



WAIKATO



About Regional Skills Leadership Groups

The Government established independent Regional Skills Leadership Groups (RSLGs) to identify and support better ways of meeting the future skills and workforce needs of Aotearoa New Zealand's regions and cities. RSLGs are connecting with stakeholders, gathering labour market information, and providing advice to decision-makers in regions and central government. Functioning independently, the groups are locally based and regionally enabled, and supported by a team of data analysts, advisors and workforce specialists at the Ministry of Business, Innovation & Employment. Members of RSLGs include iwi/Māori, regional industry leaders, economic development agencies, community and government representatives, who contribute their knowledge and local expertise.

<https://www.mbie.govt.nz/waikato-rslg>

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Te Kāwanatanga o Aotearoa
New Zealand Government

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1. Mihi

❖ Māku anō e hanga tōku nei Whare.

Ko ngā pou o roto he Māhoe, he Patetē. Ko te tāhuhu he Hīnau. He whakatupu ki te hua o te rengarenga me whakapakari ki te hua o te kawariki.

E mihi ana ki te whenua, e tangi ana ki ngā tāngata katoa. E tangi apakura ana ki te tini me te mano kua ngaro atu kei tua o te arai, moe mai ra, haere atu ra. Me whakahonore a Kingi Tuheitia Pōtatau Te Wherowhero te tua whitu me tōna whare kāhui ariki. Pai marire.

I shall fashion my own house. The pillars inside will be of Māhoe and Pātete, and the ridgepole of Hīnau. Those who inhabit the house will be raised on rengarenga and nurtured on kawariki.

Greetings to the land that cries out to all people. Let us mourn the multitudes who have gone beyond the veil, may they be at rest, farewell. Let us honour King Tuheitia Pōtatau Te Wherowhero VII and his royal house. Blessings of goodness and peace be upon you.

Photo: Hamilton Waikato Tourism

2. Co-Chair Foreword

Since its establishment in September 2021, the Waikato Regional Skills Leadership Group ('the Group' or 'RSLG') has worked hard to unravel, unpack and understand how the impacts of COVID-19 have continued to reshape our lives. The challenges resulting from the pandemic continue to be felt far and wide and have forced all sectors to adapt and improvise to manage its impacts.

This is the Waikato RSLG's first Regional Workforce Plan ('RWP'), the theme of which is based on the vision that King Tāwhiao (the second Māori King) left for his people. It is a vision that constructs the foundation from which the region can continue to build its capacity. Why build a house with Māhoe, Patetē and Hīnau when these trees are not traditionally known for their structural capabilities, let alone as building materials for a house? King Tāwhiao encouraged his people to reimagine their world from another perspective, through adapting and improvising. In preparing this first iteration of the RWP, the RSLG has drawn upon local insights and local voices that best reflect the adaptation and improvisation required to drive workforce development in the Waikato.

The RWP presents the workforce ecosystem as a road winding from "the Farm to the Port"; that is set against a backdrop of Te Ao Māori, Healthy Communities, The Future of Work, and Climate Adaptation. Our limited resources and short timeframe forced us to narrow our scope for this first RWP, and to prioritise actions for the following sectors:

- Primary Industries
- Digital Technologies
- Manufacturing and Engineering
- Construction and Infrastructure
- Freight and Logistics

Through our collective networks the RSLG has made a start in surfacing several actions that we will deliver on over the next 18 months. Some of the actions you will see are sector specific; many others are cross-sector and will require a more collaborative approach. We look forward to connecting with you as we implement and progress our first RWP.

Pai mārire



Brendon Green
Co-Chair



Keith Ikin
Co-Chair



❖ This Waikato Regional Workforce Plan has been developed by the Waikato Regional Skills Leadership Group to provide strategic focus for all stakeholders across the region who have an interest in regional workforce planning and labour market matters.

The Group has built on the research, insights and recommendations of the interim Waikato Regional Skills Group¹ ('Waikato iRSLG'), as well as considering the numerous economic development strategies and agendas across the region, including those produced by Te Waka, The Waikato Plan and Te Whare Ohaoha, alongside central and local government plans and programmes including the Government's Employment Strategy.

The group followed an agreed national approach to the development of the RWP, namely

1. ASPIRATIONS

Identify labour market aspirations for the region.

2. ANALYSIS

Use statistical and forecast data, empirical insights and stakeholder engagement feedback to both test and refine the aspirations, and co-design potential actions.

3. ACTION

Develop an action plan to achieve the outcomes articulated in the aspiration statements.

To define the aspirations, the Group considered the key labour market challenges ('what is the problem we are trying to solve?') and the many existing interventions and actions ('what is already underway?') including skills, participation, productivity and sub-regional economic drivers. They also looked closely at both the supply (people) and demand (business/industry) sides of the labour market, with a view to building tangible actions that address employment, training and education, and immigration matters.

The Group then refined this comprehensive scope into two sections of aspirations – focus sectors and themes. To support the prioritisation process, the Group applied a ‘from farm to port’ lens to their thinking; that is, the sectors or industries across the entire Waikato rohe that are involved in the journey of goods from farm to port. These sectors (Primary industries, Digital Technologies, Manufacturing and Engineering, Construction and Infrastructure, Freight and Logistics) have become the focus industries for this iteration of the RWP. Future plans will address other sectors.

When considering themes, the Group looked at where explicit challenges and opportunities exist across the entire Waikato area, and agreed to include Te Ao Māori, our Waikato Workforce, Climate Adaptation and Future of Work as themes. The Group spent some time considering the Healthy Communities theme. Despite not having a Health sector representative on the Group, there is some commentary provided for consideration and this industry will be explored further in the next iteration of the plan.

As well as the above, the Group also developed the following value statements that underpin their work;

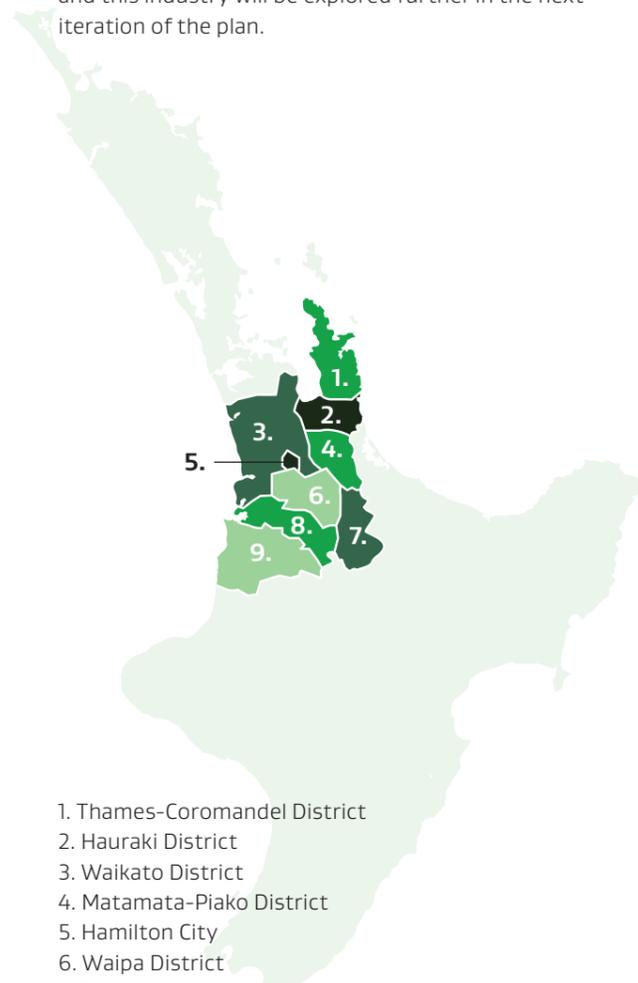
- **Ōritetanga (Equity):** Every person in the Waikato should receive the support they need to succeed in education and achieve decent and rewarding employment to lead fulfilling lives.
- **He Tangata (People):** Our people are our greatest asset with their health and wellbeing as a priority.
- **Whakangungu ahumahi (Industry Training):** We focus on key sectors of the Waikato economy.
- **Te anga whakamua (The future):** New technologies means new opportunities to develop our workforce.

Once drafted, the aspiration areas were tested with a range of stakeholders across the Waikato, and their feedback was used to further refine the group’s thinking. Alongside this engagement process, the group considered relevant data and insights to further deepen their understanding of the identified focus industries and themes. From this knowledge base, a long-list of actions was developed, and then tested and further refined through a series of stakeholder workshops.

This plan details both the challenges and opportunities the group considered for each aspiration area, with a list of actions needed to create a positive impact and outcome for each. Substantive literature and data is contained in the report appendices to support consideration of each of the five aspiration areas.

The actions and recommendations by the Group largely fall into one of three categories; influence (where the Group uses their influence to create better outcomes), collaborates (where the Group collaborates with others to create better outcomes) or act (where the Group undertakes a specific task or action to create better outcomes). The Group will now begin to work with stakeholders on the priority actions below and will regularly report back on progress through public reports that will be shared on the MBIE website.

This plan details both the challenges and opportunities the group considered for each aspiration area, with a list of actions needed to create a positive impact and outcome for each.



1. Thames–Coromandel District
2. Hauraki District
3. Waikato District
4. Matamata–Piako District
5. Hamilton City
6. Waipa District
7. South Waikato District
8. Otorohanga District
9. Waitomo District



Photo: Lisa Armstrong

Priority Actions

ACT

1. Co-design, with local youth, community providers, employers and iwi/Māori, a shared framework for augmenting current programmes to support rangatahi entering the workforce; and measuring the quality and impact of **education to employment** support services.
2. Complete a stocktake of existing or planned **iwi/Māori led local workforce** programmes.
3. Identify industry-led existing programmes, including those that support employers to be ‘better employers’, that will be most impactful for **attracting, training and retaining workers** across the Waikato, and advocate for prioritised delivery into sub-regions.
4. Identify industries/employers in target priority industries across the Waikato that have workforces most impacted by **Industry 4.0** and need support with the transitioning from manual skills to Industry 4.0 relevant digital skills; and develop programmes to support upskilling.
5. Establish the **Waikato Futures Academy** that supports both current and future skills needs of the primary industries and added value manufacturing sectors, including Agritech, Biotech, Agribusiness, Environmental and Future Foods capabilities.
6. Develop a pilot **“Tuakana-teina”** reciprocal skills transfer programme to support years of work experience, practical skills, and sector knowledge transfer from older/retiring workers to new/youth workers; and digital / ICT skills from younger workers to older workers.

COLLABORATE

7. Work with stakeholders to research what the key regional workforce implications of climate change are and how **climate adaptation** will impact Waikato businesses and workforce.
8. Partner with lead agencies to make sure programmes like **Apprenticeship** Support, FlexiWage, Mana in Mahi and Skills for Industry are being fully realised in sub-regional communities across the Waikato.

INFLUENCE

9. Consider the findings from the Diversity Works / Construction Accord ‘Diversity Roadmap’ project and Waihangā Ara Hau **‘Equity in Industry’** workforce plan and identify actions and delivery mechanisms for the Waikato.
10. Support the creation of **flexible learning environments** to encourage part-time on-the-job and off-the-job learning.
11. Increase the provision and accessibility of drivers **licensing services** across sub-regional Waikato.
12. Advocate for increased support for Te Waharoa - **Gateway to the Trades** programme and explore potential to extend the model to other iwi / industries in the Waikato region.
13. Support the **Road to Success** programme for the Waikato region which focuses on growing the pipeline of truck drivers, including exploring opportunities to increase the pipeline of female drivers.

3. The Waikato Regional Story

The Waikato RSLG area is a strategically significant land area between the fastest-growing metropolitan centres in New Zealand and at the heart of the 'golden triangle', the economic zone encompassing Auckland, Hamilton and Tauranga, which generates over 50 per cent of New Zealand gross domestic product (GDP) and is home to over 50 per cent of NZ's population.ⁱⁱ

The Waikato is rich in Māori history, the home of Kiingitanga and with ties to many Iwi. Tangata Whenua holds a significant physical and cultural relationship with the Waikato region. The authors of this report acknowledge Tangata Whenua as kaitiaki within the Waikato region.

At March 2021, the Waikato region had a resident population of just over 461,000 with 211,499 filled jobs; 45,000 of which were occupied by Māoriⁱⁱⁱ. Data from the 2018 census indicates that more than 22,000 people of Pacific descent call the Waikato region home.

Business and industry

The Waikato has a higher concentration of some industries when compared to the national economy. The infographic indicates that the region is significantly more concentrated in primary industries (dairy cattle farming alone accounts for 6.2 per cent of the regional economy but only 2 per cent of the national economy). The region also has a concentration of economic activity in manufacturing which makes up 9.2 per cent of regional GDP.

Despite these obvious concentrations the Waikato region's economy is still more diversified than the national economy with a Herfindahl-Hirschman index (HHI) of 21.5^{iv} (national index is 48.1). An HHI measure closer to 0 indicates a greater diversity of industries and reveals a more varied set of employment opportunities for the region's communities.

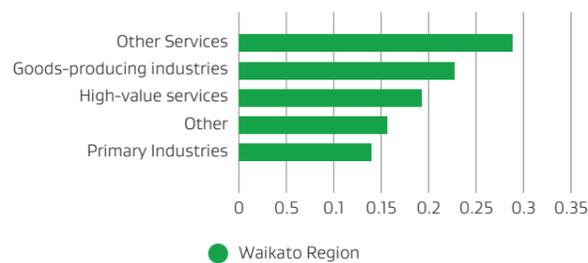
One of the positive outcomes of having a diversified economy is that it can weather economic shocks better than highly concentrated economies.

It is important to acknowledge that while the Waikato region as a whole has a relatively well diversified economy, there are stronger concentrations of particular industries at sub-regional level (e.g., dairy farming in the Ōtorohanga District, mining in Hauraki and Thames Coromandel). In general, the economies of the region's smaller districts play to their endowments of natural resources, but this can leave them exposed to fluctuations in commodity prices.

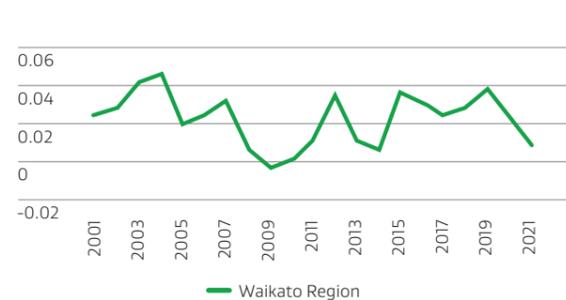
One of the challenges is that the region needs to attract and retain people to the region to help meet its labour demands as it is unlikely that the region will ever have sufficient local tertiary provision to meet all its workforce needs from within.

The group noted labour mobility as a factor across the Waikato, with workers living in one district and commuting to work in another. Stakeholders commented that it's quite common in locations like Kileleith in the South Waikato, and the many dairy factories across the region, to have staff that live 50 to 100 km away from their place of work.

Contribution to GDP by broad sector, 2021 Waikato Region



GDP growth, 2001-2021 Waikato Region



461,000
RESIDENT POPULATION

211,499
FILLED JOBS

45,000
JOBS OCCUPIED BY MAORI

Labour Market overview

Waikato is known for its green pastures and food production, supported by manufacturing (12 per cent of filled jobs). In recent years, the region seen significant population growth that has, in turn, led to growth in the construction sector workforce (19 per cent of total job growth), and the health care and social assistance workforce (15 per cent of total job growth).

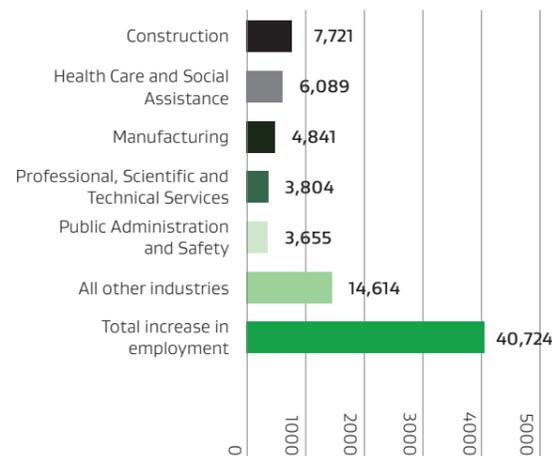
These industries, and many more in the region's economy, are finding it increasingly difficult to recruit and retain staff. Stakeholders reported experiencing increasing pressure, with competition both intra-regionally and from neighbouring metropolitan areas (Tamaki Makaurau and Tauranga) driving up wage and condition expectations.

A review of the sub-industries that created the most jobs in the 10-year period from 2011 – 2021* shows that the highest growth rate was experienced in the Cafes,

Restaurant and Takeaway Food Services industry (+2,902 jobs). However, COVID-19 has significantly affected this sector over the past two years. Waikato can retrain and retain its hospitality workers to resolve some of our labour supply issues, but a nimble, integrated support and training model will be needed for the region to make the most of this opportunity.

The Group acknowledge that many people start their working life in the services industry, often in tourism, retail and hospitality sectors. These entry-level roles provide valuable soft-skills and help workers build work ethic and base skills that they will take into their future careers.

Industries which created the most jobs, 2011 - 2021



The region's demographic profile is changing. The 2018 census indicated that 64 per cent of the Māori population in Waikato was less than 35 years old.

Future workforce

Waikato's future workforce will be shaped by current global megatrends, including urbanisation, climate change and resource scarcity, a shift in global economic power, demographic and social change, and technological breakthroughs.

The nature of skills needed now and in the future are rapidly changing and the supply of those skills via the Vocational Education & Training (VET) system is yet to fully reflect those needs. Uptake of Industry 4.0 processes in industries such as manufacturing, will continue to influence this and intensify the pressure.

The region's **demographic** profile is changing. The 2018 census indicated that 64 per cent of the Māori population in Waikato was less than 35 years old^{vi}. In the future, Māori will make up an increasing percentage of the working population. Creating more positive learning and training outcomes (and social capital) for Māori will be essential if businesses are to match labour needs with local talent. Waikato also needs its businesses to build their cultural competency levels to ensure they can attract, support and retain a more diverse workforce.

Urbanisation will continue to drive urban construction across the rohe, with a projected 51,000 houses needed in the region by 2043, according to the Waikato Housing Initiative^{vii}. However, concern about the scarcity of timber and other materials, and a push for 'greening' the industry suggests that the nature of building will change and different skills may be required.

Climate change is having a material impact on those businesses and communities dependent on water and other natural resources. More extreme weather events may require a shift in how Waikato grows and produces its food with a continued push for science and technology driven innovations. In 2019, Waikato had the highest level of emissions of any regions in New Zealand and experienced the largest annual increase in emissions. While this reflects the critical role the Waikato region plays in New Zealand's power generation, freight, and food industries, it also highlights the significant disruption the regional economy is likely to face to decarbonise.

The changing **global landscape** will result in the closure of some previously stable markets and the creation of new ones. This is likely to result in the region's businesses needing to access or carry skills able to pivot into new markets where different languages and cultures exist.

The scale and pace of **technology** breakthroughs are creating new productivity gains and operating models for those investing in technological advances.



Photo: Waikato District Council

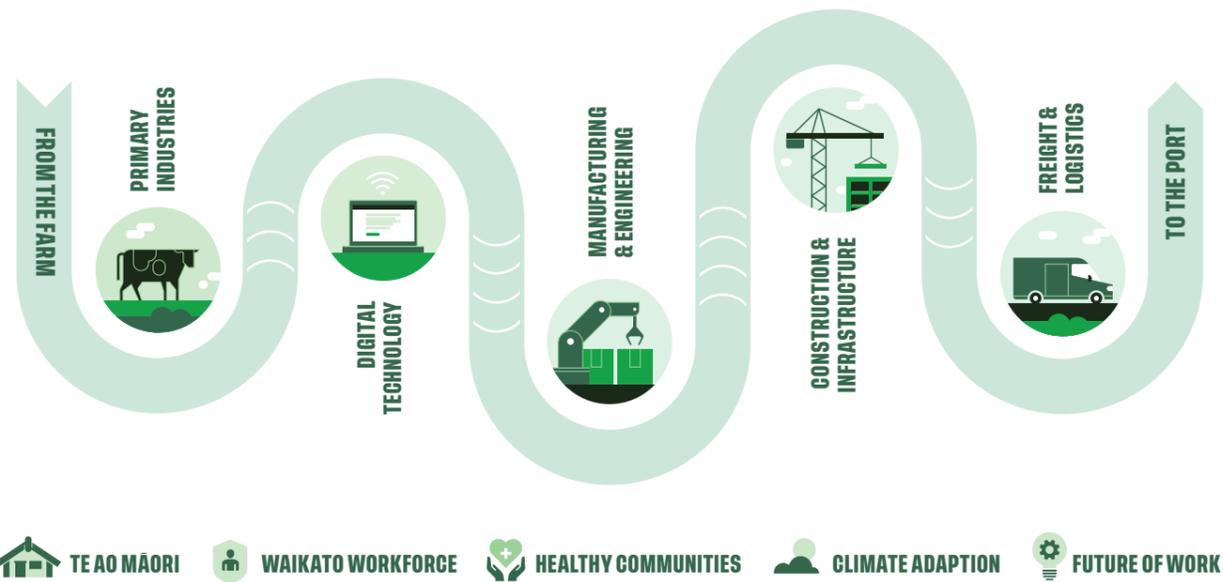
Urbanisation will continue to drive urban construction across the rohe, with a projected 51,000 houses needed in the region by 2043.



Photo: Fielddays

4. Regional Aspirations Summary

FROM FARM TO PORT



KO WAIKATO TE AWA, HE PIKO HE TANIWHA, HE PIKO HE TANIWHA. WAIKATO TANIWHARAU.

The Waikato River is a key life force of the region, as illustrated in the metaphor above, where at every bend there is a Taniwha, a supernatural entity. The Taniwha represents chiefs, which in turn represents people who not only connect through shared whakapapa but who also share their own special relationship with the Waikato River, the country's longest at 425 km. It flows from Taupo-nui-a-Tia, meanders through to Te Puaha o Waikato, where it eventually flows out into Te Tai-o-Rēhua.

Prior to the impacts of raupatu and the erection of the nine hydro dams, Māori enjoyed unimpeded travel up and down a healthy and unpolluted river. The river was not only a food basket, but the water was used in ceremony and for healing. Historically the river was like a highway and was alive with waka carrying people to various destinations, and like the Golden Triangle, was an expressway of freighted goods. The impacts of raupatu not only saw the loss of a peoples' economic base through massive land confiscations, it also saw a significant decline in the health of the river caused through increasing pollution. As the health of the river declined, so too did the health of the people living along its banks, who relied on it for food and trade.

WHATUNGARONGARO TE TANGATA, TOITŪ TE WHENUA

Iwi continue to seek cultural redress through Te Tiriti o Waitangi ('the Treaty') claims process to reinforce their identity as a Treaty partner. For those who have settled their claims, the road to building upon their capacity and capability as an economic hub continues at pace.

From a Te Ao Māori world view, land cannot be owned but rather iwi are Tangata Whenua and Kaitiaki, they are people of the land with a caretaker responsibility for future generations. Similarly, success in creating and future proofing a strong economic base for successive generations to benefit from and build upon will ensure their sustainability.

Iwi are kaitiaki of their whenua, and are actively seeking solutions to protect and enhance the environment for future generations.

Water is the life blood of the region, not only is it home to the country's longest river (from which it takes its name), it is also blessed with two coastlines: each providing food and an economic base for several iwi and communities.

NĀU TE ROUROU, NĀKU TE ROUROU, KA ORA AI TE IWI

The graphic depicts a road from the farm to the port, along which runs the sectors in focus for this RWP. It is set against a backdrop of partnerships and relationships that are necessary for sustainable growth and productivity. Te Ao Māori is a key component of this ecosystem, and as reflected in the whakatauki, iwi recognise the importance of collaboration and the building of strong and enduring partnerships. Like any good partnership, it is important for the participants to understand each other's perspective.

The RSLG wants to see more support for employers in understanding a Te Ao Māori world view.

Ōritetanga Equity

Every person in the Waikato should receive the support they need to succeed in education and achieve decent and rewarding employment to lead fulfilling lives.

He Tangata People

Our people are our greatest asset with their health and wellbeing as a priority.

Whakangungu ahumahi Industry Training

We focus on key sectors of the Waikato economy.

Te anga whakamua The future

New technologies means new opportunities to develop our workforce.

Photo: WS Watamata



5. Aspiration Themes

❖ **Ko Mōkau ki runga,
Mōkau is above**

**Ko Tāmaki ki raro,
Tāmaki is below**

**Ko Mangatoatoa ki waenganui.
Mangatoatoa is between.**

**Pare Hauraki, Pare Waikato,
The boundaries of Hauraki,
the boundaries of Waikato**

**Te Kaokaoroa-o-Pātetere.
To the place called ‘the long
armpit of Pātetere’.**

Photo: Aquaculture NZ

5.1 Te Ao Māori

The Waikato RSLG region lies within the Tainui Waka boundary, as described in the pepeha. From a Te Ao Māori world view, the North Island is widely known as Te Ika a Maui (the fish of Maui), with its head, Te Upoko o te Ika, being in the Wellington area.

Te Ao Māori views the head as the most sacred part of the body, therefore in reference to its geographic location to the head of the fish, Mokau is described as located “above”. These geographic markers not only denote the richness of whakapapa linking iwi within the region, but they also highlight the ecosystem of relationships that are crucial in progressing peoples’ aspirations for sustainable growth from a Te Ao Māori view.

The Te Ao Māori view of success is a collective success in cultural retention and dissemination, and the achievement of social outcomes for people. “When economic, cultural and social outcomes of success are attained as ‘joint outcomes’ then we are more likely to be achieving Māori wellbeing.” - Distinguished Professor Graham Hingangaroa Smith^{viii}.

Iwi and Māori entities from within the region, continue to support sustainable economic development strategies that will benefit future generations. The Māori economy is now a \$70 billion sector with significant growth potential emerging post settlement^{ix}.

The plan for future growth is detailed in Te Whare Ohaoha, the Waikato Region Māori Economic Development Action Plan Refresh of 2019^x.

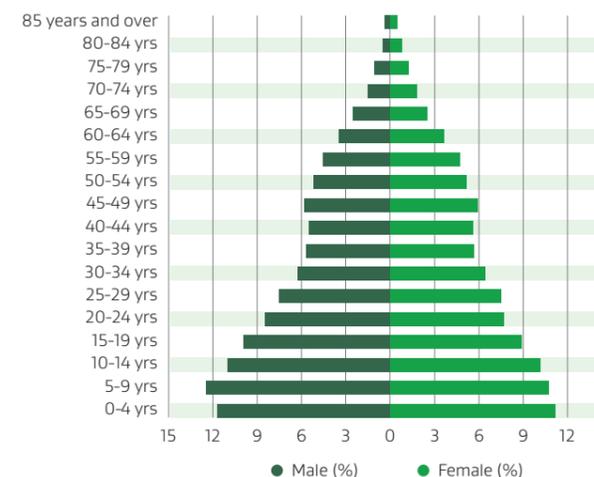
The Te Ao Māori view of success is a collective success in cultural retention and dissemination, and the achievement of social outcomes for people.

Te Whare Ohaoha provides the necessary framework and the endorsement from key stakeholders to “... provide an opportunity for Māori in the Waikato Region to work with and among fellow stakeholders to lift the overall economic performance of the region’s financial and physical, human, social, cultural and natural capitals, with the intention of raising the living standards and intergenerational wellbeing of Waikato Māori.”

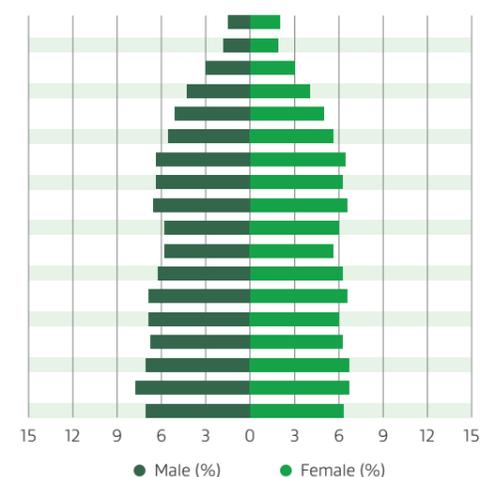
Te Whare Ohaoha is supported by three pou (or pillars):

- Te Poukaiāwha: Māori Collectives
- Te Poutokomanawa: Whānau Enterprise
- Te Poutūārongo: Rangatahi

Age and sex of Māori in Waikato Region, 2018 Census



Age and sex of people in Waikato Region, 2018 Census





TE AO MĀORI ACTIONS

- Identify opportunities to partner with iwi/Māori entities to support the delivery of existing workforce development actions that relate to the future of work.
- Support capability building programmes for Māori owned businesses across the Waikato to enable them to fully benefit from social procurement provisions.

The Poutūārongo pillar resonates with much of the work that the RSLG has undertaken in the rangatahi space alongside partners working across the Waikato Plan and Waikato Wellbeing Project. This pillar asserts that the development of capable, confident rangatahi is essential for economic prosperity in the region. In 2018, it was estimated that 57 per cent of Māori living in the region were under the age of 30 years, and that beyond this point the Māori population tapers off significantly over time^{xi}.

Through its engagement across the Waikato region to date, the RSLG has identified that there are several active initiatives that support the development and wellbeing of rangatahi as leaders. Rather than adding further initiatives, the RSLG will partner with iwi/Māori to advance their workforce development aspirations, including completing a stocktake of the various initiatives across the region to analyse their effectiveness and identify opportunities to increase the most impactful activities.

In 2018, it was estimated that 57 per cent of Māori living in the region were under the age of 30 years, and that beyond this point the Māori population tapers off significantly over time.^{xi}

Case Study

BUILDING CAPABILITY IN OUR MĀORI ENTERPRISES

Te Waka, supported by Te Puni Kōkiri and Ministry of Social Development, and in partnership with Waikato Tainui, is currently leading a project to support the development of pathways designed to address capability and capacity issues that limit Māori SMEs ability to participate in supplier diversity opportunities across the Waikato. The project, running until December 2022 aims to:

Identify and create pathways for Māori SMEs to address capability and capacity gaps, including identifying appropriate services providers to support upskilling

- Identify funding pathways
- Create an Iwi focused pilot, in collaboration with Waikato Tainui
- Create a second model that supports Iwi that are in a pre-treaty settlement space

The outcomes of this project will inform future iterations of this Regional Workforce Plan.

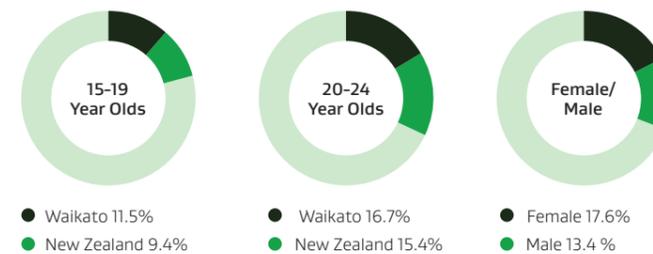
5.2 The Waikato Workforce

The region's people are at the centre of this mahi. The dynamic of the Waikato community is changing, with migration patterns impacting on subregional communities as well as cities.

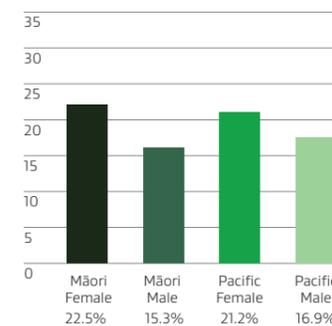
The region needs to ensure sustainable, decent and rewarding employment is available for current and future residents. It needs training programmes and enabling services to ensure its workforce are not only work-ready but inspired by career opportunities and industry needs across the Waikato and supported to explore these opportunities through fresh approaches to career counselling, mentoring and pastoral care. Investment is required to provide appropriate training for workforces facing disruption from environmental or technological changes, to ensure those workers are developing skills to allow them to secure productive and decent sustainable jobs.

The region also needs to empower under-served groups to have greater access and pathways into the labour market equally across the rohe. The Waikato RSLG identified two sub-groups in the regional workforce for priority action – Rangatahi (youth aged 15–24 years) and the growing cohort of older workers (adults aged 55 years and older). The Group has given primary focus to rangatahi in this plan with the aim of focusing on the ageing workforce in the next iteration of the RWP.

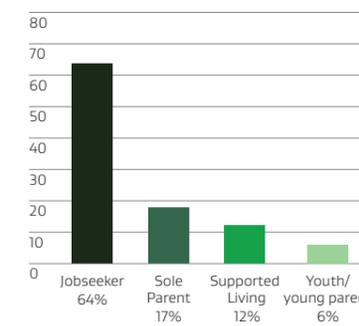
NEET rate



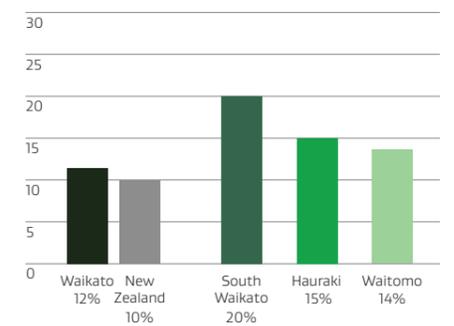
NEET rate 15–24-year-olds



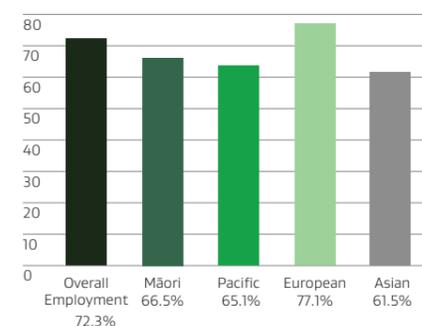
Types of benefits (16–24-year-olds)



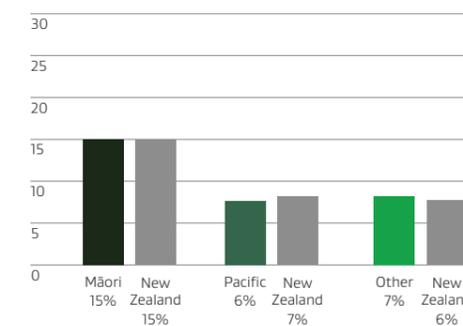
16–24-year-olds seeking a benefit



Workforce Participation 20-24 yr. olds



Benefit recipients by ethnicity



Waikato Rangatahi profile

Rangatahi living in the Waikato region make up 63,940 (or 12.6 per cent) of the resident Waikato population. Around 43 per cent of the Waikato region's rangatahi live in Hamilton, with 70 per cent living in the Hamilton, Waikato or Waipa areas. Almost one third (32.3 per cent) of the rangatahi population resident in the Waikato region are Māori, compared to the national average of 22 per cent. The areas with the highest proportion of Māori rangatahi are Waitomo (60.7 per cent), and South Waikato (47.7 per cent).

Around 30.5 per cent of Waikato region's rangatahi live in areas of high socio-economic deprivation, compared to the national average of 24 per cent. The areas with the highest proportion of youth living in areas of high deprivation are South Waikato (75.5 per cent), followed by Hauraki (56.8 per cent) and Waitomo (53.4 per cent).

The data highlights differences sub-regionally in demographic, economic and educational challenges faced by residents. South Waikato and Waitomo districts, both with high rangatahi Māori populations, feature consistently as subregions of high priority need across all measures. Therefore, addressing the equity of opportunities that are available and accessible to rangatahi across the Waikato to help improve these outcomes was a key consideration in the actions of the RSLG.

The feedback from employers in the stakeholder workshops echoed a gap between 'work-ready' expectations of employers and young workers. Employers acknowledged that there was work to be done to attract and retain young workers and support was needed to help local businesses become better employers of young workers, who can be particularly vulnerable.

As well as hearing from the voice of employers, the RSLG consulted closely with the Waikato Plan's Youth, Training and Employment ('YTE') advisory rōpū, and rangatahi-focused organisations such as Swivel Careers and SSEP (Smart Waikato's Secondary School Employer Partnerships). Overall, the consensus from data and stakeholder engagement indicated that through collaborative leadership, increased connectivity and visibility of support services, as well as greater levels of effective support; these challenges can be converted into opportunities for better educational, training and employment outcomes for rangatahi across the Waikato.

The Group will continue to work collaboratively with rangatahi support agencies, stakeholders and external providers to develop rangatahi-focused actions aligned to the aspirations of the region.



Photo: Manea Footprints of Kupe

Case study

CIRCUIT BREAKER TRIALS FOR YOUTH RESULT IN POSITIVE NEW DIRECTIONS

COVID-19 has adversely affected many youth across Waikato due to the challenges of extended lockdowns and economic downturn.

In response to this growing need, The Waikato Plan created a working group to better understand the challenges some rangatahi are facing^{xvi}.

"Our ultimate aim was to create new ways for these young people to find positive, new direction in life," says Michelle Howie from The Waikato Plan.

The groups most affected by economic downturn include youth, Māori, Pasifika, disabled, low-skilled and refugee/migrant communities. The circuit breaker trials were created to reach rangatahi in these groups throughout the Waikato region.

The aim of the trial was to:

- Introduce positive and inspirational elements into the lives of the young people to positively disrupt the likely path they were on and connect them back to training, employment or education.
- Create a change in perception among rangatahi and with the aid of support, to enable them to make different choices about what happens next in their life.



Our ultimate aim was to create new ways for these young people to find positive, new direction in life

Michelle Howie from The Waikato Plan.

- Give employers insight into how to support vulnerable young people into work and reinforce the life-changing aspects of this.

Different trials took place across key areas and demographics, including Raglan Area School, Hamilton Cook Island Association, South Waikato Pacific Islands Community Services, Paeroa College Alternative Education Unit, Anglican Action, Ngaa Taiatea Wharekura and Shama Ethnic Women's Trust.

The results of the trial provided enlightening and achievable opportunities for the rangatahi involved and created the ability for them to make different choices about what could happen next in their lives. Employers also gained valuable insight into how they could support these vulnerable young people as they transition into the workforce.



Photo: New Zealand Story

WAIKATO WORKFORCE ACTIONS

- Develop mentoring services to support the transition to work
- Ensure education, employment, and training services are tailored and culturally responsive.
- Ensure training is easily accessible across the Waikato.
- Support local, national and industry-led (peak body) initiatives to attract, train and retain workers in the Waikato region.

5.3 Climate Adaptation

The Waikato Region Climate Roadmap highlights regional exposure to the impacts of climate change, and to Government policies to reduce emissions, given that regional per capita net emissions are 30 percent higher than the national average.^{xvii}

The Group noted that whilst the Waikato Region is rich in hydro-electric power generation, it is also home to the Huntly Power Station which is the country's largest carbon emitter. The people of Rāhui Pōkeka (Huntly) will be impacted once the power station transitions from coal. Along with emissions from the dairy and freight sectors, the Waikato region has a long road to travel to reduce its carbon footprint. Clean technologies are emerging, with Hiringa Energy building a hydrogen fuel station in Hamilton that will fuel heavy transport trucks.

The Waikato is also seeing an increase in drought and extreme weather events, which the Group has observed is already changing land use patterns. This trend will continue, particularly in the north and east of the region, as temperatures increase by 0.7-1.1 degrees, over the two decades to 2040^{xviii}.

Over the next fifty years, these changes will directly affect the dairy, aquaculture, forestry and horticulture workforce, and the impact will also affect workforces in supporting industries such as transport and manufacturing^{xix}.

Coastal and northern sub-regions in Waikato will be the areas most vulnerable to climate change. Based on greenhouse gas emissions, Waikato workers most impacted by climate change will be those in low-skilled roles in the agriculture industry, followed by electricity, gas, water and waste management and manufacturing industry. The workforce for more emissions intensive industries is clearly male dominated, with Māori accounting for a larger proportion of the high emissions intensive industry^{xx}. The region also has a relatively high share of workers with no or lower qualification in high emission industries. From the industry emissions data those workers impacted most due to climate change adaptation would be mainly Māori males working in sheep and beef farming, and road, rail, transport and heavy manufacturing having no or low levels (level 1-3) qualifications^{xxi}. Dairy farming and livestock farming are particularly high emissions intensity industries that are a significant source of regional employment in Waikato region.^{xxii}

The RSLG seeks to support a 'Just Transition'^{xxiii}, including iwi/Māori and hapori-led initiatives to identify where businesses and workers will need active support to transition to decent work, in sustainable future industries^{xxiv}. Waikato Tainui has committed to being early adapters in the transition to a low emissions economy, for example^{xxv}

The Waikato Climate Action Committee is developing a dashboard to monitor emissions^{xxvi}, and leading action to transition to decarbonise and limit the impact of climate change, through the region's Climate Action Roadmap which includes support to increase:

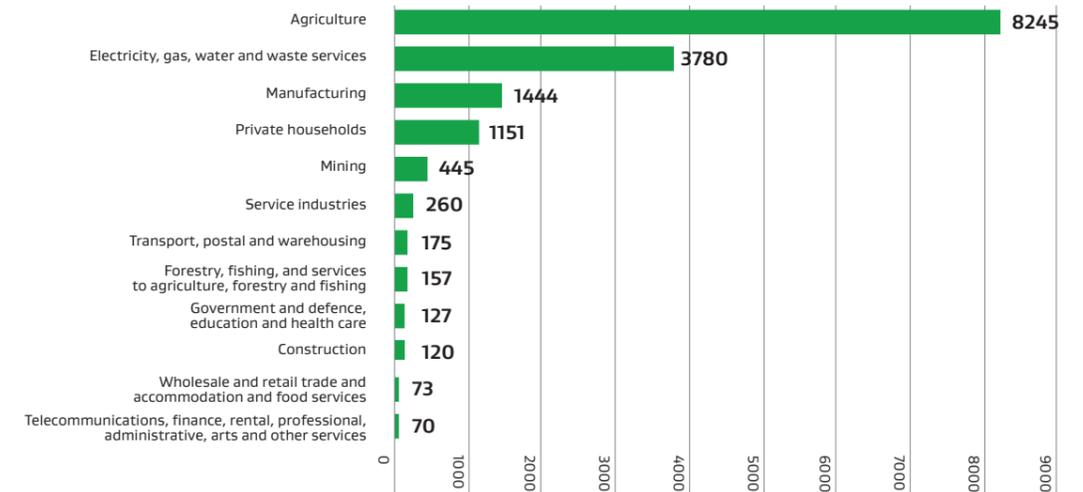
- Renewable energy generation including solar, biomass and wind (on and offshore)^{xxvii}
- Technology use to improve efficiency and reduce waste – for example, farms are using tools and calculators to understand their greenhouse gas numbers, and develop farm plans^{xxviii}
- Adaptation such as moving to climate-resilient and regenerative agriculture practices

The RSLG will draw on and support this work with a focus on education and up-skilling to mitigate and adapt to climate change at all levels (governance, management, and operational). Organisations and workers all need to understand and mitigate climate risks, and prepare for the transition required, including enlisting government support. Building on its environmental sciences expertise, University of Waikato has recently launched a new Bachelor of Climate Change and there is potential for upskilling towards green skills and green jobs across the region.

CLIMATE ADAPTATION ACTION

- Identify how the impacts of climate adaptation will transform the Waikato economy and use this insight to form future recommendations and actions.

Greenhouse gas emissions in the Waikato Region, New Zealand
By source industry, 2019, kilotonnes of CO2 equivalent (Stats NZ)



Case Study

PŪNIU RIVER CARE INC

The Pūniu River flows from within the Pureora Forest past four Marae; **Mangatoatoa, Rāwhitiroa, Aotearoa and Whakamārama**, through to Pirongia where it meets the Waipā River. The river gets its name from the Patupaiarehe (Māori mythical being of human form) that travelled down the river from the Pureora Forest seeking knowledge of the future by supernatural means. The Pūniu River holds a cultural significance to local marae hapu and iwi.

Pūniu River was once a rich source of freshwater kai and provided many swimming spots for the local people. Unfortunately, over time the health of the river has deteriorated and is no longer of a swimmable standard. In addition, the tuna stocks have depleted in some areas and there has been erosion to the riverbanks causing significant silt discharges.

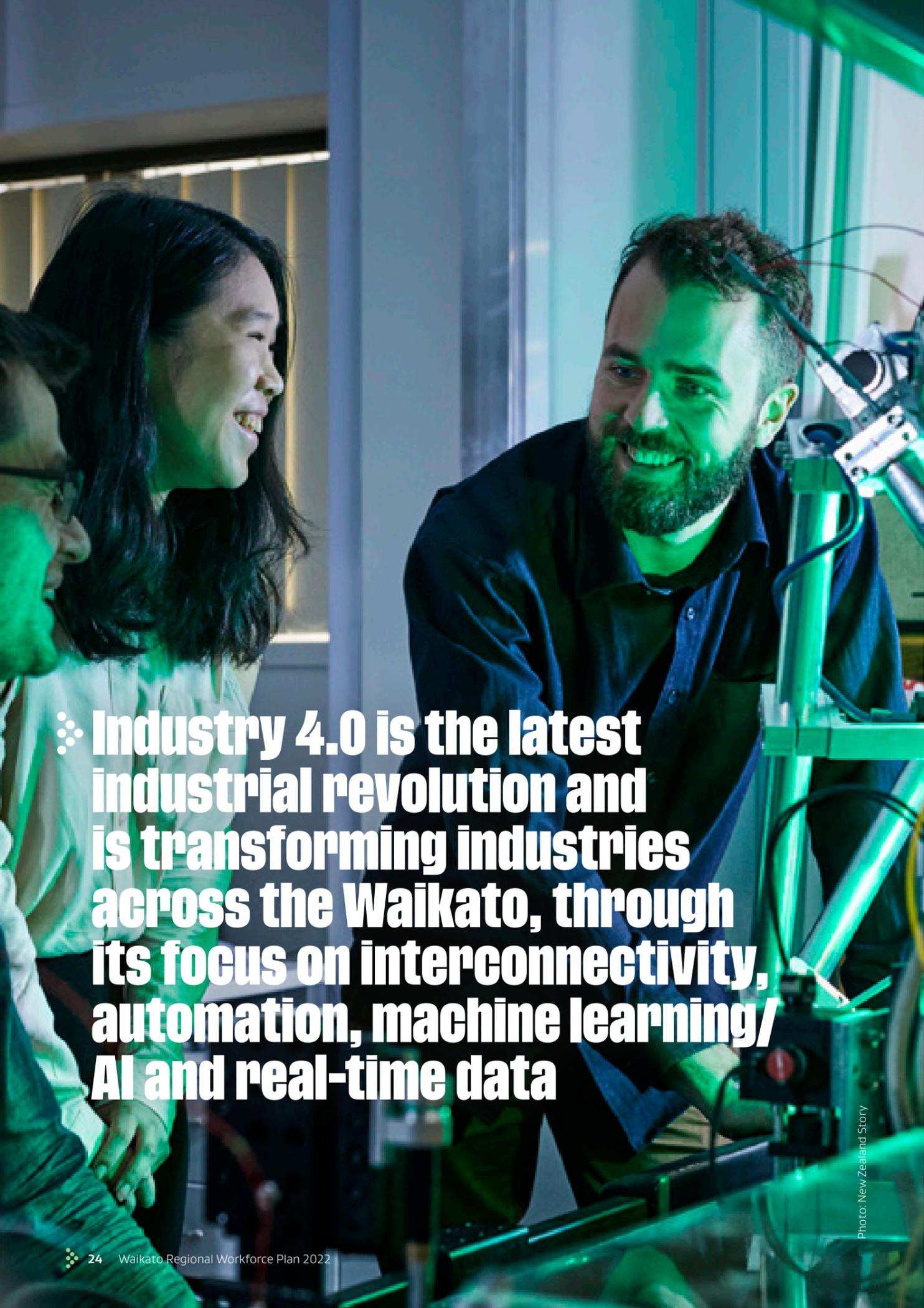
Pūniu River Care (PRC) was formed in 2015 with the support of local kaumatua and key stakeholders, to enable local hapū to be involved in the environmental restoration and enhancement of the Pūniu River catchment, the wider Waipā and lower Waikato catchment areas, while providing employment and work experience opportunities for local people.

PRC CEO and 2021 Kiwibank NZ Local Hero of the Year, Shannon Te Huia, is particularly proud and excited about the opportunities that the Government's Kick Start to Work initiative will have for the restoration of the river.



The Waikato Ministry of Social Development's (MSD) ongoing support for the programme will not only ensure the training and placement of 10 new people into employment, but it will also support the social enterprise of a native nursery, clean the local waterways, and provide support and employment in the local community.

The PRC employs around 45 staff, many of whom are now experienced horticulture and restoration project workers. PRC has a proven work delivery model for large scale eco-sourced native tree propagation, planting and restoration projects, with the goal of supplying 1.5 million eco-sourced native trees to restoration projects in 2022. To date, PRC has grown and planted over 1.2 million trees within the Waipā, King Country and Waikato regions. A total of 61.3 km of fencing has been completed to date (2015-2021), using local fencing contractors.



❖ **Industry 4.0 is the latest industrial revolution and is transforming industries across the Waikato, through its focus on interconnectivity, automation, machine learning/ AI and real-time data**

Photo: New Zealand Story

5.4 The Future of Work

COVID-19 has seen remote working, flexible working and distributed workforces become the norm, and this trend will continue to impact on our workforce.

The roles of the future will look quite different to what is available now; existing workers need to be supported to retrain, adapt or adopt new ways of working and young people need to be prepared to lead this change.

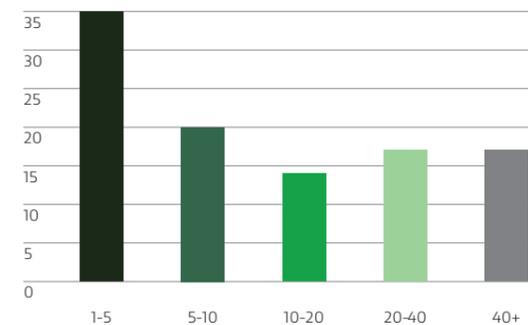
Digital technologies and the skills associated with these technologies provide significant opportunities for the Waikato region to embed productivity gains and increased per capita GDP across all industries. In addition to this, digital technologies also provide significant opportunities to reduce carbon emissions across all industries. Agritech, biotech, artificial intelligence, machine learning, robotics, remote working, electrification and other emerging technologies have the potential to transform the Waikato economy, environment, and labour market over the coming years.

To take advantage of these opportunities, the region needs to act now to identify where the future demand for workers will be and what education, training and immigration settings are required to deliver an appropriately skilled future workforce.

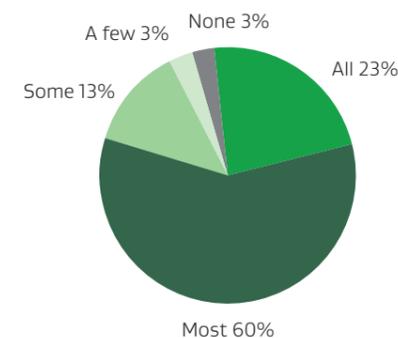
However, according to a Regional Digital Stocktake undertaken in 2018, a 'Digital Divide' exists in the Waikato region, largely between urban areas and those with higher incomes on one hand, and rural, poorer districts on the other^{xxx}. This stocktake also identified that local governments have a wide variety of disparate plans in place to build community ICT awareness and uptake. We need to ensure that all Waikato residents have access to appropriate digital technology, education, and training, regardless of where they live in the region or their demographic. Until the digital divide is addressed, future opportunities may not be realised equitably across the Waikato.

We also need to plan for transitioning people who are impacted by the adoption of digital technology and the associated reduction in the number of jobs in some sectors and increase in others.

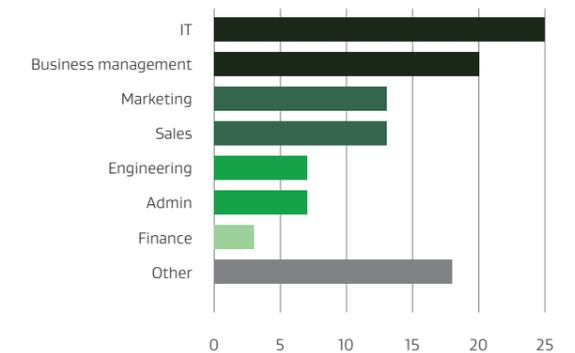
Number of staff respondents are intending to recruit in the next 3 years



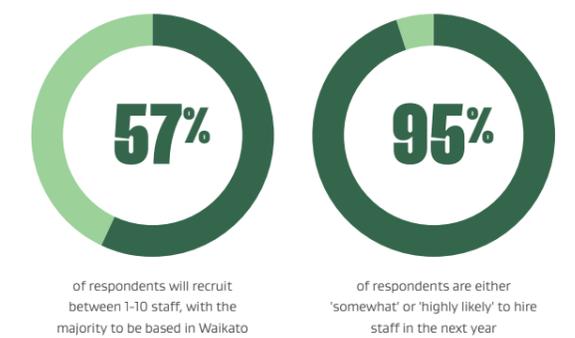
Likelihood these staff will be in Waikato



Additional skillsets most likely needed by respondents in the next 3-5 years:



Recruitment



Mentoring will be required for an increasing number of young people who will enter the workforce already comfortable with basic digital technology but without industry-specific experience. Appropriate mentoring will help fast track the development of young people, including technology graduates, and reduce any potential 'drag' on productivity while they gain experience to go with their qualifications.

Stakeholders told us that many Māori work in jobs that often involve a series of repetitive tasks, many of which will be performed by machines over time. Māori are avid consumers of digital technologies, and are often early adopters of new technologies, like the use of digital health consultations with General Practitioners (GPs). Innovative action to increase resource availability and accessible training is required now, to not only support Māori transition into higher value jobs, but to also position Māori on the world stage as reliable producers of quality technology services and products.

The Cultivate Trust is a collective of businesses, education providers, and public entities across the Waikato. Funded in part by the local tech sector, the Cultivate Trust has two goals; to accelerate the growth, success and diversity of Waikato region's technology businesses, and to identify and inspire future generations of innovators from the Waikato. Activities fall within three broad workstreams – : showcase – celebrate the success of Waikato tech companies and tech whānau; connect – increase awareness of and participation in Waikato tech sector; and grow – develop and attract world-class talent, and attract investment from new and existing businesses. The Group wish to amplify the work of Cultivate Trust to help build the local tech workforce.

FUTURE OF WORK KEY ACTIONS

Focus on up-skilling workers into higher value employment that leverages an increasingly automated future of work and eases career movement across unrelated industries, by allowing workers to develop universal digital skills that are highly transferable.

Identify how the application of technology will transform the Waikato economy and use this insight to form future recommendations and actions.



Photo: The University of Waikato

Case Study

UNLEASHING THE POTENTIAL OF AI TO HELP CREATE A BETTER WORLD

Launched in April 2021, Te Ipu o te Mahara, the Artificial Intelligence Institute at the University of Waikato takes an interdisciplinary and collaborative approach to the development of cutting-edge artificial intelligence (AI) research. It was set up with the aim of keeping Aotearoa New Zealand at the forefront of AI and equip industries with the skills to turn data into life.

With a goal of building awareness and expertise across disciplines to better leverage AI for the benefit of Waikato communities, Te Ipu o te Mahara focuses on real-time analytics for big data, machine learning and deep learning.

Te Ipu o te Mahara has created some of the world's most popular open-source tools for machine learning. WEKA (Waikato Environment for Knowledge Analysis) is one of the oldest available machine learning systems available, having started development in 1993, and it is still very active in the machine learning/data mining/AI space. WEKA has been downloaded more than 10,000,000 times and has also been cited in more than 18,000 research and applied data science publications.

Current research programmes at the Institute include Time-Evolving Data Science / Artificial Intelligence for Advanced Open Environmental Science (TAIAO), User-friendly Deep Learning, AI Human Centric Security and Entrepreneurial Universities: Real time analytics for Big Data.

5.5 Healthy Communities

With its growing population, there is increasing demand for health services across the Waikato region. COVID-19 has illustrated the need and opportunity to recruit, retain and up-skill the health workforce, starting at the local and community levels.

More workers are needed at all levels, and over the last two years, the region has struggled with border closures, due to a high reliance on migrant labour, especially among Registered Nurses and GPs. With a high female skewed workforce (79 per cent of the sector workforce is female, vs 46 per cent for the overall Waikato workforce), and a high level of migrant workers (in 2018, 25.4 per cent of the sector workforce were not born in NZ) there are opportunities to introduce new workers into the Health and Care sector.^{xxxii}

COVID-19 stimulated innovation in the development of an unregulated health workforce who helped increase capacity, through offering vaccinations and testing.

More workers are needed at all levels, and over the last two years, the region has struggled with border closures, due to a high reliance on migrant labour, especially among Registered Nurses and GPs.

Photo: Denise Kingi



There is community support for further local innovation, and Hauraki Public Health Organisation will be one of nine local health pilots nationally.^{xxxiii}

The 'health care and social assistance' is second largest employing industry across the Waikato, representing 23,500 jobs (11.1 per cent of total jobs), and strengthening this workforce is crucial to supporting and maintaining health and wellbeing across the region^{xxxiii}. Māori health providers across the region have voiced that they would like the health reforms to include a focus on wellbeing and decent work for the health workforce. This would require adequate staffing, and could be supported by coaching, aimed at preventing worker burn-out.

The Waikato RSLG will explore these challenges and opportunities further and plans to engage with the health sector for the 2023 Regional Workforce Plan update. Regional stakeholders have suggested potential future focus areas including:

- Addressing the lack of rural GPs and nurses.
- Creating ongoing training and career opportunities for unregulated healthcare workers through micro-credential development.
- Increasing the mental health training and service delivery across the Waikato.
- Working with primary health care organisations to identify capacity building opportunities that support trainee staff in securing and maximising their work placement programme.
- Consider gender and broader sector appeal factors to work in partnership with sector leads to encourage more young people to enter the Health and Care sector.
- Consider a pilot programme using the Medical Academy model developed by Te Puna Ora o Mataatua; that provides employment pathways and professional development for over 150 people a year into jobs across the Health and Medical sector^{xxxiv}.

6. Priority Sectors: From Farm to Port

The Waikato is the agricultural heart of Aotearoa New Zealand, with over 20 per cent of the nation's primary exports generated from the region.

Photo: Waikato District Council



6.1 Primary Industries

The industry is growing and adaptive, with significant new technology emerging to change traditional practices. By increasing productivity, we can reduce climate impact - and our future workforce will need to bring new skills and expertise to drive this transition.

The growth of agritech and aquaculture, alongside emerging fields like alternative proteins and other future foods, will create new opportunities across the region that will require a suitably skilled workforce to drive future growth.

The Waikato continues to be a high-performing region with a strong ecosystem of tech companies that is set to grow the region's representation further. Ten of the TIN200 companies are based in the Waikato. With a strong agritech presence, four of these companies - Gallagher Group, LIC, NDA Group and TOMRA Fresh Food - have maintained strong growth and are ranked within the ten largest companies in the TIN Agritech Insights Report 2022. There is an exceptional pipeline of technology companies including Waikato-based RiverWatch and Synthase Biotech, that span the breadth of agritech categories including Animal & Crop Health, Growing & Harvesting, Post-Harvest, Environment Management, and Data Solutions, building on the international success of established New Zealand agritech companies.^{xxxv}

Our approach:

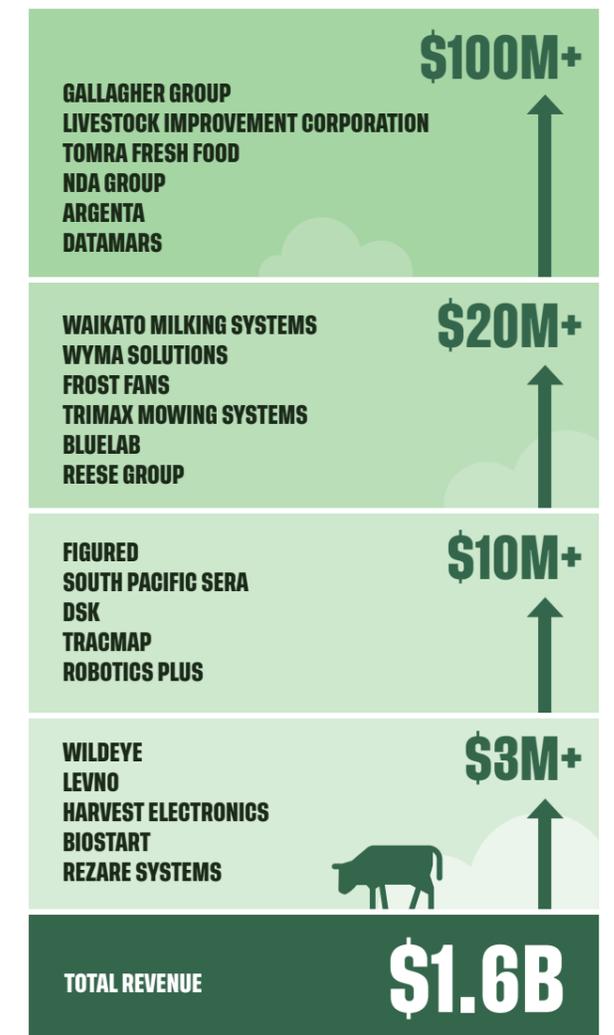
Agriculture, Forestry and Fishing is collectively the powerhouse of the Waikato region, contributing \$24.8m to GDP in 2020^{xxxvi}. The dairy farming sector provides the highest number of filled jobs in Primary Industries, employing over 9000 people. The Waikato dairy industry is key to boosting export earnings and constitutes over 60 per cent of the region's earnings and over 20per cent of all of NZ's exports.

Although dairy farming and agricultural biotechnology are the key drivers of the Waikato economy, the region's success in the primary industries sector is shared amongst several agricultural sub-sectors including agritech and aquaculture.

The burgeoning agritech sector is calling for people with technical knowledge and bio-systems knowledge to meet demand for automation and mechanisation across the sector. It is predicted that the workforce opportunities within agritech, agribusiness and future foods will continue to increase across the Waikato and create a unique opportunity for the region to be a global leader in the 'Primary Industries Futures' space.

When developing this plan, the RSLG has considered the workforce modelling studies completed by the dairy sector, research from Ministry of Primary Industries, the New Zealand Government Aquaculture Strategy 2019, and the Agritech Industry Transformation Plan.

22 TIN200 AGRITECH COMPANIES – THE BIG PICTURE



Source: New Zealand Agritech Insights Report 2022, Technology Investment Network, www.tin100.com

DAIRY

The Dairy sector is the major contributing sector to the Waikato economy. A quarter of people employed in the dairy farming sector are on-farm dairy producers and despite employing the highest number of filled jobs, productivity is low. However, the sector is transforming rapidly as it adapts to both swift technological revolution and increasing climate adaptation demands. As such, low skilled on-farm roles are not forecast to rise significantly – the workforce growth in the sector will come from higher skilled roles.

Low skilled on-farm roles are not forecast to rise significantly - the workforce growth in the sector will come from higher skilled roles.

The future skills and knowledge required for the dairy sector are:

- More market and product skills in consumer branding, along with cultural knowledge and language skills to address barriers to doing business in emerging markets.
- Business and management skills in the areas of risk management, food safety and quality assurance systems.
- Higher levels of production-oriented skills including whole farm systems, information management, resource use, financial efficiency, soft skills, and managing local and migrant staff and contractors.
- Increased science and technical support skills, particularly researchers on resource use efficiency, reducing environment effects and agriculture resource economics.
- More accredited rural professionals and providers to transfer new techniques and knowledge to farmers.

Between 2014 and 2019, only 4 per cent or 1,200 school leavers from the Waikato studied Agriculture and the majority studied at Level 1-3 (low skill)^{xxxviii}. This statistic highlights the opportunities for the sector to attract, grow and retain a locally developed workforce for the future.

DairyNZ have recently undertaken comprehensive research to develop a Dairy Workforce Resilience Plan. Early findings from this study have identified three key problems that underpin the workforce shortage for the sector;

1. The dairy sector is **heavily reliant on people** to operate
2. We are **not attracting enough people** (and specifically the right people) to on-farm roles to ensure safe and effective operations
3. The sector is **not keeping enough of the right people** with the right skills.

The draft report and supporting action plan highlight a number of activities aligned to mitigating issues identified by the Group, and as such, the RSLG will engage with DairyNZ on the implementation of various actions across the Waikato.



Photo: Muri Fonterra

Between 2014 and 2019, only 4 per cent or 1,200 school leavers from the Waikato studied Agriculture and the majority studied at Level 1-3 (low skill).

“

Although there is no silver bullet, the sector has risen to the occasion in terms of coming up with ideas. As a whole, these ideas continue to value the hard work done by everyone on farm, while looking to technology and productivity innovation as key pillars for workforce resilience. The success of our sector will require the standing together of our sector stakeholders, farm business owners and leaders, to adapt and create the change that will see our sector continue to succeed.”

Chris Lewis, Federated Farmers, April 2022



Photo: New Zealand Story

By 2025 the dairy sector is expected to need^{xxxvii}

▲ **25,700**

Trained workers to replace natural attrition within the industry

▲ **8,300**

More workers with qualifications

▼ **6,000**

Fewer workers without post-school qualifications

▼ **2,300**

Net increase of workers

AGRITECH

Agricultural technology, or agritech, is an area of significant interest for Aotearoa New Zealand. Historically, agritech has been predominantly valued for its input into New Zealand's food and fibre sectors and as a key driver for increasing productivity, quality and sustainability across the entire food and fibre production and supply value chain for the country.

The Group has met with agritech industry leaders, agritech leads from Callaghan Innovation, and representatives from the MBIE Agritech Industry Transformation Plan, to understand the context of the sector, and to explore opportunities for the future. Members have also spoken with regional leaders who are supporting the establishment of an Agritech Futures Academy in the region.

Agritech is central to driving more efficient land use and management for better environmental outcomes spanning water quality, reduced methane, nitrous oxide, and carbon dioxide emissions, both domestically and across export markets. While the above remains true, it is also clear that our strong food and fibre sector and expertise in this area represents an opportunity to grow the agritech sector as an economic driver, particularly as an export industry. This is the primary reason why the sector has been selected as a priority area under the Government's refocused industry policy^{x1}.

The Waikato region has a number of comparative advantages when it comes to agritech. By effectively exploiting these advantages, the region will be in a good position to increase its share of the global market. Some of these regional advantages include:

- Strong complementary food and fibre industry;
- Small market size – ideal for testing technologies;
- Ingenuity in developing solutions and world-class research;
- Strong pasture-based management systems;
- Increased international investment activity.

Digital technology is also a key part of the agritech sector, allowing for 'weightless exports' to be a feature of the sector and helping overcome some of the challenges of the country's geographic isolation. Technologies behind our genetic gains, farm modelling and management systems will drive the next levels of productivity and industry transformation.

Māori are significant players in the agriculture sector, with many entities owning significant land assets.

The sector will need more high-skilled workers with university-level qualifications to:

- Increase enrolment in critical areas of university education for the food and fibre sectors (e.g., Bachelor of Agricultural Science, Horticultural Science and Forestry Science);
- Increase the use of the food and fibre sectors as learning examples across all areas of study at university; and
- Encourage university graduates of specialist and other subjects (such as IT, engineering and robotics) into food and fibre career pathways.

In order to achieve this, the Group needs to engage with universities to understand what they are offering and how they are encouraging students into food and fibre careers.

Māori are significant players in the agriculture sector, with many entities owning significant land assets. An agribusiness training academy would not only support growth for these entities, it would also give much-needed support for Māori wanting to utilise land that is not currently in productive use. Waikato landowner, Aramiro Ahu Whenua Trust has partnered with Te Puni Kōkiri to help develop it's land into an agricultural enterprise that moves away from a reliance on simply farming

Despite the Waikato dairy farming and manufacturing sectors being significant contributors to national GDP, there is no dedicated agritech or agribusiness training academy within the region. The Group believe there is a strong opportunity to develop such an academy in the Waikato. The academy could be a mix of classroom, field based and digital learning where students will be able to undertake practical and online learning modules. Training could encompass environmental, animal welfare and climate change courses.

Home to over 60 businesses and 800 employees, Waikato Innovation Park continues to be an ideal place for research, collaboration, and commercialisation in the heart of the Waikato and New Zealand. With the recent completion of a 2,900 sqm collaborative space for technology, food and agricultural companies, and growth plans across 15 hectares of master planned land, the Waikato Innovation Park is a synergistic potential home for the new Waikato Futures Academy. Waikato Tainui's college in Hopuhopu also has the potential to host research and collaborations, as does the University of Waikato.



Case Study

USING CLOUD TECHNOLOGY FOR AN EASIER WEIGH OF LIFE

Taking on a family farm with over seven decades of success is no walk in the park! So when Kim and Mat Sherriff took over the family farm "Rotomate", located in PioPio, ten years ago, it was imperative to keep that success alive.

The Sheriffs run Romney ewes and breeding cows and started off with a 20-year-old weigh scale with a manual dot matrix print out. This meant manual data input into an excel spreadsheet, which is hugely time-consuming and leaves room for errors.

Keeping a close eye on the weights of their stock is important so the Sherriff's know that animals are being fed correctly, and it makes it easier to pick up if an animal isn't doing well or is sick. Measuring everything is also vitally important to maximising yield.

The Sheriff's made the move from the old weigh scale to new technology, and now use a Gallagher weigh scale with an integrated EID reader and a compatible cloud-based Animal Performance web and mobile platform. This means that all the team at Rotomate can easily sync data to the account and can check data and graphs from the mobile app whether on or off farm.

Mat says gathering data is so important, and the Gallagher TW unit paired with the Animal Performance web and mobile app is paramount to analysing data to make more informed, data-driven decisions about his animals.



Photo: New Zealand Story



Photo: Te Waka

AQUACULTURE

More than half of the seafood that the world eats comes from aquaculture and this is expected to rise to 60 per cent by around 2031^{xii}.

In the Waikato, aquaculture activity is largely clustered in the Coromandel Peninsula, with Sanford (New Zealand’s largest seafood company) operating substantial Greenshell Mussel™ farming and post-harvest facilities in the area (Greenshell Mussels™ are a sustainable crop indigenous to Aotearoa New Zealand). The Coromandel aquaculture industry delivers 30 per cent of national Greenshell Mussel™ production and 24 per cent of national Pacific Oyster production by weight. Together, these two species bring in over \$50 million to the Coromandel economy and create about 400 industry-related jobs.

The burgeoning seaweed industry is a further growth area, with Paeroa seaweed innovation company AgriSea working with University of Waikato on a two-year sea lettuce (Ulva) growing trial at Kopu marine precinct in the Coromandel^{xiii}. The aquaculture sector is forecast for sustained growth, as outlined in the New Zealand Government Aquaculture Strategy (2019)^{xiii}. This strategy has a goal to reach \$1 billion in sales by 2035 (from \$600-650 million in 2019) through maximising the value of existing farms through innovation, extending into high value land-based aquaculture, and extending aquaculture into the open ocean.

There are no specific requirements to become an aquaculture farmer. However, an aquaculture qualification, such as a New Zealand Certificate in Aquaculture (Level 3 or 4), may be useful^{xiv}.

Greenshell Mussel™ and Oyster Production brings in over \$5 million to the Coromandel economy and create about 400 industry-related jobs.

PRIMARY INDUSTRIES ACTION

- Fully leverage the Waikato’s position as the agriculture backbone of Aotearoa New Zealand.



Photo: New Zealand Story

6.2 Digital Technology

Digital technology, and the skills associated with information and communications technology (ICT), provide significant opportunities for the Waikato region to realise productivity gains and increased GDP. In addition, digital technology also provides significant opportunities to reduce carbon emissions across all industries.

Our approach:

The Waikato RSLG believes that supporting digital technology – and particularly agritech development and adoption – must be integral to the region’s future workforce and skills development. It views support into increasing agritech education and training in the region as fundamental to its role, noting that agritech in dairy remains a surprisingly small sector in New Zealand^{xv}.

2020 research by Te Waka found that most Waikato technology businesses are small, with 65 per cent having a turnover of \$5 million or less^{xvi}. An additional 20 per cent of survey respondents reported revenues of over \$20 million, with several far exceeding this level. These large anchor employers – such as Gallagher and Waikato Milking Systems – play an important role in developing the region’s technology workforce, by identifying and growing the capability needed for innovation.



The technology sector spans our entire economy. Whether you’re in agriculture, finance, health or some of other industry, so much of what you do is underpinned, enabled and delivered through technology... the fact that we grow really cool businesses whilst generating excellent trade surpluses in export revenue is one of the reasons I love it. It also makes life easier and fun for many people and enables us to become a knowledge economy rather than just a process or manufacturing economy. It’s amazing in terms of the things that you can do and the value that you can create.^{xviii}

Waikato RSLG member and tech professional, David Hallett

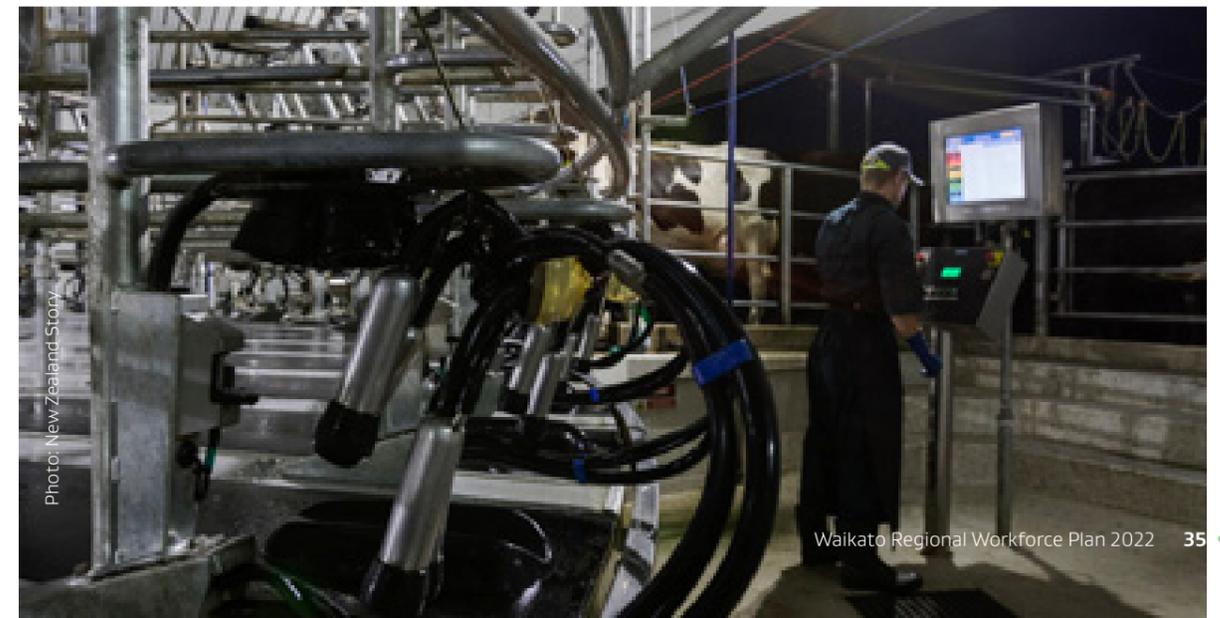


Photo: New Zealand Story

Key Insights:

Marrying the Waikato primary sector, manufacturing, and transport and logistics capability with technology will position the region’s workforce well for the future. High-tech manufacturing and advanced manufacturing are regional strengths, largely because of their role as inputs to the existing primary sector eco-system. The region’s technology industry is already leveraging significant opportunities in areas such as agritech, artificial intelligence, machine learning, and robotics, that all build on these strengths.

Waikato technology industry employers will need to continue to attract and retain skilled workers from other regions and offshore by promoting their agritech capability, as well as promoting the region’s lifestyle offering. Local employers told the Group that their technology experts are mobile and can be based anywhere in the world – and that post-COVID-19, the converse is increasingly true – Waikato-based technology workers are now sought after and employed by companies all around the world.

Regional leadership and investment in developing the future local technology workforce and leaders is a clear need and opportunity. This means a dedicated focus on attracting more rangatahi into the industry through clear education and training pathways that are relevant to the region’s future, and through creating more pathways for upskilling of the current workforce.

Māori represent only 4.1 per cent of the workforce, Pasifika 2.8 per cent, and women 27 per cent. A concerted effort will be needed to attract more women, Māori and Pasifika people into the Waikato ICT sector.

Improving diversity remains a challenge for technology employers nationally. Māori represent only 4.1 per cent of the workforce, Pasifika 2.8 per cent, and women 27 per cent^{xviii}. A concerted effort will be needed to attract more women, Māori and Pasifika people into the Waikato ICT sector.

That said, there is growing Māori leadership in the digital technology sector across the Waikato. Te Matarau (the Māori Tech Community), and rangatahi Māori are emerging not only as the future workforce, but also as future leaders and business owners. It is important to ensure that whanau understand the pathways and future opportunities for rangatahi in the digital technology sector.

DIGITAL TECHNOLOGY ACTION

‘Close the gap’ between learning and working across the digital/ICT sector.

Photo: Vanessa Loring



Case Study

TORO ACADEMY

In November 2021, Waikato-based digital animation design company TORO Studios launched a unique 16-week digital 3D animation course that targeted rangatahi aged 16 years and over. The TORO Academy started with 18 rangatahi and celebrated its first cohort of 15 graduates in March 2022. The programme sought to attract more Māori into the 3D animation sector with a view to develop the talent pool at a local level. The programme combined a Te Ao Māori approach to learning with lots of practical hands-on learning through opportunities to work on real industry jobs.

TORO Academy drew on the support of Māori animators in the industry to provide industry insights and facilitate mater classes. The first five weeks were delivered online with the remainder of the course taking place in a purpose-built studio at Te Wānanga o Aotearoa’s Mangakōtukutuku campus in Hamilton. At the online graduation ceremony in March 2022, TORO Academy Kaiako Nikora Ngaropo, spoke about how the mentoring support that the students received during the programme would continue during the internships. Of the 15 graduates, 10 have been offered internships.

When asked why it was hard to attract rangatahi Māori to the creative tech sector, CEO and Founder of Arataki Systems, Lee Timutimu said that whānau needed support in understanding the value of encouraging their tamariki into the sector. Lee suggested that the intangible nature of the tech industry could be a barrier to understanding and it was crucial to educate whanau about the benefits of the sector as a valuable career. Lee demonstrated this by drawing a comparison of average wage in New Zealand of \$52,500 against the starting base salary in the tech sector of \$73,000.

When asked why it was hard to attract rangatahi Māori to the creative tech sector, CEO and Founder of Arataki Systems Lee Timutimu said that whanau needed support in understanding the value of encouraging their tamariki into the sector.



Photo: TORO Academy



Photo: University of Waikato

Manufacturing has been crucial in cementing the Waikato as Aotearoa New Zealand's agricultural powerhouse, with dairy product manufacturing accounting for 62 per cent (\$9,295.3m) of the sector's contribution in 2020.

6.3 Manufacturing and Engineering

As a significant employer and contributor to GDP, the engineering and manufacturing sector is a critical enabler of industry across the Waikato, which requires skilled and qualified staff at all levels.

With an ageing workforce, new ways of recruiting, training and retaining workers is essential for sustained sector growth. Apprentice and cadet programmes are widespread in engineering career pathways and emerging in the manufacturing sector. The approach to skills training, certification and on-the-job learning requires rejuvenation and new models of targeted delivery.

When surveying RSLG stakeholders about whether the Manufacturing sector should be a focus area in the RWP, nearly 100 per cent agreed. The Group used the data from Infometrics, survey feedback, as well as insights from Waikato Engineering Careers Association (WECA) and the Waikato RSLG Manufacturing, Engineering and Logistics industry representative to build their knowledge on the sector.

Our approach:

Manufacturing has been crucial in cementing the Waikato as Aotearoa New Zealand's agricultural powerhouse, with dairy product manufacturing accounting for 62 per cent (\$9,295.3 million) of the sector's contribution in 2020.

Manufacturing is a key contributor to the economy, providing 11.3 per cent of total jobs and contributing 10.9 per cent of total GDP for the Waikato region in 2021 (a total GDP contribution of \$700 million over the last 10 years), and is the third highest growth industry in Waikato, based on jobs created.

Manufacturing is a key contributor to the economy, providing 11.3 per cent of total jobs and contributing 10.9 per cent of total GDP for the Waikato region in 2021.

Largest employing sub-industries, Manufacturing, 2021

RANK (OUT OF TOP 50)	INDUSTRY	JOBS	PER CENT OF TOTAL
12	Cheese and other dairy product manufacturing	2916	1.4%
17	Meat Processing	2446	1.2%
19	Engineering Design and & Engineering Consulting Services	2363	1.1%
38	Machinery and Equipment Manufacturing	1429	0.7%

Employment by 2-digit occupation in the Manufacturing sector in Waikato RSLG Area, 2021

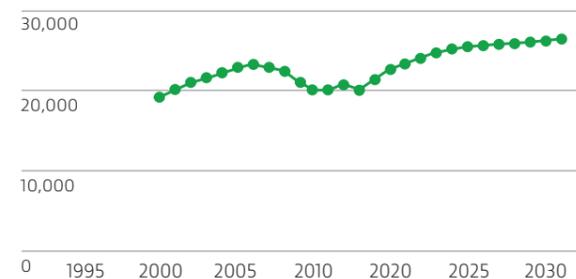
	Manufacturing		Total Waikato RSLG Area	
	EMPLOYMENT	% OF TOTAL	EMPLOYMENT	% OF TOTAL
Factory Process Workers	3,527	14.7%	5,009	2.4%
Automotive & Engineering Trades Workers	2,472	10.3%	6,248	3.0%
Specialist Managers	2,380	9.9%	16,428	7.8%
Machine & Stationary Plant Operators	1,485	6.2%	3,206	1.5%
Other Labourers	1,411	5.9%	5,608	2.7%
All others	12,713	53.0%	175,001	82.7%
Total	23,988	100%	211,499	100%



The skills required will need to reflect the future demands and drivers for change, as well as strategic drivers. For example, if global supply chains continue to become disrupted or changed, this may strategically require more regional industry to be self-sufficient, and more independent from other parts of the world or regions, changing the demand for skills and resources. Additionally, the need for supply chain and partnerships in linking to external resources will also be needed, as manufacturing is reliant on a whole system, end to end approach.

Waikato RSLG survey response, December 2021'

Manufacturing - total employment levels and forecasts Waikato Region



Key Insights:

Industry representatives noted that funding businesses to train people quickly in-house is a priority across the region. There is real concern regarding retaining institutional knowledge such as highly specialised, high value trade skills within the industry. Waikato Engineering Careers Association (WECA) members have voiced the need for support to see highly-skilled ageing workers moving away from the tools and more towards a teaching and mentoring role. Employers appreciate the value that these workers add to their industry, and are acutely aware that as trades workers age, they often wish to reduce their degree of physical work and may opt for early retirement from the industry if there aren't management or coaching roles to transition into. WECA members also reflected their commitment to worker wellbeing and list the benefits of a mentoring scheme as allowing ageing workers to be physically able to continue in their careers longer; younger people gaining valuable, specialised skills; and retaining institutional knowledge.

Labour and skills shortages continue to be the top workforce challenge. A September 2020 WECA survey in conjunction with Employers and Manufacturers Association (EMA) showed 22 per cent of respondents report finding entry and mid-level staff has become more difficult for businesses; while 32 per cent report finding highly skilled staff is extremely hard. At the time collectively, 37 respondents were carrying a total of 198 vacancies that they needed to fill. The sector has a reasonably high reliance on specialist migrant labour with 35 per cent of all 'Employer Assisted Temporary Work Visas' in the region issued for Technicians and Trades Workers. Top occupations in this group include machinists, fabricators, and mechanics. This would suggest opportunity to attract and train a local workforce to step into these specialist roles.

Looking to the future, based on employment forecasts, manufacturing in Waikato will be experiencing 1-2 per cent growth over the 2021-2027 24,887 workers in 2027^{xlix}.

Research from the Productivity Commission indicates that New Zealand's productivity is not keeping up with international competitors. The Commission has recommended an overhaul of our innovation ecosystems, saying that not enough is being invested to achieve impact. Increased uptake overseas of Industry 4.0 is enabling international competitors to undertake highly customised manufacturing at mass production cost. Waikato has an international reputation for making high-quality, highly customised devices and components for high-value niche markets. Investing in Industry 4.0 needs to be a priority if the Waikato manufacturing sector is to maintain a competitive edge.

In the meantime, increasing the uptake of Industry 4.0 needs to be a priority if the Waikato manufacturing sector is to maintain a competitive edge. Waikato has an international reputation for making high-quality, highly customised devices and components for high-value niche markets. Increased uptake overseas of Industry 4.0 is enabling international competitors to undertake highly customised manufacturing at mass production cost.



Photo: New Zealand Story

MANUFACTURING AND ENGINEERING ACTION

Waikato Wisdom Project: practical skills plus industry/workplace knowledge transfer



Photo: Fonterra

[Photo caption: Muri Martell, Dairy Processing Apprentice from Fonterra Hautapu. Photo credit: Fonterra]

Case Study

FONTERRA DAIRY PROCESSING APPRENTICESHIP

Fonterra Co-operative developed a pilot in 2020 with the Primary ITO and FITT board to undertake an industry apprenticeship programme under the DAIRYCRAFT qualification framework (NZQA L4). Fonterra had identified the barriers associated with early career workers and the issues associated with a mature and ageing workforce. The programme was developed for transition school leavers through a 30-month programme which is designed to result in ongoing employment in the industry and leave the candidate with transferable skills applicable in the dairy processing industry.

The pilot was run at Dairy Processing Sites in Hautapu in Waikato, as well as sites in Northland and Southland. The first cohort of early career workers who entered the pilot in the 2020/21 season and the initial trial has produced positive results:

- 84 per cent of the initial candidates completed the apprenticeship
- All of whom transitioned to ongoing employment with Fonterra

On the back of these outcomes, Fonterra has looked to expand beyond the pilot to introduce the programme across the wider Manufacturing business and is looking at introducing similarly structured training programmes for early career entry to different parts of their business.

6.4 Construction and Infrastructure

There is vast opportunity to increase capacity and capability to meet the increasing investments in civic and private construction and infrastructure projects across the Waikato. Taking a collaborative approach, the sector is enabled to develop people capacity across all levels of industry.

Our approach:

The Construction and Infrastructure sector is significant for the Waikato, with activity across the entire region and ongoing workforce opportunities in years to come. When the Group engaged with our wider community, 89 per cent of respondents agreed this is a sector the group should focus on.

There are more than 7000 businesses in this sector across the Waikato, and just over 30,000 jobs. The sector is forecast to be the third top growth industry for the Waikato (by job openings projections), with 11.2 per cent growth in the workforce forecast from 2021 to 2026¹.

The Group has used data from BCITO Workforce information platform to gather a sense of the sector's future workforce needs. The Group has also considered the significant Central Government, Local Government and iwi/Māori investments across the Waikato that in some part will be serviced by workers in this sector. The group also considered the work completed by the Construction Accord and the existing Construction Sector Transformation Plan.

Key Insights:

There is vast opportunity to increase capacity and capability to meet the increasing investments in civic infrastructure, and commercial and residential construction projects, across the Waikato.

The sector has a high self-employment rate of 24.4 per cent, compared to the 17.5 per cent average for the total Waikato RSLG area. This provides an opportunity to encourage sole-traders to expand their workforce to meet increased demand for their services.

The sector has always grown its workforce through Apprenticeships (and similar style programmes) and we predict this shall continue. We have received anecdotal feedback that the Targeted Training and Apprenticeship Fund and Apprentice Boost Fund has encouraged employees to enrol and employers to support learning journeys in Construction and Infrastructure¹¹.

However, the Group is aware that the need for workers is immediate. Ninety-five per cent of Waikato construction businesses indicated in a recent survey that skills shortages are a problem¹¹. Finding and retaining key staff is critical to completing current builds, as well as the 4,970 dwellings in the Waikato that were consented in the year ended September 2021 (an increase of 23 per cent compared to the year ended September 2020). The industry is hopeful that new immigration policy settings that increase the number eligible to apply for residency will not only help progress current projects but will also strengthen businesses that have been weakened by successive labour shocks.

As well as the need to attract new workers into the sector, they are losing invaluable institutional knowledge with every retiring worker. The knowledge gap in experience between highly skilled retiring workers and new workers is at least 30 to 40 years. Investment and support is required to ensure the successful transfer of skills.

The Group also sees a lack of connection between the construction industry and secondary schools adding to this gap. This is amplified by limited or poorly resourced or advised school careers departments and leads to lost opportunities to effectively connect school leavers with industry pathways.

Waihanga Ara Rau (the WDC) is undertaking some deep modelling for workforce projections for the Waikato and will be sharing this with the RSLG as soon as it is released. This work is built from the Workforce Information Platform, using forecast modelling data to extrapolate indicative workforce numbers.



Case Study

TE WAHAROA GATEWAY PROGRAMME - WAIKATO TAINUI

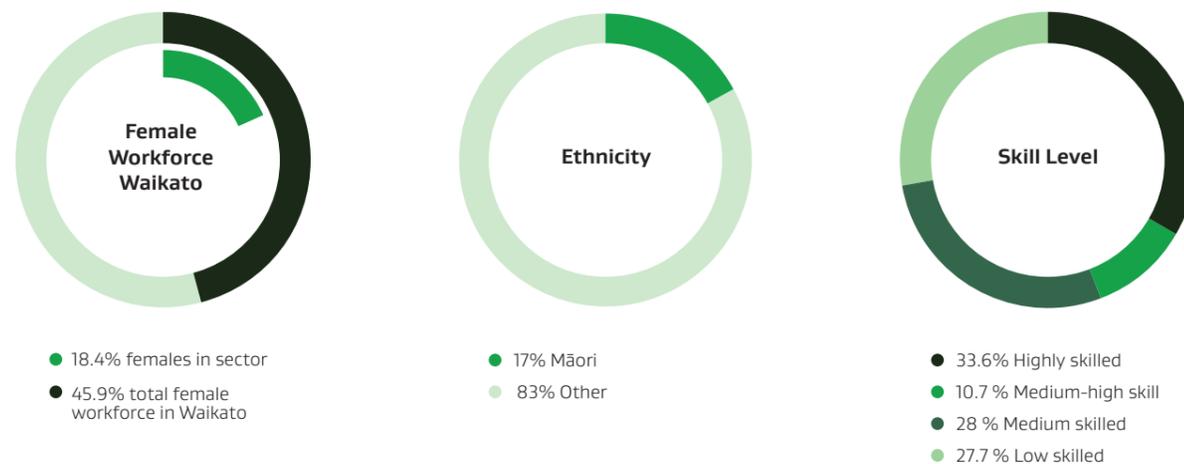
Te Waharoa, a collaboration between Waikato Tainui and BCITO, is a pre-trade training programme specifically for young iwi members. The programme received funding from the Provincial Growth in late 2019 and has had three cohorts of ten rangatahi successfully complete the programme to date. The fourth cohort is due to start in June 2022.

All 30 rangatahi are employed and are at various stages of their apprenticeships. The 10-week programme aims to expose rangatahi to as many trades within the building and construction industry as possible, but more significantly, to connect them with meaningful and sustainable employment opportunities. The programme is built on a foundation of identity and cultural connectedness; this involves noho marae, where the rangatahi make connections with each other, their whenua, awa, maunga and marae. The programme also aims to pathway iwi members into business ownership.

Prior to the start of each programme, Waikato Tainui and BCITO search their networks for willing partners who can provide a six-week paid work experience placement for at least one trainee. The goal of these placements is fulltime employment with an apprenticeship.

Waikato Tainui and BCITO leads the pastoral care which continues through to the completion of the young person's apprenticeship. Support from the Waikato Tainui team will remain indefinitely. Waikato Tainui is resolute in acknowledging that the success of the programme is a result of the hard yards in building relationships with employers and government agencies.

Waikato Construction & Infrastructure 2021 Workforce Demographic



There is vast opportunity to increase capacity and capability to meet the increasing investments in civic infrastructure, and commercial and residential construction projects, across the Waikato.

What is already happening:

- The Construction Accord's Transformation Action Plan aims to build capability through addressing skills gaps, helping shape the reforms in vocational education, and creating a long-term workforce plan.
- Iwi are partnering to create career pathways for future leaders. Waikato Tainui and BCITO are supporting their third cohort through the trades programme, Te Waharoa.
- Māori businesses are collaborating to compete with the big players. Six Māori-owned trades businesses recently formed a company and have attracted another 34 Māori-owned trades businesses who have committed to being available as subcontractors. This will allow them to enter into contracts for housing developments as the main contractor.

To build a sustainable workforce, the sector must promote and value diversity and ensure that everyone can see a good career path in construction. There are for future work and career opportunities in the Construction and Infrastructure sector across the Waikato, however it is not clear whether the region's young people are fully aware of these opportunities and encouraged to pursue them. By increasing diversity in Construction and Infrastructure, the region can diversify and strengthen the existing workforce. The Group has highlighted the low number of women and Māori entering the sector and how any real or perceived barriers could be removed.

Building and construction methods are also evolving in response to new technology, innovation, and environmental and policy changes.

The construction workforce needs to evolve alongside these developments to ensure it has the green jobs and skills to support a modern, productive industry.

The sector is a significant contributor to greenhouse gas emissions which are emitted when building materials are produced, during construction and energy is used in buildings during their operation.

The sector is traditionally resource-heavy and cash-driven, and is now facing resource scarcity throughout the global economy. Stakeholders told the group that demand for skills will depend on future demand drivers and the influence of central government policies on the industry. In addition, the workforce needs are being influenced by convergence with other industries, for example manufacturing in pre-fabrication. This means the future workforce will need different skills and thought is required to understand and develop the qualifications for new entrants and upskilling the current workforce.

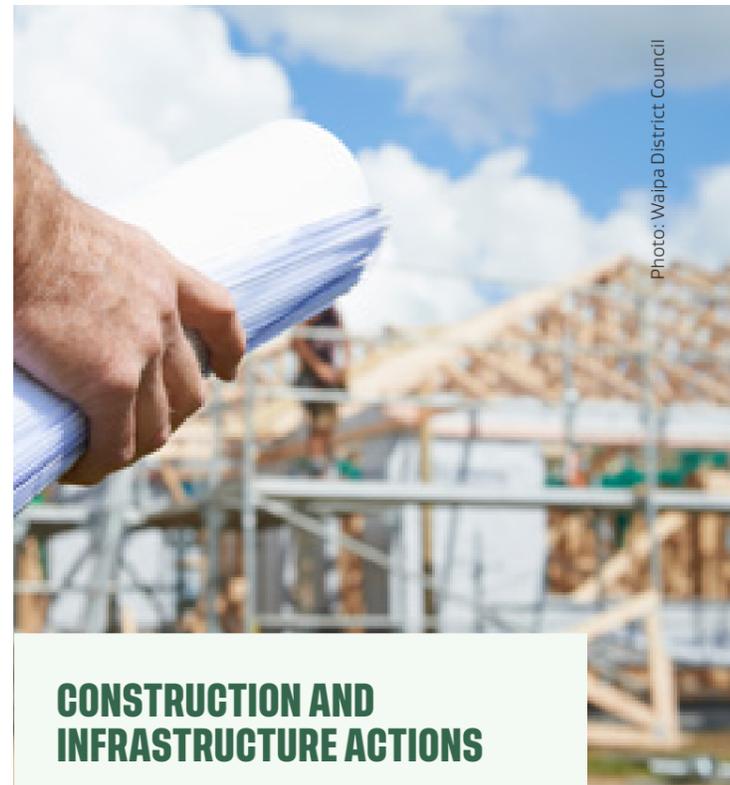


Photo: Waipa District Council

CONSTRUCTION AND INFRASTRUCTURE ACTIONS

• Develop broader professional standards for the industry that build capability and capacity and support a career in construction.

• Improve the connection between the construction industry and secondary schools to effectively connect school leavers with industry pathways.

6.5 Freight and Logistics

The Waikato is the heart of the 'Golden Triangle' with massive volumes of freight both generating from and passing through the region on a daily basis.

The sector offers vast career opportunities and will evolve swiftly with the introduction of new technologies and new methodologies to support climate adaptation targets.

Our approach:

The Freight and Logistics Sector is a critical enabler of economic activity across the Waikato RSLG area. State Highway One and the main trunk line both pass through the rohe, carrying significant volumes of freight every day. As well as goods freight, many of the growth sectors of the Waikato require efficient freight and logistics services to support their business activity.

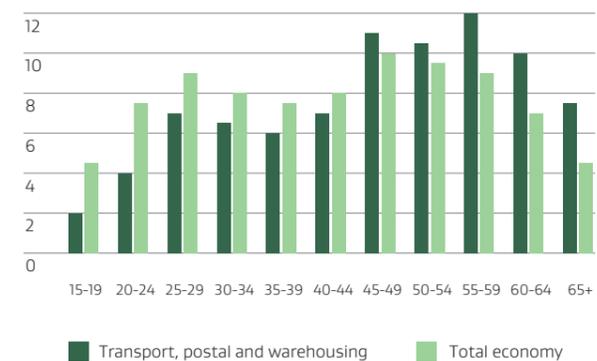
In Aotearoa New Zealand, road freight is the predominant mode of freight transport and accounts for almost 70 per cent of the total domestic freight movement (in terms of ton-km) and over 90 per cent of the freight (in terms of volume/ton). Rail, although a small player in terms of employment and value-added within the wider transport, logistics, and distribution sector, plays a vital linking role between, for instance, Auckland, Tauranga, and Hamilton.

Looking to the future of the sector, more than 90 per cent of Aotearoa New Zealand's freight is transported by road, with 42 per cent of the total freight (by tonnage) being moved within the Golden Triangle. There is likely to be an increase in freight over the next 25 years in response to the population growth.

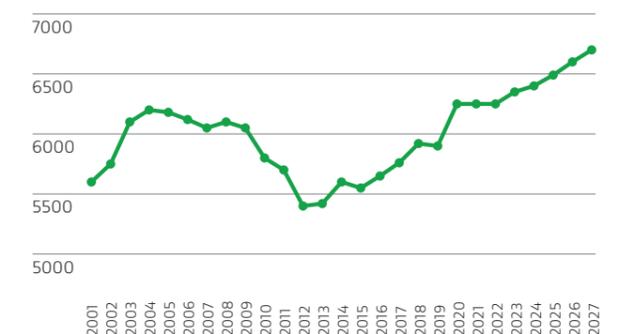
A recent study commissioned by Te Waka found that the overall growth in freight volumes to 2030 in the Waikato and Bay of Plenty regions could be as much as 47-65 per cent^{iv}.

Kirikiroa Hamilton is the third-largest city in New Zealand's North Island, located around 12 km south of Auckland. The city forms the southern point of New Zealand's 'Golden Triangle', a geographic node encompassing Auckland, Tauranga, and Hamilton. It is responsible for approximately 50 per cent of the country's economic output and is home to half of the country's total population. At present, the population of the Golden Triangle region is approximately 2.47 million people. It is expected to grow to 3.24 million by 2043, registering a growth rate of 31 per cent. This may create unprecedented demand for freight handling facilities in the region.

Transport, postal and warehousing in Waikato RSLG Area versus total economy



Transport, postal and warehousing in Waikato RSLG Area



Key insights:

The sector employs 7,064 workers across the Waikato, with 2,337 of these workers in Hamilton City.

The Freight and Logistics sector is heavily skewed toward a male workforce (22.2 per cent of workers in the sector are female) and most workers in the sector are low-skilled (74.3 per cent). The Waikato has a heavy reliance on migrant workforce for postal and courier deliver, but there are low numbers of migrant workers across the balance of the sector. Of the workforce in this sector, 19.7 per cent identify as Māori and 61 per cent of the workforce in this sector have no post-school qualification (2018 Census).

Looking to the future, the sector workforce is forecast to increase by 12.4 per cent from 2021 to 2026, making it the seventh fastest growing sector across the Waikato.

Data from the Work Information Platform helped identify future workforce needs for both publicly and privately funded investments across the Waikato, that in some part will be serviced by workers in this sector.

The Group used Infometrics forecast modelling to identify future workforce opportunities in the sector. They met with Driving Change to better understand the complexities around the New Zealand Driver Licence system and have surveyed stakeholders to gather insights relevant to the sector. The Group considered current and pending significant investments in civic and private commercial building and infrastructure, as well as the associated increase in Freight and Logistics associated activity and also the rise of export firms and the growth of the Ruakura Inland Port as further drivers of growth, and as creators of new roles that require expertise (e.g., Freight Forwarding).

The Freight and Logistics sector is heavily skewed toward a male workforce. 22.2 per cent of workers in the sector are female. 74.3 per cent of workers in the sector are low-skilled.

The top five occupations are: Truck Driver (General) 23.4 per cent, Courier 6.5 per cent, Bus Driver 5.9 per cent, Labourers 4.6 per cent, Taxi Driver 2.8 per cent^{iv}.

While some of the worker shortage is for drivers (heavy machinery, road freight, warehousing), there is also need for logistics workers across the Waikato (Freight Forwarder / Logistics Planner). Training courses are part of the solution to address shortages, including drivers' licence training (Drivers Licence Classes 2, 3, 4 and 5; Endorsements F, R, T, W), the University of Waikato's Supply Chain Management undergraduate course, and Wintec's Graduate Diploma in Supply Chain Logistics.

However, the sector may not be as appealing as others, with 71.4 per cent of the workforce working 40+ hours and 29.3 per cent working 40-49 hours a week, and roles often requiring significant time away from home and family. Drivers can experience moderate wage growth and limited career development opportunities.



FREIGHT AND LOGISTICS KEY ACTION

- Fully leverage the Freight and Logistics workforce opportunities provided within the 'Golden Triangle'.

Photo: kai19



Photo: Waikato District Council

Case Study

FREIGHT ACTION PLAN FOR THE GOLDEN TRIANGLE

Freight and logistics leaders have recently collaborated to produce a Waikato and Bay of Plenty Freight Action Plan, in partnership with Te Waka.

The Freight Action Plan, due to be released in June 2022, highlights key challenges and opportunities for this growing sector, including:

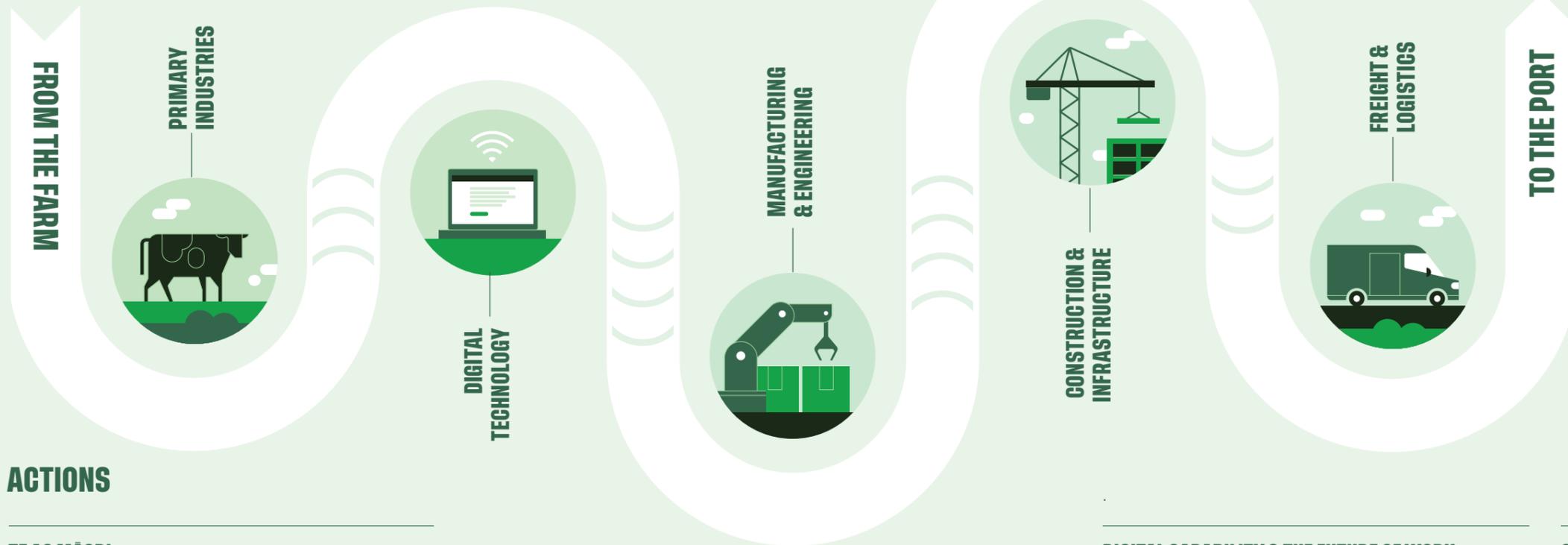
- Opportunities to increase the capacity of the network across the region to meet strong forecast demand
- Opportunities to improve supply chain resilience
- The need to continue mitigating current and expected skills shortages, with a strong focus on truck driver licensing/training and ensuring appropriate immigration settings to attract international talent
- Opportunities to embrace new technologies, particularly hydrogen

The production of this report demonstrates the willingness of the freight and logistics industry to collaborate and speak with a collective voice on important issues affecting the sector in the region, including key skill shortages. It also highlights important implications for related sectors, like the critical role the Construction and Infrastructure sector will need to play to increase the capacity of regional freight networks to meet demand and support technology change (e.g., rollout of hydrogen infrastructure).

Industry partners that co-funded the development of the Freight Action Plan include KiwiRail, Port of Tauranga, Fonterra, Netlogix, Tainui Group Holdings, Mondiale, and Priority One. Other industry representatives that were interviewed to help create the Freight Action Plan included Swire Shipping, Carr & Haslam Transport, Coda Group, Waka Kotahi, Ministry of Transport, Bay of Connections, and FoodStuffs.

7. Action Plan Infographic

From farm to port



ACTIONS

TE AO MĀORI

Complete a stocktake of existing or planned iwi/Māori led local workforce programmes.

CLIMATE ADAPTATION

Work with stakeholders to research what the key regional implications of climate change are and how climate adaptation will impact Waikato businesses and workforce.

OUR WAIKATO WORKFORCE

Co-design, with local youth, community providers, employers and iwi/Māori, a shared framework for measuring the quality and impact of education to employment support services.

Partner with lead agencies to make sure programmes like Apprenticeship Support, FlexiWage, Mana in Mahi and Skills for Industry are being fully realised in sub-regional communities across the Waikato.

OUR WAIKATO WORKFORCE

Identify industries/employers in target priority industries across the Waikato that have workforces most impacted by Industry 4.0 and need support with the transitioning from manual skills to Industry 4.0 relevant digital skills; and develop programmes to support upskilling.

Consider the findings from the Diversity Works/ Construction Accord 'Diversity Roadmap' project and Waihanga Ara Hau 'Equity in Industry' workforce plan and identify actions and delivery mechanisms for the Waikato

Support the creation of flexible learning environments to encourage part-time on-the-job and off-the-job learning.

Increase the provision and accessibility of drivers licensing services across Waikato.

DIGITAL CAPABILITY & THE FUTURE OF WORK

Identify industry-led existing programmes, including those that support employers to be 'better employers', that will be most impactful for attracting, training and retaining workers across the Waikato, and advocate for prioritised delivery into sub-regions.

PRIMARY INDUSTRY

Establish the 'Waikato Futures Academy' that supports both current and future skills needs of the primary industries and added value manufacturing sectors, including Agritech, Biotech, Agribusiness, Environmental and Future Foods capabilities.

MANUFACTURING & ENGINEERING

Develop a pilot "Tuakana teina" reciprocal skills transfer programme to support years of work experience, practical skills and sector knowledge transfer from older/retiring workers to new/youth workers; and digital and ICT skills from younger workers to older workers.

CONSTRUCTION & INFRASTRUCTURE

Advocate for increased support for Te Waharoa - Gateway to the Trades programme and explore potential to extend the model to other iwi / industries in the Waikato region.

FREIGHT & LOGISTICS

Support 'Road to Success Programme' for the Waikato region which focuses on growing the pipeline of truck drivers, including exploring opportunities to increase the pipeline of female drivers.

Ōritetanga Equity

Every person in the Waikato should receive the support they need to succeed in education and achieve decent and rewarding employment to lead fulfilling lives.

He Tangata People

Our people are our greatest asset with their health and wellbeing as a priority.

Whakangungu ahumahi Industry Training

We focus on key sectors of the Waikato economy.

Te anga whakamua The future

New technologies means new opportunities to develop our workforce.

8. Action Table

Unless otherwise specifically noted, all actions are applicable across the entire Waikato area.

Many of the actions/recommendations are applicable across multiple sectors (reflected in the table); whilst there are also some sector specific actions identified.

Timescale Key: Immediate: Within 6 months; Short Term: 6 - 18 months; Medium Term: 18 month – 3 years; Long Term, beyond 3 years

	#	ACTIONS	PARTNERS / STAKEHOLDERS	TIMESCALE	OUTCOMES	CROSS-CUTTING SECTOR OR THEME
Te Ao Māori Actions	Identify opportunities to partner with iwi/Māori entities to support the delivery of existing workforce development actions that relate to the future of work.					
	1	Complete a stocktake of existing or planned iwi/Māori led local workforce programmes.	Iwi Leaders Forum Te Waka Te Puni Kōkiri Ministry of Social Development	Short Term: Identify Partners Medium Term: complete the stocktake	Identify current initiatives across the region, who they benefit (including where in the region they are targeted) and how they are performing, to then enable a gap analysis (what is missing, e.g., sub-regional coverage) and what should be prioritised for additional support (finding what is working well and helping them to scale up their operations/ impact)	All sectors Our Waikato Workforce
	Support capability building programmes for Māori owned businesses across the Waikato to enable them to fully benefit from Social Procurement provisions					
	2	Consider the outcomes from the Te Waka capability building programme pilot, and potentially advocate for funding / implementation support if deemed successful.	Te Waka Te Puni Kōkiri Ministry of Social Development Waikato Tainui	Immediate Short Term	Te Waka is supported to complete the current capability building pilot project Lessons learned from that pilot are used to implement a sustainable programme for SME capability and capacity building across the region	Construction and Infrastructure a priority, with Professional Services a secondary consideration.
Climate Adaptation Actions	Identify how the impacts of climate adaptation will transform the Waikato economy, and use this insight to form future recommendations and actions					
	3	Work with stakeholders to research what the key regional implications of climate change are and how climate adaptation will impact Waikato businesses and workforce.	Ministry of Business, Innovation and Employment Ministry of Primary Industries Ministry for the Environment Waikato University Waikato Regional Council Council of Trade Unions	Medium term	By deepening understanding of expected workforce impacts (positive and negative) from climate adaptation, the Group can better advise on skills, training, and worker transition in future Regional Workforce Plans.	All sectors
Our Waikato Workforce Actions	Develop services that support transition to work					
	4	Develop mentoring programmes to make sure tertiary trained talent is work-ready	Te Pūkenga PTEs WDCs Universities Industry Leaders / Peak Bodies	Short term Medium term	An environmental scan of existing tertiary-transition mentoring programmes in place by sub-region and support type Develop and deliver programmes that improve the work-readiness of tertiary trained talent in the region	ICT Construction and Infrastructure
	5	Expand on existing mentoring programmes that support young people entering education, training, or work	Secondary Schools Industry Peak bodies MSD Youth Training and Employment Sub-committee / Waikato Plan (YTE) Smart Waikato	Short term	Identify existing mentoring/ work-ready programmes that support young people entering education, training or work programmes and reflect on successful models for potential expansion/ replication or new programmes to fill identified gaps	

#	ACTIONS	PARTNERS / STAKEHOLDERS	TIMESCALE	OUTCOMES	CROSS-CUTTING SECTOR OR THEME
6	Foster stronger connections between key sector employers and learning institutes, and WDCs, to better understand the work-ready requirements for the sector then advocate for inclusion in the secondary school system.	Te Pūkenga WDCs	Immediate	Continue learning from industry about what work-ready skills are needed by those entering the industry	
7	Co-design, with local youth, community providers, employers and iwi/Māori, a shared framework for measuring the quality and impact of education to employment support services.	Youth Training and Employment Sub-committee / Waikato Plan (YTE) Waikato Plan External parties dedicated to youth mentoring-pastoral care-placement MSD Iwi Māori	Short term	Through co-design, the groups involved will dictate the underlying principles of good education to employment/training/higher education transition support services, what good employment looks like for young workers and what makes for good employment practice for young workers and their employers.	
Education, employment, and training services are tailored and culturally responsive					
8	Consider the findings from the Diversity Works/ Construction Accord 'Diversity Roadmap' project and Waihanga Ara Hau 'Equity in Industry' workforce plan and identify actions and delivery mechanisms for the Waikato	Diversity Works Waihanga Ara Hau	Short term	New programmes, support and tools are made available to Waikato employers to support a more diverse workforce, i.e flexible working arrangements.	All sectors
9	Develop a programme of corporate cultural capability / humility so that employers are better resourced to recruit and retain a rangatahi Māori / youth workforce	Iwi Te Pūkenga WDCs External parties dedicated to youth mentoring-pastoral care-placement	Medium term	Completed environmental scan of existing cultural capability programmes and identification of potential models for expansion or replication into the Waikato	All sectors
10	Increase support for workplaces and apprenticeships that attract and reflect a diverse, inclusive, and suitably skilled future workforce	WDCs	Short term	Work with partners to identify and provide resources that support workplaces in their DEI journey	All sectors
11	Consider specific needs around neuro-diversity support in the workplace and identify potential in-work based programmes.	WDCs External parties dedicated to youth mentoring-pastoral care-placement	Medium term	Consider research and findings around neuro-diversity challenges in the workplace through a Waikato workforce lens	All sectors
Training is easily accessible across the Waikato					
12	Support the creation of flexible learning environments to encourage part-time on-the-job and off-the-job learning.	Te Pūkenga WDCs	Short term Medium term	Better understand the flexible learning requirements of the region's workforce Identify priority sectors and training partners to create pilot programme	All sectors
13	Remove Digital Connectivity (cost and access) as a barrier to allow full participation in training and education opportunities.	MSD Digital.govt.nz	Short term Medium term	Geo-map digital connectivity and activity to highlight digital inequality across the Waikato Advocate for sub-regional solutions through public, private and iwi investment	Sub-regional Waikato

#	ACTIONS	PARTNERS / STAKEHOLDERS	TIMESCALE	OUTCOMES	CROSS-CUTTING SECTOR OR THEME
14	Increase the provision and accessibility of drivers licensing services across Waikato. Identify and advocate for delivery of actions from Driving Change Network/ Waka Kotahi to increase pool of licenced workers in the Waikato region Encourage wider provision and uptake of MSD Waikato licensing programmes	Waka Kotahi MSD	Immediate Short term	Build a stronger understanding of existing service provision and barriers (including cost of licensing as a barrier for worker compliance), with a rural / sub-regional focus. Advocate for enhanced visibility of the support mechanisms and services available to increase the numbers of licenced drivers across the Waikato.	Sub-Regional Waikato
Support local, national, and industry-led (peak body) initiatives to attract, train and retain workers in the Waikato region.					
15	Identify industry-led existing programmes, including those that support employers to be 'better employers', that will be most impactful for attracting, training and retaining workers across the Waikato, and advocate for prioritised delivery into sub-regions.	Te Waka MBIE	Short term Medium term	Create a matrix of existing/planned programmes Identify priority actions and advocate for Waikato delivery/activity	All sectors
16	Improve the quality of careers guidance for young people in the Waikato by increasing connections between industry and careers advisors to provide a greater understanding of future workforce needs and more industry pathway options for school leavers across the Waikato	Smart Waikato TEC FutureForce External parties dedicated to youth mentoring-pastoral care-placement	Short term Medium term	Create a matrix of existing / planned programmes enhancing awareness and promoting careers to young people in the key sectors in Waikato. Identify national and sector promotion initiatives and local delivery partners to amplify the sector career opportunities across the Waikato (e.g., careers.govt.nz, Inspiring the Future, Go with Dairy, NZ Tech, et al) Identify ways to deliver more comprehensive career guidance and engagement in sub-regional Waikato (e.g., Career Expo, FutureForce, et al). Support the expansion of Smart Waikato's Secondary School Employer Partnerships (SSEP) programme.	All sectors, with early priority on: Construction and Infrastructure Manufacturing and Engineering ICT/Digital
17	Partner with lead agencies to make sure programmes like Apprenticeship Support, FlexiWage, Mana in Mahi and Skills for Industry are being fully realised in sub-regional communities across the Waikato.	MSD	Immediate	Create a matrix of existing / planned programmes of training and employment support programmes/ mechanisms and work with MSD to identify opportunities to increase visibility of these across the Waikato	All sectors
Focus on up-skilling workers into higher value employment that leverages an increasingly automated future of work and eases career movement across unrelated industries by allowing workers to develop universal digital skills that are highly transferable.					
18	Identify industries/employers in target priority industries across the Waikato that have workforces most impacted by Industry 4.0 and need support with the transitioning from manual skills to Industry 4.0 relevant digital skills; and develop programmes to support upskilling.	WDCs Industry Bodies Central Govt agencies Council of Trade Unions	Short term Medium term Long term	Identify target priority industries/sectors in Waikato that have workforces most likely to be severely impacted by rapid Industry 4.0 adoption. Consider insights from Industry 4.0 workforce reports to identify actions to support the Waikato workforce in the transition from manual skills to Industry 4.0 relevant digital skills. Research existing business capability / transitional skills programmes to support the workforce and industry, e.g., RBP, Just Transitions, income insurance schemes. Secure funding for pilot programme. Deliver pilot programme within priority sector/s.	All sectors

#	ACTIONS	PARTNERS / STAKEHOLDERS	TIMESCALE	OUTCOMES	CROSS-CUTTING SECTOR OR THEME
Identify how the application of technology will transform the Waikato economy, and use this insight to form future recommendations and actions					
19	Appoint a Futurist to support ongoing regional workforce plan development.	Te Waka MBIE	Medium term	By continuously looking to the future, we will better understand the possibilities and opportunities for the Waikato.	All sectors
Fully leverage the Waikato's position as the agriculture backbone of Aotearoa.					
20	Establish the 'Waikato Futures Academy' that supports both current and future skills needs of the primary industries and added value manufacturing sectors, including Agritech, Biotech, Agribusiness, Environmental and Future Foods capabilities.	University of Waikato Te Pūkenga Muka Tangata WDC Fed Farmers Callaghan Innovation Dairy NZ MBIE TEC	Short term Medium term Long term	Identify project partners (including academia and industry); prepare MOU and programme plan. Undertake ideation and produce business case for the Academy. Secure funding and establish the Academy.	Digital / ICT Services Sciences
Close the gap between learning and working across the digital/ICT sector					
21	Introduce digital/ICT apprenticeships and micro-credentials to close the gap between school and workforce.	University of Waikato Te Pūkenga PTEs Cultivate Trust	Short term	Identify existing micro-credentials for the sector; explore stair-casing opportunities where micro-credentials can stack to degree level.	
22	Initiate dedicated tech hubs in each sub-region (or mobile) for students to access as part of STEAM (Science, Technology, Engineering, Arts and Mathematics) school curriculum (e.g., Mini MindLab).	Mindlab Cultivate IT Puhoro STEMM Academy	Medium term Long term	Conduct an audit to identify existing (and planned) STEAM facility provision in schools across region. Secure funding to develop business case for mobile / decentralised Tech Hubs for learners.	Sub regional Waikato
23	Support the 'Equitable Opportunities for Tech Employment' pilot initiative to simplify and improve the tech education-to-employment pathway so there are equitable opportunities for a wider spectrum of learners. Resulting in a deep pipeline of locally grown, diverse work-ready tech talent that can support industry, iwi (Waikato Tainui) and regional growth	Ministry of Education Secondary Schools Smart Waikato TORO Academy Cultivate Trust	Medium term	Create a collaborative model that joins up the whole ecosystem to build, retain and grow local talent. Work together to remove all barriers and expand opportunities from tertiary through recruitment to employment. Create and tailor the supports, tools and mechanisms to sustain and scale the pilot.	
Waikato Wisdom Project: practical skills plus industry/workplace knowledge transfer					
24	Develop a pilot "Tuakana teina" reciprocal skills transfer programme to support years of work experience, practical skills and sector knowledge transfer from older/retiring workers to new/youth workers; and digital / ICT skills from younger workers to older workers.	WECA MSD	Immediate Short term Medium term	Finalise business case and pilot partners. Secure funding and implementation partners. Deliver pilot, evaluate learnings and refine/replicate across other sectors.	Extend pilot to other sectors once tested in Manufacturing and Engineering

10. Partners and stakeholders

Since forming in September 2021, the Group has prioritised building relationships across the wider Waikato region, with iwi leaders, key sectors and industry leaders, employers, education providers, youth development organisations, local and central government, and worker representatives.

The group and Secretariat (MBIE staff dedicated to support the activity of the group) organised and facilitated workshops, issued surveys, and had numerous kōrero and email correspondence with interested stakeholders across all sub-regions of the Waikato. The group also engaged the expertise of Melissa Reynolds-Clarke for a futurist perspective on workforce development, to better respond to the impact of the future of work.

The group's approach followed the below 'double diamond' framework, intentionally structured to frequently test and refine the thinking of the group throughout all phases of the plan development.

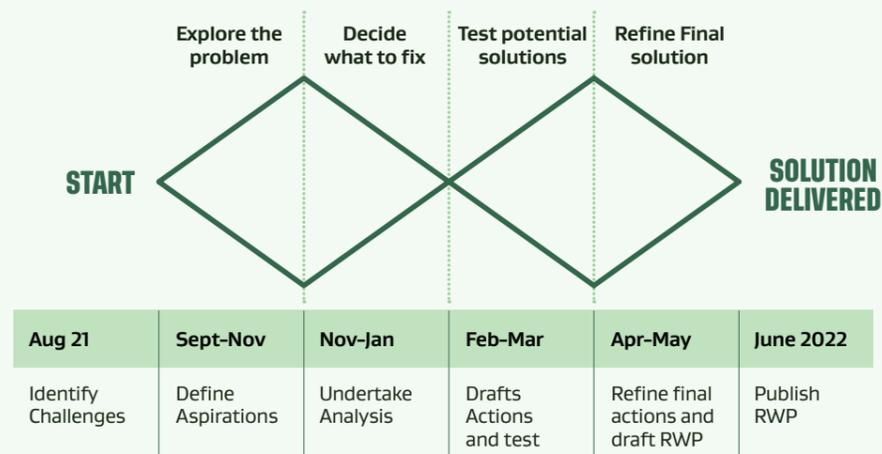
Since September 2021, the group has engaged with over 200 stakeholders and subject matter experts to inform the development of this plan. Groups and organisations that the RSLG directly engaged with to support the development of this plan include;

- Iwi/hapu
- Māori businesses and associations
- Industry associations / Peak Bodies
- Local Councils and EDA's
- Central Government agencies
- Unions
- Sector groups / Peak Bodies
- Business representatives
- Social services providers
- Agritech specialists
- Youth development/support organisations
- Schools and education providers

The group intentionally went wide in its outreach to make sure that all sub-regions and stakeholders in the Waikato had an opportunity to contribute and has attempted to reflect the views and suggestions received. In some instances, feedback received was outside the scope of the Group, in which case the information was shared with the relevant agency. Where further thinking and analysis is required, this is noted for a future action of the group.

The stakeholder engagement process helped identify a myriad of active initiatives across the Waikato region that support the many aspirations in this plan. Where possible, rather than adding further initiatives, the Group seeks to partner with stakeholders to enhance and support the growth and development of these initiatives. These intended partnerships have been noted in the action table. The group has also recommended further funding and support towards some initiatives in order to amplify important work that is already under way.

The group acknowledges the six Workforce Development Councils/Ohu Mahi (WDC) which were established in October 2021 as part of the Reform of Vocational Education (RoVE). Collaboration between RSLGs and WDCs is critical for enabling regional views and workforce needs to be reflected and considered in national standards and advice and for facilitating partnership opportunities to support regional initiatives and actions, alongside providers and other partners. The Group has ongoing conversations with many of the WDCs as well as having members serving on some WDCs.



11. Waikato Regional Skills Leadership Group (2021/22)

Co-Chairs



Brendon Green



Keith Ikin

Regional Public Services Commissioner



Te Rehia Papesch

Members



Tom Buckley



Jason Dawson



David Hallett



Chris Lewis



Pam Roa



Rosie Spragg



Tony Stevens

12. Appendices

All appendices that support this report are accessed from <https://www.mbie.govt.nz/waikato-rslg>



RSLG Foundational Documents:

1. Cabinet Paper establishing RSLGs
2. Letter of Expectations (from Minister Sepuloni to RSLG Co-Chairs)

Definitions:

1. Glossary of key terms
2. Definitions of technical terms
3. Glossary of acronyms

Supporting Information:

1. Regional Economic Profile Report (Infometrics)
2. Supporting material:
 - Waikato interim Regional Skills Leadership Group summary report
 - Waikato Region Māori Economic Action Plan 2019
 - The Waikato Plan
 - Emissions Reduction Plan
 - Digital Tech ITP
 - Advanced Manufacturing Industry ITP
 - Construction Sector Accord
 - Advanced Manufacturing Industry ITP
3. Stakeholder Engagement Summary

Useful links:

1. Waikato RSLG website: www.mbie.govt.nz/waikato-rslg
2. Regional Skills Leadership Groups website: www.mbie.govt.nz/waikato-rslg which contains links to:
 - Reform of Vocational Education
 - Workforce Development Councils
 - Immigration Rebalance
 - Industry Transformation Plans
 - Employment Strategy and Employment Action Plans

Endnotes

- i. Ministry of Business Innovation and Employment. (2021). Waikato Interim Regional Skills Leadership Group Summary Report August 2021. Ministry of Business Innovation and Employment.
- ii. Waikato District Council. (2021). Waikato 2070: Waikato District Council Growth & Economic Development Strategy.
- iii. Infometrics Ltd. (2022, April 6). Waikato RSLG area - Regional economic summary. Infometrics Ltd.
- iv. Infometrics Ltd. (2022, April 6). Waikato RSLG area - Regional economic profile. Infometrics Ltd.
- v. Infometrics Ltd. (2022, April 6). Waikato RSLG area - Employment growth industries, regional economic profile. Waikato, New Zealand.
- vi. Statistics New Zealand. (2022, April 6). 2018 Census Place Summaries, Waikato Region. I tīkina mai Statistics New Zealand: <https://www.stats.govt.nz/tools/2018-census-place-summaries/waikato-region>
- vii. The Waikato Plan. (2022, April 6). Waikato Housing Initiative. I tīkina mai Waikato Plan: <https://www.waikatoplan.co.nz/waikato-housing-initiative>
- viii. Smith, G. H., Tinirau, R., Gillies, A., & Warriner, V. (2015). He Mangōpare Amohia: Strategies for economic development. Ngā Pae o te Māramatanga. Whakatāne: Te Whare Wānanga o Awanuiārangī. doi:978-0-473-32355-4
- ix. Newsroom (Tumuaki). (2022). What's driving the Māori economy [Kiriata]. I tīkina mai <https://www.newsroom.co.nz/whats-driving-the-maori-economy>
- x. Waikato Tainui and Waikato Regional Council. (2019). Te Whare Ohaoha – Waikato region Māori economic development action plan refresh: A 12 month refresh. Hamilton: Waikato Regional Council. I tīkina mai [https://tewakapublicwebsite.blob.core.windows.net/sitefinity-storage-production/docs/default-source/resources/waikatoregion-Maorieconomicactionplan-finaljune62019-1\(1\).pdf?sfvrsn=550d08cc_1](https://tewakapublicwebsite.blob.core.windows.net/sitefinity-storage-production/docs/default-source/resources/waikatoregion-Maorieconomicactionplan-finaljune62019-1(1).pdf?sfvrsn=550d08cc_1)
- xi. Statistics New Zealand. (2018). Population structure. I tīkina April 6, 2022 mai Waikato Regional Council: <https://www.waikatoregion.govt.nz/community/about-the-waikato-region/community-and-economy/pld-report/#:-:text=Inper cent201991per cent20per cent2018per cent25per cent20ofper cent20the,lessper cent20thanper cent2035per cent20yearsper cent20old>
- xii. Pawar, S., & Ataoa Carr, P. (2022). A socio-demographic profile of rangatahi in the Waikato. Te Ngira. Hamilton: University of Waikato
- xiii. Pawar, S., & Ataoa Carr, P. (2022). A socio-demographic profile of rangatahi in the Waikato. Te Ngira. Hamilton: University of Waikato
- xiv. Pawar, S., & Ataoa Carr, P. (2022). A socio-demographic profile of rangatahi in the Waikato. Te Ngira. Hamilton: University of Waikato
- xv. Pawar, S., & Ataoa Carr, P. (2022). A socio-demographic profile of rangatahi in the Waikato. Te Ngira. Hamilton: University of Waikato
- xvi. The Waikato Plan. (2021, November 21). Circuit breaker trials for youth affected by COVID-19, result in positive, new directions. I tīkina mai The Waikato Plan: <https://www.waikatoplan.co.nz/post/food-production-steps-up-to-meet-global-demand>
- xvii. Waikato Regional Council. (2019). Council Climate Action Roadmap. Waikato Regional Council. I tīkina mai <https://www.waikatoregion.govt.nz/assets/WRC/WRC-2019/Climate-Roadmap.pdf>
- xviii. Ministry for the Environment. (2018, May 31). Climate change projections for the Waikato region. I tīkina mai Ministry for the Environment: <https://environment.govt.nz/facts-and-science/climate-change/impacts-of-climate-change-per-region/projections-waikato-region/#what-could-this-mean-for-waikato>
- xix. Wang, M., Li, Y., & Yin, C. (2019). An assessment of the impacts of climate change in the Waikato region: Applying CMIP5 data. Hamilton: Waikato Regional Council. I tīkina mai <https://www.waikatoregion.govt.nz/services/publications/tr201526/>
- xx. Ministry of Business, Innovation and Employment. (2022, May 3). Just Transition. I tīkina mai Ministry of Business, Innovation and Employment: <https://www.mbie.govt.nz/business-and-employment/economic-development/just-transition/> MBIE,
- xxi. New Zealand Council of Trade Unions. (2022). Just Transition. I tīkina mai NZCTU: <https://union.org.nz/just-transition/>
- xxii. Waikato Regional Council. (2019). Council Climate Action Roadmap. Waikato Regional Council. I tīkina mai <https://www.waikatoregion.govt.nz/assets/WRC/WRC-2019/Climate-Roadmap.pdf>
- xxiii. NZ Infrastructure Commission (Te Waihanga). (2019). Sector State of Play: Energy. NZ Infrastructure Commission (Te Waihanga). I tīkina mai <https://www.tewaihanga.govt.nz/assets/Uploads/Energy-Sector-State-of-Play-Discussion-Documents-February-2021.pdf>
- xxiv. Dickie, B. (2022, March 10). Renewable energy opportunities in the Waikato region report to the Waikato Climate Action Committee. Waikato Regional Council. I tīkina mai <https://waikatorc.sharepoint.com/sites/DSDocumentBank/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FDSDocumentBank%2FShared%20Documents%2FClimat%20Action%20Committee%2F%20Agenda%20Package%20%2D%20CAC%5F10Mar%5F2022%2Epdf&parent=%2Fsites%2FDSDocumentBank%2FShared%20Documents%2FClimat%20Action%20Committee&p=true&ga=1>
- xxv. He Waka Eke Noa Primary Sector Climate Action Partnership. (2021, July 7). Equipping farmers and growers to know their GHG numbers, and have a written plan. I tīkina mai He Waka Eke Noa: <https://hewakaekenoa.nz/wp-content/uploads/2021/07/GHG-tools-update-2.pdf>
- xxvi. Cultivate IT. (2019, October 7). Digital Waikato 2025 Strategy. I tīkina mai Te Waka Anaga Whakamua Waikato: https://tewakapublicwebsite.blob.core.windows.net/sitefinity-storage-production/docs/default-source/default-document-library/cultivateit_digital-waikato-2025-strategy_a4_oct19_1-071019_digital.pdf?sfvrsn=7c9a8d3_1#:-:text=The%20Digital%20Waikato%202025%20
- xxvii. Infometrics Ltd. (2022). Waikato RSLG Area - Health Workforce Report. Infometrics Ltd.
- xxviii. Little, A. (2021, April 21). Releases: Health Reform – Govt ensures local say in health services. I tīkina mai Beehive.govt.nz: <https://www.beehive.govt.nz/release/health-reform-govt-ensures-local-say-health-services>
- xxix. Infometrics Ltd. (2022). Waikato RSLG Area - Health Workforce Report. Infometrics Ltd.
- xxx. Te Puna Ora o Mataatua. (2020, January). Toitū Oranga Toitū Rongoā: Health & Medical Academy in Whakatāne. I tīkina mai Te Puna Ora o Mataatua: <https://www.tpoom.co.nz/service/health-and-medical-academy>
- xxxi. Technology Investment Network. (2021). New Zealand Agritech Insights Report. I tīkina May 3, 2022 mai <https://tin100.com/product/2021-new-zealand-agritech-insights-report/>
- xxxii. Infometrics Ltd. (2022). Waikato RSLG area - Regional economic profile. Infometrics Ltd.
- xxxiii. Ministry for Primary Industries. (2020). Fit for a Better World – accelerating our economic potential. Ministry for Primary Industries. doi:ISBN: 978-1-99-002545-7 Tertiary Education Commission. (2021). Waikato school leavers data. I tīkina mai Ngā Kete: Tertiary Education Commission.
- xxxiv. Coriolis Ltd. (2014, September). The New Zealand Agritech Sector. Coriolis Research. I tīkina mai Coriolis: https://coriolisresearch.com/pdfs/coriolis_nzte_agritech.pdf
- xxxv. Ministry of Business, Innovation and Employment. (2020). Agritech Industry Transformation Plan. Ministry of Business, Innovation and Employment. doi:ISSN (Online): 978-1-99--001912-8
- xxxvi. Food and Agriculture Organisation of the United Nations. (2019). Fisheries and Aquaculture. I tīkina mai Food and Agriculture Organisation of the United Nations: <https://www.fao.org/fishery/en/aquaculture/en>
- xxxvii. Te Waka Anaga Whakamua Waikato. (2022, March 14). Waikato Story: Seaweed could hold key to cleaning up waterways. I tīkina mai Te Waka Anaga Whakamua Waikato: <https://www.waikato.com/news/article/2022/03/13/seaweed-could-hold-key-to-cleaning-up-waterways>
- xxxviii. The New Zealand Government. (2019). The Government's Aquaculture Strategy to 2025. The New Zealand Government. doi: ISBN: 978-1-99-000833-7 (online)
- xxxix. <https://www.wintec.ac.nz/future-you/explore/jobs/aquaculture-and-fishing/aquaculture-farmer>
- xl. Lewis, G., Garden, S., Shafiee, H., Simmons, G., & Smith, J. (2021). Frontier firms: Four industry case studies. Working paper 2021/02. New Zealand Productivity Commission. doi:ISBN: 978-1-98-851958-6
- xli. Te Waka Anaga Whakamua Waikato. (2021, March 23). Survey reveals size and shape of the Waikato Tech Sector. I tīkina mai Te Waka Anaga Whakamua Waikato: <https://www.waikato.com/news/article/2021/03/23/survey-reveals-size-and-shape-of-the-waikato-tech-sector>
- xlii. Gardner, C. (n.d). Tips for technology start-ups. I tīkina mai Company X: <https://companyx.com/news/tips-for-technology-start-ups>
- xliiii. New Zealand Digital Skills Forum. (2021). Digital Skills Aotearoa: Digital Skills for our Digital Future. New Zealand Digital Skills Forum. I tīkina mai https://nztech.org.nz/wp-content/uploads/sites/8/2021/01/Digital-Skills-Aotearoa-Report-2021_online.pdf
- xliiii. Infometrics Ltd. (2022). Waikato RSLG Area - Manufacturing Sector Profile. Infometrics Ltd.
- xliiii. Infometrics Ltd. (2022). Waikato RSLG Area - Construction Sector Profile. Infometrics Ltd.
- xliiii. Tertiary Education Commission. (2022, April 19). Targeted Training and Apprenticeship Fund (free trades training). I tīkina mai Tertiary Education Commission: [https://www.tec.govt.nz/funding/funding-and-performance/funding/fund-finder/targeted-training-and-apprenticeship-fund/#:-:text=The%20Targeted%20Training%20and%20Apprenticeship,organisations%20\(TEOs\)%20by%20us.](https://www.tec.govt.nz/funding/funding-and-performance/funding/fund-finder/targeted-training-and-apprenticeship-fund/#:-:text=The%20Targeted%20Training%20and%20Apprenticeship,organisations%20(TEOs)%20by%20us.)
- xliiii. Te Waka Anaga Whakamua. (2021, August 30). Confidence takes a tumble in latest Waikato Rapid Sentiment Survey. I tīkina mai Te Waka Anaga Whakamua Waikato: <https://www.waikato.com/about-us/projects/economic-intelligence/waikato-business-sentiment-survey-march-2022>
- xliiii. The Detail. (2021, October 27). Fighting over timber – the shortages hitting construction. I tīkina mai RNZ: <https://www.rnz.co.nz/programmes/the-detail/story/2018817284/fighting-over-timber-the-shortages-hitting-construction>
- xliiii. Infometrics Ltd. (2022). Waikato RSLG Area - Freight & Logistics Sector Profile. Infometrics Ltd.
- i. Appendices: List of Waikato RSLG stakeholder engagement activity. (2021-2022).



Website:

<https://www.mbie.govt.nz/waikato-rslg>

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