterprises, 2011)

Aggregation is a core function of food hubs.

Recent research from the United States evaluates “alternative food networks” such as food hubs in Vermont (LeBlanc, Conner, McRae, & Darby, 2014). While the researchers cautioned that their findings may not be generalisable in other states or countries, and that further research is required, they anticipate the hubs investigated will

Aid in creating resilient nonprofit food hubs that are able to maintain relevance through deep connections and credibility with diverse community producers and consumers, and that can engage these community groups as part of their core civic agriculture mission. (LeBlanc et al., 2014, page 14)

Jeff Griggs of Local Food Northland and Sean Stanley of the NNFC visited Vermont in 2014 and 2015 respectively. They were both impressed by the diversity and vibrancy of the food system in a state that has harsh winters and a five month growing season.

Food solutions, New England report over the last five years reports the addition of 8,884³ new direct, indirect and induced jobs. The multiplier effect produces an additional 1.28 jobs for every new job in the food system. In the same time period, 625 new farms and food-related businesses were created (Food Solutions New England, n.d.). **On a per capita basis, this is equivalent to 2388 new jobs in Northland over a five year period, or 477 jobs annually.**

[A similar study of Detroit](#) found that shifting 20% of spending on food to local food would create 4,719 jobs and \$US 483,125,887 increased economic output (Shuman, 2010). Again, on a per capita basis this would equate to 1,167 jobs for Northland.

Northland research

Northland data exists on the economic multipliers generated by the Whangarei Growers Market.

Turnover at the WGM for the 2013 year was \$3.66 million. An 88-sector model of the Northland economy has been used to estimate the broader impacts of this economic activity. When the multiplier effects are added, the total value of the markets to the region is estimated as \$8.77 million as outlined below.

³ Vermont's population (2015 estimate) is 626,042 ([Wikipedia](#))

	Revenue (\$ millions)	Net Household (Income \$m)	Employment (jobs)	Value Added (\$ millions)
Direct production activity from Table 1	2.93	0.55	19	1.12
Flow-ons to Backward Linked Sectors	3.27	0.42	11	1.13
Total Direct & Backward Linked Impacts	6.20	0.97	30	2.25
Flow-ons to Forward Linked Sectors	2.57	0.54	11	0.76
Value of Total Impacts due to WGM	8.77	1.51	41	3.01
<i>Backward Linked Multiplier (e.g. 6.20/2.93)</i>	2.12	1.76	1.58	2.01
<i>Total Multiplier (e.g. 8.77/2.93)</i>	2.99	2.75	2.16	2.69

Table 14: Total economic impacts for the Northland economy emanating from sales at the WGM

The multipliers in Table 14 conveniently summarise the economic impacts of the WGM. For Revenue, \$1 of produce sold at the WGM induces another \$1.12 of sales revenue for supplying business units in the Northland region (multiplier 2.12). Another 87c of services is required to deliver this produce to final consumers ($1 + 1.12 + 0.87 = 2.99$ the multiplier including the forward linkages). Note that a fraction of this 87c could represent a contribution to the wages of casual staff in Northland restaurants for example. The Employment multipliers in Table 14 cannot be similarly interpreted because the WGM technology for growers and sellers is not the same as the production technology intrinsic to the economic model as outlined above (Bruce et al., 2014).

Food Hubs are well established in the United States. Ecotrust started [FoodHub](#) in the Western U.S. in 2009 as an "incubator and capital vehicle for moving innovative social enterprises forward".

The authors of *Rebuilding the Foodshed* describe the span between farm and fork as where a "frenzy of innovation is occurring." They call it "The New Middle" (a solution to "the missing middle" referred to earlier) which describes the changing dynamic in aggregation, processing and distribution. There are a variety of possible forms and combinations ranging from largely non-profit initiatives to "savvy entrepreneurial initiatives" (Ackerman-Leist, 2013). The innovative co-operatives recently established in Northland would appear to fit nicely.

The New Middle appears to be blue ocean (Kim & Mauborgne, 2005) based in that it is a move away from centralised distribution centres with reliance on fossil fuels and refrigerated vehicles travelling long distances and develops a new "old" system of local aggregation, processing and distribution but with the advantages of technology. This provides much more certainty around food security and caters for small as well as large-scale growers.

This infographic from the USDA highlights some of the strengths of food hubs.

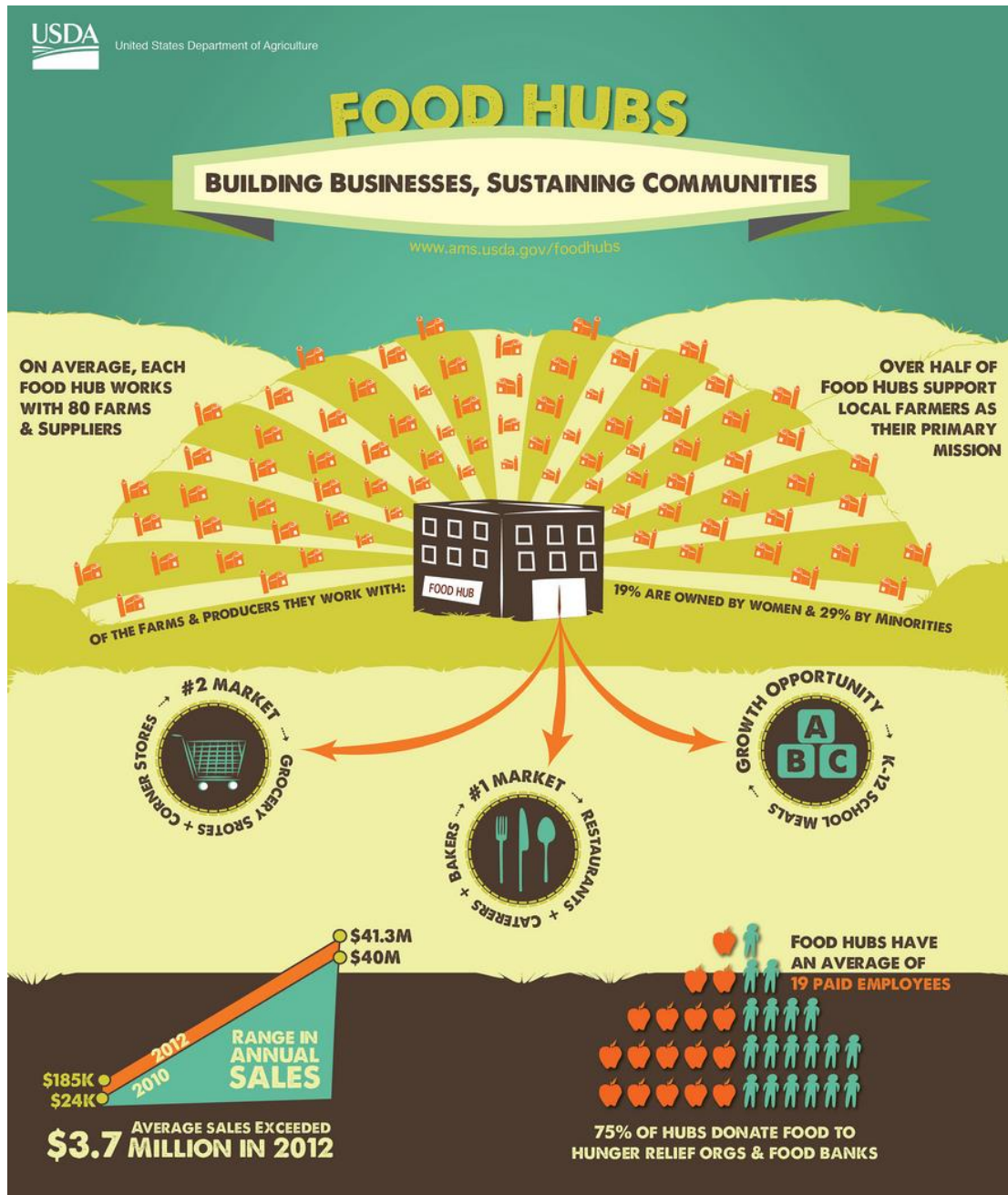


Figure 19: Food Hub infographic part one (USDA, 2013)



Figure 20: Food Hub infographic part two (USDA, 2013)

Conclusions and recommendations

Perspectives on Northland's food systems

The intention of this report was to gain a better understanding of the Northland food system. We conclude that there are aspects of the system that are unsustainable and require our collective attention, from the production side through to health impacts on consumers. Our potential for financial and social sustainability of the system is however eroding. Our growers are aging without clear succession pathways and the current distribution models disadvantage small growers and forces them to assume distribution functions. In addition grower feedback and our own desktop enquiry suggests entry costs for new growers can be prohibitive. The food produced sold through the wider system appears, on balance, nutritionally deficient with consequent social and economic health impacts implying a further imperative for change.

Current business practice assumes the continuation of anything but light restraint of free market forces as anti-growth. Ironically the resultant economic landscapes in our regions are increasingly dominated by corporates slowly but surely engulfing smaller operators with an attendant inhibition of local enterprise and edging towards a future of monopoly and almost certainly increased costs through less competition in the marketplace.

Growers

Growing fruit and vegetables are very complex operations. Successful growers have to master crop culture, harvesting and post-harvesting and marketing embedded in the generic business requirements of planning, managing human resources, regulatory requirements and finances.

Rather than leave our growers exposed to the full impact of a hostile business environment, the most immediate actions can be improving returns from their often inequitable levels. For example, if the 30 to 50% returns (of nominal supermarket retail price) from distributors could be raised by 10%, growing would be more lucrative. This in turn will help attract others into the field.

Growers will also benefit from more dependable payment systems, perhaps enabled by the Internet.

The “middle”

The “missing middle” – the distribution system – is dominated by corporate distributors and supermarket supply chains. Any reshaping of distribution systems need be mindful of the concepts of the short food chain and Sherer’s (2005) value networks. In the short term, the profit motive has to be moderated or, in places, displaced with social enterprise models that prioritise grower returns while delivering a strong value proposition to customers.

The “missing middle” extracts a disproportionate value of produce. If we take a nominal \$2 head of broccoli, the grower can get as little as 50 to 60 cents, while a typical café owner is paying \$1.80 to \$2.00. This leaves the distributor making up to \$1.50. This is not always be the case, but it represents a distortion that does not reflect the inputs required to produce and distribute produce.

The development of farmers or growers markets, innovative co-operatives and initiatives such as that of Remuera New World, are encouraging and exemplify shortened food chains. In Northland we think food hubs may have the potential to create new distribution channels and related services to benefit growers.

Outlets

The value proposition emerges as an important concept underlying good service to outlets. Produce quality was nominated as important by all outlets, followed by price and service quality. Busy chefs and kitchen managers want to focus on the core business of cooking, rather than logistical concerns.

New business models

Orchardists use shelter belts to protect plants from wind damage. There is an analogy here with business practices. If we continue to leave smaller growers exposed to the full force of competition, we will continue to see a depleting of production capability in Northland. With insights we can glean from thinkers such as Otto Scharmer (2013), we can begin to reconceptualise enterprise models that are more community led, focusing on building local capability and resilience, rebuilding levels of trust, diversifying the economic base, creating both jobs and fostering entrepreneurship.

The levels of cohesion implied here are currently characterised by a few growers who are engaged with their customers, and food outlets, such as Jas Singh’s Shiraz who are fostering the value of those relationships. Others, at least aspire to better support local growers without having clear pathways to do so.

The role of community

The recommendations that follow will be of interest to a number of organisations, but they are also relevant to the wider community.

By developing more awareness of the impact of the dollars that each of us spend, we can effectively “vote” for the economic activity we want to foster. This research has surfaced great stories of growers, distributors and food outlets that remain largely untold. We believe customers who want to support good local food stories also have a role in spreading them.

Recommendations

1. Investigate the feasibility of food hubs in Whangarei and other Northland Centres.

The primary purposes of food hubs are to improve returns to growers and to make healthy food more readily available to consumers. These benefits are essential to our social, economic and environmental sustainability and are deserving of utilising public resources accumulated over the decades for our future wellbeing and prosperity. A first step is to build a wide coalition of institutions, groups and individuals committed to their establishment.

2. Convene a regional discussion on the local food economy.

International studies cited earlier reveal significant job and enterprise generating potential from an enhanced local food economy. Local government, development agencies, the Intersectional Forum, food producers, food outlets, Iwi, health agencies and educational institutions are all stakeholders. Further study to quantify actual and projected gains will be useful, but need not preclude advancing the conversation.

3. Promote local food.

Recall figure one. In 2013, New Zealanders spent \$22.60 weekly on fruit and vegetables, \$32.30 on “ready to eat” foods and \$21.40 on alcoholic beverages. Promoting local food has potential to shift these numbers. Strategies are a local certification programme and developing community awareness.

Further research

Here are questions that have emerged for this research.

Building capacity – Are Northland growers keen to explore new opportunities, perhaps upscale production and where are the gaps? How soon could this happen? How to encourage new growers and possible crop diversification into the marketplace?

The grower - wholesale customer connection – What benefits will flow from creating a social field where growers and wholesale customers can interact and explore mutual interest?

Payment mechanisms – Cash flow management problems for growers are a disincentive to sell directly to wholesale customers. What mechanisms can be developed to improve payment protocols?

Grower support – What mechanisms currently exist for grower support? How effective are they? What enhancements are required for effective support?

Hub facilities – What facilities are appropriate for Northland Hubs? What kitchen facilities are required to support value-add for local produce?

Impact on existing distribution channels – Will diversifying market channels have a negative impact on farmers / growers markets and co-ops?

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Appendix 1: Research Methods

Secondary data

Desktop research of journals and industry sources, primarily through the Internet provides context for the primary research. While much of this is accessed in the early phases of research, surfacing data is an iterative process – the researchers follow up themes that emerge during the research process.

Primary data

The food system is categorized here as producers, distributors and outlets. Owners or managers of 15 production facilities, 5 distributors and 13 outlets are interviewed. Selection processes were also iterative. An initial range of interviewees are selected and as researchers followed leads, further interviewees are added. As the researchers are based in the Whangarei District, most interviewees are based here, but producers from the Kaipara and Far North Districts are represented.

Interviews are mostly face to face, but some are by telephone when face to face interviews are not practicable. Interviews are designed to be brief, targeting information to quantify margins and transactional parameters.

Confidentiality

Research forms are coded to ensure confidentiality. These forms are stored by one of the research team with password protection, with contact details associated with the codes stored by another researcher. Where individual interviewees are quoted in the report, their permission is obtained. The Participant Information and Consent form follows.

Validity

We aspire to a better shared understanding of the food system. This is enhanced by returning interview notes to interviewees and distributing the draft report for feedback.



Participant Information and Consent

Thank you for your interest in participating in this research project.

Understanding the market dynamics of fruit and vegetable production, distribution and produce outlets.

This project is supported by *Local Food Northland* and NorthTec.

Local Food Northland is a community led initiative aspiring to promote and establish community-led sustainable food systems for Northland.

The research addresses these questions:

1. Who are the main commercial producers in Northland and what is their knowledge and perceptions of market dynamics?
2. Who are the major distributors and what proportion of their produce is sourced from Northland?
3. What are examples of produce outlets in Northland, where do they access their produce and in what volumes and frequency?
4. What major crops are produced in sufficient volumes to satisfy local demand and what major crops have potential for increased local production?
5. What opportunities exist to develop levels of local production by meeting current production shortfalls, and increasing market demand for local produce?

As a stakeholder, we invite you to participate in this study as your responses will help the research team to develop a more detailed picture of our food system, and how food system dynamics might shift to greater financial, social and environmental sustainability for our local economy.

If your story is of particular value to illustrate themes in the report we will seek permission to quote you directly in the report. You will have a second opportunity to check your recorded quotation and, if desired, withdraw consent.

Thank You

I, of

agree to participate in this research. I understand that my contributions will be summarised and communicated back to me to enable me to verify them as an accurate summary of my responses.

Signature:

Date:

Appendix 2: Household expenditure

Expenditure group, subgroup, and class	2009/10	2012/13	Percentage change	Percentage of net 2013 expenditure
<i>Food</i>				
Fruit and vegetables	20.30	22.60	11.4	
Fruit	8.80	9.30	5.6	0.8%
Vegetables	11.50	13.30	15.8	1.2%
Meat, poultry, and fish	26.70	27.90	4.6	
Meat and poultry	22.50	23.60	4.9	2.1%
Fish and other seafood	4.20	4.30	3.0	0.4%
Grocery food	77.30	81.30	5.2	
Bread and cereals	19.10	19.30	1.2	1.7%
Milk, cheese, and eggs	13.90	15.20	8.9	1.4%
Oils and fats	3.00	2.90	-0.2	0.3%
Food additives and condiments	4.90	5.30	8.9	0.5%
Confectionery, nuts, and snacks	11.30	11.90	5.0	1.1%
Other grocery food	25.10	26.70	6.1	2.4%
Non-alcoholic beverages	10.20	11.50	12.6	
Coffee, tea, and other hot drinks	3.00	3.40	12.3	0.3%
Soft drinks, waters, and juices	7.10	8.10	12.8	0.7%
Restaurant meals and ready-to-eat food	43.10	49.20	14.3	
Restaurant meals	16.10	16.60	3.1	1.5%
Ready-to-eat food	26.50	32.30	21.8	2.9%
Other food services	S	S	S	
<i>Total food</i>	177.50	192.50	8.4	17.3%
<i>Alcoholic beverages, tobacco, and illicit drugs (ATID)</i>				
Alcoholic beverages	21.30	21.40	0.3	
Beer	7.10	8.20	15.5	0.7%
Wine	8.50	8.50	-0.9	0.8%
Spirits and liqueurs	2.50	2.00	-19.4	0.2%
Alcoholic beverages not elsewhere classified	3.10	2.70	-15.2	0.2%
Cigarettes and tobacco	7.90	8.20	3.5	
Cigarettes and tobacco	7.90	8.20	3.5	0.7%
Illicit drugs	S	S	S	
<i>Total ATID</i>	29.30	29.50	0.9	2.7%
<i>Clothing and footwear (total only)</i>	30.30	31.60	4.5	2.8%
<i>Household and housing utilities (total only)</i>	251.60	272.90	8.5	24.6%
<i>Household contents and services (total only)</i>	45.10	48.80	8.2	4.4%
<i>Health (total only)</i>	24.20	27.10	12.1	2.4%
<i>Transport (total only)</i>	131.00	158.30	20.8	14.2%
<i>Communication (total only)</i>	35.60	35.80	0.4	3.2%
<i>Recreation and culture (total only)</i>	98.20	107.20	9.1	9.6%
<i>Education (total only)</i>	16.60	18.40	10.8	1.7%
<i>Miscellaneous goods and service (total only)</i>	92.10	101.70	10.5	9.2%
<i>Other expenditure (total only)</i>	107.90	116.30	7.8	10.5%
<i>Total sales, trade-ins, and refunds</i>	-20.70	-28.80	38.9	-2.6%
<i>Total net expenditure</i>	1,018.70	1,111.40	9.1	

Average weekly household expenditure for years ended 30 June 2010 and 2013 (Statistics New Zealand, 2013b)

Research team

Peter Bruce-Iri is a researcher and lecturer for the Business Management degree and diploma programme at NorthTec. He led the research team that produced *Our Contribution* and *The Social and Economic Impact of the Proposed CCR Project* for Refining NZ in 2008 and 2012 and *The Social and Economic Impacts of the Whangarei Growers Market* in 2012. Peter is the author of *Better Business for a Better World*, published in 2000. He was born in Northland and has lived here most of his life. Peter's first career was in horticulture. He currently blogs for www.localfoodnorthland.org. To contact Peter email pbruce@northtec.ac.nz.



Eloise Neeley is a recent NorthTec Applied Management graduate and Massey University Masters' student/researcher. In 2015 she completed an individual research project, *Is the Agriwomen's Development Trust "Escalator" Programme helping Agri-women to "step up" in governance and leadership roles?* She enjoys research that draws on both her academic experiences and her 20+ year agri-sector careers in farming and communication. Returning to Northland in 2013, Eloise has enjoyed reconnecting with her roots, is passionate about the potential of the region and supporter of local initiatives and business people.

