Hort Innovation

Vegetable high school education resources

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Project code:

VG23010

Project:

Vegetable high school education resources (VG23010)

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Publishing details:

Published and distributed by: Hort Innovation

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Public summary

With a growing disconnect between young Australians and the food production systems that sustain them, the horticulture sector's investment in high-quality educational resources is critical to bridging this gap. Schools provide a powerful platform for building students' knowledge of how vegetables are grown, their role in healthy diets, and the diverse career opportunities that exist within the horticulture industry.

The Vegetable High School Education Resources Project (VG23010) was commissioned by Hort Innovation and led by the Primary Industries Education Foundation Australia (PIEFA) in direct response to a documented gap in secondary school teaching materials. A 2023 review by PIEFA confirmed the lack of contemporary, curriculum-aligned content for Years 7-10, particularly within Science, Geography, Design and Technologies, and Health and Physical Education.

At the forefront of the project, VEG Education developed six themed teaching units aligned to the Australian Curriculum: *Carrotopia, Salad Secrets, Corn You Believe It, Versatile Vegetables, Brassicas Unplugged,* and *Vegonomics*. Each resource was designed to be classroom-ready, engaging, and adaptable, while embedding authentic examples of vegetable industry practice. Complementing the units, PIEFA designed and delivered a Virtual Reality (VR) farm tour in partnership with Think Digital, providing students with immersive access to modern vegetable production and supply chains. A centralised online education hub at www.freshfoodschools.com.au was also launched, providing free access to all resources and direct links to industry information and career pathways. Professional learning materials and a national promotion strategy further supported teacher adoption and long-term engagement.

VG23010 directly contributes to the goals of the Vegetable Strategic Investment Plan 2022–2026, by building teacher capacity, enhancing student engagement with vegetable content, and raising awareness of career pathways in horticulture.

Future opportunities include expanding the development of resources to cover additional year levels, learning areas, and curriculum content, as well as developing accompanying Virtual Reality farm tour resources. Opportunities also exist to strengthen and support professional development offerings for educators and showcase additional career paths to students. Evaluating the long-term impact of resource use on teacher confidence, student learning and industry interest is a key consideration of stakeholders.

Keywords

Vegetables; education; careers; Australian Curriculum; food systems; supply chain; sustainable; virtual farm tour; resources; industry

Introduction

With a growing disconnect between young Australians and the systems that produce their food, the horticulture sector faces challenges in engaging the next generation as informed consumers and potential industry participants. Schools provide an important platform for raising awareness of the vegetable supply chain, its nutritional importance, and the diverse career opportunities it offers. A 2023 review by the Primary Industries Education Foundation Australia (PIEFA) identified a gap in curriculum-aligned classroom materials related to vegetable production, particularly for students in Years 7-10, across Science, Geography, Design and Technologies, and Health and Physical Education. Developing curriculum-aligned resources is essential to ensure teachers can confidently integrate vegetable industry content into their programs.

In response, the Vegetable High School Education Resources Project (VG23010) was commissioned by Hort Innovation, using the vegetable research and development levy and contributions from the Australian Government, with the project activities targeting high school teachers. The project was led by PIEFA, in partnership with VEG Education, to deliver accessible and contemporary resources that embed vegetable industry content into secondary school learning areas. PIEFA contributed national curriculum expertise, classroom understanding and the development of the virtual tour, while VEG Education led the development of resource content and an online learning hub, drawing on strong industry connections and experience in training and education.

At the forefront of the project were six themed teaching units developed by VEG Education and aligned to Version 9.0 of the Australian Curriculum: *Carrotopia, Salad Secrets, Corn You Believe It, Versatile Vegetables, Brassicas Unplugged,* and *Vegonomics*. Each unit provided a key knowledge resource booklet, lesson plans with teacher guidance, student activities, and multimedia resources, embedding authentic industry examples throughout.

Complementing these units, PIEFA designed and produced a Virtual Reality (VR) farm tour in partnership with Think Digital. Filmed at Dicky Bill Australia, the tour offers teachers and students immersive access to modern production, harvesting, and processing systems, showcasing technology, sustainability, and innovation throughout the supply chain.

To ensure broad adoption and access, VEG Education established a centralised online education hub at www.freshfoodschools.com.au, providing free access to all resources, VR content, and links to industry and career information. The hub is designed for both teacher and student use, and resources are also accessible via PIEFA's Primezone platform primezone.edu.au. Promotion and professional learning activities are supporting adoption, including recorded teacher webinars, conference presentations, direct outreach to schools, and alignment with national events such as Ag Day and National Science Week.

VG23010 directly contributes to the goals of the Vegetable Strategic Investment Plan 2022–2026, particularly in building teacher capacity, improving food system knowledge, and raising awareness of career pathways in horticulture. It also responds to workforce development priorities by exposing students to real-world agricultural settings and sustainable production practices.

Foundational to the project was PIEFA's established expertise in designing curriculum-aligned resources and engaging schools through platforms such as Primezone. A deliberate model of co-design was applied, combining rigorous curriculum mapping, iterative editorial review, and structured feedback from a national Teacher Reference Group. Additional teacher input was sought through VEG Education's professional networks and engagement activities, while Hort Innovation was consulted throughout to ensure tone, messaging, and industry alignment. This collaborative approach ensured that all resources were accurate, classroom-ready, and reflective of contemporary industry practice.

By positioning vegetable production as a central theme in teaching and learning, VG23010 enhances industry visibility, strengthens curriculum priorities, and lays the foundation for the continued integration of horticulture content in Australian secondary education.

Methodology

The Vegetable High School Education Resources project (VG23010) was delivered through a structured, multi-phase approach that integrated national curriculum analysis, teacher reference group consultation, classroom resource development, immersive digital content creation, pilot testing, dissemination, and formal project governance. The project management and VR tour output was led by PIEFA, and the lesson resources and website learning hub were developed by VEG Education. The project's methodology prioritised curriculum alignment, classroom usability, educator involvement, and industry relevance, targeting secondary school educators and students (Years 7-10) across Australia. National reach is being achieved through digital platforms and leveraging educator networks.

This approach was selected because curriculum mapping ensured educational integrity, Teacher Reference Group (TRG) engagement informed classroom usability, and immersive VR technology provided students with access to authentic industry practices not otherwise possible in a school setting. The online learning hub and extension activities further supported scalability, longevity, and ease of adoption.

Phase 1 – Needs identification and planning
The project commenced with a curriculum analysis of Version 9.0 of the Australian Curriculum to identify appropriate entry points for vegetable industry content across various learning areas for Years 7–10. This mapping informed subject alignment and guided the structure of the resources. (Appendix 1: Curriculum Analysis)

To assess the needs of educators, PIEFA conducted a national survey of 79 teachers across various subject areas. The findings confirmed teachers lacked confidence teaching food and fibre, faced barriers accessing suitable resources, and required content that was curriculum-aligned, adaptable, and practical. (Appendix 2: National Survey and Report)

A national Teacher Reference Group (TRG) was then established to provide expert feedback. Comprising experienced educators from multiple states, the TRG was involved from project inception through review drafts, testing resources, and validating quality. To address teacher workload constraints, PIEFA used flexible engagement methods including structured meetings, detailed notes, and video-recorded feedback. (Appendix 3: Teacher Reference Group Information)

Phase 2 – Curriculum design and resource development

VEG Education developed six themed resource units, with approval from Hort Innovation to structure each around a specific vegetable product. The units included *Carrotopia, Salad Secrets, Corn You Believe It, Versatile Vegetables, Brassicas Unplugged,* and *Vegonomics*. Each was mapped to Version 9.0 of the Australian Curriculum and aligned to Science, Health and Physical Education, Design and Technologies, Geography, English, Economics and Business, and Music.

Resources included a key knowledge resource booklet, learning outcomes, lesson plans, student worksheets, media assets, teacher notes, and extension tasks. PIEFA conducted multiple editorial reviews of each unit, addressing structure, accessibility, curriculum alignment, and tone, with Hort Innovation consulted to confirm clarity and industry accuracy. All resources were approved by Hort Innovation prior to release. (Appendix 4: Link to Resources and Appendix 5: Review of Resources Register).

Phase 3 – Virtual Reality tour production

PIEFA led the design of a Virtual Reality (VR) supply chain tour in partnership with Think Digital. After site visits, Dicky Bill Australia in Maffra, Victoria, was selected as the filming site, based on its production diversity, visual suitability, accessibility, and alignment with the project's messages on sustainability, technology, and careers.

The VR tour documented growing, harvesting, washing, processing, and packing operations, filmed in 360-degree video with interactive hotspots (Image 1). The storyboard was collaboratively developed, reviewed for curriculum alignment, and tested by teachers and students for accessibility, content clarity, and technical performance. (Appendix 6: Virtual Tour)
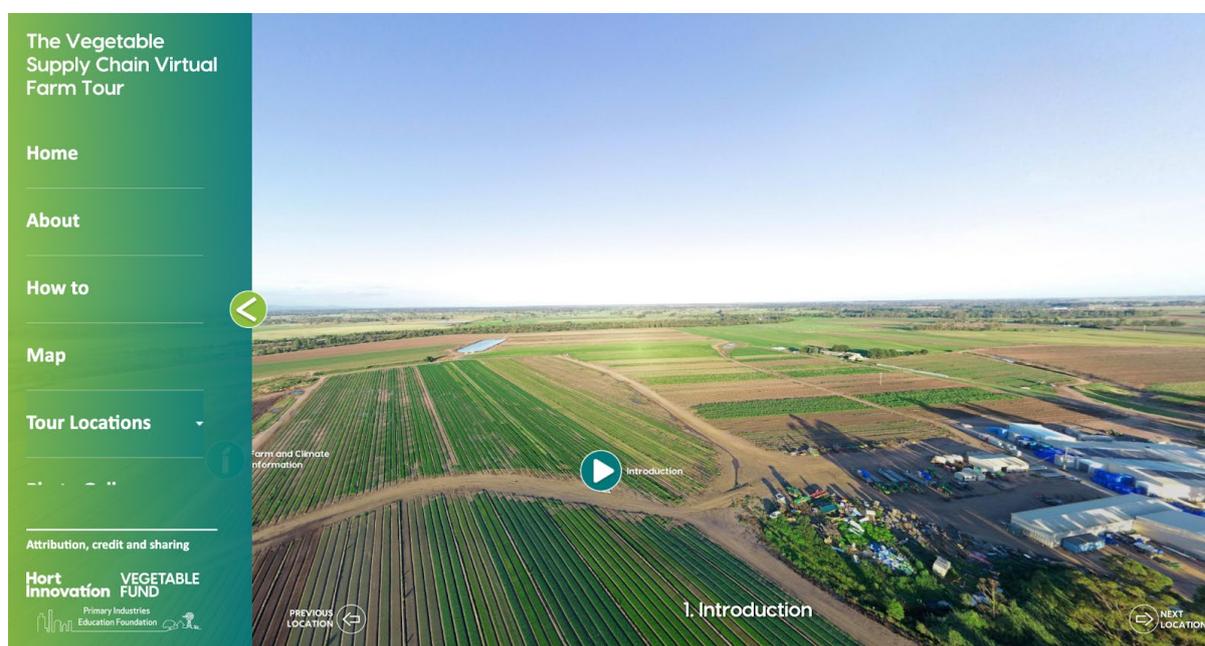

Image 1: The Vegetable Supply Chain Virtual Farm Tour
https://farmvr.com/virtual-tours/Vegetable-Supply-Chain/

Phase 4 – Consultation, pilot testing and feedback integration

The TRG remained engaged throughout the development process, providing structured input through meetings, interviews, reviews, and recordings. VEG Education also collected teacher feedback during pilot testing and professional development sessions, during conferences and online events.

All feedback was systematically reviewed and incorporated into final versions, with adjustments made to student activities, titles, structure, and tone to improve classroom applicability and student engagement. (Appendix 7: TRG Resource Review Example and Appendix 8: VEG Education Teacher Feedback Survey)

Phase 5 – Dissemination and extension

To support national access and reach, a centralised digital platform was launched by VEG Education at www.freshfoodschools.com.au. All teaching resources, videos, worksheets, teacher guides, and the VR tour are available on the website (Image 2). Resource links are also hosted on PIEFA's Primezone platform and the virtual tour on the Think Digital VR portal. Hort Innovation has reviewed all content related to the project and provided its final approval on all content. (Appendix 9: Links to Outputs)
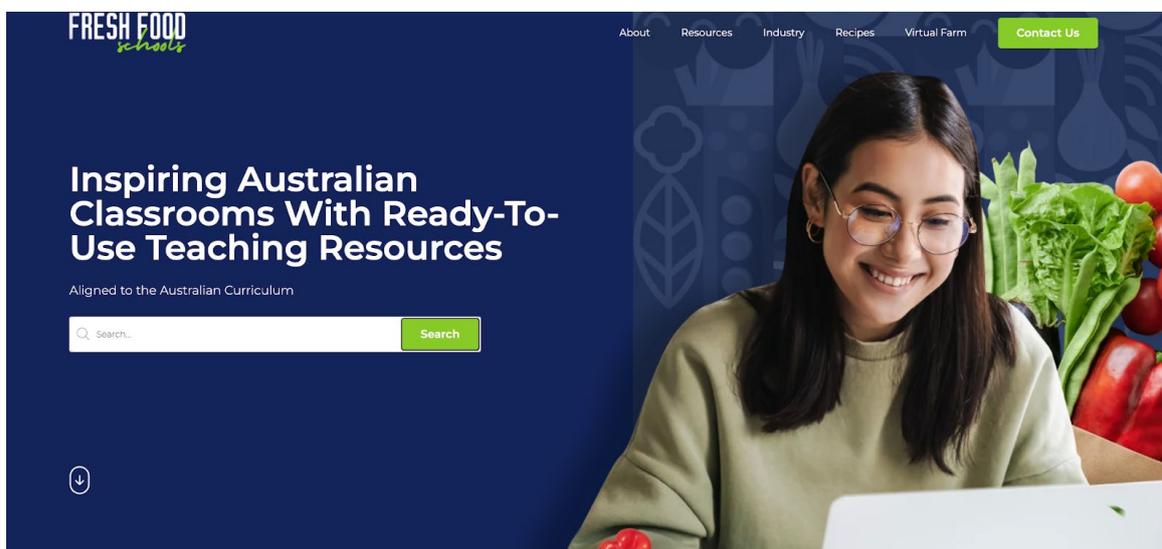

Image 2: Fresh Food School Online Learning Hub

A dissemination and promotion strategy is being implemented to encourage uptake. This includes: promotion at national and state education conferences; social media campaigns aligned with key events such as National Ag Day and Science Week; email communications to schools and educator networks; recorded webinars for teacher professional development. (Appendix 10: Promotional Strategy/Materials)

Phase 6 – Project management and governance

The project was led by PIEFA, working collaboratively with VEG Education and Think Digital to ensure clear role allocation, effective development, and delivery across all components. PIEFA was responsible for managing contractual obligations, coordinating project activities, overseeing milestone reporting, risk management, monitoring and evaluation and ensuring rigorous documentation and tracking. (Appendix 11: Monitoring and Evaluation Final Report)

Throughout the project, PIEFA implemented formal project management systems to support quality assurance, monitor risks, and facilitate stakeholder communication. A structured feedback and monitoring process was used for all resource materials, including the Virtual Reality (VR) tour. PIEFA engaged regularly with Hort Innovation to review deliverables, address emerging challenges, and align on feedback, particularly where industry expectations intersected with educational content requirements.

Governance protocols included monthly meetings, documented agendas and outcomes, and a formal risk register. Minor timeline variations occurred (e.g., due to weather affecting filming), but all deliverables remained within the approved scope and budget. The project also tracked and responded to multiple layers of feedback from teachers, industry representatives, and Hort Innovation. This transparent and accountable approach enabled robust quality assurance, educational rigour, and shared commitment to the project's outcomes and success.

PIEFA will continue to provide six-monthly impact reports for three years post-project, incorporating Primezone data on page views, promotional reach, and teacher/student engagement.

Results and discussion

The Vegetable High School Education Resources project (VG23010) successfully delivered a comprehensive suite of curriculum-aligned resources designed to increase teacher confidence and student understanding of vegetable production, sustainability, nutrition, and careers in horticulture. All resources were designed for use in Years 7-10 and are aligned to Version 9.0 of the Australian Curriculum.

The project successfully delivered all outputs as outlined in the original Request for Proposal and Research Agreement, including:

- Six curriculum-aligned education units, each with a key knowledge resource, suggested teaching sequence, student worksheets, teacher guides, embedded curriculum links, media resources, and extension activities. Units included: *Carrotopia, Salad Secrets, Corn You Believe It, Brassicas Unplugged, Versatile Vegetables, and Vegonomics.* In addition, a structured teacher and student feedback and validation process is embedded.
- A fully developed and classroom-tested Virtual Reality (VR) supply chain tour, filmed at Dicky Bill Australia in Victoria, showcasing real-world vegetable growing, harvesting, processing, and distribution. The VR tool is hosted on the Think Digital platform and includes 360- degree video, interactive hotspots, reels, and 2D videos to support classroom delivery and engagement. The resource can be accessed via www.freshfoodschools.com.au or www.primezone.edu.au.
- A centralised digital education platform at www.freshfoodschools.com.au, hosting all teaching materials, the VR experience, and additional industry content. This was developed to ensure open access, national reach, and long-term use. The site is designed for both teacher and student access.
- A national promotion and communication strategy, including direct outreach, newsletters, social media, and conference engagement.
- Teacher professional development recorded webinars to support the efficacy and accessibility of the educational resources. The webinars will help teachers deliver materials and understand the content of the resources.

Throughout the project, feedback was gathered through multiple channels:
- A national TRG provided structured advice throughout the project, including reviews of drafts and validation of resources.
- Pilot testing by VEG Education confirmed classroom usability and student engagement.
- More than 70 teachers at professional learning events and conferences (hosted by VEG Education) interacted with the resources and provided feedback.

Teachers highlighted that clear curriculum alignment, clarity of design, and flexible delivery formats made the materials practical and adaptable for use in diverse classroom contexts. This feedback is documented in milestone reports and supported by recorded interviews, survey data, and pilot feedback summaries.

Implications for industry and future use
The project outcomes demonstrate that curriculum-aligned, industry-informed resources can directly address gaps in secondary education while benefiting stakeholders in the horticultural sector.

For educators, the resources will increase teacher confidence and provide ready-to-use tools that integrate vegetable production, nutrition, and careers into mainstream teaching. For industry, the materials will provide a scalable platform to improve industry visibility, support workforce development, and build consumer awareness by embedding vegetables in everyday learning. Growers and industry groups can also utilise these tools in school visits, outreach programs, and community engagement initiatives.

Finally, for students**,** the VR tour offers immersive access to on-farm practices, strengthening their understanding of supply chains, sustainability, technology and innovation in the vegetable sector. The six themed teaching units, along with their accompanying key knowledge resource booklets, will provide structured opportunities to explore nutrition, production systems, and economics. Meanwhile, the online Fresh Food Schools hub ensures that students can access multimedia content and career information in a format designed for their use, as well as for teachers.

The resources developed through VG23010 address a long-standing gap in secondary school education by providing accurate, industry-informed, and curriculum-mapped materials. These tools enable teachers to deliver lessons that accurately reflect modern vegetable production practices and promote awareness of career pathways in horticulture.

<u>Future considerations</u>
Opportunities exist to expand the suite of resources to include other crops, technologies, and regions, as well as to extend the learning materials to primary and senior secondary students. Additional investment in professional learning, teacher training, and long-term impact measurement will help ensure sustainable engagement and further embed vegetable industry content in the school curriculum. The Virtual Reality (VR) supply chain tour and experience can be enhanced by developing supporting educational resources and creating additional VR tours to showcase new production systems, highlighting similarities and differences in supply chains and regions of produce. Similarly, regular review and feedback cycles will be essential to keep digital and curriculum materials current.

Outputs

The VG23010 Vegetable High School Education Resources project delivered a suite of tangible outputs aligned with its Monitoring and Evaluation (M&E) Plan. These outputs were designed to support curriculum engagement, teacher confidence, and student understanding of vegetable production, nutrition, and career pathways in horticulture. Each output was tracked through the project's M&E framework, and associated monitoring data was/will be gathered as evidence of uptake and quality.

Table 1. Output summary

Output	Description	Detail
Curriculum-aligned teaching resources and evaluation tools	Six themed teaching units designed for years 7-10, aligned to Version 9.0 of the Australian Curriculum. Developed for delivery in Science, Health and Physical Education, Design and Technologies, Geography, English, Economics and Business, and Music.	Units include *Carrotopia, Salad Secrets, Corn You Believe It, Versatile Vegetables, Brassicas Unplugged,* and *Vegonomics*. Each includes a key knowledge resource booklet, lesson plans, student worksheets, media assets, and extension activities. The resources can be accessed by teachers and students. An in class assessment tool is available for each unit to evaluate and measure outcomes focused on teacher and student engagement. All resources approved by Hort Innovation. Publicly available via www.freshfoodschools.com.au and www.primezone.edu.au. Engagement data will be periodically reported to Hort Innovation. (Appendix 9: Links to Outputs)
Virtual Reality (VR) Farm tour	Virtual Reality (VR) Farm Tour showcasing a commercial vegetable supply chain.	Filmed at Dicky Bill Australia in Maffra, Victoria. https://farmvr.com/virtual-tours/Vegetable-Supply-Chain/ Developed in collaboration with Think Digital. Includes 360 degree video with interactive hotspots, reels and 2D curriculum-aligned, scripted videos for classroom use. The tour can be navigated by teacher-led instruction or utilised by students due to its user-friendly design and targeted scripting. This resource is freely accessible via the Think Digital platform and is linked to from www.freshfoodschools.com.au and www.primezone.edu.au. Engagement data will be periodically reported to Hort Innovation. (Appendix 9: Links to Outputs)
Fresh Food Schools Centralised online education hub	Centralised digital platform providing free access to all project resources. Designed for teacher and student use.	www.freshfoodschools.com.au hosts all key knowledge resource booklets, themed teaching units, lesson guides, worksheets, videos, and VR content. The platform also includes industry and career information. Domain registration and long-term hosting responsibilities will be determined and finalised between Hort Innovation and VEG Education. (Appendix 9: Links to Outputs)

Teacher Professional Development (PD) webinars	Pre-recorded webinar sessions to support teacher adoption and classroom implementation.	To enhance the efficacy and accessibility of the educational resources, PIEFA has produced three pre-recorded webinars to guide teachers in delivering materials effectively, including the VR Tour. Each webinar, linked to a specific year level band, ensures a comprehensive understanding of content and methods. Webinar recordings and support materials are made available via the primezone.edu.au website. This initiative underscores a commitment to supporting educators in delivering high-quality education. VEG Education will use their current teacher professional development mode to promote the resources. Engagement data will be periodically reported to Hort Innovation. (Appendix 9: Links to Outputs)	

Outcomes

The project aligns with the Vegetable Industry Strategic Investment Plan Outcome 2: 'Demand creation supports the Australian vegetable industry to develop existing and future domestic and international markets.'

Both intermediate and end-of-project outcomes are summarised in Table 2. These outcomes demonstrate the project's unique contribution to building teacher knowledge and competence, supporting demand creation, and strengthening awareness of the vegetable industry. Refer to the Monitoring and Evaluation section to understand how educational outcomes will be assessed beyond project completion. This ongoing evaluation process will ensure that Hort Innovation receives regular updates on the reach, adoption, and influence of the resources and will support continuous improvement in future education investments.

Note: Outcomes marked with an asterisk (*) will continue to be monitored and evaluated post-project for a period of three years.

Table 2. Outcome summary

Outcome	Alignment to fund outcome, strategy and KPI	Description	Evidence
Increased teacher confidence and competence in teaching vegetable-related topics (Intermediate outcome)*	**Outcome 2:** Demand creation supports the Australian vegetable industry to develop existing and future domestic and international markets. **Strategy 4:** Support vegetable product differentiation and initiate stakeholder education initiatives. **KPI:** Development of stakeholder education programs that impact knowledge, awareness and purchase intent.	Development of outputs focused on vegetable production, nutrition, and career opportunities within the industry to raise knowledge and awareness of teachers, improving their confidence and competence in delivering lessons. To date, piloted teachers' feedback has indicated that the resources would improve confidence, support the curriculum, and facilitate ease of integration into classroom teaching. During ongoing reporting, teachers will report greater confidence in teaching vegetable production, supported by curriculum-	National teacher survey TRG feedback and testing (Appendix 1: Curriculum Analysis and Appendix 2: National Survey and Report) Ongoing reporting will be informed by in-class assessment tools (VEG Education), website analytics (PIEFA and Think Digital), and provided in six-monthly impact reports prepared by PIEFA as part of Hort Innovation's annual membership reporting.

		aligned resources and practical tools.	
Increased student knowledge and engagement in learning about vegetable-related topics (Intermediate outcome)*	**Outcome 2:** Demand creation supports the Australian vegetable industry to develop existing and future domestic and international markets. **Strategy 4:** Support vegetable product differentiation and initiate stakeholder education initiatives **KPI:** Development of stakeholder education programs that impact knowledge, awareness and purchase intent	By engaging with the resources, students will develop increased knowledge and understanding of the biological, technological, sustainability, and nutritional aspects of vegetable production in Australia. During ongoing reporting, students will demonstrate improved knowledge of vegetable production, sustainability, and nutrition through classroom delivery and VR immersion.	Ongoing reporting will be informed by in-class assessment tools (VEG Education), website analytics (PIEFA and Think Digital), and provided in six-monthly impact reports prepared by PIEFA as part of Hort Innovation's annual membership reporting.
Engagement with resources (Intermediate outcome)*	**Outcome 2:** Demand creation supports the Australian vegetable industry to develop existing and future domestic and international markets. **Strategy 4:** Support vegetable product differentiation and initiate stakeholder education initiatives **KPI:** Development of stakeholder education programs that impact knowledge, awareness and purchase intent	PIEFA's national teacher survey identified core challenges and informed the design and delivery of the project. Resources have been developed based on teachers' needs to support improving knowledge of the industry and increasing students' awareness of opportunities within the horticulture industry. During ongoing reporting, teachers will indicate high levels of student engagement with resources and the Virtual Reality farm tour, and therefore program these resources into existing units of work or integrate a new vegetable unit/lesson/resource into their teaching delivery. Teachers and students will engage with resources via the Fresh Food Schools hub, Primezone, and VR platform, with positive feedback on usability.	The Teacher Needs Survey was analysed to inform the format, content, and classroom needs. (Appendix 2: National Survey and Report) TRG were engaged for the duration of development. TRG had the opportunity to review all resources. Ongoing reporting will be informed by in class assessment tools (VEG Education), website analytics (PIEFA and Think Digital), and provided in six-monthly impact reports prepared by PIEFA as part of Hort Innovation's annual membership reporting.
Student career interest in horticulture (End of project)*	**Outcome 2:** Demand creation supports the Australian vegetable industry to develop existing and future	The resources aim to encourage informed food choices, raise awareness of the diverse career opportunities available within the vegetable	Ongoing reporting will be informed by in class assessment tools (VEG Education), website analytics (PIEFA and Think Digital), and provided in

	domestic and international markets. **Strategy 4:** Support vegetable product differentiation and initiate stakeholder education initiatives **KPI:** Development of stakeholder education programs that impact knowledge, awareness and purchase intent	industry, and highlight the dynamic supply chain by exploring various career profiles, the required skills, and available pathways. The resources feature up-to- date imagery, case studies, innovation, technology and data collection to showcase food production to students. This exposure to content from the vegetable industry will increase students' awareness of career opportunities in horticulture and the supply chain.	six-monthly impact reports prepared by PIEFA as part of Hort Innovation's annual membership reporting..
Improved teacher competence (End of project)*	**Outcome 2:** Demand creation supports the Australian vegetable industry to develop existing and future domestic and international markets. **Strategy 4:** Support vegetable product differentiation and initiate stakeholder education initiatives **KPI:** Development of stakeholder education programs that impact knowledge, awareness and purchase intent	Targeted Professional Development webinars have been produced to support teachers in effectively utilising the educational materials, including the integration of a VR farm tour focused on vegetable production. Feedback from educators and students will be collected to assess the usability and impact of the educational resources and VR farm tour.	Ongoing reporting will be informed by in class assessment tools (VEG Education), website analytics (PIEFA and Think Digital), and provided in six-monthly impact reports prepared by PIEFA as part of Hort Innovation's annual membership reporting..

Monitoring and evaluation

To date, the VG23010 project has been monitored and evaluated using the framework outlined in its Monitoring and Evaluation (M&E) Plan.

Monitoring data has been collected from multiple sources, including:

- A national teacher needs survey
- Ongoing feedback and pilot testing throughout the project by the Teacher Reference Group (TRG)
- Feedback from educators at professional learning events and conferences (VEG Education)
- Usage testing of the VR supply chain tour
- Internal project governance tools, including milestone tracking, risk register, and review documentation

Given the nature of educational projects, impacts must be assessed over time to enable resources to be effectively implemented in classrooms and teaching programs at appropriate and relevant points in the academic calendar. To capture this long-term impact, PIEFA will continue to monitor and evaluate activities beyond project completion and report this to Hort Innovation under the PIEFA membership reporting. PIEFA will provide standard six-monthly impact

reports to Hort Innovation for a period of three years. These reports will incorporate relevant data from Primezone and will include:

- Page views and access statistics for each resource
- Promotional efforts and subsequent online engagement
- Teacher, student, and school engagement data (as collected by VEG Education and reported to PIEFA)
- Overall network and audience growth

Table 3. Key Evaluation Questions

Key Evaluation Question	Project performance	Continuous improvement opportunities
1. To what extent has the project achieved its expected outcomes? (Effectiveness)*	All contracted outputs were delivered: six resource units, a Virtual Reality supply chain tour, the Fresh Food Schools online education hub, three teacher Professional Development webinars, resource evaluations, and promotional strategy. Teacher surveys from conference attendees and TRG feedback confirmed that the resources will improve teacher confidence and student engagement. VR testing demonstrated high usability and appeal, and in a pilot school, the tour will be included in a teaching program. Ongoing reporting and analytics will determine increases in student knowledge and engagement, as well as increases in teacher competence and confidence.	Due to the nature of this project, impact data will be reported at six-month intervals to track student interest in agricultural careers. Future evaluations should include direct student feedback (in addition to teacher reports) through in class assessment tools, evaluation forms and surveys. PIEFA staff will also collect teacher data during engagement activities to feed into six-monthly impact reports for Hort Innovation.
2. How relevant was the project to the needs of the intended beneficiaries? (Relevance)	The project addressed curriculum gaps identified in PIEFA's 2023 review, particularly in Years 7–10, specifically in Science, Health and Physical Education, Design and Technologies, and Geography. The resources include specific content focused on production, nutrition, careers and sustainability. Resources were developed based on survey analytics and the feedback received from the TRG. Teachers have reported that the resources are practical, adaptable, and industry-relevant. Real-world case studies have been included in the key knowledge resource booklets, and the Virtual Reality farm tour provides significant insight into production systems and supply chains.	Expand resource coverage to Years 11–12 and upper primary. Review and update resources to ensure alignment with curriculum reforms and evolving industry practices. Expand reach of professional development by developing in school sessions and professional development opportunities.

3. How well have intended beneficiaries been engaged in the project? (Appropriateness)*	The TRG was consulted throughout the development process via surveys and interviews, with feedback incorporated into resource development by VEG Education. VEG Education consulted industry experts during the development phase and has included significant industry content on the education hub. The VR farm tour was developed in consultation with industry experts at Dicky Bill Australia and incorporates all feedback and advice provided. More than 70 teachers engaged through PD sessions and conferences, directly shaping final usability. Regular updates to Hort Innovation (by PIEFA) ensured industry alignment, while monthly stakeholder meetings and staged milestone reports supported transparency. Professional development is offered to teachers and includes pre-recorded webinars to extend engagement beyond live events.	Consideration to streamlining the TRG feedback processes to reduce teacher workload and improve efficiency. Develop online or in-person review sessions/days to maximise feedback and discussion around future resource development. Establish a school membership network to drive peer-to-peer adoption and strengthen sustained use. *(PIEFA has recently developed a school membership program, and this will provide access to teachers willing to pilot, engage and monitor new resources to ensure usability and feedback.)*
4. To what extent were engagement processes appropriate to the target audience? (Appropriateness)*	Resources are available through multiple teacher-preferred channels, including the Fresh Food Schools hub, Primezone, webinars, and national events. The VR tour was designed for accessibility across devices, with 360-degree footage, 2D video, interactive hotspots, and reels to maximise engagement. This tour is curriculum-aligned and has received significant interest when showcased by teachers and students. Resources included a variety of student activities across multiple learning areas. Teacher feedback informed improvements to activity design, formatting, and support materials. The promotional campaign will be employed throughout the academic year and aligned with Ag Day and Science Week to maximise visibility.	Continue scaling professional development opportunities to expand reach. Monitor uptake through six-monthly reports to ensure ongoing reach and impact.
5. What efforts did the project make to improve efficiency? (Efficiency)	The project was delivered within budget and scope. Digital platforms will enable the scalable and cost-efficient dissemination of resources, including VR tour and teacher PD webinars. This use of technology will also enable the collection and reporting of monitoring and	Automate analytics from all outputs to streamline future monitoring and analysis. As multiple stakeholders collect analytics, streamlining this process is recommended. Consideration should be given to the time commitments of the TRG and

	evaluation data. Strong governance processes (risk register, milestone tracking, monthly meetings) ensured accountability. All stakeholders were able to work within the set timelines. Consideration of TRG time demands needs to be taken into account in the future. PIEFA senior staff oversaw reviews at key points to ensure quality and cost management. All deliverables were approved by Hort Innovation, with budgets closely monitored by PIEFA management and finance teams.	pilot teachers. PIEFA can provide recommendations for this process in the future, centred around focused feedback workshop days.

Recommendations

Based on the outcomes of the VG23010 project and engagement with educators nationally, the following recommendations are made to maximise the value of Hort Innovation's investment and support the continued integration of vegetable industry content in Australian schools.

Application of project findings
- Sustain investment in school education: Continue to support the development and promotion of curriculum-aligned resources across both primary and secondary levels based on the recommendations of experts in food and fibre education/resource development (and their consultation with industry and schools). Consistent engagement across schooling stages will build long-term awareness, knowledge, and interest in horticulture.
- Enhance use of the VR tour: Develop a dedicated classroom resource to accompany the VR supply chain tour, including structured lesson plans, inquiry task, and assessment tool to ensure effective integration into teaching practice.
- Adopt clear curriculum alignment: All future resources should include clear planning and mapping to the Australian Curriculum and state/territory syllabuses, as determined by experienced stakeholders, to ensure ease of adoption and direct relevance to classroom programming.
- Supporting resources: Engage with education experts to develop additional curriculum content to support the suite of resources including; posters, supply chain card games and assessment and project options to increase the offerings to teachers in classroom settings.

Future research, development and extension (RD&E)
- Expand content coverage: Develop resources that address additional vegetables, production systems, and regional contexts, showcasing industry diversity, innovation, sustainability, and export pathways.
- Investigate long-term teacher use and student engagement: Future RD&E efforts should also collect data on student learning outcomes and teacher engagement to monitor sustained teacher use of resources and ensure the project's legacy is maintained.
- Explore digital innovation: Opportunities exist to further develop new resources to complement VR platforms.
- Continued investment in careers: Development in further careers information and targeted resources to support interest in careers throughout the supply chain.

Development and extension activities
- Invest in teacher professional development (PD): Deliver structured PD opportunities that are flexible, on-demand, and grounded in practical classroom examples. PD is essential for supporting the effective adoption and sustained use of resources. Future initiatives should engage education and industry experts to deliver staged professional learning (in-person and online) that includes interactive elements such as Q&A sessions, ensuring teachers can confidently embed industry content in their classrooms.
- Maintain strategic partnerships: Continue collaborating with curriculum experts, such as PIEFA, to ensure resources remain pedagogically sound, accurate, and aligned with teacher and industry needs.

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- Strengthen education-industry dialogue: Establishing regular forums or advisory groups that include teachers, education authorities, and industry representatives to identify emerging curriculum opportunities and maintain industry relevance.
- Promote resources through industry channels: Encourage growers and supply chain businesses to utilise resources in schools, community engagement initiatives, and promotional events, thereby extending the reach and visibility of project outputs.

Intellectual Property

All Project Intellectual Property (IP) arising from VG23010 has been recorded in the Hort Innovation IP Register. VEG Education has provided the IP register, referencing, and permission related to the six curriculum-aligned teaching units, as well as the associated teacher and student resources, and the Fresh Food Schools online hub. (Appendix 12: IP Register | VEG Education Pre-existing and Project IP and Appendix 13: VEG Education References and Permissions).

PIEFA has provided the IP register and talent release forms relating solely to the Virtual Reality (VR) supply chain tour, developed in collaboration with Think Digital (Appendix 14**:** IP Register | PIEFA Project IP and Appendix 15: Project Talent Release Forms). No issues relating to royalties, license fees, or restrictions on usage have arisen during the project. All outputs are approved by Hort Innovation and made freely available for educational use under agreed project arrangements.

Acknowledgements

The project team acknowledges the valuable contributions of Tahirih and Ryan McLeod (and family), as well as the staff at Dicky Bill Australia, who generously provided access to their farm operations in Maffra, Victoria, and supported the filming of the Virtual Reality supply chain tour. Their willingness to share knowledge, showcase industry innovation, and engage with education has been central to the success of this project.

Appendices

Appendix 1: Curriculum Analysis **CONFIDENTIAL**

Appendix 2: National Survey and Report **CONFIDENTIAL**

Appendix 3: Teacher Reference Group Information
Andrew Harris (Tasmania), Sue Pratt (South Australia), Louise Nicholas (QLD)

Appendix 4: Link to Resources

Appendix 5: Review of Resources Register

VEGED Review tracking

Resource	Round 1	Significant	Round 2	Round 3	Round 4	Round 5	Final
1. Carrotopia	✓		✓	✓	✓	✓	✓
2. Salad Secrets	✓		✓	✓	✓	✓	✓
3b Corn you believe it	✓	✓	✓	✓			✓
4. Versatile Vegetables	✓	✓	✓	✓	✓	✓	✓
5. Brassica's Unplugged	✓		✓	✓			✓
- The Secret life of Broccoli Lesson	✓	✓	✓	✓			✓
6. Vegonomics	✓	✓	✓	✓	✓		✓
Website wireframe	✓		✓	✓			✓
Teacher Feedback Evaluation	✓		✓				✓
Student Pre and Post assessment	✓		✓				✓
Videos x 6	✓		✓	✓			✓

Appendix 6: Virtual Tour

Appendix 7: TRG Resource Review Example **CONFIDENTIAL**

Appendix 8: VEG Education Teacher Feedback Survey **CONFIDENTIAL**

Appendix 9: Links to Outputs

Output 1: Education Resources
www.freshfoodschools.com.au
www.primezone.edu.au/resource/fresh-food-schools
Output 2: Virtual Reality Farm Tour
https://farmvr.com/virtual-tours/Vegetable-Supply-Chain/
www.primezone.edu.au/resource/vegetable-supply-chain-virtual-farm-tour
Output 3: Online Learning Hub
www.freshfoodschools.com.au
Output 4: Professional Development Webinars
www.primezone.edu.au/vegetable-high-school-education-resources

Appendix 10: Promotional Strategy/Materials **CONFIDENTIAL**

 Appendix 11: Monitoring and Evaluation Final Report

Hort Innovation

Monitoring and Evaluation Report

Project and delivery partner details

Project title	Vegetable High School Education Resources
Project code	VG23010 (CON-003201)
Delivery partner (Organisation)	Hort Innovation and PIEFA
Lead researcher	Luciano Mesiti
Date completed/updated	1st October 2025

1. Introduction

The Monitoring and Evaluation (M&E) framework for VG23010 was developed to ensure progress was measured against the objectives of the Vegetable Strategic Investment Plan 2022–2026, with a focus on teacher capability, student engagement, curriculum integration, and promotion of horticulture careers. The project was monitored against key evaluation questions (KEQs), performance indicators, and outcomes outlined in the approved Monitoring and Evaluation (M&E) Plan.

This report provides a consolidated evaluation of performance, backed by data collected through:

- Teacher needs survey
- Ongoing feedback from the Teacher Reference Group (TRG)
- Pilot testing of all resource units
- VR tour usage testing
- Professional development events
- Internal governance and risk monitoring systems

2. Summary of Monitoring Activities

Monitoring Source	Purpose	Status
National Teacher Needs Survey (National Educators)	Identify curriculum gaps, teacher confidence, and resource preferences	Completed
Teacher Reference Group (TRG) Feedback (National Educators)	Review drafts, test resources, and validate usability. (Continuous engagement throughout the project.)	Completed
Teacher Surveys (VEG Education)	Evaluate content usability and student engagement	Completed
VR Tour User Testing (Pilot school)	Test accessibility, interactivity, and student experience	Completed
Professional Development Feedback (TRG and conference attendees)	Teacher confidence will be monitored via ongoing assessment to determine ease of access and engagement	Completed and ongoing (three pre-recorded webinars)

| Website Analytics | Track access, downloads, engagement | Ongoing |
| Risk Register | Identify and mitigate project risks
Continuously updated throughout the project. The project has been delivered on time and on budget. | Completed |

Risk Register Summary

A comprehensive risk management strategy was implemented throughout the VG23010 project, ensuring that potential risks were identified, assessed, mitigated, and monitored. A detailed risk register was maintained and updated, with each identified risk assessed using a standardised matrix and mitigation actions recorded. Key risks such as delays in VR tour filming, were actively managed through contingency planning. Regular risk reporting was provided to Hort Innovation and the Teacher Reference Group, ensuring transparency and accountability. As a result, all risks remained within manageable levels, and no issues compromised the successful delivery of project outputs. The proactive approach to risk management supported on-time delivery, financial compliance, and the production of approved project outputs.

3. Performance Against Key Outcomes

Outcome	Result	Evidence	
Increased student knowledge of vegetable production and nutrition	Achieved	Teacher reports, pilot feedback	Ongoing reporting will be informed by in-class assessment tools (VEG Education), website analytics (PIEFA and Think Digital), and provided in six-monthly impact reports prepared by PIEFA.
Improved teacher competence	Achieved	TRG feedback, PD session evaluations, survey data.	
Enhanced student interest in horticulture careers	Partially achieved with strong potential	Anecdotal teacher feedback, VR tour appeal, career content views.	
Adoption of resources in Years 7–10	Achieved	Usage tracking (websites), PD participation, application.	
Scalable digital access to resources	Achieved	FreshFoodSchools.com.au launch, Primezone integration	

4. Analysis of Key Evaluation Questions (KEQs)

KEQ 1: To what extent has the project achieved its expected outcomes?

- All outputs were delivered: six fully developed curriculum units, a VR tour, a centralised website, and professional development webinars.
- Teacher feedback strongly indicates there will be an increase in confidence and competence, particularly in integrating industry topics and the VR tool into classroom settings.
- Feedback indicates that student engagement with resources is expected to be high, as well as the use of digital platforms. Long-term impact will be tracked in six-monthly reports.

KEQ 2: How relevant was the project to the needs of teachers and students?

- The project addressed well-documented gaps in curriculum-aligned vegetable content for Years 7–10.
- Resources were mapped to Version 9.0 of the Australian Curriculum and validated through consultation.

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- Teachers have described the materials as "practical," "engaging," and "ready to use."

KEQ 3: How well were stakeholders and beneficiaries engaged?

- Teachers were involved via a national TRG, pilot testing, and conference events.
- Educators engaged directly with resources via events and workshops (VEG Education).
- Industry input informed case studies and VR content, ensuring real-world alignment.
- The engagement process was inclusive, iterative, and sustained across project phases.

KEQ 4: Were engagement processes appropriate for the target audiences?

- Yes. Resources are being delivered through multiple platforms that are preferred by educators (Fresh Food Schools, Primezone, Think Digital).
- PD includes recorded webinars to suit teacher availability.
- Resource design and VR integration reflect teacher input and classroom needs.

KEQ 5: How efficiently was the project delivered?

- The project remained within budget and met all milestone deadlines.
- Resources were produced using digital-first strategies to maximise scalability and minimise production costs.
- Risk management systems (approved and updated risk registers submitted at milestones) allowed early identification and resolution of issues (e.g. VR filming delays due to weather).
- The use of digital platforms for PD, dissemination, and tracking will continue to provide cost-efficient impact reporting.

5. Key Performance Indicators (KPIs)

KPI	Target	Result	Supporting Data
Teacher confidence	50 teachers report increased confidence	Ongoing reporting will be informed by in-class assessment tools (VEG Education), website analytics (PIEFA and Think Digital), and provided in six-monthly impact reports prepared by PIEFA.	National survey, PD feedback and ongoing tracking and assessment of analytics
Student knowledge	50 teachers report improved student understanding		Pilot feedback and ongoing tracking and assessment of analytics
Student career interest	Increase post-resource use		Anecdotal reports; full data expected in six-monthly reports
Digital engagement	Website, VR, and webinar access sustained	Achieved	Web analytics, resource download metrics, and ongoing tracking and assessment of analytics

6. Continuous Improvement and Future Recommendations

Based on the outcomes of the VG23010 project and engagement with educators nationally, the following recommendations are made to maximise the value of Hort Innovation's investment and support the continued integration of vegetable industry content in Australian schools.

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Application of project findings
- Sustain investment in school education: Continue to support the development and promotion of curriculum-aligned resources across both primary and secondary levels based on the recommendations of experts in food and fibre education/resource development (and their consultation with industry and schools). Consistent engagement across schooling stages will build long-term awareness, knowledge, and interest in horticulture.
- Enhance use of the VR tour: Develop a dedicated classroom resource to accompany the VR supply chain tour, including structured lesson plans, inquiry task, and assessment tool to ensure effective integration into teaching practice.
- Adopt clear curriculum alignment: All future resources should include clear mapping to the Australian Curriculum and state/territory syllabuses, as determined by experienced stakeholders, to ensure ease of adoption and direct relevance to classroom programming.
- Supporting resources: Engage with education expertise to develop additional curriculum content to support the suite of resources including; posters, supply chain card games and assessment and project options to increase the offerings to teachers in classroom settings.

Future research, development and extension (RD&E)
- Expand content coverage: Develop resources that address additional vegetables, production systems, and regional contexts, showcasing industry diversity, innovation, sustainability, and export pathways.
- Investigate long-term teacher use and student engagement: Future RD&E efforts should also collect data on student learning outcomes and teacher engagement to monitor sustained teacher use of resources and ensure the project's legacy is maintained.
- Explore digital innovation: Opportunities exist to further develop new resources to complement VR platforms.

Development and extension activities
- Invest in teacher professional development (PD): Deliver structured PD opportunities that are flexible, on-demand, and grounded in practical classroom examples. PD is essential for supporting the effective adoption and sustained use of resources. Future initiatives should engage education and industry experts to deliver staged professional learning (in-person and online) that includes interactive elements such as Q&A sessions, ensuring teachers can confidently embed industry content in their classrooms.
- Maintain strategic partnerships: Continue collaborating with curriculum experts, such as PIEFA, to ensure resources remain pedagogically sound, accurate, and aligned with teacher and industry needs.
- Strengthen education-industry dialogue: Establishing regular forums or advisory groups that include teachers, education authorities, and industry representatives to identify emerging curriculum opportunities and maintain industry relevance.
- Promote resources through industry channels: Encourage growers and supply chain businesses to utilise resources in schools, community engagement initiatives, and promotional events, thereby extending the reach and visibility of project outputs.

7. Conclusion

The VG23010 project has successfully met its monitoring and evaluation expectations, delivering high-quality educational content that addresses a national curriculum gap and increases the visibility of the vegetable industry in secondary schools. The M&E framework was applied consistently across the project lifecycle. Initial results indicate strong engagement from teachers and promising uptake by students, with early signs of increased knowledge, confidence, and effective curriculum integration. Ongoing, six-monthly reporting will provide further insight into the long-term impact on students, teacher behaviour change, and the resource adoption lifecycle.

Appendix 12: IP Register | VEG Education Pre-existing and Project IP **CONFIDENTIAL**

Appendix 13: VEG Education References and Permissions **CONFIDENTIAL**

Appendix 14: IP Register | PIEFA Project IP **CONFIDENTIAL**

Appendix 15: Project Talent Release Forms **CONFIDENTIAL**