

## **Final Report**

# **VegNET – Tasmania**

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VG19014

**Project:**

VegNET – Tasmania (VG19014)

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## Summary

VegNET2 Tasmania, was one of 10 regionally delivered extension projects for the Australian vegetable industry. The target audience was vegetable levy payers and other stakeholders in the vegetable industry, including agronomists, advisers, processors, contractors, and supply chain participants.

This main activities and achievements were:

- **Regional Development Officer (RDO):** Continuation of the Tasmanian RDO role by Theresa Chapman, handover, and continuing service without delays to a new RDO, Ossie Lang
- **Scoping:** Development of a regional, five-year extension strategy (Appendix 2) including a discussion paper (Appendix 1), strategy and project focus areas (sub-projects) for VegNET 2, and the future VegNET Phase 3 in Tasmania
- **Planning:** Development of Project Briefs (Appendix 3) for delivery of sub-projects over five years for five priority areas:
  - Herbicide Resistance
  - Biosecurity
  - Precision Agriculture
  - Soil Management
  - Training Coordination
- **Communications and engagement:** Activities included bi-monthly email updates, social media posts, farm visits and attendance at regional industry events to deliver VegNET information and have one-on-one conversations with vegetable growers and stakeholders
- **RDO capacity building** through participation in
  - Hort Innovation training for VegNET RDOs
  - Extension Accelerator Program (a Tasmanian program delivered by the Tasmanian Institute of Agriculture)
  - Australasia-Pacific Extension Network Ltd (APEN) training
  - APEN Regional Coordinator role in Tasmania
  - Hort Connections 2021 in Brisbane.
- **Resource development** e.g., Herbicide Resistance Testing fact sheet, Precision Agriculture Research Summary and website updates (<http://www.tasfarmingfutures.com.au/national-vegetable-extension-network-about>).

The main project outcomes listed below align with the long term contract and the project plan outcomes. These outcomes will be progressed further in VegNET 3.0 as for many outcomes it is too early to see them fully realised were:

- Ossie Lang has been established as the VegNET Tasmania RDO; growers and stakeholders refer to him for information and invite him to relevant events to present or co-deliver; he has become a trusted resource
- Good working relationships with VegNET RDOs in other regions and the Hort Innovation Regional Extension Manager
- A sound base and direction for the delivery of VegNET 3
- Increased awareness of issues and opportunities for growers and industry; and increased understanding of emerging issues and opportunities, especially in the VegNET Tasmania strategic focus areas
- Strengthening of industry networks and relationships through regular dialogue with levy payers, vegetable industry members, key influencers, technology providers, peak bodies and relevant state government staff as well as attendance at events, and communication one-on-one, and through social media and other channels

- A better understanding of RD&E needs of Tasmanian levy payers
- Increased awareness, skills and knowledge in the target audience through providing resources and hosting events.

Recommendations are:

- Maintain a consistent presence for VegNET in Tasmania and continue the growth of awareness of VegNET.
- Build on the relationships between VegNET, levy payers and vegetable industry stakeholders
- While maintaining the focus on the five-year strategy and sub-projects (for the five priority areas) developed as part of this project, ensure that some flexibility is maintained to address emerging issues
- Review the Project Briefs (for sub-projects) and five-year extension strategy at commencement of VegNET Tasmania Phase 3. This should consider lessons learned from this phase 2 project e.g., how to engage growers and advisors on the topic of on-farm biosecurity planning
- Review the segmentation of the target audience we have been using, and for larger-scale businesses, to continue to refine customised extension and adoption activities. Reduce the focus on production issues and increase the provision of input into strategic industry support and expansion in line with state government and industry targets
- Increase targeted one-on-one extension activities, with content being created from above-mentioned undertakings
- Continue using our experience of featuring vegetable industry ‘champions’, to foster adoption of new approaches and technologies
- Continue to access in-depth industry guidance from a diversity of growers and stakeholders, with whom we deepened our relationships as part of this project and other activities

Continue to listen to industry stakeholders, to be able to provide information to Hort Innovation on RD&E needs for the Tasmanian vegetable industry.

## Keywords

Vegetables, capacity building, extension, communication, sustainable production, horticulture, Tasmania, industry development, RD&E, adoption, practice change, regional, network, biosecurity, herbicide resistance, integrated weed management, precision agriculture, soil management, training coordination.

## Introduction

VegNET (Phase 1) (2016 to 2020) encompassed ten regionally delivered extension projects for the Australian vegetable industry. Each region employed a RDO, and the projects focused on transfer of R&D information, coordination of events and industry communications.

VegNET (Phase 2) (2020 to 2021) was an 18-month project, continuing with the same ten regions as in Phase 1. This phase had a strong focus on developing regional extension strategies (5-year strategies) and development of sub-projects to address priority focus areas. Delivery of the sub-projects commenced during this phase and were planned with a five-year time horizon i.e., commencing in VegNET Phase 2 and continuing in VegNET Phase 3.

This final report is for the VegNET Phase 2 project in Tasmania.

The Program Logic (Appendix 4) developed for this project presents how the project is intended to work for the five years to 2025. Thus, the Logic covers both Phase 2 and Phase 3 projects. VegNET (Phase 3) will be run for five years from October 2021.

The intermediate project outcomes sought were:

- Increased awareness of issues and opportunities for growers and industry to understand emerging issues and opportunities to address them and existing problems
- Strengthening of industry networks through regular dialogue with industry members, attendance at events, and communication through social media and other channels.
- Increased grower and service provider skills and knowledge through providing resources and hosting expert speakers. Increases in adoption will form the end of project outcomes in VegNET 3.

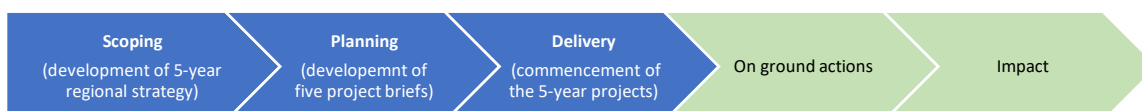
The main objective of VegNET 2 - Tasmania was to effectively extend R&D information to vegetable levy payers, via the continued delivery of VegNET services in Tasmania. These VegNET services aimed to continue to contribute to Outcome 5 of the Vegetable Strategic Investment Plan 2017-2021 “*improved industry capabilities for innovation and adoption*” and had a significant responsibility for achievement of Strategy 5.1 “*communication and extension*”.

Project activities were targeted to vegetable levy payers, industry stakeholders and value chain members including field officers and agronomists.

## Methodology

### GENERAL APPROACH

The general approach included scoping, planning and commencement of delivery of the sub-projects (five-year projects) (Figure 2). The project used an innovation systems approach. The innovation systems approach seeks to have VegNET work with the existing projects in Tasmania, work with the different key-influencers in the system, and address gaps. This approach was supported by the RDO training that was undertaken through Hort Innovation. The on-ground actions and impact of the project relate to the expected longer-term outcomes.



*Figure 2: General approach. Note that while there has been some change in knowledge and awareness over the timeframe of this project, on ground actions and impact are expected longer term outcomes by 2025/2026. Scoping, planning and commencement of delivery are included in this phase 2 project.*

### ACTIVITIES

**Scoping, planning and RDO training** activities included the following:

- **Scoping**
  - Development of a discussion paper
  - Establishment of a Regional Extension Advisory Group (REAG)
  - Development of a five-year regional strategy, refined with feedback from the REAG
- **Planning**
  - Development of five Project Briefs, addressing the main priorities identified in the strategy
  - Development of a program logic with input from the training provider
  - Development of a monitoring and evaluation (M&E) plan with input from the training provider
  - Development of a stakeholder engagement plan (Appendix 6)
  - Development of an annual workplan (Appendix 7) with input from the REAG to commence implementation of the regional extension plan.
- **RDO Training**
  - The RDO participated in online training and mentoring that was coordinated by Hort Innovation. This training focused on development of the regional strategy and project planning documents listed above.
  - The RDO also participated in other training and development opportunities through the Australasia-Pacific Extension Network (APEN) and the Extension Accelerator program delivered by the Tasmanian Institute of Agriculture (TIA) and the Tasmanian Department of Primary Industries, Parks, Water & Environment (DPIPWE).
  - The RDO attended Hort Connections 2021 in Brisbane including participation in the Extension Forum.
- **Regional Extension Advisory Group**
  - A REAG was established, and met five times, providing feedback on activities and input into



priorities. Associated documents form Appendix 13.

**Implementation of the sub-projects included the following:**

- **Biosecurity sub-project:**
  - Attendance at industry events and forums to discuss biosecurity and approaches to improve biosecurity practices, and to engage with growers and agronomists/service providers
  - Engaging agronomists, processors and packers and service providers through phone calls and in-person meetings to discuss biosecurity issues and approaches to improve biosecurity practices.
  - Discussing farm biosecurity with growers whilst on farm including the main issues and approaches to improve biosecurity practices
  - Raising awareness of potential pest threats through various communication channels including social media
  - Hosting a VegNET Tasmania ‘Emerging pest workshop’ for growers and industry
  - Assisting businesses by providing biosecurity planning resources and drafting biosecurity plans.
  - Working closely through regular interaction and cross-referencing of projects, with Biosecurity Tasmania, the Tasmanian Farmers and Graziers Association (TFGA) biosecurity project and the Tasmanian Agricultural Productivity Group (TAPG) to maximise impact.
- **Herbicide resistance and integrated weed management sub-project:**
  - Engaging with growers, field officers and agronomists/service providers at industry events to discuss the herbicide resistance issues and risks; and how to better deal with it.
  - Engaging agronomists and service providers through direct contact to discuss herbicide resistance and how to manage the risks.
  - Engaging with growers whilst on farm to discuss herbicide resistance, how to prevent it, and how to manage it.
  - Facilitation of a cross-industry VegNET workshop to gain input on the extent of the problem and potential solutions of interest; a cross-industry approach is important because vegetables are grown in rotation with other field crops and weed issues affect them all, and management in one crop can affect following crops.
  - Documented workshop feedback for future VegNET project planning
  - Developed a factsheet, “Testing for Herbicide Resistance” (Appendix 10)
  - Distributed the ryegrass resistance management factsheet produced under VegNET 1.
- **Precision Agriculture sub-project**
  - Assisted in the organisation, promotion and delivery of the TAPG annual Precision Ag Expo (now rebranded as Ag innovation Day) which were held in November 2020 and April 2021.
  - Collating resources from the exhibitors at the Precisions Ag Expo and providing information for growers and service providers who were unable to attend.
  - Engaging with growers at events and through on-farm visits about imagery options including yield maps, NDVI, targeted soil sampling or grid sampling to better deal with in-field variability.
  - Engaging with emerging ag-tech providers at events and through online or in-person meetings to ensure benefits for vegetable growers
- **Soil Management sub-project**
  - Extended resources from the Soil Wealth and Integrated Crop Protection (SWICP) project,

through VegNET Tasmania’s social media, newsletter and via hard copies of resources provided at farm visits and industry forums.

- Engaging with local projects to assist in extending their project outputs, including work on erosion management and cover cropping completed by NRM organisations.
- **Training Coordination sub-project**
  - Engaging with growers and industry to ascertain training requirements for themselves and staff (topics, format, timing/length, location) and how they could be addressed via formal and informal training.
  - Engaging with training organisations and other stakeholders to identify what is available.
  - Compiling information around gaps and working to address these with training organisations.
  - Assisting growers and industry to connect with training opportunities.
  - Promotion of industry training and capacity building opportunities, e.g. Hort Innovation leadership initiatives and courses on offer, through social media, electronic updates and direct contact.
  - A relatively small amount of project resources was allocated to the Training Coordination project in this phase of VegNET, with resourcing for Phase 3 to be confirmed.

**Communications and engagement activities** included the following:

- **Bi-monthly electronic updates including relevant R&D outputs, events, training opportunities, funding opportunities, biosecurity risks and other information relevant to vegetable producers and stakeholders**
- **Social media (Facebook and Twitter) posts and resharing relevant posts from other projects e.g., SWICP**
- **Engagement meetings with key stakeholders included:**
  - Grower farm visits and individual conversations via telephone and at industry forums / events
  - TFGA – biosecurity project
  - TFGA – Vegetable Council
  - TFGA – re training needs
  - TFGA – Red Meat Industry Development Officer (IDO) e.g. re synergies for industry training
  - EnviroVeg Facilitator
  - Soil First Tasmania (influential grower group with many members)
  - Southern Farming Systems (SFS)
  - Fruit Growers Tasmania (FGT) (synergies re training and biosecurity)
  - NRM North
  - Cradle Coast NRM
  - NRM South
  - Tasmanian Department of Primary Industries Parks Water & Environment, Biosecurity Tasmania
  - AUSVEG
  - Field based R&D providers e.g. Staphyt, Arvensis Research
  - Processors and packers including Simplot Australia Pty Ltd, McCain Foods Limited, Harvest Moon, Premium Fresh, Sumich, Houston’s Farm, Southern Fields, One Harvest.
  - Agribusiness including EE Muir/Serve-Ag, Elders, Nutrien, Agronico agronomists, Walker Ag Consultancy, Ben Lomond Agriculture

- Botanical Resources Australia (pyrethrum), Sun Pharma and Extractas Bioscience (poppies) field staff (crops grown in rotation with vegetables, can affect all VegNET focus areas)
- Tasmanian Agricultural Productivity Group (TAPG), including assistance with planning and promotion of the annual Precision Ag Expo and board meeting
- Tasmanian Irrigation
- Tasmanian Institute of Agriculture (TIA) and the University of Tasmania
- TasTAFE
- Burnie Industry Training Hub
- Skills Tasmania
- Agricultural Contractors Association of Tasmania
- Vegetable seed companies e.g Bejo Australia, South Pacific Seeds
- Tasmanian Women in Agriculture
- Rural Business Tasmania
- Training providers including TasTAFE, Duff Consulting, Irrigation Australia, PSVC Advisory
- Related projects including but not limited to SWICP, The Onion Project, Tasmanian Fruit and Vegetable Export Facilitator (TFVEF)
- Technology providers including Swan Systems, John Deere, Precision Agriculture, Sensand, Growave,
- Tasmania Fruit and Vegetable Export Facilitation Group (TFVEFG)
- Tasmanian Government’s Agricultural Coordination Group, a regular contact point between government and key industry contacts.

#### **Linkage with related RD&E projects**

The project continued to be a conduit for related projects including referral to growers and advisors; and arranging meetings and events. These included, but were not limited to:

- Soil Wealth and Integrated Crop Protection (VG16078): Many of the resources from this important project have been promoted by VegNET Tasmania communications, and VegNET resources and events have been promoted by SWICP communications.
- Australian Onion Industry Communications Program (VN18003): At the commencement of this new onion industry project, VegNET assisted by including the sign-up for onion growers in newsletter and social media communications and distribution of a needs analysis survey. VegNET Tas also supported the Tasmanian farm walk undertaken by this project helping with event promotion. The annual onion magazine was also featured in VegNET communications; onions are grown in rotation with other vegetables, so onion farm walks are relevant for engagement with growers and understanding the impact of onions on other vegetable crops.
- Working with private research company Staphyt to connect them with growers to arrange trial work.
- Biosecurity pathogen database: A State Government funded project to provide a database for testing results, to back up Tasmania’s area freedom status for many pests.

#### **Attendance at industry events / and co-delivery**

The project team attended events to engage with stakeholders, and worked closely with event hosts to co-deliver events, including but not limited to:

- Hort Connections, June 2021, Brisbane, including attendance at a national VegNET meeting during the conference
- Walker Ag Vegetable Industry Forum, August 2021, Ulverstone. VegNET Tas was invited to have a trade table and helped to promote the event and identify speakers and session topics

- TAPG Precision Ag Expo (now Ag Innovation Day) November 2020 and April 2021, included involvement on the organising committee and helping with event promotion
- The Onion Project, onion industry farm walk, November 2020
- Agfest, May 2021
- Cradle Coast paddock walk, Cover crops, July 2021
- NRM North paddock walk, July 2021
- Southern Farming Systems, Soil Carbon results day, May 2021
- Southern Farming Systems, Annual planning meeting, June 2021
- Training by Biosecurity Tasmania for the VegNET RDO to act as an industry liaison in the case of an incursion, March 2021

**Project management and reporting** included

- Participated in monthly RDO virtual meetings with Hort Innovation and other RDOs
- Three written milestone reports detailing activities, outputs and outcomes as well as issues
- Fortnightly team meetings
- Final report.



Figure 1: VegNET Tasmania RDO, Ossie Lang at the Walker Ag Vegetable Industry Forum, August 2021.

## Outputs

Project outputs and extension materials included the following.

### Biosecurity sub-project

- 2 x Case studies: Biosecurity for service providers Ben Lomond Ag, Biosecurity there's an app for that (Appendix 15)
- 1 x Biosecurity plan for agronomy service provider (Appendix 16)
- 1 x Template for service providers for biosecurity planning (Appendix 17)
- 1 x Workshop looking at emerging pest threats to the Tasmanian industry, April 2021.

### Herbicide Resistance and Integrated Weed Management sub-project

- 1 x cross-industry workshop to build networks and allow industry to look 'over the fence' at what is happening in other cropping situations including:
  - Invitation
  - Workshop agenda
  - Workshop summary
- 1 x scoping document from these conversations which provides direction for the work in VegNET Phase 3
- 1 x Factsheet "Testing for Herbicide Resistance" to assist industry in submitting samples for resistance testing.

### Precision Agriculture sub-project

- 1 x summary of collated feedback from the Precision Ag Expo and individual engagement. (Appendix 18)
- 1 x Factsheet Precision Ag Technology and Spatial Variability (Appendix 19)

### Training Coordination sub-project

- 1 x Summary of Training Coordination including needs analysis and recommendations for VegNET Tasmania Phase 3 (Appendix 11)
- 1 x checklist of training for discussion with growers and advisors during farm/site visits
- Information on Human Resource Management collated for the VegNET Tasmania webpage
- 1 x List of suitable training providers.

### Communications and media articles

- Electronic updates:
  - [VegNET Tas | Industry Update – May 2020](#)
  - [VegNET Tasmania July Update – July 2020](#)
  - [VegNET update – September 2020](#)
  - [TAPG Precision Ag Expo 2020 - 8th October – September 2020](#)
  - [December Update – December 2020](#)
  - [Tas VegNET Update – March 2021](#)
  - [Veg Industry Discussion Meeting - Emerging exotic pests – March 2021](#)
  - [Fall Armyworm detected in Tasmania – May 2021](#)
  - [Walker Ag Industry Forum - Remember to RSVP – July 2021](#)
  - [VegNET Update July – July 2021](#)
- Magazine articles (Appendix 14):
  - 'Regional focus for Tasmania's VegNET team' Vegetables Australia, Spring 2020

- ‘Nick Eyles: Eyeing off a sustainable future in Tasmania’ Vegetables Australia, Summer 2020/21
- ‘VegNET – Tasmania update: Cover crops in-focus’ Vegetables Australia, Autumn 2021
- ‘VegNET – Tasmania: Update from the Apple Isle’ Vegetables Australia, Winter 2021
- ‘Q&A with Rob Arvier’ Vegetables Australia ,Winter 2021
- ‘Cross-industry engagement key to success in Tasmanian horticulture’ Vegetables Australia, Spring 2021.
- Social media:
  - Twitter: @VegNET\_Tas, 591 followers 81 Tweets, 32,729 impressions, 1,831 profile visits, 108 new followers (over the course of the 18-month project)
  - Facebook: <https://www.facebook.com/VegNET.Tas/> 376 page followers 141 Posts, 17,426 impressions, 1,197 engagements, 151 new page likes (over the course of the 18-month project)
  - Promotion of events, resources and information from Hort Innovation R&D projects e.g.: Webinars from [PotatoLink](#), [Soil Wealth & Integrated Crop Protection](#) and [Hort Innovations & AUSVEG](#).
  - Promoting relevant industry events and activities in Tasmania e.g.: The [Walker Ag Forum](#), [The Onion grower walk](#)
  - Promoting training, leadership and grant opportunities e.g.: From [TasTAFE](#), and [Nuffield Australia](#)
- Displays at industry events:
  - Display at and support for Tasmanian Agricultural Productivity Group (TAPG) Precision Ag Expo, event planning and cover crop demo for expo.
  - Display at Walker Ag Vegetable Industry Forum, 6 August 2021
- Engagement meetings:
  - Notes from frequent communication with TFGA, TIA, TAPG, NRM North, Agronico, Southern Farming Systems, Simplot field officers, as well as communications with Seedlab Tasmania, Tas Food Cluster, Fight Food Waste CRC, UTAS Horticulture Business Masterclass.
  - Notes from one-on-one farm visits (examples of topics discussed included farm biosecurity, cover cropping, strip tillage, precision ag technologies, imagery, training topics, weed management and resistance issues).
  - Notes from engagement meetings with training providers and relevant stakeholders (refer to list in Summary of Training Coordination, Appendix 11)
- Other media coverage included but was not limited to:
  - Tas Farming Magazine VegNet continues to work for and with vegetable producers in Tasmania – June 2020
  - ABC Country Hour – 4th May 2021 – Agfest chat - <https://www.abc.net.au/radio/programs/tas-country-hour/tasmanian-country-hour/13321864>
  - ABC Country Hour – 24th May 2021 – Farm biosecurity and Covid - <https://www.abc.net.au/radio/programs/tas-country-hour/tasmanian-country-hour/13348344>

## Outcomes

### Project 1 – Herbicide resistance management

What Changes are Sought from the M&E plans	Who	VegNET 2.0 outcomes
Clearer understanding of resistance issues e.g. weed species, crops, rotations, locations, region and other factors.	Agronomists, field officers(vegetables, potatoes, poppies, pyrethrum)	This is documented in the herbicide resistance scoping document (Appendix 8). This input was sort to inform the direction of this focus topic in VegNET 3.0 The workshop has provided a list of industry priorities including new technologies, spray application basics, cultural practices and activities to deliver in VegNET 3.0
Clearer understanding of what practices are and aren't working in the field		
Refine what IWM practices need to be increased within Tas industry		
Tailored Information is available and accessible	Growers, field officers, NRM staff, agronomists	The testing for resistance factsheet has been developed. Due to the development of the guide and seasonal timing it is too early to measure who has acted on the detail provided. This and future factsheets will be utilised within future VegNET activities
Information alone will not lead to change; these resources will be used to support engagement and training activities		
Increased awareness of issue and risks to productivity	Growers	VegNET 2.0 engagement on herbicide resistance was largely focussed on agronomists and field officers following direction from the REAG. VegNET 3.0 will have more of a focus on grower engagement on this topic.
Implementation of IWM approaches (longer term outcome)		
Change in knowledge	Growers, agronomists, field officers, contractors	Training activities were not applicable for this reporting period. They are relevant for VegNET Phase 3.
Also, increased awareness and practice change, same as above (longer term outcome)		

<p>50% of agronomists and field officers engaged in the project, support growers to identify herbicide resistance, test for resistance or to implement management plans, where needed.</p>	<p>Service providers, Growers</p>	<p>30 agronomists and field officers were engaged via the workshop and industry events.</p>
<p>Reduced herbicide resistance risk</p>		<p>It is too early in the delivery of this focus topic to measure and supply meaningful data for this outcome. This will be the focus of the delivery and monitoring in VegNET 3.0</p>

Project 2 – Biosecurity

<p><b>What Changes are Sought from the M&amp;E plans</b></p>	<p><b>Who</b></p>	<p><b>VegNET 2.0 outcomes</b></p>
<p>Biosecurity Plans developed that work for individual businesses and key practices implemented</p>	<p>Growers</p>	<p>There was very little uptake of farm plans but 3 growers (21% of farm visits) engaged with through individual visits indicated that they are looking at putting a plan together but the timing was not suitable to complete this in VegNET 2.0. These and other growers will be targeted in VegNET 3.0</p>
<p>Awareness of how others have implemented biosecurity plans</p>	<p>Growers, packers, agronomists</p>	<p>Case studies are in development. Increase in awareness due to the case studies is relevant for phase 3.</p>
<p>Increased awareness of risks</p>	<p>Growers, packers, agronomists, processors, contractors</p>	<p>Their change in awareness will be measured in phase 3.</p>
<p>50% of the providers who we engage with, have biosecurity kits in their vehicles and in use</p>	<p>Service providers (packers, agronomists, processors, contractors, resellers)</p>	<p>It is too early in the delivery of this focus topic to measure and supply meaningful data for this outcome. This will be the focus of the delivery and monitoring in VegNET 3.0</p>
<p>At least one agribusiness includes biosecurity in staff inductions or training</p>		
<p>Farm biosecurity plans developed and implemented</p>	<p>Growers</p>	
<p>Reduced biosecurity risk due to increased awareness</p>	<p>Growers, packers, agronomists, processors,</p>	



and preventive actions	contractors	
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Project 3 – Precision Ag

What Changes are Sought from the M&E plans	Who	VegNET 2.0 outcomes
Increased awareness of imagery available e.g. Simplot yield maps, LISTMAP, NDVI	Growers	It is too early in the delivery of this focus topic to measure and supply meaningful data for this outcome. This will be the focus of the delivery and monitoring in VegNET 3.0
Increased awareness of resources available and support available from VegNET	Growers, field officers, agronomists, contractors	
Increased awareness of imagery available e.g. Simplot yield maps, LISTMAP, NDVI	Growers, field officers, agronomists, contractors	
50% growers who participate in the project, consider, trial, adopt or intend to adopt precision ag technologies	Growers	
Improved productivity and sustainability; reduced risk e.g. waterlogging risk.	Growers	

Project 4 – Soil Management

What Changes are Sought from the M&E plans	Who	VegNET 2.0 outcomes
Increased awareness of soil management practices; increased awareness of outcomes from demo sites	Growers, packers, field officers, agronomists	Throughout VegNET 2.0 there has been consistent sharing of resources and information. There has been no quantitative data recorded through VegNET 2.0 but this measurement will be revisited in VegNET 3.0
Increased awareness and knowledge of soil health management practices		
50% of agronomists and field officers engaged through the project, provide advice to their clients about good soil health management practices	Service providers (packers, agronomists, processors, contractors, resellers)	It is too early in the delivery of this focus topic to measure and supply meaningful data for this outcome. This will be the focus of the delivery and monitoring

50% of growers engaged through the project, consider, trial or adopt good soil health management practices	Growers	in VegNET 3.0
Adoption of soil health practices which improve farm productivity and/or sustainability	Growers, field officers, agronomists, contractors	

Project 5 – Training Coordination

<b>What Changes are Sought from the M&amp;E plans</b>	<b>Who</b>	<b>VegNET 2.0 outcomes</b>
Clearer understanding of training needs and demand, training available and gaps	Growers, packers	This has been recorded through the Summary of Training Coordination project (Appendix 11)
Information is accessible		The information for distribution is to be compiled from the summary document and will form the early focus in this project area for VegNET 3.0
Increase in training participation (formal VET Utas, informal, targeted training)	Training Providers	Training coordination, brokerage or delivery was not applicable for this reporting period.
Training delivered that is tailored for the vegetable industry, as required		
80% of training participants have increased understanding, skills and/or knowledge e.g. people management skills		Not applicable in this reporting period.
Increased knowledge of training system and where to find information		

Resources and training courses taken up with positive feedback about learning outcomes		
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The expected **end of project outcomes**, with a time horizon of **2025**, as shown in the Program Logic (Appendix 4) are:

- 50% of growers we engage with about soil management, either consider, trial or adopt new soil health management practices
- 50% of the service providers who we engage with about biosecurity, have biosecurity kits in use; vegetable growers and packers develop and implement Farm Biosecurity Plans.
- 50% of growers who participate in the Precision Ag component, consider, trial, adopt or intend to adopt precision ag technologies
- Growers implement integrated weed management (IWM) practices to reduce the risk of herbicide resistance. Field officers and agronomists incorporate IWM into the support they provide growers.

The expected intermediate outcomes were:

- Increased awareness of issues and opportunities
- Strengthening of industry networks
- Increased skills and knowledge

Foundational activities included project scoping, development of a five-year regional extension strategy and development and commencement of five five-year sub-projects.

The progress of VegNET 2 towards the intermediate outcomes is described below.

**Increased awareness of issues and opportunities**

Awareness of issues and opportunities has been increased through social media, electronic communications, workshops and factsheets. An example of this was of one grower who will be reviewing their yield map after their first pea crop this upcoming season. This was a direct result of discussions with this grower about precision agriculture tools and how they could be utilised on her property. As this grower is a younger grower without substantial resources invest in new technologies, she was glad to hear that this was a part of her contract with the processor (Simplot).

Feedback from the REAG was that the presence at industry events had raised the profile of the project, and this was highly valued by REAG members.

Some growers and service providers have expressed interest in engaging with VegNET to assist with biosecurity planning and reviewing yield maps, as part of their review of this season. This includes 21% of growers who were engaged with through individual visits, and service providers responsible for at least 52% of vegetable levy production in Tasmania (by weight).

Discussing training needs and options with growers has increased their awareness of training opportunities. Engagement with education and training providers has increased their awareness of the training needs, issues and opportunities. For example, TasTAFE and the Industry training hub have consistently contacted the VegNET RDO to discuss industry requirements and invited the RDO to participate in meetings.

**Strengthening of industry networks and consistent presence of VegNET Tasmania**

Industry networks have been strengthened through attending, and participation in industry events. The RDO is now a go-to person for industry groups. The RDO was invited to participate in biosecurity training. This training enables Ossie to act as liaison in the event of an incursion. The RDO was also invited to participate in the Agricultural Coordination Group. This group was formed by the Tasmanian Department of Primary Industries,

Parks, Water and Environment, in response to COVID-19. Initially the group met weekly, and now continues to meet every two months. The group enables two-way communication between industry and the Government, which allows issues to be identified early e.g. transport and logistics, labour. The RDO has also strengthened his networks through participation in professional development training and attending industry events.

The RDO has been invited to present at industry events e.g., TIA Field day and the NRM North hillslope erosion farm walk.

A highlight of the project was coordination and facilitation of a cross-industry workshop on herbicide resistance and integrated weed management. Participants represented vegetable, onion, potato, cereal, poppy and pyrethrum crops. Feedback from participants was very positive and indicated that more cross-industry events would be useful with one participant saying,

*“Interested in more. Getting all the different industries together to try and fix "our" problem”.*

This event provided a starting point for industries to work together on herbicide resistance and weed management, which is very much a cross-industry issue. In Tasmania, vegetable crops are commonly grown in rotation with other crops such as poppies, pyrethrum, grains and pasture. The management of weeds in one crop influences weeds and potential for herbicide resistance, in the next crop.

### **Increased skills and knowledge**

Feedback from the Herbicide Resistance Workshop highlighted that there had been little knowledge of the mechanisms of the spread of herbicide resistance in a population, in particular in annual ryegrass and wild radish. This knowledge will help agronomists and growers implement their resistance management plans to take this into account.

Feedback from the ‘Emerging Pest Threats to the Tasmanian Industry’ event, indicated that industry often relies on Bass Strait and the state government to keep pest threats out of Tasmania. As a result of the event there was a better understanding of the ability of pests like Fall Armyworm to get across Bass Strait un-aided by humans.

### **Lessons learned and how they can be applied in VegNET Tasmania Phase 3**

There have been some key lessons which have been brought together in the recommendations section of this report. Tailoring communications strategies and solutions for growers will be critical to success in achieving the outcomes sought in Phase 3. In the biosecurity sub-project, while most growers and stakeholder believe that biosecurity is important, having an on-farm biosecurity plan is not common. Engaging with growers on this topic is challenging. We have learned that the language used e.g ‘farm hygiene’ instead of ‘biosecurity’ may help to get growers on board with formalising what they do into a plan.

### **Conclusions about project outcomes**

A substantial portion of the project duration was taken up with the foundational activities as described above and listed in the program logic. This coupled with the impacts of COVID-19 set back some of the momentum built up through VegNET Phase 1.

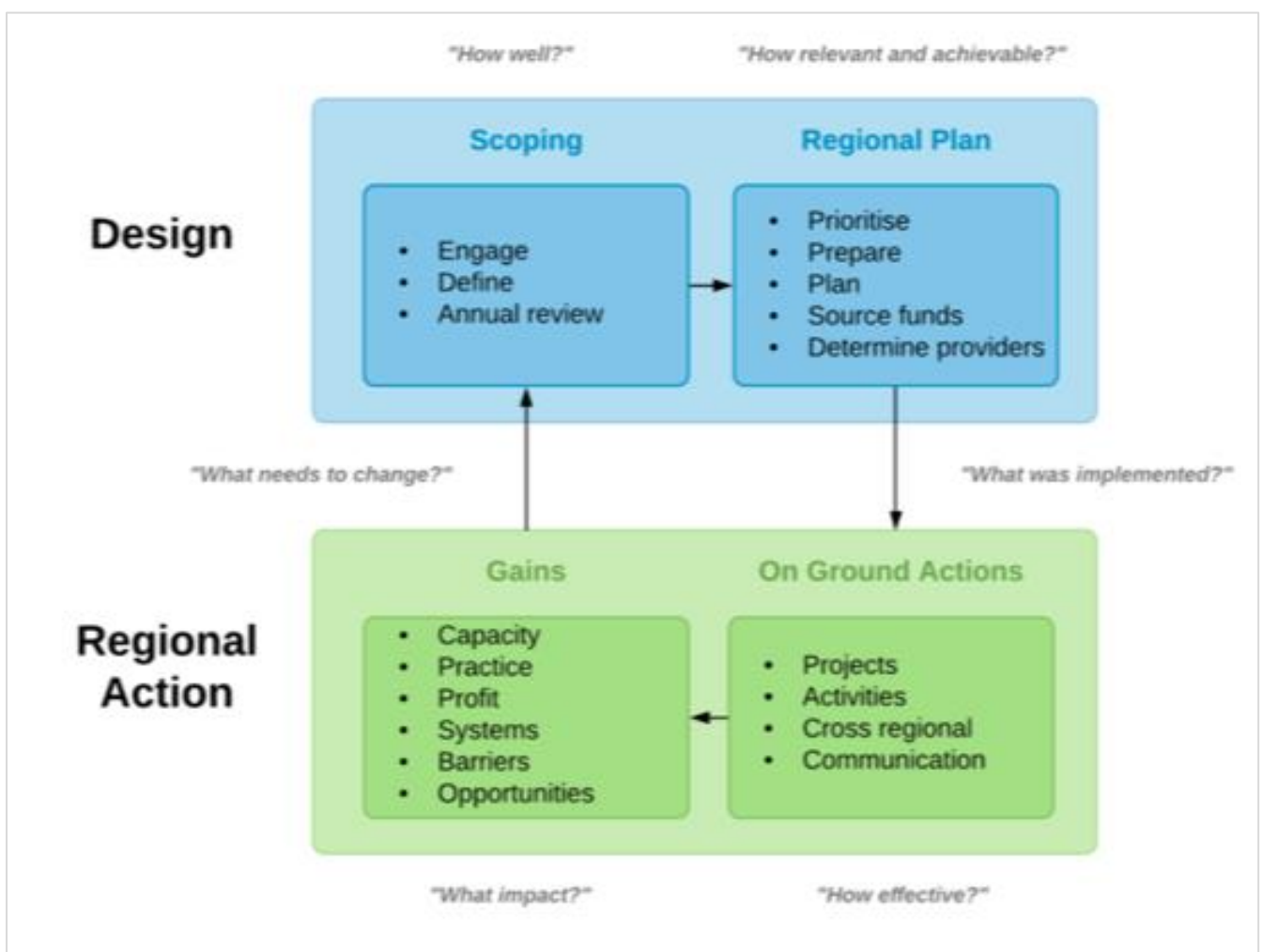
The focus topics that are being addressed by VegNET Tasmania are issues that are often complex to work through and will have differing adoption requirements by individual farm businesses and key influencers. These topics were identified as priorities for VegNET because they are important but complex and therefore not covered well enough by other providers or projects. For example, with regard to herbicide resistance as an emerging issue, it was at times difficult to get consensus from industry as to the extent of the problem, let alone clear direction on possible solutions. Thus it will take time to achieve the desired outcomes.

The long-term planning completed in the first half of this project along with the work accomplished so far in the project has set a solid foundation for successful delivery of VegNET Phase 3. The development and strengthening of networks, and increasing visibility of VegNET Tasmania, has strengthened the ability of VegNET 3 and the RDO to deliver against the end of project outcomes indicated in the program logic.

## Monitoring and evaluation

The National Vegetable Extension Action Plan 2021-2026 (Draft Version 3 – February 2021) includes the following diagram (Figure 3) which summarises the core elements of the national extension strategy for vegetables. These elements will be used in future monitoring and evaluation of VegNET Tasmania and will be supported by the National VegNET Coordinator and National VegNET M&E Manager.

**Figure 3: Summary of the evaluation frameworks for the Vegetable Industry Extension Strategy (Source: National action plan for extension delivery in the vegetable industry, Draft Version 3 - February 2021)**



The measures listed in table 1 are from the VegNET Tasmania M&E Plan (refer to Appendix 5)

**Table 1: Report against the M&E Plan.**

Focus Topic	What to measure	Results	Comments
<b>Herbicide Resistance</b>	Outcomes documented including recommendations for activities and target audiences.	Scoping Document completed (see Appendix 8)	
	Information and assessment guide developed, and numbers/ details of who received it captured Proportion of those who receive the guide, that collect incidence and severity of herbicide resistance per uniform guidelines.	TBA	Due to the development of the guide and seasonal timing it is too early to measure who has acted on the detail provided.
	Document farm visits including discussion points. Document timing, location and content of workshops / meetings; number of participants and lessons learned. Proportion of participants have increased awareness, knowledge or aspiration to change practices.	Comms database (Appendix 12)  Workshop held July 2021 with 11 participants. A scoping document was prepared (see Appendix 8)  Workshop feedback (Appendix 9)	
	Change in knowledge Intention to change practices.	This will be measured in Phase 3.	Informal feedback indicated a change in knowledge following the workshop which will lead to different practices from the agronomists concerned.
<b>Precision Ag</b>	Number of growers supported, type of technology assessed or trialled. Change in awareness, aspirations	14 grower visits plus additional discussions at industry events.	Still in early stages of gathering data relating to technologies of interest and can be trialed.
	Document lessons learned, expo feedback e.g., increased awareness or intention to use certain precision ag technologies	A summary was developed of Hort Innovation project PT13000, [in final draft form]	
	Number of articles / presentations Event attendance	14 articles in e-updates and socials	

Focus Topic	What to measure	Results	Comments
<b>Biosecurity</b>	Number and location of farm visits and status of plan development Lessons learned Impacts after implementation	14 visits, Three growers indicated interest in plan development but postponed due to timing.	Engagement in biosecurity is challenging, growers and others visiting farms are seldom interested until there is a crisis.
	Case studies developed Change in awareness	3 x Case studies developed. (in final draft form)	Awaiting confirmation from case study participants on some details prior to distribution.
	Number of displays and presentations  Change in awareness	2 x presentations for service providers / agronomy companies; 3 x displays at industry events Ongoing discussions with other providers on informal basis. Change in awareness will be measured in Phase 3.	
<b>Soil Management</b>	Number of communication articles and topics	13 Articles in e-updates relating to cover crops, disease management, reduced tillage and the Tasmanian Demo site for the Soil Wealth and Integrated Crop Protection project. Sharing social posts and events	
	Event location, focus topics and number attending Feedback from attendees and collaborators, including change in awareness	Assisted in Walker Ag Forum including panel discussion. Attended Cradle Coast, NRM North and Southern Farming Systems soil events.	

Focus Topic	What to measure	Results	Comments
<b>Training Coordination</b>	Needs analysis documented	Completed. Refer to Appendix 11.	Some measures are not applicable for this Phase 2 project, as the Training Coordination sub-project was allocated only a small proportion of the overall resourcing. The summary report (Appendix 11) provides direction and recommendations for Phase 3.
	HR and people information developed Directory of trainers developed Website data developed Website data Number of people requesting or accessing information (e.g. if hard copy)	Completed. Ready for webpage. Completed. Ready for webpage. Website data is not applicable for this Phase 2 project. Not applicable for this Phase 2 project. We were contacted by training providers e.g. TasTAFE and other stakeholders e.g. Burnie Training Hub to provide feedback and participate in industry meetings.	
	TBC Number of people participated in training Training outcomes	Not applicable for this Phase 2 project	



## Recommendations

Recommendations are to:

- Maintain a consistent presence for VegNET in Tasmania and continue the growth of awareness of VegNET
- Build on the relationships between VegNET, levy payers and vegetable industry stakeholders
- While maintaining the focus on the five-year strategy and sub-projects (for the five priority areas) developed as part of this project, ensure that some flexibility is maintained to address emerging issues
- Review the Project Briefs (for sub-projects) and five-year extension strategy at commencement of VegNET Tasmania Phase 3. This should consider lessons learned from this phase 2 project e.g., how to engage growers and advisors on the topic of on-farm biosecurity planning
- Review the segmentation of the target audience we have been using, and for larger-scale businesses, to continue to refine customised extension and adoption activities. Reduce the focus on production issues and increase the provision of input into strategic industry support and expansion in line with state government and industry targets
- Increase targeted one-on-one extension activities, with content being created from above-mentioned undertakings
- Continue using our experience of featuring vegetable industry ‘champions’, to foster adoption of new approaches and technologies
- Continue to access in-depth industry guidance from a diversity of growers and stakeholders, with whom we deepened our relationships as part of this project and other activities
- Continue to listen to industry stakeholders, to be able to provide information to Hort Innovation on RD&E needs for the Tasmanian vegetable industry.

## Refereed scientific and other publications

None to report.

## **Intellectual property, commercialisation and confidentiality**

No project IP, project outputs, commercialisation or confidentiality issues to report

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## Appendices

- Appendix 1: Regional strategy discussion paper
- Appendix 2: Regional strategy
- Appendix 3: Project Briefs
- Appendix 4: Program Logic
- Appendix 5: Monitoring and Evaluation Plan
- Appendix 6: Stakeholder Engagement Plan
- Appendix 7: Annual Extension Plan
- Appendix 8: Herbicide Resistance Scoping Document
- Appendix 9: Summary of feedback from Herbicide resistance workshop
- Appendix 10: “Testing for Herbicide Resistance” Factsheet
- Appendix 11: Summary of Training Coordination Project
- Appendix 12: Communications Database
- Appendix 13: Regional Extension Advisory Group meeting documentation
- Appendix 14: Media Articles
- Appendix 15: Biosecurity Case Studies
- Appendix 16: Service Provider Biosecurity Plan
- Appendix 17: Service Provider Biosecurity Template
- Appendix 18: Precision Ag Expo & Other Grower Feedback
- Appendix 19: Precision Ag and Imagery Factsheet