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Irrigation New Zealand Case Study

The Current Environment and Training Options

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List of Acronyms

Acronym	Description
AQF	Australian Qualifications Framework
CoVE	Centre of Vocational Excellence
FEPs	Farm Environment Plans
GMP	Good management practices
INZ	Irrigation New Zealand
NZQA	New Zealand Qualification Authority
RoVE	Reform of Vocational Education
WDC	Workforce Development Council

Introduction

Irrigation is vital to the horticulture, agriculture, and sports turf sectors as well as a range of other commercial applications. It significantly contributes to food security, enhances wellbeing, protects the environment, and stimulates economic growth.

Irrigation New Zealand (IrrigationNZ) leads efforts within New Zealand to promote efficient and responsible water use, with its vision and activities being crucial to supporting sustainable practices in these industries.

To help achieve this vision, IrrigationNZ also plays a role in promoting and supporting training and development within the irrigation industry. A skilled workforce is indispensable for the effective management and operation of irrigation systems, yet current skill gaps must be addressed to meet industry needs. Training is essential for workforce development, promoting employee growth and retention through vocational education, and ensuring informed decision-making in freshwater management.

This report seeks to examine how the professionalisation of the industry would benefit businesses, employees and communities that depend on irrigation services.

Purpose of this case study

This case study explores the existing training and development options offered by IrrigationNZ and its industry partners within the irrigation sector.

Specifically, this case study seeks to:

1. Provide an overview of the training programmes and qualifications currently available in the irrigation sector, including both formal and informal offerings.
2. Analyse the effectiveness of existing training models in meeting industry needs and addressing workforce shortages.
3. Explore insights into the learner experience, including attraction and retention, support mechanisms, and career progression pathways.
4. Explore the challenges faced in delivering vocational education and training in the irrigation sector, particularly regarding funding, accessibility, and policies.
5. Examine the role of industry partnerships and collaborations in shaping and delivering vocational education and training.

Finally, this case study aims to inform IrrigationNZ, employers, policy makers, industry leaders, and education providers providing valuable insights that can contribute to the ongoing development and enhancement of vocational education and training in the food and fibre sector.

Methodology

This research used an exploratory single-case study approach. Information was gathered in two ways:

1. Semi-structured Interviews (n=8): We talked to a variety of people involved in the sector, including students, employers, tutors, and staff from Irrigation New Zealand[1]. These conversations helped us understand different perspectives on the current state of vocational education in irrigation.
2. Document Analysis: We reviewed strategic plans from Irrigation New Zealand, information from their website, and relevant government documents about vocational education and the irrigation industry in New Zealand.

Combining interviews and document analysis enabled a well-rounded view of the environment. Interview data was thematically analysed, and important insights were extracted from documentation to compare against interview themes.

[1] All quotes used in the body of the paper are from these interviews.

The NZ Irrigation Sector

The Water Management System

New Zealand's unique geography and diverse climate necessitate a comprehensive water management system and as such requires that New Zealand balance environmental preservation with the demands of agriculture, industry, and urban development.

The Resource Management Act 1991 (RMA) provides the primary legislation for managing water resources, delegating significant responsibility to regional councils and unitary authorities. These bodies develop policies and plans for sustainable water use within their jurisdictions.

Key aspects of New Zealand's water management include:

1. Allocation of water rights through resource consents
2. Monitoring and enforcement of water quality standards
3. Management of water infrastructure, including irrigation systems
4. Protection of freshwater ecosystems
5. Consideration of Māori cultural values in water management

The National Policy Statement for Freshwater Management, introduced in 2011 and subsequently updated, aims to safeguard water bodies while enabling economic growth within environmental limits.

The irrigation sector plays an important role, particularly in agricultural regions. Efficient irrigation practices are essential for sustainable water use and food production as climate change impacts become more pronounced.

Challenges remain, including addressing over-allocation in some catchments and managing diffuse pollution from land use. New Zealand's water management system continues to evolve, reflecting the nation's commitment to balancing economic, environmental, and cultural considerations.

IrrigationNZ's role

IrrigationNZ is dedicated to promoting efficient irrigation practices and advocating for sustainable water use for New Zealand.

As a non-profit, membership-funded national industry body, it champions the significance of Good Management Practices (GMP) in irrigation, which are necessary for enhancing water quality and optimising the use of water resources.

The organisation actively supports training and workforce development within the irrigation sector by providing various training resources and courses aimed at improving the skills of individuals involved in irrigation management. This ensures that operators are knowledgeable about the latest techniques as well as regulatory compliance and safety standards.

IrrigationNZ collaborates with Primary ITO/Te Pūkenga and Site Safe to deliver irrigation-focused programmes and certifications such as water measurement verification, irrigation design, and irrigation performance assessment. In addition to these offerings are informal certificates and courses such as irrigation fundamentals workshops led by irrigation schemes, which address immediate industry needs

related to regulatory compliance. All of these formal and informal courses are generally highly regarded by employers, regulators, and industry alike.

Additionally, IrrigationNZ focuses on ensuring the efficient design and operation of irrigation systems. Once trained to the required competency level, IrrigationNZ's members are able to conduct regular performance assessments, including scheduled Bucket Tests, to evaluate system efficiency while emphasising compliance with legal consent conditions for irrigation water—an essential aspect of sustainable water management. The organisation advocates for maintaining auditable records, which are crucial for accountability, performance analysis, and continuous improvement of irrigation practices.

Beyond these operational aspects, IrrigationNZ plays a significant role in advocacy and policy development. The organisation strives to influence water management policies that reflect the interests of its members and the wider community. It addresses challenges such as water scarcity, environmental impacts, and quality issues across various regions in New Zealand.

Overall, IrrigationNZ is instrumental in promoting sustainable irrigation practices and advocating for effective water management strategies critical to New Zealand's food and fibre sector, as well advocating for the training and development of those employed within the industry.

"IrrigationNZ in my opinion punch above their weight constantly when I see what they do and achieve compared to other industry bodies." (Tutor)

Clearer Career Pathways are needed within the Industry

The irrigation industry plays an important role in New Zealand's food and fibre sector, yet it lacks a formal, structured career pathway. This absence makes it challenging for both current workers and potential entrants to understand and navigate the career opportunities available within irrigation.

Addressing this gap is important for ensuring the long-term sustainability and growth of New Zealand's irrigation industry.

> ***"It's quite an interesting career for people, you've got so many different things you can specialise in. It's not just putting pipe in the ground." (Employer)***

The New Zealand Qualifications and Credentials Framework (NZQCF) currently includes NZQA-registered Certificates at Levels 4 and 5 for the irrigation sector, which are designed for professionals who already have experience in the field. However, there are no formal NZQA accredited qualifications below these.

This lack of clear career progressions, defined pathways, and formally recognised entry-level qualifications, was viewed as a barrier for potential newcomers. Interviewees highlighted this as a particular challenge in attracting young people to the sector. They suggested that developing foundation-level qualifications, engaging courses, and well-defined career trajectories could effectively promote irrigation as an attractive career option for school leavers and other job seekers.

> ***"If we have courses that are appealing and people can come out qualified, I think it's an amazing career and industry and for anybody who wants to jump on board." (Employer)***

The absence of an entry career pathway is particularly noticeable when compared to other industries that have long established formal apprenticeships, like the construction, plumbing, automotive industries. To this end, IrrigationNZ has actively sought to develop an apprenticeship or foundation level programme that meets the need of industry and provides an entry point for young people and those seeking a career in irrigation. To date, this has not been successful with varying degrees of impediments.

Further to the availability of these programmes, interviewees also felt that the diversity of opportunities within irrigation was not well understood or communicated to potential entrants to the industry. The irrigation industries covers an array of jobs and specialities that may be appealing to job seekers and school leavers if these opportunities were better understood and had clear entry points and career progression pathways.

While these issues have been identified as a main concern by the sector, there are also other challenges that impact the learner's experience.

These issues stem from a combination of factors and include:

- **In-House training and external support.** Some private companies run their own internal training programmes which includes learner mentoring. These appear to be filling some gaps, particularly in practical skills, but may lack standardisation across the industry. Smaller companies may not have the resources, expertise or time to create their own training programmes. They are therefore reliant on training and development courses outside of their company.

Development of resources and guidance for employers on how to effectively support and train their employees, potentially including mentorship programmes and structured on-the-job learning plans could be of value to employers.

- **Fragmented training:** While there are courses available for specific skills or compliance requirements, there doesn't appear to be a comprehensive programme that covers all aspects of irrigation. This leaves learners to piece together their own learning pathway, which can be challenging and may leave gaps in their knowledge.
- **Geographical obstacles**: New Zealand's irrigation industry is widely distributed across all regions, with significant activity in areas like Canterbury, Otago, Marlborough, and Hawkes Bay. This can create challenges given that training is mostly delivered in main centres, which creates accessibility barriers for learners living in remote areas.

To address these challenges, IrrigationNZ has been leading an initiative with industry to consider developing a structured, industry-recognised career framework. This framework should outline the skills, knowledge, and competencies required at different levels of expertise, from entry-level positions through to advanced specialist roles.

Ideally, this framework would be aligned with NZQA standards to ensure national standardisation, recognition and portability but could still incorporate informal courses, programmes and accreditations required for professionals working within the irrigation sector.

Training for the NZ Irrigation Sector

A Timeline of Training Developments in the sector

From 2016, IrrigationNZ actively worked towards the development of a formal foundation level qualification, driven by the sector's growing demand for skilled professionals and the need to establish a structured career pathway for newcomers to the field.

By 2020, significant strides had been made in laying the groundwork for the apprenticeship programme. This development was led by IrrigationNZ and initially supported by Competenz, an Industry Training Organisation (ITO). IrrigationNZ's other formal qualifications sat with Primary ITO, the main standard setting organisation with responsibilities for agriculture irrigation at the time.

The proposed structure included a Level 3 and a Level 4 certificate, which together would form the basis of the apprenticeship. Discussions were also underway to explore the possibility of structuring the Level 3 certificate around stacked micro-credentials, aimed at breaking down unit standards into more manageable, bite-sized components.

However, at the end of 2020, Competenz put work on the apprenticeship on hold. This decision was influenced by several factors: uncertainties stemming from the Reform of Vocational Education (RoVE), the inherent complexity of developing an apprenticeship that drew on skills from various industries under the purview of multiple ITOs, and the financial considerations associated with creating a qualification for a relatively small industry.

In response to the challenges faced in developing NZQA-accredited foundation level qualifications, IrrigationNZ shifted its focus. The organisation began investigating alternative methods to equip industry newcomers with the essential knowledge and skills required for a successful career in the irrigation sector.

This exploration led IrrigationNZ to the **Certificate III in Irrigation Technology**, a qualification registered on the Australian Qualifications Framework and currently taught by Irrigation Australia. This certificate encompasses the majority of skills and competencies necessary for entry into the irrigation industry and has been identified as a viable alternative in the absence of a New Zealand-specific qualification.

> ***"I know we're working with irrigation Australia to see if we can get their level 3 and that would be a good thing for entry level people. We would support something like that." (Employer)***

Building a training programme around the competencies set out in the Certificate III is an option for IrrigationNZ as an alternative to continuing to develop a New Zealand irrigation apprenticeship which would require substantial further work and financial investment in resource creation. The Certificate III is viewed as a current viable and efficient option for meeting the industry's training needs, however, despite having the general support of the sector, and containing the necessary learning components required for entry into the industry, IrrigationNZ have only tested this as a pilot programme using the Irrigation Australia trainer. IrrigationNZ would prefer for long term programme viability to recruit or train a New Zealand based delivery provider able to deliver the equivalent competencies here in New Zealand.

In the absence of a New Zealand-based delivery partner, IrrigationNZ has piloted the qualification with a cohort of learners with tutors brought to New Zealand to deliver all aspects of the programme. This was

facilitated under an established Memorandum of Understanding with Irrigation Australia that allows IrrigationNZ to access to their training materials.

However, this model is not ideal for long-term implementation. Consequently, IrrigationNZ, in collaboration with industry partners, has been working with NZQA to have the competencies registered as Unit Standards and establish a formally recognised qualification in New Zealand.

Following the Reform of Vocational Education (RoVE), the responsibility for developing and registering qualifications related to irrigation was assigned to Hanga Aro Rau, the Manufacturing, Engineering and Logistics Workforce Development Council (WDC).

IrrigationNZ has been working closely with Hanga Aro Rau to have the units of competency (the Australian equivalent of unit standards) in the Certificate III qualification formally recognised in New Zealand.

Each unit of competency is undergoing evaluation to determine its suitability for incorporation into the New Zealand framework. This assessment includes checking the level of each standard, identifying any existing equivalent unit standards in the NZQA framework, and ensuring all required parameters are met.

However, with further changes proposed to the New Zealand vocational education sector, including the disestablishment of WDCs, there is a risk that this work may face additional disruption and delays.

This ongoing uncertainty poses a significant challenge to the irrigation sector, which continues to lack a clear, foundation-level entry pathway for career development. The potential impact of these changes underscores the need for a stable and responsive vocational education system that can meet the needs of specialised industries like irrigation.

How effective are the current training models?

The effectiveness of current training models in the irrigation sector appears to be mixed. On one hand, specific courses like water meter verification, irrigation system design and irrigation performance assessment are meeting immediate industry needs, with some alignment to assist regulatory compliance. These courses are well-regarded and provide essential skills for professionals in the field. Appendix 2 shows registrations for the formal training options offered by IrrigationNZ.

However, the sector faces challenges in addressing broader skill shortages and providing a comprehensive, recognised training framework. Some interviewees noted that the training feels *'ad hoc'* and lacks a clear structure.

> ***"People decide, I will do a workshop because we haven't done a workshop for a while." (Tutor)***

The industry is struggling to attract and retain new talent due to the absence of a structured career, training, and apprenticeship pathway. The successful pilot of the Australian Certificate III shows recognition of the need for more comprehensive training, but limitations on delivery may be affecting its reach and effectiveness. The industry, however, is supportive of its continued development and implementation.

Overall, while existing training models are meeting some immediate career and training path needs, there is still a perceived need in the sector for a holistic, industry-wide solution to skill development and workforce preparation.

Impact of an Evolving VET Landscape on Training

The irrigation industry in New Zealand faced difficulties in meeting its training needs within the Vocational Education and Training (VET) system established as a result of RoVE and it is likely that the newly proposed reforms will impact them further.

Changes to the tertiary sector has meant that for smaller primary sector support services like irrigation, they struggle to be recognised and prioritised by newly established standard setting bodies and education providers.

One of the key challenges is its relatively small size compared to other trade or technical industries. The potential volume of learners within irrigation in rural workplaces is considerably lower than in larger, more high-profile sectors, with clear pull factors from urban plumbing and electrical trade organisations.

The viability of developing and delivering specialised qualifications for a limited number of learners in more remote workplace locations is a significant consideration. Education providers and funding organisations must weigh the costs associated with delivering, creating and maintaining such programmes against the potential uptake and long-term sustainability. The irrigation sector's smaller learner pool presents challenges in terms of achieving economies of scale in education provision and securing adequate funding to support comprehensive workplace training programmes.

As a small industry with specialised requirements, it struggles to fit into the volume-based funding model, which hinders the development of formal training programmes often utilising block courses outside the workplace. This situation has led to a reliance on informal, employer-led training, resulting in inconsistencies and potential loss of talent to other trades with established formal training pathways.

The industry's position is further complicated by its assignment (under industry classifications) to Hanga Aro Rau – Manufacturing, Engineering, Logistics and Transport), despite being an industry more directly aligned with skills and knowledge based within primary sector services. This split affiliation between two different WDCs, Hanga Aro Rau and Muka Tangata (the people, food and fibre WDC), creates additional challenges.

Given that irrigation's main function aligns more closely with the food and fibre sector, the industry may be better served with future VET reviews placing them with which ever standard setting body is assigned the responsibility for food and fibre. Even when training has an engineering component to it, such as irrigation pipe and pump system design, the fundamental skill sets for optimised irrigation practices sit within a deep understanding of the food and fibre production sectors' relationships with plants, soils, and water. This places it more clearly into the primary sector than engineering or manufacturing.

Addressing these challenges may require collaborative efforts between industry bodies, education providers, and government agencies to create sustainable solutions that meet the unique needs of sectors like irrigation while operating within the constraints of the broader vocational education framework.

Promoting Irrigation as an Exciting and Rewarding Career Option

Attracting people into the industry requires more than just having clear career pathways. The irrigation sector '*isn't just about pipes in the ground'* there are multiple career opportunities within irrigation that aren't well promoted or understood by those outside of the industry.

To excite and interest more people to consider irrigation as a career, the irrigation industry should further invest in promoting and raising awareness of the varied and rewarding career options available.

Interviewees consistently highlighted the need for new entrants, particularly young people, to join the industry. There is a concern about the aging workforce, with many experienced professionals either in the middle of their careers or nearing retirement age, creating a gap in the pipeline of skilled professionals.

> ***"He hasn't got an employee under 40 years of age... there's no people coming in to backfill some of his old hands that know everything there is about installing irrigation." (Industry expert)***

To help address this issue the industry is actively recruiting professionals from diverse trade backgrounds, particularly those with mechanical, electrical, or plumbing experience. Many are keen for a more outdoors employment setting embedding themselves into rural communities.

Interviewees highlighted the sector's openness to career-changers from other and adjacent industries, recognising that diverse experiences can drive innovation and adaptability. However, interviewees also noted the need for better promotion of irrigation careers to attract a wider pool of skilled professionals, which is crucial for long-term succession planning and industry growth.

> ***"Our staff are very much a trades type person, hands on. They can be plumbers; they could be electricians. We've got builders that are sick of the building industry" (Employer)***

Still others raised concerns about poaching in the industry, with bigger companies able to offer higher wages and better workplace conditions to attract staff away from smaller companies. Interviewees stated that when employees show potential, they often *"rise up through the ranks pretty quick"* and are then poached by other companies. The shortage of skilled workers in the industry may be a factor in driving competition for talent between companies.

However, workforce shortages cannot solely be filled by other experienced tradies; a steady influx of younger workers is still important to ensure long term workforce sustainability.

Interviewees stressed the need for better marketing of the industry, showcasing its technological aspects (use of digital technology, AI systems, decision support software), and improving the availability of formal training. They believe that by addressing these areas, the irrigation sector could become more appealing to younger generations, potentially alleviating the current challenges with an aging workforce.

The consensus was that while the industry has much to offer, it needs to actively work on its image and outreach to successfully engage with potential new recruits.

> ***"We need to try to actually formulate how do we get young people into this industry because it is really exciting and can be a good career for someone." (Employer)***

Examples of how to appeal to younger people and career changers include:

- **Emphasising technological innovation:** The irrigation sector is increasingly incorporating advanced technologies. Highlighting the use of cutting-edge technology such as GPS systems, automation, AI and machine learning, remote sensing, and data analytics can attract tech-savvy younger generations who are interested in applying digital skills to real-world problems.
- **Focus on environmental sustainability**: Many young people are passionate about environmental issues. The irrigation sector can emphasise its role in water conservation and sustainable agriculture. Showcasing how modern irrigation practices contribute to efficient water use and environmental stewardship can appeal to environmentally conscious youth.
- **Promote diverse skill development**: The sector offers opportunities to develop a wide range of skills. This multidiscipline industry covers diverse areas such as - engineering and design, soil science and agronomy, hydraulics and fluid dynamics, electrical and mechanical systems, project management, computer programming, water conservation techniques and environmental impact assessment. This diversity can appeal to young people who enjoy varied work and continuous learning.
- **Highlight the outdoor work environment:** Many people value jobs that aren't confined to an office. The irrigation sector can promote the blend of outdoor work and technical skills. This aspect can be particularly appealing to those who enjoy practical, hands-on work in diverse settings.
- **Showcase the industry's impact:** Emphasise how the irrigation sector contributes to food security, economic growth, and community development. People often seek meaningful work that makes a difference. Demonstrating the sector's crucial role in supporting agriculture and food production can resonate with this desire for impactful careers.

To further market and promote irrigation as a career option, especially to young people, the industry could also consider:

1. Creating partnerships with schools and tertiary education providers to increase awareness of irrigation careers.
2. Utilising social media and digital platforms to reach younger audiences.
3. Offering internships or work experience programmes to give young people a taste of the industry.
4. Highlighting success stories and career progression of young professionals in the sector.

Interviewees emphasised both the challenges and opportunities in attracting younger talent to the irrigation industry. While acknowledging the sector's struggle with visibility and effective communication of career prospects to youth, they highlighted that irrigation offers exciting, technology-driven careers with diverse specialisations and strong progression opportunities.

Addressing these issues requires a collaborative effort from all stakeholders in the irrigation sector. Industry bodies, educational institutions, employers, and government agencies must unite to promote irrigation as a dynamic and varied career path. This collaboration should focus on securing adequate funding for career promotion, training, and development programmes, ensuring the industry invests fully in its future workforce.

This comprehensive approach will not only help address skills shortages but also enhance the industry's capacity to innovate and adapt to future challenges.

Impact of Regulation and Compliance on Training

The New Zealand irrigation sector is facing increasingly complex regulatory and compliance requirements, which impact the training and development needs. These evolving regulations reflect growing concerns about water resource management, environmental sustainability, and workplace safety.

Regional councils play a pivotal role in shaping the regulatory landscape for irrigation. Each council sets its own requirements, leading to regional variation in compliance standards. For instance, Canterbury has implemented specific regulations around the performance assessment of irrigation systems. This regional diversity lends itself more towards informal tailored training programmes that can address local regulatory nuances while still good practice. In contrast, some formal training, such as the performance assessor and design course are taught to a national code of practice. This means once someone has successfully completed this course, the are able to work in any New Zealand region.

Farm Environment Plans (FEPs) have become a crucial tool for ensuring sustainable farm management, including irrigation practices. These plans, often mandated by regional councils, require farmers to identify and manage environmental risks associated with their operations.

For the irrigation sector, this means demonstrating efficient water use, minimising runoff, and protecting water quality. The implementation of FEPs has created a significant demand for training in water use efficiency areas such as irrigation system design, irrigation scheduling, and performance assessment. Professionals in the sector now need the skills not only to develop irrigation plans but also to implement and monitor irrigation water use effectively within regulatory constraints.

Health and safety requirements, while not exclusive to irrigation, have become increasingly stringent across all industries in New Zealand. In the context of irrigation, this encompasses safe operation of machinery, handling of chemicals, and management of risks associated with water storage and distribution systems. Training programmes should incorporate comprehensive health and safety modules, ensuring that irrigation professionals are equipped to create and maintain safe working environments.

The water measurement regulations introduce another layer of compliance, requiring verification of water meters and water use records. This has led to the development of specialised training, via the "Blue Tick" accreditation offered by Irrigation New Zealand. These certificates are becoming essential for professionals involved in water measurement and management.

> ***"We work with INZ for our Blue Tick accreditation. Also, with our monitoring of water meters...we've got to keep that current plus have staff trained up to do that compliance." (Employer)***

These regulatory demands are shaping the training landscape in several ways.

1. There's an increased need for ongoing professional development to keep pace with evolving regulations.
2. Training programmes must now balance technical skills with a strong focus on compliance and risk management.
3. The complexity of regulations should be part of any formal, recognised qualifications that demonstrate competence in regulatory areas.

For training providers and industry bodies, this regulatory environment presents both challenges and opportunities. There's a clear need for closer collaboration with regulatory authorities to ensure training meets compliance requirements. Additionally, the integration of topics on new technology, improvement in understanding best management practises, climate change drivers, and changing compliance into existing qualifications requires regular updates to course content, trainer skills, and assessment methods.

The regulatory and compliance landscape is significantly shaping the future of training and development in New Zealand's irrigation sector. It underscores the need for a robust, flexible, and continuously updated training framework that can meet regulatory obligations while supporting industry efficiency and innovation.

Conclusion

This report highlights the training needs and challenges within New Zealand's irrigation sector.

While essential for water management, food security, environmental stewardship, and economic growth, the sector struggles to develop and maintain formal qualifications that meet industry needs within the current VET landscape.

Irrigation New Zealand's delivery of industry specific programmes and their efforts to establish formal training pathways, including exploring alignment with international qualifications, demonstrate commitment to professional development. However, these initiatives have been hindered by the sector's relatively small size and the ongoing reforms in the VET system, highlighting the need for a more tailored approach to training in specialised industries.

This case study has identified several challenges for IrrigationNZ and the wider industry:

1. Establishing clear, NZQA-aligned career framework, particularly at the entry-level or as an apprenticeship pathway.
2. The promotion of irrigation careers to attract a diverse workforce including young people and school-leavers.
3. Proactively engaging with industry and regional/unitary councils to develop and deliver training that ensures ongoing regulatory compliance while meeting evolving sector needs.
4. The sector's strategic placement within the VET system.

Addressing these areas will require a collaborative effort from all stakeholders, including government agencies, educational providers, and industry bodies. The continued development of tailored, industry-specific qualifications at all levels that meet industry needs and NZQA standards should be a priority, as should efforts to enhance the sector's visibility and appeal as a career choice.

This case study provides a foundation for future discussions and actions aimed at enhancing vocational education and training in the irrigation sector. It offers insights from those currently working in the industry and can be used to inform policy decisions, guide the development of training programmes, and support the sector's efforts to build a skilled, professional workforce capable of meeting the challenges of modern irrigation practices.

Ultimately, the success of these efforts will depend on recognising irrigation's role within New Zealand and providing appropriate support within the VET system. With continued collaboration and a commitment to excellence, the irrigation sector can develop a training framework that not only meets

its unique needs but also positions irrigation as an attractive, rewarding career choice for the next generation of skilled professionals.

Recommendations for Industry

1. Develop a structured career and training framework for irrigation:

IrrigationNZ could work with the wider irrigation industry to create a clear, industry-recognised career and training framework that outlines the skills, knowledge, and competencies required at different levels of expertise. This framework should be aligned with NZQA standards to ensure national recognition and portability of qualifications where possible.

It should include the existing nationally accredited Certificates, informal courses, and the competencies adapted from the Australian Certificate III in Irrigation Technology.

Having a clear framework for irrigation will help learners and employers understand and navigate all training opportunities currently available.

2. Establish an apprenticeship for irrigation:

While work to establish an apprenticeship level programme has proved difficult, industry is still largely supportive of this approach. The Australian Certificate III is a good starting point and building on this will help meet some of the training needs at this lower level, however having a specific New Zealand apprenticeship programme to offer and entice young people into the irrigation industry may still be valuable and should be considered.

It is suggested that once a new standard setting body is confirmed for irrigation that IrrigationNZ should raise with the relevant educational bodies and industry partners the possibility of developing and implementing a NZQA-registered apprenticeship programme and additional qualifications. These would aim to provide essential skills and knowledge for those entering the irrigation industry with little to no experience, addressing the current gap in entry-level training.

However, IrrigationNZ could also explore informal apprenticeships. In lieu of NZQA or WDC support for formal apprenticeship models Irrigation New Zealand could develop and market their own informal apprenticeship model that incorporates current and new informal and formal training activities. This could be promoted to the sector as part of IrrigationNZ's role as the industries peak body.

3. Expedite recognition of Certificate III in Irrigation Technology:

It is recommended that IrrigationNZ continue collaborating with Hanga Aro Rau (and any new SSB in future) and other relevant bodies, to progress a New Zealand equivalent to the Australian Certificate III in Irrigation Technology and have it formally recognised and adapted for the New Zealand context. This could provide a quicker solution to the lack of foundation-level qualifications.

4. Enhance industry promotion and career awareness:

Develop a comprehensive marketing strategy to promote irrigation as an exciting and varied career option. This promotional activity could also focus on the exciting and diverse job opportunities within irrigation, including technological and environmental sustainability roles that are especially of interest to younger people.

5. Strengthen collaboration with regulatory bodies:

Continue to foster close relationships with regional councils and other regulatory authorities to ensure that training programmes are up-to-date with current compliance requirements and can adapt quickly to regulatory changes.

6. Advocate for appropriate sector placement:

Engage with relevant government bodies to advocate for the irrigation sector to be placed under the standard-setting body responsible for food and fibre in future VET reviews. This alignment could better serve the industry's training needs.

7. Develop a talent retention strategy:

Work with industry partners to create strategies for retaining skilled workers, potentially including industry-wide professional development resources, mentoring programmes, or cross-company career progression pathways.

These recommendations aim to address the key challenges identified in this case study and provide a pathway for the irrigation sector to develop a more robust, accessible, and attractive vocational education and training landscape.

Irrigation New Zealand: Addendum to Case Study

Background

Irrigation New Zealand (IrrigationNZ) has been actively working to establish robust training and development pathways for irrigation professionals across the country. Water management through efficient irrigation practices is increasingly important in New Zealand's agricultural and horticultural sectors, requiring skilled professionals who understand both technical systems and environmental considerations.

The initial case study explored the existing training landscape for irrigation workers and identified gaps between industry needs and available educational pathways.

This short follow-up to the case study examines the progress made since the original research was published. It documents current initiatives underway and outlines future plans to further support irrigation training and career development in New Zealand.

Initial Findings and Challenges

The original case study revealed that IrrigationNZ has been working towards designing and developing industry-specific programmes and to establish formal training pathways. However, due to the sector's relatively small size compared to other food and fibre industries, it often struggled to gain traction within the broader Vocational Education and Training (VET) system, which has itself been undergoing significant reforms.

Four primary challenges were identified through the research:

Firstly, the sector struggled with a career framework aligned with New Zealand Qualifications Authority (NZQA) standards, particularly for entry-level workers. Without these formal pathways, potential workers lacked clarity about how to enter the industry or progress once employed.

Secondly, attracting a diverse workforce presented ongoing difficulties. The sector particularly struggled to appeal to young people and school-leavers who might otherwise consider irrigation as a career option.

Thirdly, balancing regulatory compliance with practical sector needs. The irrigation sector relies on close working relationships with regional councils and other regulatory authorities to ensure that training programmes are up to date with current compliance requirements and can adapt to any regulatory changes.

Finally, finding appropriate placement within the VET system proved challenging. The irrigation sector spans multiple industries including agriculture, horticulture, and infrastructure, making it difficult to situate within existing educational structures.

Recommendations and Sector Response

To address these challenges, the initial case study proposed several recommendations, including developing a structured career and training framework aligned with NZQA standards, establishing both formal and informal apprenticeship pathways, expediting recognition of Australian qualifications for New Zealand contexts, enhancing industry promotion, strengthening collaboration with regulatory bodies, advocating for appropriate placement within standard-setting bodies, and developing strategies for worker retention.

The case study generated positive feedback from across the wider food and fibre sector. Key organisations including Primary ITO and Hanga Aro Rau (the lead Workforce Development Council for Irrigation) confirmed that it accurately portrayed the current training landscape and workforce challenges. They acknowledged that the study correctly captured the sector's general sentiment towards training needs and challenges.

Furthermore, they noted that work to address many of the identified challenges had been in the pipeline and underway, with changes close to being implemented.

Qualification Framework Development

Since the publication of the original case study, progress has been made in developing a comprehensive qualifications pathway for the irrigation sector.

The new qualification framework has been structured to provide clear progression through Levels 3, 4, and beyond to more specialised qualifications, allowing learners to build their skills and knowledge. This structured approach addresses one of the key findings from the original research—the need for clear career pathways that offer progression opportunities.

Currently, six new qualifications exist within this framework, including three newly developed micro-credentials that were launched in January 2025. These micro-credentials provide flexible, targeted learning opportunities that can be completed alongside work commitments, making them particularly valuable for an industry where many workers are already employed but seeking to upskill.

The development of these qualifications has been a collaborative effort involving multiple organisations. The existing six qualifications were developed in collaboration with Muka Tangata Work Development Council, while the new Level 3 and 4 pathway involves both Muka Tangata and Hanga Aro Rau Work Development Councils, reflecting the cross-sectoral nature of irrigation work and addressing recommendation #4 from the original report.

The framework continues to undergo review and refinement, with particular focus on Certificate Level 3 and Level 4 development. These levels are especially important as they provide an entry and progression points for many workers entering the irrigation sector.

Finally, progress has been made in adapting the Australian units of competency to meet New Zealand standards and requirements, though this cross-jurisdictional work has taken longer than initially anticipated due to organisational changes in both countries.

Delivery Model and Partnerships

The approach to delivering these new qualifications reflects a long-standing industry partnership between Primary ITO and IrrigationNZ. This collaborative model leverages the strengths of both organisations to ensure the training meets both educational standards and practical industry needs.

Under this partnership arrangement, Primary ITO manages the programme development, compliance requirements, and moderation processes. This ensures the qualifications meet all necessary NZQA standards and maintain educational integrity. IrrigationNZ takes responsibility for delivering the programme nationwide, providing sector-specific expertise and assisting with the development of practical resources that reflect current industry practice.

This division of responsibilities plays to the strengths of each organisation while ensuring a consistent, high-quality learning experience for students regardless of their location within New Zealand.

Several delivery options are currently under consideration for the Level 3 and 4 qualifications. This includes packaging the qualifications to form a complex New Zealand Apprenticeship. This would provide a structured pathway combining on-job and off-job learning components, creating a holistic training experience that connects theoretical knowledge with the technical skills needed for irrigation systems.

In parallel, there are plans to offer Level 3 and Level 4 as stand-alone qualifications. This flexible approach recognises that learners come with different needs and prior experiences, allowing them to enter the framework at the most appropriate point for their individual circumstances.

The implementation of this framework has required coordination between multiple organisations, including educational bodies, industry representatives, and workforce development councils. Though complex, this work is well advanced with completion expected within the current year.

Future Outlook and Initiatives

Looking ahead, the irrigation sector in New Zealand is well positioned to benefit from these developments in its training suite. With six qualifications now established, including the three new micro-credentials, a clear career pathway is forming that provides logical progression through various qualification levels.

As the new qualifications are implemented, the sector will be better placed to attract more diverse talent. The clarity of career progression opportunities is particularly important for young people entering the workforce, who often seek clear pathways for advancement when choosing career options.

To support sector growth and address the historical challenges with visibility and recruitment, Primary ITO and Irrigation New Zealand are planning a coordinated marketing campaign for 2025. This initiative will include social media promotion specifically designed to raise the profile of irrigation careers and highlight the sophisticated technology and environmental stewardship aspects of modern irrigation work.

This marketing approach recognises that one of the sector's persistent challenges has been its relatively low profile compared to other agricultural career paths. By actively promoting the technological aspects of irrigation work and its importance to sustainable farming practices, the campaign will aim to reposition irrigation careers to appeal to young people seeking meaningful work.

Collaborative Approach

The progress made thus far demonstrates the value of collaboration between industry bodies, educational providers, and regulatory organisations. By working together, these stakeholders have begun to address the challenges identified in the original case study while respecting the unique position of the irrigation sector within New Zealand's broader landscape.

The ongoing partnership between Irrigation NZ, Primary ITO, and the WDCs has created a coordinated approach to workforce development for the benefit of the sector. This collaboration ensures that training programmes respond to genuine industry needs while meeting necessary regulatory requirements.

By establishing professional pathways with clear career progression opportunities, the sector is addressing one of its fundamental challenges—attracting and retaining skilled workers. The framework now taking shape will help position irrigation as a profession rather than just a job, elevating its appeal to potential workers.

Conclusion

The developments outlined in this case study represent significant progress for the irrigation sector in New Zealand. By addressing the challenges identified in the original research through collaborative, structured approaches to qualification development and delivery, the sector is building a stronger foundation for its future workforce.

It is worth noting however, that despite progress in qualification development with WDCs and provider support, limited funding still constrains course development and resource creation for programme delivery.

While work remains to be done, particularly in terms of raising the profile of irrigation careers and fully implementing the new qualification framework, the direction is promising. The coordinated efforts of industry bodies, educational providers, and workforce development councils demonstrate a shared commitment to developing a skilled, professional irrigation workforce capable of meeting the complex water management challenges of modern agriculture.

As these initiatives are implemented, they will contribute not only to the irrigation sector's growth and sustainability but also to broader goals around efficient water use and environmental stewardship in New Zealand's primary industries.

Addendum Appendix 1: New Qualifications and Micro credentials

New Qualifications

New Zealand Certification in Irrigation Installation (Level 3)

New Zealand Certificate in Irrigation Engineering (Level 4)

Microcredentials

Irrigation – Full pipe water measurement device installation and commission (Level 5) 5 credits

Irrigation – Full pipe water measurement device verification (Level 5) 5 credits

Irrigation – Water measurement telemetry system installation and commission (Level 5) 5 credits

Appendices

Appendix 1: Current Qualifications, Courses, and Standards

1. **New Zealand Certificate in Irrigation System Performance Assessment (Level 4).** This qualification is registered on the NZQA framework and administered by Primary ITO/Te Pūkenga. IrrigationNZ provide the training and the assessment of the certificate on behalf of Primary ITO and own all training resources and assessment material.

2. **NZ Certificate in Irrigation System Management Level 4.** This qualification is registered on the NZQA framework and administered by Primary ITO/Te Pūkenga. IrrigationNZ provide the training and the assessment of the certificate on behalf of Primary ITO and own all training resources and assessment material.

3. **New Zealand Certificate in Irrigation System Design Level 5.** This qualification registered on the NZQA framework and is administered by Primary ITO/Te Pūkenga. IrrigationNZ provide the training and the assessment of the certificate on behalf of Primary ITO and own all training resources and assessment material.

4. **Site Safe Foundation Passport - Civil (Irrigation).** This is not a NZQA registered certificate. It is delivered by Site Safe. IrrigationNZ assist in promoting the courses.

5. **Unit Standard for installation NZQA 27445** – Select, oversee installation, and commission a full pipe water measurement system and

   Unit Standard for verification NZQA 27556 – Carry out a full pipe water measurement system verification.

   These unit standards are both NZQA approved and administered through PrimaryITO with delivery and assessment done by IrrigationNZ. All training and assessment materials are owned by IrrigationNZ. These are currently in the process of being turned into Micro-credentials.

   A third (new) water measurement unit standard and micro credential may also be available soon and will be delivered by IrrigationNZ if there is industry demand.

6. **The Australian Certificate III in Irrigation Technology** is a nationally accredited qualification in Australia, focused on all aspects of irrigation. This qualification builds upon the learner's current level of experience within the industry and provides certification as a qualified irrigation technician. It includes everything needed to design, install, and maintain irrigation systems across a wide range of applications. The course has been designed to suit irrigation systems and technology specific to New Zealand.

   It comprises of 22 units of competency delivered over four one-week blocks of training and requires the learner to commit to between 900 and 2400 hours of on-the-job supervision, which accumulates over two years depending on the level of prior knowledge before entering the programme.

   It is currently going through a recognition processes to align with NZQA recognised competencies and credits.

Appendix 2: Registrations for formal INZ available qualifications and standards

Qual/Standard	2024 YTD	2023	2022	2021	2020	2019	TOTAL
New Zealand Cert in Irrigation System Design	7	-	17	15	-	7	**46**
New Zealand Cert in Irrigation System Performance Assessment	6	5	47	10	7	-	**75**
New Zealand Cert in Irrigation System Management	5	-	-	-	-	-	**5**
Cert III in Irrigation Technology (pilot)	-	-	10	-	-	-	**10**
Water Meter Verification and Installation unit standards	23	49	68	38	27	32	**237**
TOTAL	**41**	**54**	**142**	**63**	**34**	**39**	**373**

* The 2021 and 2022 increase in trainee numbers were due to the introduction of the Targeted Training and Apprenticeship fund and Fees Free eligible programmes. Gaps in 2020 were due to the impact of Covid on training.

** The high numbers in registrations for the unit standards is a result of regional councils requiring companies to be blue tick accredited to work in their regions in the water measurement space.