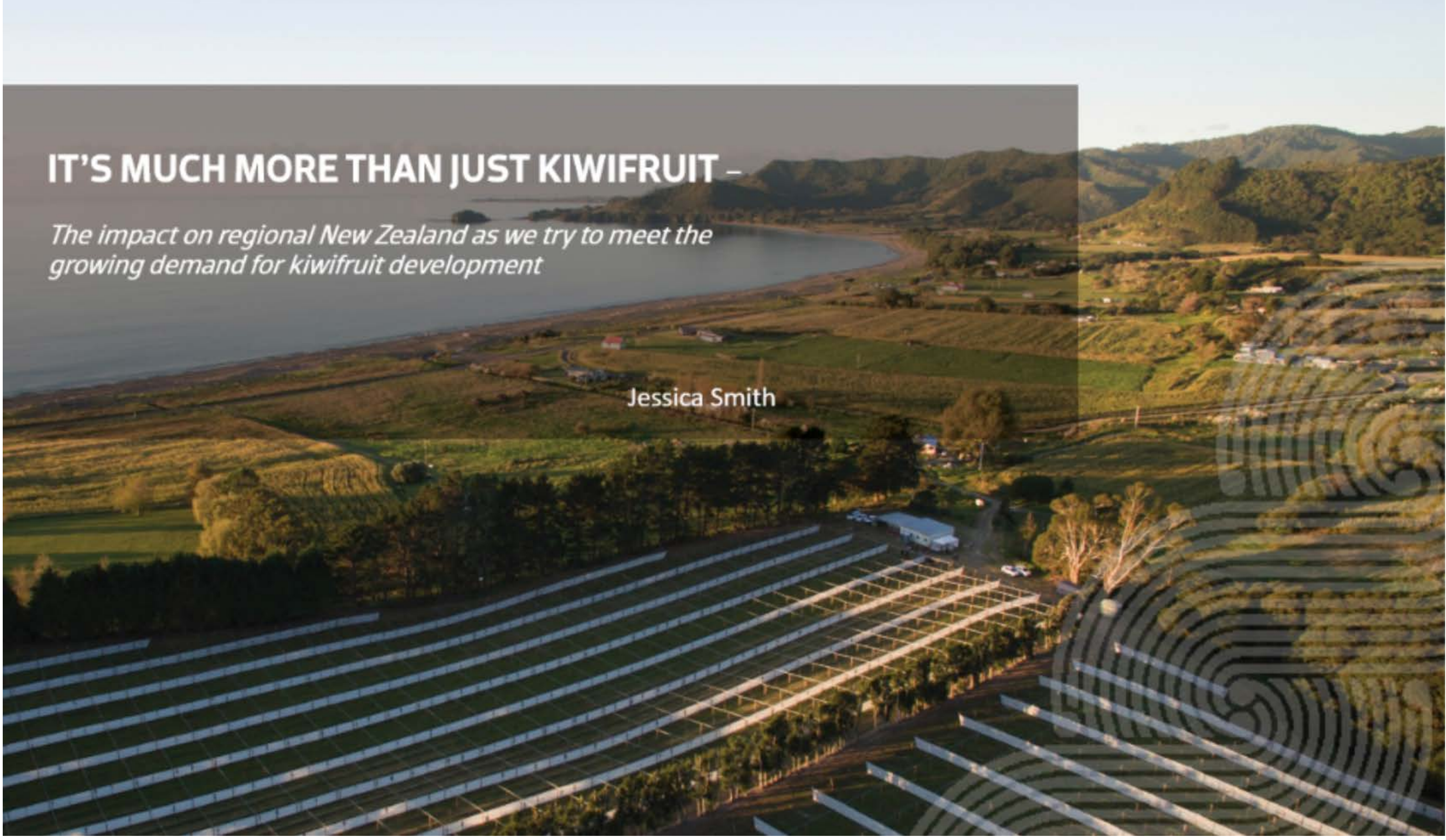
IT'S MUCH MORE THAN JUST KIWIFRUIT –

The impact on regional New Zealand as we try to meet the growing demand for kiwifruit development

Jessica Smith



Kellogg Rural Leadership Programme

Jessica Smith

Course 38 2018

KELLOGG Rural Leadership PROGRAMME

Executive Summary

1. If our regions are not thriving the prosperity of our people declines. Half of New Zealand's population live in the regions. It is our regions that generate our economic output through the primary industry. Kiwifruit is the largest horticultural economic contributor and is targeted for significant growth.

2. This research is about the impact on regional New Zealand as we try to meet the growing demand for kiwifruit development. In my opinion, very little research exists about the impact of kiwifruit development that is **people centric** and **flavoured** with **regional perspectives**.

3. The Government's regional economic strategy to foster regional prosperity aligns with global growth opportunities in Kiwifruit, Zespris growth strategy and market demand. The common denominator is that the regions are key to achieving their strategy.

4. 52 individuals participated in the survey over a three month period. A combination of in-person interviews, postal and online surveys were conducted. All respondents were located in Te Whanau Apanui, a thriving kiwifruit community north of Opotiki. The survey questions were designed to capture demographic data for regional context; and gain **personal** insights about the impact of kiwifruit development on their community.

5. The **people centric** approach that I have undertaken has enabled me to gain, on the ground personal insights which will be used to help guide industry thinking about kiwifruit development in our regions, particularly the more remote areas.

6. Three key themes emerged from the research that captured the essence of the voices of the people in this region:

   - the impact on our **People**;
   - the impact on our **Land**; and
   - the importance of **Social Investment**

7. The following recommendations have been prepared to guide and support key industry stakeholders about working in our regional kiwifruit communities.

THAT a multifaceted strategy is required when growing industries in our regions. This will require collective involvement from the communities, industry and Government. MULTIFACETED STRATEGY

THAT the voice of the people is critical in the development of any strategy, therefore any strategy needs to include and allow time for meaningful engagement. MEANINGFUL ENGAGEMENT.

THAT a knowledge gap currently exists in our regional communities about on-orchard kiwifruit practices. INFORMATION COMMUNICATION

THAT a Maori grower participation strategy needs to be developed to increase participation within the kiwifruit industry. MAORI PARTICIPATION

ACKNOWLEDGEMENTS

A special thank you to the families of Te Whanau Apanui for taking the time to contribute to my research project. I am grateful for the time, personal information, thoughts and perspective that the participants have afforded me, and I will ensure their personal information is kept confidential.

I wish to thank the Kellogg Programme Investing Partners for their continued support:

CONTENTS

1 Introduction

1.1 *The impact on regional New Zealand as we try to meet the growing demand for kiwifruit development.*

1.2 *The purpose of this report and the research undertaken is to provide key insights into kiwifruit development from the perspective of people who live and work in regional New Zealand.*

1.3 The journey within the report commences with my research methodology, followed by my love for our regional communities, my why, and my motivation for embarking on this research.

1.4 A key focus of my research is about the growing demand for kiwifruit development. To provide context in respect of drivers, a brief background is provided on regional economic drivers and the current Governments initiative to reinvigorate deteriorating regions. This is supported with Zespri's growth strategy, global growth opportunities, market demand and potential challenges to growth.

1.5 The report will then present three key themes that emerged from the research undertaken, an analysis of the demographic composition, and my concluding comments about what all of this means.

1.6 The insights gathered from my research will be used to guide industry thinking about kiwifruit development in our regions; to raise awareness about the knowledge gap in our regional communities about on-orchard kiwifruit practices; the need to increase engagement with those that live in those communities; and increasing Maori grower participation.

2 Research Method

2.1 My research follows a mixed method approach. The data source is from a series of focus groups, individual interviews and industry literature.

Figure 1 A summary of my research method

2.2 To appropriately gather personal insights in order to construct a tailored survey for a broader regional audience, focus group discussions were held with five local families. Each focus group comprised five to six family members.

2.3 The focus group discussions were extremely helpful as they provided the space to discuss and explore a range of topics, opinions and ideas that exist in this community, from their beliefs, experiences and practices. The insights gathered enabled the creation of a targeted survey for a broader regional audience (see Appendix A).

2.4 The survey comprises of both qualitative and quantitative questions aimed to capture two data sets:

- demographic data to understand current baseline information for regional context and composition; and
- local perspectives about kiwifruit development.

2.5 52 individuals participated in the survey over a three month period. Individuals were invited to participate if they lived in Te Whanau Apanui. Te Whanau Apanui is an area in the Opotiki District, which starts in Hawai at the mouth of the Hawai River and stretches as far north as Waihau Bay (see Figure 2).

Figure 2 Te Whanau Apanui Tribal Area

2.6 At the commencement of my research I attended a number of kiwifruit forums in Te Whanau Apanui to inform the community of my research. It was important to ensure that I had the appropriate level of support in the community before I continued. These forums also enabled me to entice survey participants. Furthermore, I joined Te Whanau Apanui Facebook group and shared information regarding my research.

2.7 Data collection was carried out using three approaches, face to face interviews and online and written surveys. Face to face interviews was the preferred approach as this enabled me to gain a deeper understanding of individual responses. Online and postal surveys were available to those where face to face was not possible.

2.8 Survey monkey was used to collate and analyse the data (see **Appendix B**). Thematic network analysis approach was used to analyse the qualitative data, resulting in the identification of three emerging themes (Attride-Stirling, 2001). The quantitative data is provided and is referred to throughout this reported in **Table 1**.

3 My Motivation

3.1 I am a Maori, who grew up on an intergenerational hill country sheep and beef farm in rural New Zealand. I have lived in rural and urban New Zealand as well as overseas. My family and life experiences have taught me to be a good kaitiaki (caretaker) for the whenua (land) and for our people.

3.2 I am passionate about building thriving communities to enable regional New Zealand to flourish. I am also passionate about creating growth opportunities in our regional communities that stem from the land. The passion that I have for these areas supports me to facilitate greater engagement and participation with Maori.

3.3 I am currently working in Maori land management. As part of my role I work closely with Maori landowners to build whanau enterprises on whanau land. More recently, I have been working with a number whanau in Te Kaha to develop kiwifruit orchards on their whenua (land). I have also been working closely with Te Kaha Growers Limited (**TKG**) to assist with the strategic direction of their business. What excites me about TKG is their continued commitment to growing a thriving community for the benefit of Te Whanau Apanui.

3.4 I have been working in the kiwifruit industry with Maori land owners for the past four years. It has been exciting to see the growth of the kiwifruit industry in New Zealand and the many opportunities that could stem from industry growth for Maori.

3.5 During my time working in the kiwifruit industry, I have struggled to fine research that is people centric and flavoured with regional perspectives from the people in the regions. For this reason, I choose to carry out my research to better understand the views and perspectives of the people.

4 BACKGROUND

4.1 4.63million people live in New Zealand and nearly half of our population live outside the main cities. The regions generate approximately 40% of our economic output. It is important for our regions to thrive otherwise the overall economic performance of our country will be impacted (Hon Shane Jones, 2018).

4.2 A large part of the economic output that comes from the regions is through primary industry. This year export revenue from primary industry will increase to 42.2 billion. This is a 10.8% increase from last year (Ministry for Primary Industries, 2018). Dairy, meat and wool, and forestry continue to be our top three export revenue earners.

4.3 Exports for high-value niche products are seeing significant growth, particularly to the Asia-pacific market (Ministry for Primary Industries, 2018). This growth segment is part of the changing landscape that our primary industry faces. With the rapid growth in the Asia-pacific population we are fast moving from feeding and meeting the needs westerners to the Asia-pacific market.

4.4 Horticulture is our fourth biggest industry and comprises 14% of our export revenue and is our largest economic contributor in the regions. Exports are forecasted to grow 4.5% this year (Ministry for Primary Industries, 2018). In 2017, kiwifruit became New Zealand's largest horticulture industry as revenue surpassed wine for the first time. Apples was the next biggest at $690 million, followed by onions ($112m) and avocados ($82m).

4.5 In February last year, Frank Scrimgeour, Warren Hughes and Vijay Kumar published a report about the economic contribution of kiwifruit industry expansion in the Bay of Plenty. That report highlighted how much the kiwifruit industry as a whole, contributes to regional prosperity, particularly in the Bay of Plenty. The report went on to say, that in 2015/2016 the total impact from kiwifruit production in the Bay of Plenty comprised of $1.97billion in revenue, $368 million in net household income, $867 million in GDP and 10,672 FTEs (Scrimgeour, Hughes, & Kumar, 2017).

4.6 Maori contribution to the primary sector is significant as evidenced by **Figure 3**. The Maori economy continues to grow and positively contribute to New Zealand's economy. This trend is likely to continue as Maori increase their stake in the primary sector through new ventures, such as the recent 98 hectare kiwifruit portfolio purchase by three iwi in the North Island (Hunter, 2017). This was one of the New Zealand's largest privately owned kiwifruit orchard portfolio.

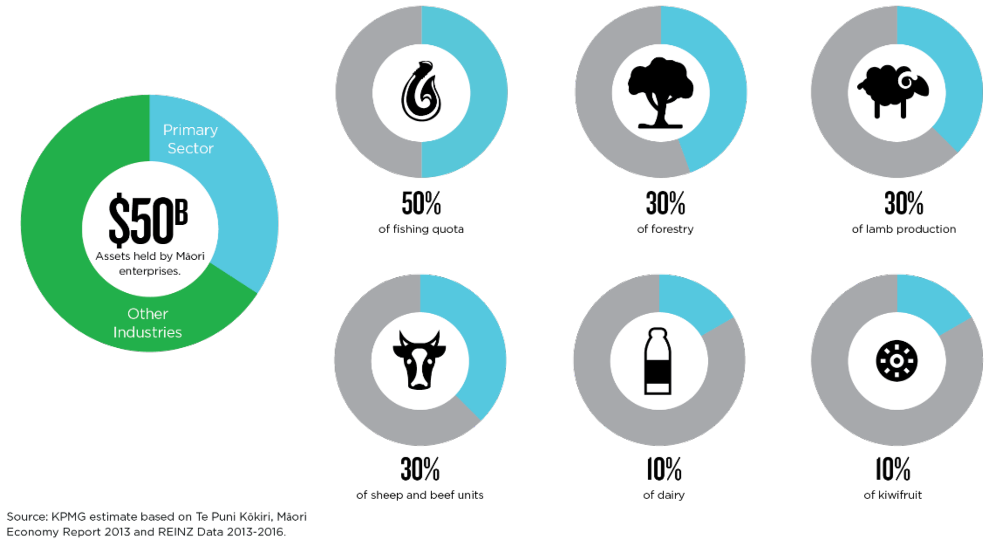


Figure 3 *Maori Contribution to New Zealand's Primary Sector*

4.7 In 2017, Ministry for Business Innovation and Employment (**MBIE**) published findings from their research about the key challenges facing our regions. Their findings included the following:

- the pressure of globalisation on regional economies;
- agglomeration forces can attract resources away from some regions;
- our ageing populations in the regions;
- smaller regions can experience inconsistent growth; and
- employment patterns are shifting in favour of high-skilled occupations (Ministry of Business Innovation and Employment, 2017).

4.8 The greatest impact on regions with any development will always be on our people. This means that all change-directed initiatives need to make a difference for the people living in the targeted area. MBIE's research states that prosperity for the people is about investing in opportunities that result in **job creation** that has **sustained employmen**t and provides an **increase in household incomes** (Ministry of Business Innovation and Employment, 2017).

5 KIWIFRUIT INDUSTRY GROWTH

Global Growth Opportunities

5.1 Kiwifruit has seen significant growth over the years (see **Figure 4**), despite this, kiwifruit is only 0.2% of the global fruit bowl. Apples, oranges and bananas have consistently dominated this space. For every kiwifruit that is consumed, 50 apples, 60 oranges, 80 bananas are consumed (Zespri, 2011).

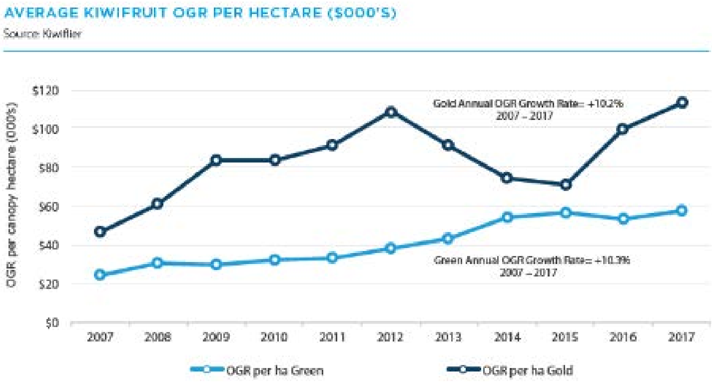


***Figure 4** Average Kiwifruit OGR per Hectare - ANZ Insights into the Kiwifruit Industry Opportunities and Challenges 2018*

5.2 For kiwifruit, this means there is scope on a global scale to grow kiwifruit consumption by:

- Building new markets and brand awareness in markets like India and the Middle East, along with increasing consumption in Asia where the population growth is so rapid.
- Leveraging off changing consumer preferences - consumers are increasingly looking for food that is safe, of a high quality and nutritious.
- Leveraging off population growth - 4.3 billion people in Asia-Pacific, this represents 60% of the world's population in 2050 there will be 10 billion people.

Zespri's Growth Strategy

5.3 Zespri, the single desk marketer and the global marketing organisation for kiwifruit in New Zealand is projecting to double kiwifruit sales in the next seven years. The growth strategy is to accelerate the supply of SunGold into the market.

5.4 Over the next five years Zespri's release of SunGold licence will include 750 hectares (including organic) per year in New Zealand from 2018 up to 2022. By 2025, Zespri want to grow global sales revenue by 4.5billion (Zespri, 2017).

***Figure 5** Zespri Growth Predictions*

5.5 The market has demonstrated positive signs in the past two seasons to support this ambitious growth strategy. It is estimated that this could return over $3 billion to our regional kiwifruit growing communities.

FreshFacts "more than 495,000 tonnes of New Zealand kiwifruit are sold overseas each year"

Regional Growth Objectives

5.6 The current Government recognises the importance of reinvigorating regional New Zealand and is committed to lifting productivity potential in the regions (Jones, The Provincial Growth Fund, 2017). Key deprivation indicators currently paint a poor picture in the regions. To realise the Government's commitment to regional growth and their economic strategy, the Provincial Growth Fund (the **PGF**) was established.

5.7 There are 2,694 hectares of kiwifruit orchards in New Zealand (see **Figure 6**), from the top of the South Island to through to the far north of the North Island (Gray, 2018). Whilst kiwifruit is grown in many locations, the majority is grown in the Bay of Plenty. In the wider area of the Opotiki District, agriculture is the primary driver for the economy (beef and dairy farms, forests and horticulture, mostly kiwifruit) (About our District, n.d.)).

Growth Challenges

5.8 Land availability, high capital costs, water, climate change, labour force and access to Maori land are a few of the growth challenges for the kiwifruit industry.

5.9 **Land availability** is a critical factor in the growth program. Large quantities of SunGold licence are being made available for greenfield developments, however there is diminishing land in key industry areas coupled with an increase in land values across the country. Diminishing land might create challenges for one area, but may also ignite opportunities for greenfield growth in other areas, like Gisborne, Hawkes Bay and Northland (Gray, 2018).

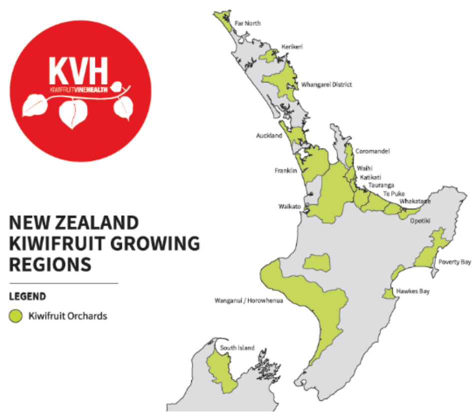


Figure 6 *New Zealand Kiwifruit Growing Regions - Kiwifruit Vine Health*

5.10 Northland is seen as the biggest growth area for kiwifruit due to land availability. Whilst there is land availability, there are concerns with its remoteness, low population and labour force (Scrimgeour, Hughes, & Kumar, 2017). Northland currently produces 3.6 million trays per year and there is opportunity for this to increase.

5.11 **Maori land** – in Te Whanau Apanui there is approximately 1,802 hectares of Maori land that is considered appropriate for horticulture activity. This comes from 690 blocks of Maori land comprising 66,348.5 hectares. A small area of the land appropriate for horticulture activity is represented in **Figure 7**.

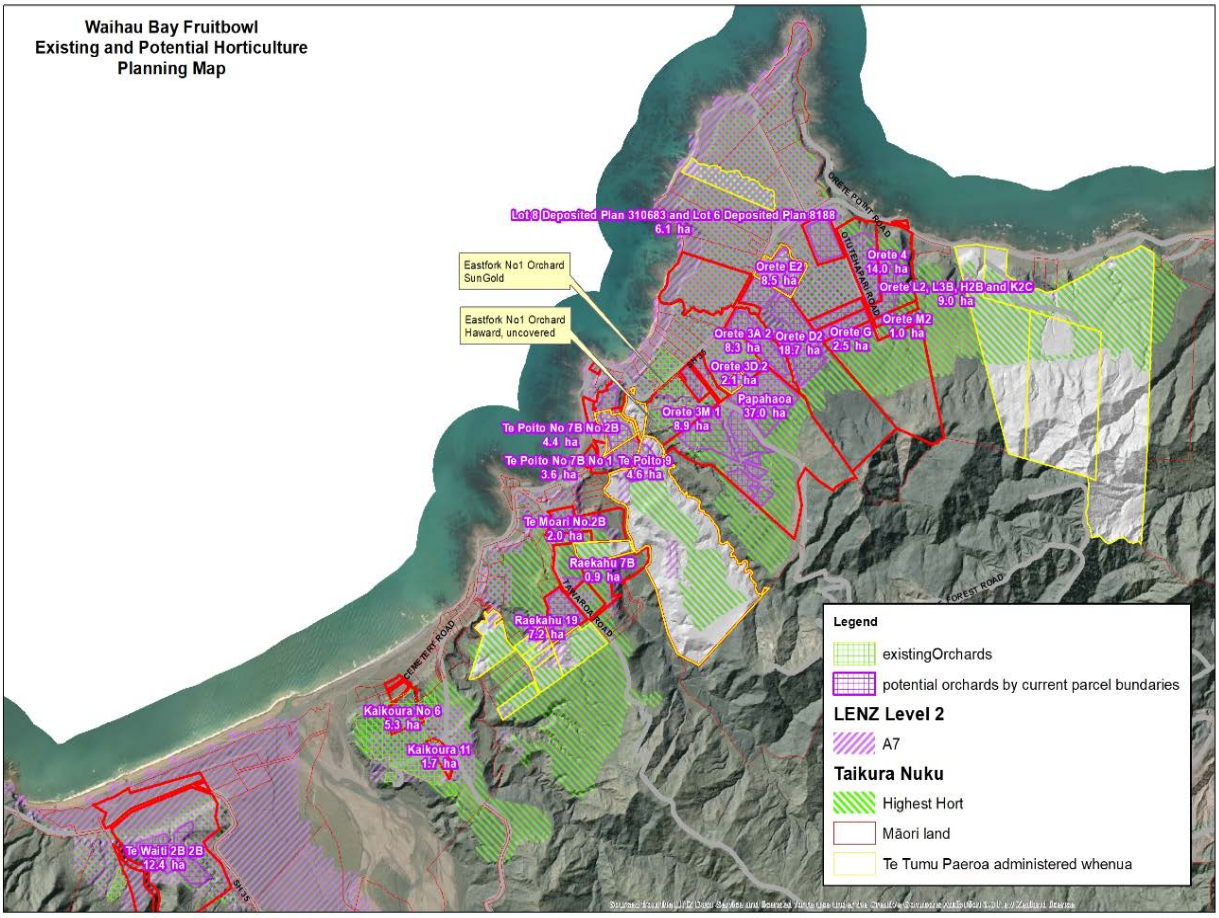


***Figure 7** Waihau Bay Horticulture Potential Map - Te Tumu Paeroa*

5.12 Whilst, the information indicates there is significant Maori land available for horticultural development, a number of challenges hinder those who want or are ready to convert, these are:

- access to capital;
- land tenure system;
- capability;
- varying ownership interests; and
- land sizes are too small and aggregation is not always possible.

5.13 **High capital costs** for orchard ownership in respect of land values ($125k per hectare on average), SunGold licence ($250k per hectare) and infrastructure ($100k per hectare) present barriers to entry (ANZ, 2018).

5.14 **Labour shortage** - In the Bay of Plenty this year a labour shortage was called for the first time in ten years. A shortage of up to 12,000 seasonal workers impacted on orchards' ability to harvest. Furthermore, there will be labour constraints for the build and scale of infrastructure to support growth aspirations for kiwifruit development.

5.15 **Water** access and quality water for irrigation and frost prevention is essential to an orchard's strategy, however, with challenges due to over allocation, availability of water, inconsistent council consent processes. This is likely to cause significant challenges for kiwifruit development in the regions.

5.16 **Climate Change** is an emerging risk to the industry (Piddock, 2017). Warming temperatures across the country are in prime kiwifruit growing areas and will affect orchard growing patterns (Piddock, 2017). According to a recent NIWA study, the future of the green variety is grim as it will cease to be commercially viable in the future due to changes in our climate (NIWA, 2017).

5.17 Despite the growth challenges, there is a positive outlook for kiwifruit development in our regional communities, along with some challenges to work through. The biggest challenge the industry has faced to date has been Pseudomonas Syringae Actinidiae (**PSA**). The experience of PSA brought the industry together and fostered alternative growing practices, adaptable and resilient stakeholders, along with opportunities to learn and innovate.

5.18 The industry is a resilient one with real experience in dealing with challenges. I believe this provides a strong foundation for the industry to pivot in order to meet future growth challenges.

Global Growth	Zespri's Growth Strategy	Regional Growth Objectives	Growth Challenges
• 0.2% Global Fruit bowl • Building new markets • Leveraging off changing consumer preferences • Leveraging off population growth 1 kiwifruit, 50 apples, 60 oranges, 80 bananas	• Single desk marketer • Strategy to accelerate the supply of SunGold • Incr sales rev 4.5b • Market demonstrated the demand to support strategy • Estimate to return 3bill to our communities	• Government recognises the importance of reinvigorating regions • Governments commitment to regional growth through economic strategy eg PGF	• Land availability, • High capital costs, • Water, • Climate change, • Labour force • Maori land management

***Figure 8** A Summary of Kiwifruit Industry Growth*

6 FINDINGS

6.1 The demographic findings from survey respondents provided meaningful insight into their regional environment. The spread of respondents is reflective of three areas within Te Whanau Apanaui; 37% live in Te Kaha; 13% live in Omaio; and 12% live in Waihau Bay. It is important to note, these are all areas that have had established kiwifruit orchards for over 20 years. These areas also have suitable land for future development into horticulture.

Industry

6.2 Both the kiwifruit and the education industry equally employ 50% of the survey respondents. 77% of survey respondents are in paid employment; 59% are working fulltime, with 18% working in part time or seasonal employment. The majority of part time or seasonal workers relate to the work in the kiwifruit industry.

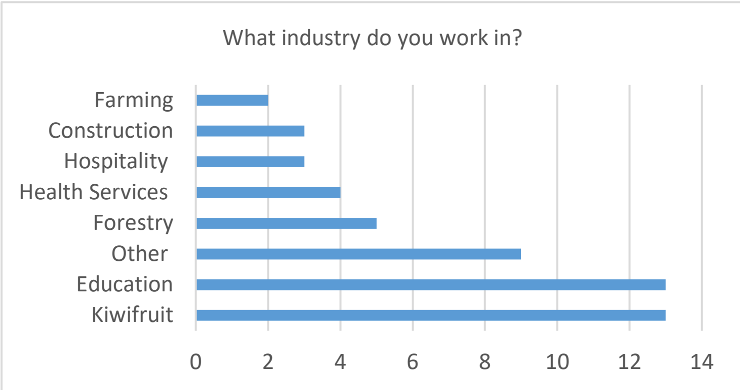
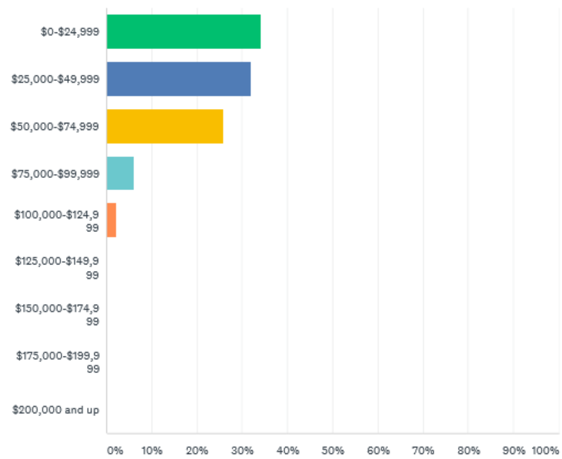


Figure 9 *Survey Results Question 6: What industry do you work in?*

Income

6.3 34% of survey respondents earn between $0 and $24,999; 32% between $25,000 and $49,999; 13% between $45,000 and $74,999. There is a small percentage (4%) that earn between $75,000 and $149,000.



6.4 Median household income in the wider Opotiki District (the district that Te Whanau Apanui is in) was $20,700 in 2013, compared with $28,500 nationally (About our District, n.d.). This equated to $370 take home pay per week. As of April this year, the current minimum wage, take home pay per week nationally is now $540 (Hunter, Zoe, 2018).

6.5 The majority of income per survey respondent is spent on **food** and **transport** costs (predominately petrol) followed closely by rent/mortgage, utilities, communications and entertainment.

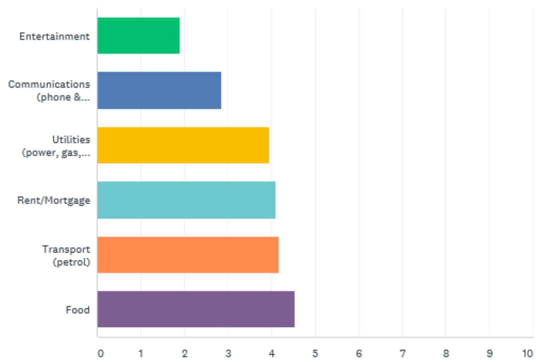


Figure 10 *Survey Results Question 8 – Use a ranking system to identify where most of your income is spent.*

6.6 If we look a little deeper into the food and transport costs of the respondents, we learn the following things:

Food

6.7 The closest supermarket is in Opotiki. 70% of survey respondents shop in Opotiki at least once or twice a week as the local option is too costly. Survey respondents also said that if their incomes were higher their preference would be to buy less frequently and buy in bulk. This would still require a trip to Opotiki however, it would ideally be once a month.

6.8 Buying in bulk will help reduce trips to Opotiki however, using locally sourced or home grown food will also help reduce the demand on income. Only a small portion of survey respondents indicated they have home gardens. This could be an option to consider given fertility levels in the area.

6.9 The cost of food is rising every year, in January this year grocery food prices rose 1.4% compared with December 2017 (Statistics New Zealand, 2018). Access to good nutritious food is an important part of leading a healthy life for the whole family (Healthy Eating , 2018).

Transport - Petrol

6.10 65% of survey respondents travel to Opotiki to get petrol once or twice a week. The average return trip from Te Kaha (the location of most survey respondents) to Opotiki is 132.8km. Survey respondents indicated that they are travelling twice a week at 266km to get petrol. This is costing $80 to $120 per week, just for petrol (no diesel costs). Many of the respondents indicated that they also take a 20 litre petrol gallon to fill up as back-up. This is an additional of $45-$50 per week.

6.11 Survey respondents who work outside of Te Whanau Apanui travel daily and require more regular visits to the petrol station. The average income of the respondents who work outside of Te

Whanau Apanui is relative to those who work in Te Whanau Apanui. The financial impact on those survey respondents is much greater.

6.12 There is a petrol station in Waihau Bay (71.8km return trip from Te Kaha) however survey respondents indicated that there is no supermarket or other services in Waihau Bay like there is in Opotiki. For this reason a trip to Opotiki is favoured over travelling to Waihau Bay for petrol and other services (like food).

6.13 Previously there were two petrol stations in Te Kaha and one in Omaio. All of the stations have since closed due to expired underground tanks and high capital costs for replacement tanks. To make a station viable in remote areas like Te Whanau Apanui requires a fuel consumption level of 500,000 LPA is required. A station also requires approximately $500,000 of capital investment, and that is for card service only.

6.14 As indicated in the findings, the majority of income earned is allocated to food, with transport costs through petrol attracting spot two. If we look at respondent income levels, 34% earn between $0 and $24,000 per year, this means that on average 28% to 30% of their income is being spent of transport through petrol costs. This is only based on two trips per week to town. For those working outside of Te Whanau Apanui the cost would be substantially higher, thus altering the findings to transport being in spot one.

6.15 Most of the survey respondents live in populated kiwifruit areas. The standard of living is assumed to be relatively low given incomes levels, location to key services and the associated cost to access. The impact on household income for communities like this would be huge. Key services within closer proximity would no doubt provide greater levels of disposable income to households thus impacting positively on standards of living in the region. Unfortunately, this is just one part of a wider problem.

6.16 Access to local employment opportunities that provide job security through full time, all year round employment in areas like this will also make an enormous impact on communities, and the families that live in them.

6.17 Survey findings regarding the impact of kiwifruit development highlighted common regional perspectives about the impact of kiwifruit development in Te Whanau Apanui. A visual representation of the responses received from survey respondents is represented in **Figure 11** and **Figure 12.**

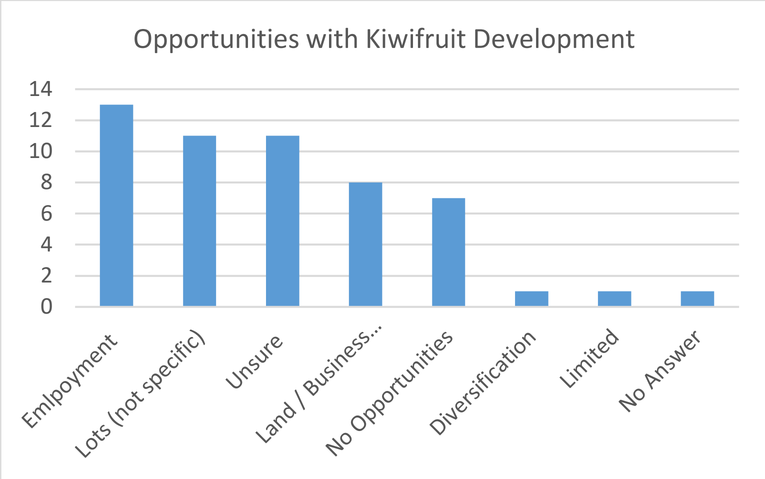


***Figure 11** Survey Results Questions 18 and 20 Opportunities with Kiwifruit Development*

6.18 The most common response relating to opportunities with kiwifruit development was **employment**. More specifically, the type of employment opportunities that will exist for the local community if development in the region occurs. Respondents also mentioned that development would foster the creation of new businesses from supporting industries and diversification of land use out of maize. Respondents want to see an investment into developing local skills so that employment opportunities are more varied for local resource. This would help address concerns relating to local accessibility to current opportunities.

6.19 Two responses that polled almost equally; kiwifruit development will provide "lots" of opportunities (11%); and unsure about what type of opportunities kiwifruit development will bring to the region, however I am excited by it (15%). Unfortunately, 13% of respondents claimed that there will be no opportunities. More information needs to be gathered to gain a greater understanding about this response.

6.20 It is fair to say, that the majority of survey respondents feel that the opportunities out-perform the concerns raised. Although, 21% of respondents advised that they were unsure about the opportunities. This response is interesting given that the demographic data indicates that the majority of participants work, live and have lived in populated kiwifruit areas for some time. On this basis, one would assume that there should be greater knowledge regarding opportunities.

6.21 The concerns with kiwifruit development in the region are presented in **Figure 12**. The participation rate of respondents for this area of the survey was considerably higher than the questions relating to opportunities. On average each survey respondent provided 3-4 concerns with respect to kiwifruit development.

6.22 68% of participants were concerned with sprays, chemical use and environmental impacts, followed by 16% who were concerned about employment job opportunities going to non-locals. 16% indicated that they had no concerns relating to kiwifruit development in their area.

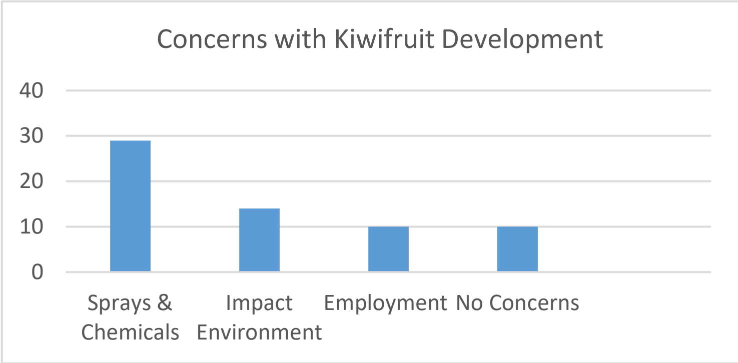


Figure 12 *Survey Results Questions 19 and 20 Concerns with Kiwifruit Development*

6.23 It is hard to articulate the level of concern raised by respondents who completed this section of the survey. It was clear that chemical use and fertilisers on the environment particularly the land, air and waterways troubled many. Furthermore, the impact of harsh orchard management practices has on the land and the people that work on-orchard.

6.24 As previously mentioned, the kiwifruit industry has been in this area has for over 20 years. These are concerns from people who have lived and worked in the region for some time. According to survey respondents, to date, there has been no proactive approach to address these concerns. With that said, I am unaware of any platform whereby respondents or the community are able to raise these concerns.

6.25 It is possible that kiwifruit industry stakeholders are unaware of concerns that currently exist on the ground. So, what is being done to raise the concerns to the kiwifruit industry so they are able to address them?

6.26 I believe there is an opportunity improve communication about orchard management practices so that communities are informed and can be educated about matters, like sprays and chemicals used on-orchard. Furthermore, if alternatives practices are being adopted or researched then this should be communicated. This may alleviate or address concerns that have been raised.

6.27 What is not known at present is if these views are representative of wider regional perspectives. The people surveyed are realising their growth aspirations on their land, and with growth scheduled in the coming years increased engagement and participation is essential.

Emerging Themes

6.28 When analysing the data received from survey respondents using different techniques, it was clear that a number of commonalities existed. I believe three key themes emerged that capture and categorise the voices of the people in this region.

6.29 The three key emerging themes are:

Figure 13 A Summary of the Three Key Themes

6.30 The data underpinning the three emerging themes provides a deeper understanding about the impact of kiwifruit development from the people by the people. The themes are explained in more detail in **Table 1**.

Table 1 Emerging Themes Summary

EMERGING THEMES	CATEGORISED DATA	THE VOICES OF THE PEOPLE
1. People - Employment	Opportunities for locals (+'ve)	• Direct and indirect employment opportunities for locals from kiwifruit development. • On-orchard and management pathways for locals (particularly Maori) to pursue if there are a growing number of orchards.
	Low wages (–'ve)	• On-orchard picking jobs during harvest are seen to be low pay (i.e. minimum wage). • Due to low and inconsistent wages there is a low level of motivation to work.
	Seasonal work (+'ve –'ve)	• Unable to secure full time work for 12 months of the year. • With more kiwifruit development there will be greater ability to provide full time work year round. • The opportunity to potentially secure year round work in kiwifruit and via other industries in the regions.
	Non-local workforce (–'ve)	• The use of RSE workers on orchard for picking etc. during harvest.

		• Perception of a reduction in local job opportunities.
	Employee welfare (–'ve)	• Long hours, hard work. • Worker recognition for efforts during busy season (i.e. bonus payments, management feedback). • Appropriate safety attire when working with chemicals and sprays.
	Income to the local community (+'ve –'ve)	• Raising the standard of living in the community. • Not enough money being recycled in and around the community. • Key services are not located in the regions therefore potential income is lost.
	Opportunities for rangatahi (+'ve)	• Employment pathways.
	Live and work locally	• Create opportunities to work in their hometown. • Greater ability to give back, work harder on the land (i.e. Maori land with operating business). • The cost benefit of having local work opportunities and the impact on household income.
	Health and wellbeing of our people	• Exposure to chemicals and sprays on and off orchard. • Poisons near to schools children and homes.
2. Land	Sprays and Chemical usage (–'ve)	• Use of the sprays and chemical on-orchard. • Poisoning the environment. • Affecting health of the land. • Orchard proximity to the sea and the chemical run off. • Unscientific approach to orchard management. • Staff safety when handling sprays and chemicals.
	Health of our Environment (land and waterways) (–'ve)	• Environmentally sustainable growing practices. • Financial impact of environment practices. • Water, soil and air contamination.
	Utilisation Options – diversification (+'ve)	• Large amount of available land suitable for horticultural activity. • Opportunity to move away from maize and diversify into kiwifruit.

		• Diversify into something other than current or kiwifruit i.e. supporting industry like Manuka.
	Utilisation Options – improved revenue streams (i.e. compared to Maize) (+'ve)	• Higher returns from kiwifruit compared with other available options.
	Utilisation Options – income for landowners (+'ve –'ve)	• Higher returns from kiwifruit means more income for land owners/Trusts. • Not all income is being distributed for the benefit of all owners. • The impact of a greater financial return is not being seen in the community.
3. Social Investment	Education (+'ve)	• On and off the job education pathways for locals. • Investment in raising the skill base on the community.
	Local communities (+'ve)	• Support for business creation to meet the growing needs if development increases. • Investment in the community act
	Raising living standards (+'ve)	• Accessing key services in the region at affordable prices. • The impact of having a local petrol station; transport to work. • Local employment reduces creates greater affordability at home.
	Communication	• Connecting the region to the world. • The influence of technology at home and at the office. • Improvement work practices with better accessibility. • WIFI.

7 What does all of this mean?

7.1 The greatest impact on regions with any development will always be on our people. This means that all change-directed initiatives need to make a difference for the people living in the targeted area. MBIE's research states that prosperity for the people is about investing in opportunities that result in **job creation** that has **sustained employmen**t and provides an **increase in household incomes** (Ministry of Business Innovation and Employment, 2017).

7.2 There is a positive outlook for growth in the kiwifruit industry as set out in the market demand and global growth statistics. Therefore, it is no surprise that Zespri has a complimentary growth strategy.

Figure 14 Summary Impacts and Emerging Themes

7.3 The current Government's focus on regional development has established programmes to inspire regional growth initiatives. This presents clear synergies with the strategic growth objectives of the industry, the regional growth programme of the Government and the potential the impact at a regional level.

7.4 I believe that a multifaceted approach has a higher chance of providing positive outcomes for all, however, what appears to be missing is an appreciation of the community perspective. For this reason, this research is able to present that missing perspective.

7.5 People who live and work in our regions often have different perspectives about things that impact or affect their community, by comparison to stakeholders that have an interest however are removed from the everyday life.

7.6 The emerging themes provided great insight into regional perspectives. The impact on our **People,** focused primarily on sustainable employment opportunities for the regions. The impact on our **Land** captured concerns around the use of chemicals and sprays on orchard; and **Social Investment** was about investing raising the living standard, providing educational pathways, allowing for basic necessities like communication capability, but most importantly transport.

7.7 Interestingly, the views and experiences of locals who have lived and worked in the region and or on-orchard for many years expressed a high level of concern regarding the chemicals and sprays currently being used. The opportunity for the industry is to engage with the regions to inform and educate about on-orchards practices as well as investigate alternative methods. The opportunity for locals, is to be proactive and investigate what spraying practices are being used locally, and ask what is being done at an industry level to address alternative spray and chemical use.

7.8 Maori have a close connection with the land and uphold the role of being the kaitiaki (guardian) of the land, air and water. This role entails protection for this generation to the next. Many of the concerns raised regarding sprays and chemical practices relate to kaitiakitanga (guardianship). These practices are seen to directly contradict the role of kaitiakitanga (guardianship).

7.9 Understanding the importance of this role is an opportunity for the kiwifruit industry. The opportunity is in how the industry reports or communicates to Maori growers. For example, how can reporting regimes be adapted to measure on-orchard kaitaikitanga practices. This would go a long way to addressing the concerns raised.

7.10 The regions are rich in history, culture and in land, however not necessarily in monetary means and management capabilities. The richness of our primary industry provides the potential to create other opportunities for those in the regions. The regions need to stop acting as landlords (in a passive state) and transition to being astute business owners who are responsible for driving growth and opportunities for the people.

8 Conclusion

8.1 The starting point for this research was to attempt to ascertain the impact on regional New Zealand as we try to meet the growing demand for kiwifruit development. The approach for this research was from the perspective of the people who live and work in regional New Zealand, rather than the kiwifruit industry. This approach differs to research that is currently available.

8.2 Unfortunately, to reach a conclusion that is both tidy and simple as a result of the research carried out is not possible in this case. The responses show the difficulty in encapsulating a region that has many different characteristics.

8.3 It is clear that a deeper analysis needs to be carried out in this area and in regional New Zealand so that we are able to truly understand direct, indirect and induced impacts of these activities.

Only then will we be able to provide an accurate picture of how development truly impacts and affects our regions.

8.4 What we do know is that the this research has raised many more questions than answers, and that impact for regions is coupled with things such as isolation, economics, social, cultural and generational disparity along with many other key indicators that point to a multi-faceted approach.

8.5 If we are looking at a multifaceted approach then the focus is about how we uplift regions to adequately prepare for the development of an industry.

8.6 The three emerging themes provide the required guidance for any stakeholder to develop their multifaceted strategy:

- the impact on our **People**;
- the impact on our **Land**; and
- the importance of **Social Investment**

8.7 I hope that the insights gathered will assist key stakeholders that interact with the regions. I hope it will help them understand the macro and micro impacts an industry can have on a small region. It is important to note that not all impacts are negative however can be perceived in that way, if stakeholders are not proactively engaging.

9 Recommendations

9.1 The following recommendations have been prepared to guide and support key industry stakeholders when working in our regional kiwifruit communities.

THAT a multifaceted strategy is required when growing industries in our regions. This will require collective involvement from the communities, industry and Government. **STRATEGY**

THAT the voice of the people is critical in the development of any strategy, therefore any strategy needs to include and allow time for meaningful engagement. **ENGAGEMENT.**

THAT a knowledge gap currently exists in our regional communities about on-orchard kiwifruit practices. **INFORMATION**

THAT a Maori grower participation strategy needs to be developed to increase participation within the kiwifruit industry. **MAORI PARTICIPATION**

10 References

About our District. (n.d.). Retrieved from Opotiki District Council : http://www.odc.govt.nz/our-district/about-our-district/Pages/default.aspx

ANZ. (2018). *Insights into the Kiwifruit Industry Investment Opportunities and Challenges.*

Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research*, 385-405.

Gray, J. (2018). Kiwifruit growing spills beyond Bay of Plenty to other regions. *New Zeland Herald*.

Healthy Eating . (2018). Retrieved from Ministry of Health: https://www.health.govt.nz/your-health/healthy-living/food-activity-and-sleep/healthy-eating

Hon Shane Jones, E. D. (2018, February). Operation Design of the Tuawhneua Provincial Growth Fund. Wellington.

Hunter, Z. (2017, June 27). North Island Maori purchase huge 98-hectare kiwifruit portfolio. *New Zealand Herald*.

Hunter, Zoe. (2018, May 9). Kiwifruit worker shortage: Low wages, high living costs blamed. *New Zealand Herald*.

Jones, H. S. (2017, December). The Provincial Growth Fund.

Jones, H. S. (2018, February 23). *Provincial Growth Fund open for business*. Retrieved from Beehive: https://www.beehive.govt.nz/release/provincial-growth-fund-open-business

Ministry for Primary Industries. (2013). *The Future of Maori Agribusiness: Growing the Productive Base of Maori Freehold Land.*

Ministry for Primary Industries. (2018). *Situation and Outlook for Primary Industries March 2018.* Ministry for Primary Industries.

Ministry of Business Innovation and Employment. (2017). *Briefing for the Incoming Minster for Regional Economic Development .*

NIWA. (2017, September 1). The most commonly grown variety of kiwifruit around Te Puke will not be commercially viable in the area by the end of the century, say scientists.

Piddock, G. (2017). Niwa finds green kiwifruit under threat from climate change in Bay of Plenty growing. *NZ Farmer*.

Scrimgeour, F., Hughes, W., & Kumar, V. (2017). *The Economic Contribution of Kiwfruit Industry Expansion to the Bay of Plenty, Northland and New Economies.* Institute of Business Research, The University of Waikato.

Statistics New Zealand. (2018, February 14). Food price index: January 2018.

Te Whanau Apanui. (n.d.). Retrieved from TeAra Government : https://teara.govt.nz/en/te-whanau-a-apanui/page-4

Zespri. (2011, April 13). The role of governance in the success of the New Zealand kiwifruit industry.

Zespri. (2017). *Zespri 5 Year Outlook .*

Zespri. (2017, November 24). Zespri wins top award for best growth strategy.

11 APPENDICES

Appendix A

Survey Questions

1. Contact Information (Optional)
2. What is your gender?
3. What is your age?
4. Are you in paid employment?
5. Which of the following categories best describes your employment status?
6. What industry do you work in?
7. What is your approximate annual income?
8. Using the below options, please rank from 1-6 where most of your income is spent. Eg Most of my income is spent on Transport - 1, Mortgage-2, Food-3 etc.
9. What town do you get petrol from?
10. How often do you have to get petrol?
11. How often do you do your household shop for groceries?
12. Where do you get your household groceries from?
13. Do you buy in bulk when grocery shopping & Why?
14. How many people currently live in your household?
15. How many are under 18?
16. How many are over 18?
17. How many of the over 18 are in paid employment?
18. What opportunities are there with kiwifruit development in your area?
19. What concerns do you have with kiwifruit development in your area?
20. What are the positive and negative impacts of kiwifruit development for your rohe?

Survey Analysis

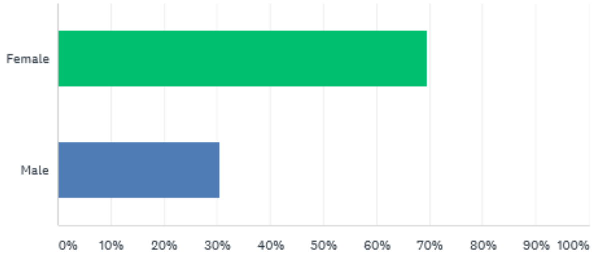
Below is an analysis of some of the survey questions.

Q2

Customize Export

What is your gender?

Answered: 49 Skipped: 3

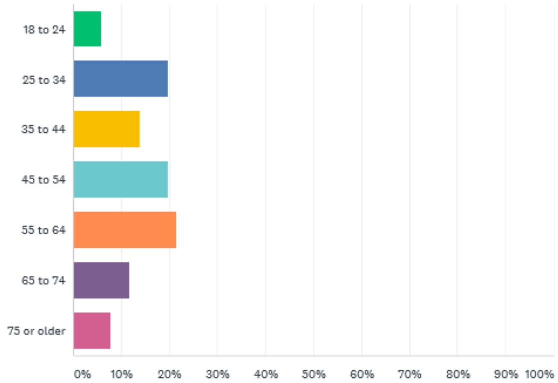


ANSWER CHOICES	RESPONSES	
Female	69.39%	34
Male	30.61%	15
TOTAL		49

Q3

What is your age?

Answered: 51 Skipped: 1

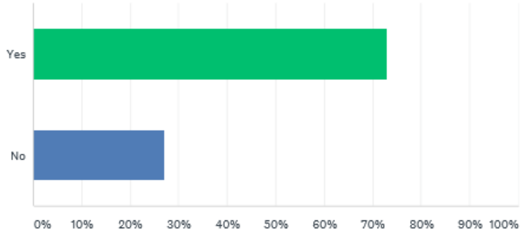


ANSWER CHOICES	RESPONSES	
18 to 24	5.88%	3
25 to 34	19.61%	10
35 to 44	13.73%	7
45 to 54	19.61%	10
55 to 64	21.57%	11
65 to 74	11.76%	6
75 or older	7.84%	4
TOTAL		51

Q4

Are you in paid employment?

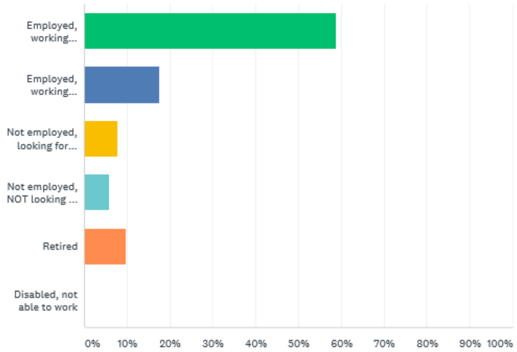
Answered: 52 Skipped: 0



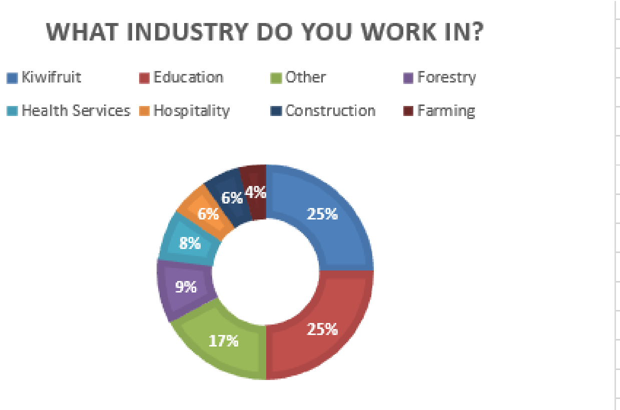
ANSWER CHOICES	RESPONSES	
Yes	73.08%	38
No	26.92%	14
TOTAL		52

Which of the following categories best describes your employment status?

Answered: 51 Skipped: 1

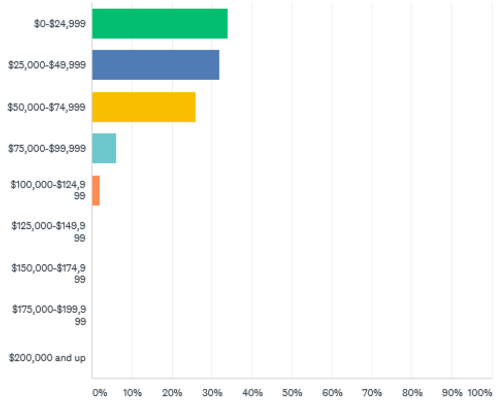


ANSWER CHOICES	RESPONSES	
Employed, working full-time	58.82%	30
Employed, working part-time (and or seasonal)	17.65%	9
Not employed, looking for work	7.84%	4
Not employed, NOT looking for work	5.88%	3
Retired	9.80%	5
Disabled, not able to work	0.00%	0
TOTAL		51



What is your approximate annual income?

Answered: 50 Skipped: 2

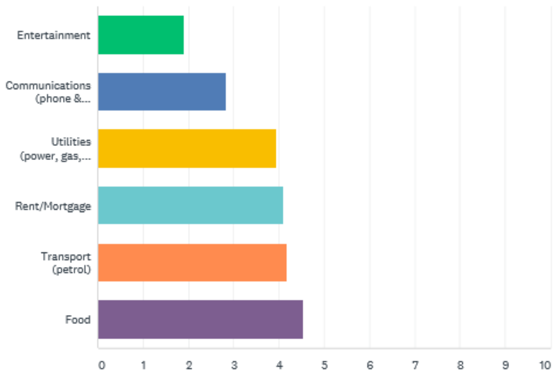


ANSWER CHOICES	RESPONSES	
$0-$24,999	34.00%	17
$25,000-$49,999	32.00%	16
$50,000-$74,999	26.00%	13
$75,000-$99,999	6.00%	3
$100,000-$124,999	2.00%	1
$125,000-$149,999	0.00%	0
$150,000-$174,999	0.00%	0
$175,000-$199,999	0.00%	0
$200,000 and up	0.00%	0
TOTAL		50

Q8

Using the below options, please rank from 1-6 where most of your income is spent. eg Most of my income is spent on Transport - 1, Mortgage-2, Food-3 etc

Answered: 51 Skipped: 1



	1	2	3	4	5	6	TOTAL	SCORE
Entertainment	9.76% 4	2.44% 1	0.00% 0	9.76% 4	12.20% 5	65.85% 27	41	1.90
Communications (phone & internet)	0.00% 0	4.55% 2	18.18% 8	36.36% 16	38.64% 17	2.27% 1	44	2.84
Utilities (power, gas, rates)	10.87% 5	26.09% 12	30.43% 14	17.39% 8	10.87% 5	4.35% 2	46	3.96
Rent/Mortgage	46.34% 19	7.32% 3	7.32% 3	4.88% 2	17.07% 7	17.07% 7	41	4.10
Transport (petrol)	13.95% 6	37.21% 16	16.28% 7	18.60% 8	13.95% 6	0.00% 0	43	4.19
Food	28.89% 13	24.44% 11	28.89% 13	11.11% 5	2.22% 1	4.44% 2	45	4.53

Q9

What town do you get petrol from?

Opotiki	64.71%	33
Waihau bay	13.73%	7
Whakatane	7.84%	4
Untagged	13.73%	7

Where do you get your household groceries from?

Answered: 48 Skipped: 4