

Vegetable Industry Extension Strategy

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Strategy Objective

The Vegetable Industry Extension Strategy guides the collaborative development and delivery of user defined activities focused on targeted and measurable practice change to support the profitable and sustainable growth of Australian Vegetable Businesses.

Acknowledging the systems nature of extension service delivery, Hort Innovation are aware of the need to work collaboratively with other organisations and providers to ensure an effective and efficient approach, where third parties are collaborators, not competitors.

Context

Review

The Hort Innovation Strategy 2019-2023 calls for an emphasis and increased focus on delivering extension that truly impacts on business decisions and enhances practices on farm. Hort Innovation is currently finalizing its Extension and Adoption (E&A) Framework which sets out the approach it will take to maximise the impact of research, development and marketing investments. Coutts J&R in association with and Rural Consulting Group and Neels Botha Consulting were contracted to scope the extension needs of the vegetable industry and develop an extension strategy and associated implementation plan by October 31st 2019. This strategy draws upon the following activities completed through the consultancy:

- A review of recent extension investments, reports, and documents relevant to the vegetable industry
- 14 interviews with informed persons in the vegetable industry
- 12 regional workshops with stakeholders (140) in the Vegetable industry
- A literature review of contemporary approaches to agricultural extension globally
- A national workshop of key stakeholders

Insights from these activities are outlined below to provide context for the extension strategy proposed for the vegetable industry.

Recent history of extension in the Vegetable industry

Since July 2016, \$12.6 million has been invested in the Hort Innovation Vegetable Strategic Investment plan, outcome Area 5 – improved industry capabilities for adoption and innovation. The largest spend is focused on what we describe as ‘technical and capability development’ investments (\$6.3 million), and within this, VegNET forms the largest single investment at \$2.6 million. Outside of this, the communications and awareness area is second largest with \$2.8 million invested.

Review of relevant internal project documentation would suggest that these investments, while addressing contracted milestones and being well received by those directly involved, have no mechanism for assessing impact, are fragmented, lack overall coordination, and so raise questions around efficacy and return on investment. Evaluations have either been project focused exploring achievement of contractual obligations, or at too high a level to assess whether the outcome of improved industry capabilities for adoption and innovation has been achieved.

Key Messages from Consultation

Regional feedback showed stakeholders seem neither overly enthusiastic nor negative toward the VegNET program. Key messages to arise from the consultation process were:

- VegNET currently provides a network for dissemination of information for those engaged in elements of the project
- National Co-ordination of VegNET is under resourced
- An absence of strategy directing regional and national extension activity
- An absence of engagement processes which clearly link regions to the ‘national level’ and back again
- Limited Cross-regional collaboration on shared problems
- Lack of integration with the communications investment
- Variability in employment arrangements of VegNET staff
- Limited scope for professional development and career pathways in Vegetable extension
- Weak integration with Hort Innovation research and market development functions
- Poor attribution to the Levy investment
- Investment pathways for extension and development projects difficult to navigate
- Fragmented investment in extension

The overarching impression is that stakeholders like the idea of having a regional project but don’t necessarily engage fully or broadly with what they have. The model was largely seen as being based on a ‘pipeline’ approach when many of the challenges faced by stakeholders were systems oriented and not amenable to the linear, technology transfer approach (pipeline).

The diverse, third party delivery model dilutes attribution and brand awareness for the vegetable levy fund. This, combined with the poor integration with the communications project and the lack of central co-ordination, largely explains poor regional attribution/brand awareness around extension investments.

Regional feedback also highlighted the patchy nature of regional engagement in the VegNET program. Each region operates slightly differently, and in the absence of any quality control or standardized engagement processes, plus the limited integration of VegNET activities with the Hort Innovation Strategic Investment Advisory Panel (SIAP) process, means the two-way flow from regions, to the national leadership and back again is not effective. This again might explain some of the frustration at a regional level with regards to the capacity to influence Hort Innovation investment in research and extension.

Perceptions of issues/challenges facing growers

The most commonly mentioned challenges facing growers from our consultation were in relation to:

- Water (availability, quality and cost);
- Labour (availability, awards, HR and skills);
- Input costs;
- Biosecurity;
- Pest management;
- Market development (including export);
- Post-harvest and marketing;
- Urban encroachment;
- Social license (environmental impact and chemical (mis)usage); and
- Business management.

Contrasting this with the current 'pipeline' model as identified through the consultation demonstrates another mismatch between potential ends and means. This is not to say that extension should be expected to 'fix' these problems. It is more that through an innovation systems approach, the role of extension shifts from being a conduit of technical insight to an enabler or broker of knowledge from various sources – including, but not exclusively, Hort Innovation research. For problems which may have technical, advocacy and/or knowledge transfer elements, extension becomes a key linking role to bring broad coalitions together to deploy skills and capacity as required in a strategic and focused way.

Requirements of a contemporary extension system

Our review of the history and traditions of innovation in agriculture highlights how there are three main paradigms which underpin extension services globally – transfer of technology, participatory approaches and innovation systems thinking. Typically, systems approaches have evolved out of the more linear models of research, development and extension. While not suggesting one model is better than another, systems approaches are looked to when problems become more complex and involve multiple, diverse stakeholders who often have conflicting or competing objectives. Feedback from regional consultation supported the fact that a linear, pipeline approach is the predominate model in use and is not completely appropriate for the challenges facing Vegetable growers. Extension in the Vegetable industry therefore needs to draw on all three 'traditions' of extension in order to be effective. The key element of an effective strategy is having the structures in place which ensure the right people are engaged in the process of deciding 'fit for purpose' delivery.

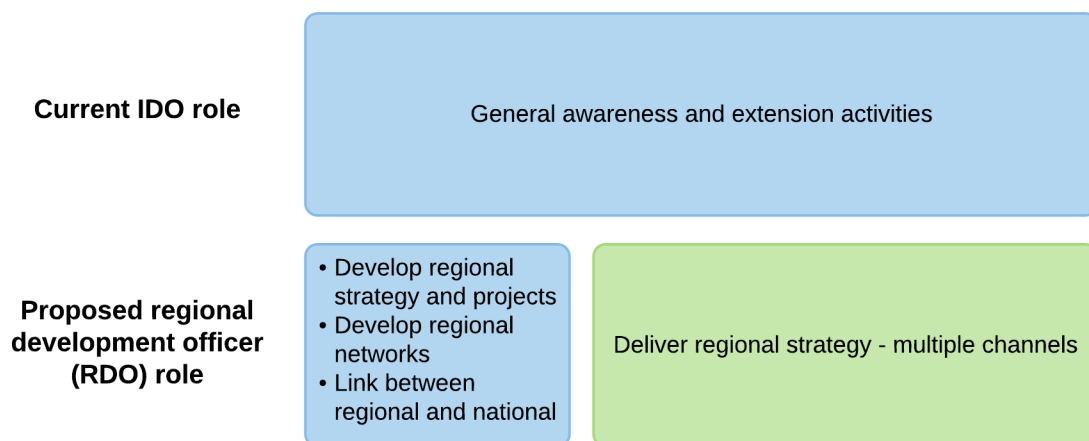
Strategy Considerations

A number of tensions require resolution through the strategy developed for the Vegetable Industry:

- ✓ **Science led vs grower led:** The challenge for Hort Innovation is to balance the need to generate a return on its investment in research through improved practices on farm, but also to enable greater regional engagement and enhance the involvement of levy payers in the process of problem 'setting and solving'.
- ✓ **Regional vs national:** Balancing the requirement for regional autonomy and national oversight is a critical tension to manage. Regions in many ways would like to be left alone to get on with the job, but too much autonomy leads to inefficiency as each region potentially replicates the work of other regions without adequate national co-ordination.
- ✓ **Investment in capacity vs investment in projects:** What is the relative balance of investment in capacity to define 'needs' at a regional level and project 'funds' to deliver on these needs through multiple mechanisms? The tension here is between owning the outcome and having enough 'skin in the game' to influence it, but to do this in such a way that third parties are not shut out of the process. It is critical that Hort Innovation does not compete in the space, and rather adds value.
- ✓ **Process focus vs Output focus:** The current VegNet project is output (activities) focused so that when it comes to be evaluated, success or otherwise of achieving outputs is measured. With systems approaches, given the problem situation tends to be more complex and multifactorial, it is more relevant to evaluate outcomes and the processes which can be linked to particular outcomes or practices.
- ✓ **Technical focus vs network focus:** There is a question as to how you balance the shared focus areas of biosecurity, water, labour, market access, with the requirement for technical responsiveness through regional networks for issues such as water use efficiency or pest and weed management.

The Purpose of Extension Services in the Vegetable Industry

Previously, Industry Development Officers (IDO's) have had a general remit around the delivery of awareness and extension activities in a given geographical region. This strategy describes a shift in this role to being more focused on the development of regional and national strategies based on well-developed processes of stakeholder engagement. This refined role is a **Vegetable Regional Development Officer** role (RDO's) and while not excluding the delivery of on ground activities for growers, delineates these two functions:



As such, key roles in the new extension system can be understood as follows:

Role of Hort Innovation Vegetable RDOs: To develop and facilitate a system that: a) enables two way flow of information from levy payers to Hort Innovation and back, b) ensures action is being taken in prioritised areas where extension can make a contribution, and c) measures and tracks impacts of extension activity to ensure grower expectations around value for money are being realized.

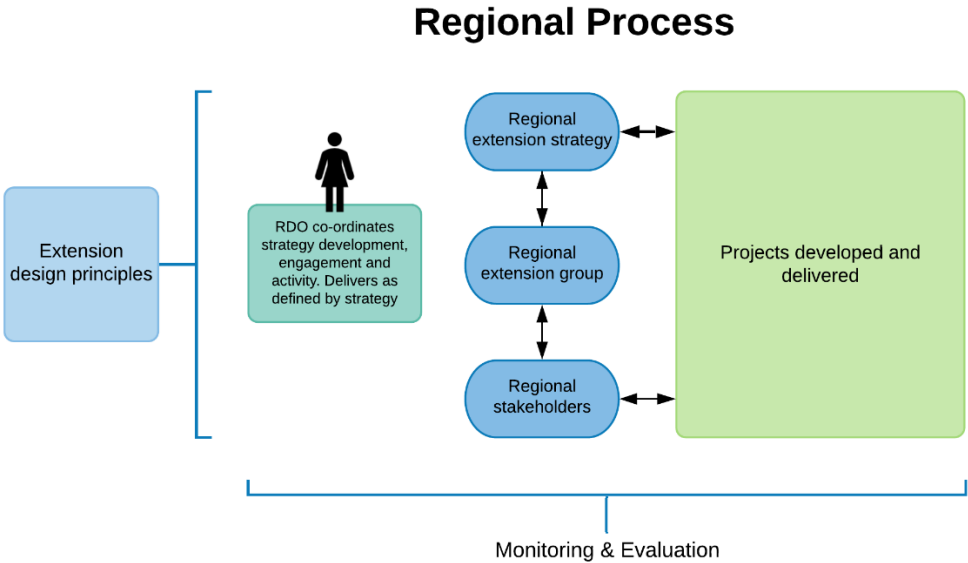
Role of other stakeholders and service providers: To work with Hort Innovation in the process of defining, designing, and delivering activities which enable progress to be made in areas of identified need.

Key Elements of the Extension Strategy

There are four key components of the strategy necessary to take Vegetables extension forward over the coming decades. These are outlined below along with the recommendations associated with implementation of each:

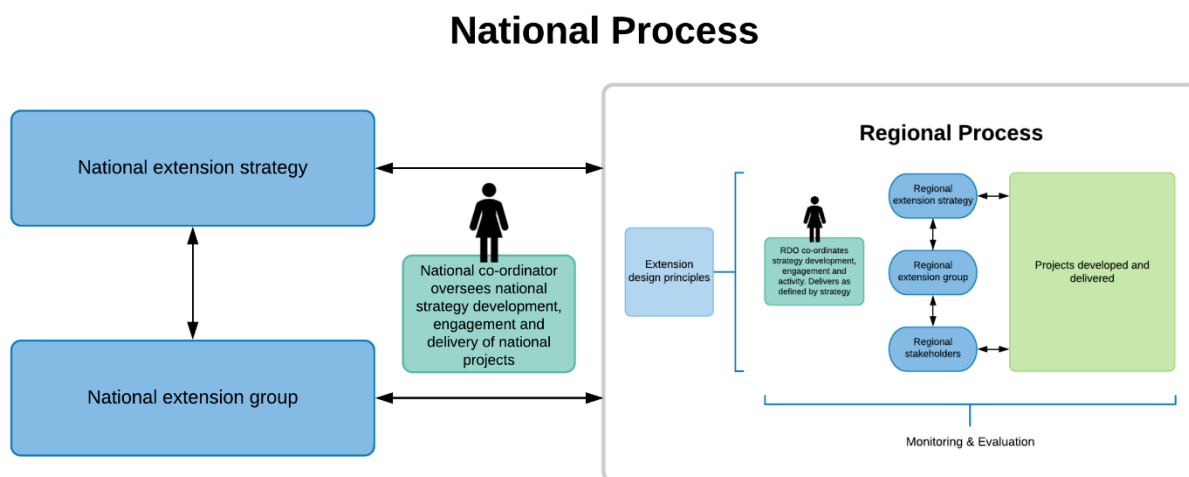
1. Grow regional capacity to engage and build strategy

- 1.1. Hort Innovation directly invest in regional vegetable development officers (RDO's) whose role is to:
 - 1.1.1. Build regional networks;
 - 1.1.2. Establish and work with regional extension groups to develop regional vegetable extension plans, and strategies to address and operationalize;
 - 1.1.3. Work with regions to attract co-investment for vegetable R,D&E 'projects' and provide implementation support where appropriate;
 - 1.1.4. Be Hort Innovation's conduit to vegetable regions (two-way);
 - 1.1.5. Link key elements across the vegetable supply chain;
 - 1.1.6. Undertake an annual review of progress and effectiveness and changes needed to more effectively implement the regional vegetable extension plan.
- 1.2. Hort Innovation invest in a national Vegetable extension coordinator role accountable to Hort Innovation and to whom the RDO's are responsible for program reporting and oversight.
- 1.3. Hort Innovation to provide training and mentoring support to provide the skills and frameworks needed by regional and national staff to work effectively using this approach.
- 1.4. Regional Vegetable RDO's to be named and badged appropriately to identify them with levy funds – potentially co-located with a regional organisation to provide linkages without direct management.



2. Design processes and structures to link regions to national coordination and back

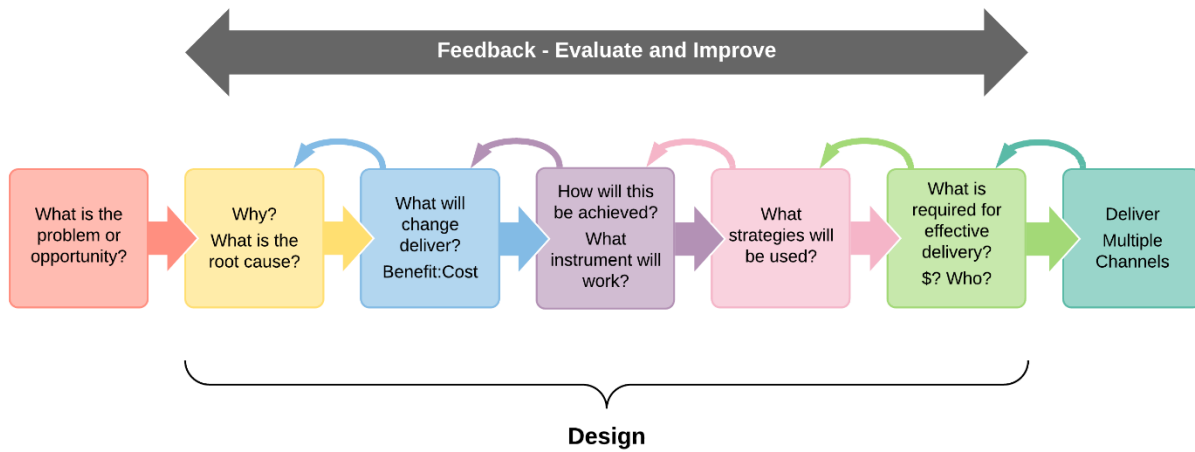
- 2.1. Establish a national vegetable extension advisory group who, with the national vegetable extension coordinator role, are responsible for consolidating regional strategies into supporting national strategies.
- 2.2. National vegetable communications to reflect regional and national extension strategies and link producers with Hort Innovation research, information and tools.
- 2.3. National projects contracted to work across regions with regional staff and relevant researchers on common cross-regional issues identified through the regional and national planning process.
- 2.4. Develop a common evaluation and reporting framework and data management platform consistent with the approach being taken and relevant performance measures – and build in the resources and plans to undertake effective monitoring, evaluation and reporting.



3. Focus on practice change in priority areas directed by regional and national extension strategies

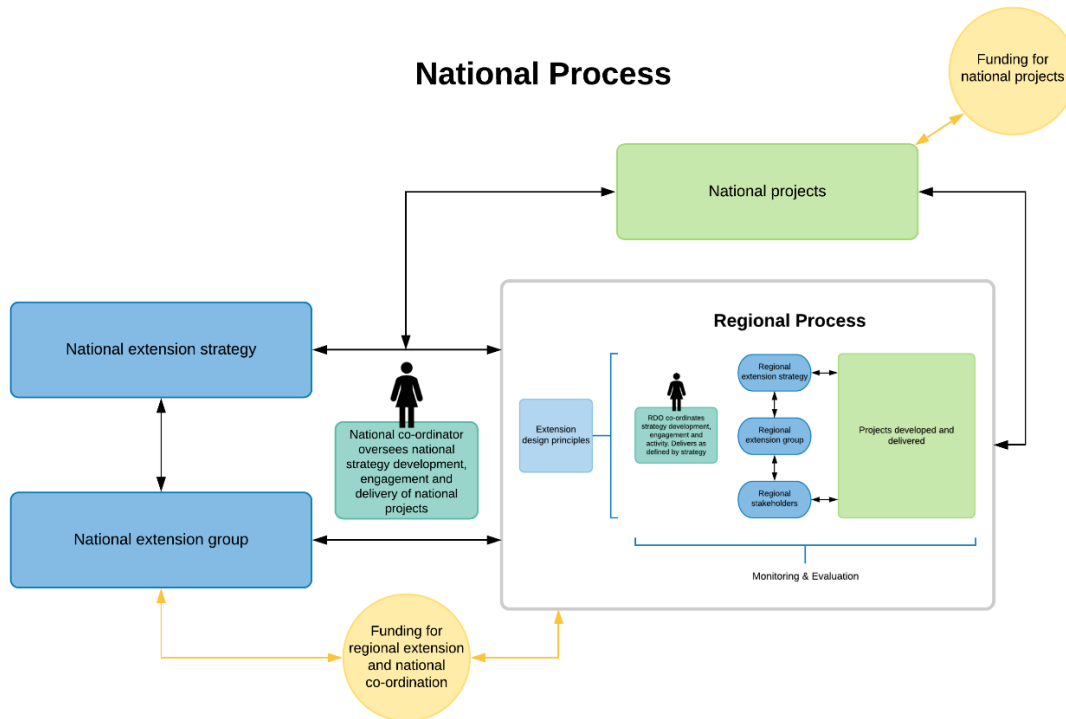
- 3.1. Strategies designed to influence specific problem domains and practice change rather than general technology adoption.
- 3.2. Regional action plans developed based on strategies and accounting for the existing activity within regions with regional M&E plans to permit effective monitoring and learning and also reporting against the national reporting and evaluation framework.
- 3.3. Role of Hort Innovation Vegetable RDO's is to identify gaps and work with regional stakeholders in addressing these but not necessarily deliver responses – delivery to be done by those best suited.

The diagram below outlines the design approach central to the strategy. This approach will require RDO's to be trained and develop skills in collaborative and design-based extension approaches.



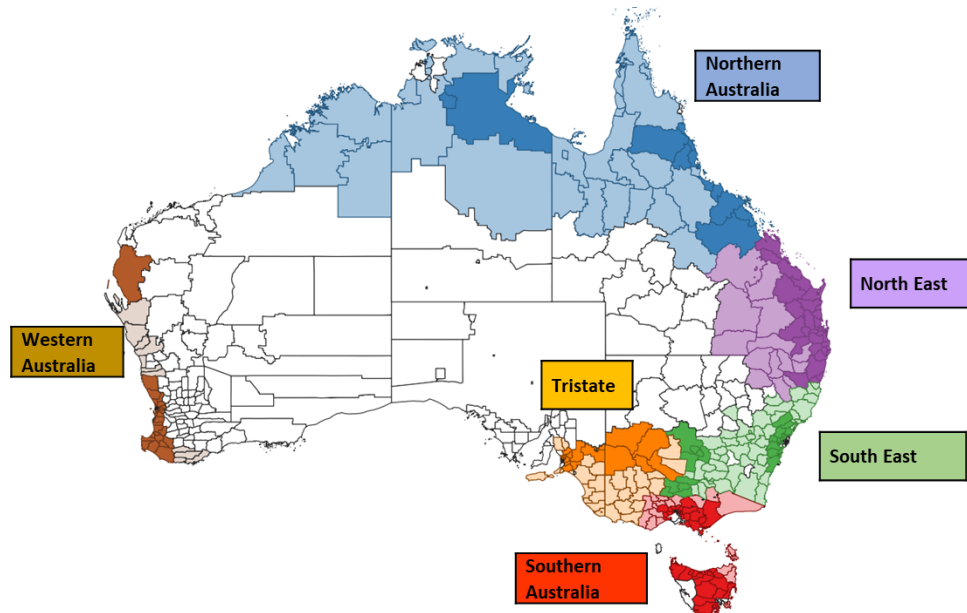
4. Provide resources to enable regional engagement and incentivise collaborative project development and delivery

- 4.1. Establish funds outside of regional RDO funding for implementation of national and regional extension projects defined by strategy.
- 4.2. Regional coalitions encouraged to bid into this, or commissioned, for delivery of strategic priority actions/projects.



Structure to Support the Strategy

The Vegetable Industry extension strategy needs to align with the Hort Innovation national extension and adoption strategy with regards to its regional structure, summarised below.



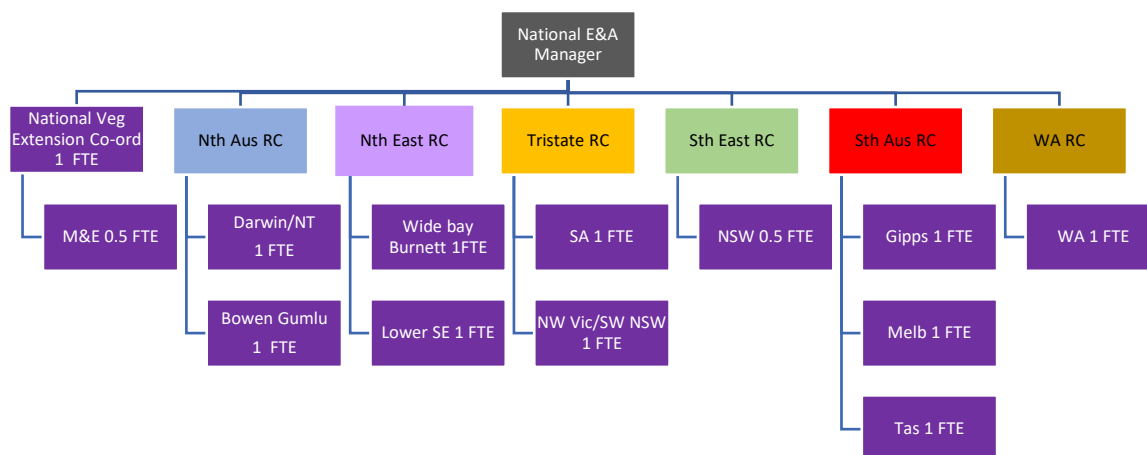
To achieve this, a matrix structure is proposed that allows strong integration between national Hort Innovation E&A staff and Vegetable RDO's located in regions relevant for the vegetable industry.

This is described in the following organisational chart. Under this structure:

- Direct staff management of Vegetable RDO's would be from E&A regional coordinators.
- The National Vegetable Extension Coordinator would be managed by the national E&A manager and be responsible for regional and national progress to Hort Innovation.
- An M&E manager to be appointed and directly managed by the Vegetable Extension National Coordinator.
- The Vegetable extension national coordinator would be responsible for oversight of the vegetable extension program as a whole, regional and national extension strategy development, national project co-ordination, reporting internally and externally, team skill development, and national industry stakeholder engagement.

The chart also includes the proposed resourcing based on slight variation of the current contracted FTE's as informed by Hort Innovation analysis of employment and grow value of Vegetable production in each of the 6 regions.

Including the National Vegetable Extension Coordinator role and an M&E manager, this gives a total of 12 FTE's, distributed regionally as per the chart. The purple boxes represent the Vegetable levy funded positions whilst the rest are Hort Innovation E&A staff. This colour coding also indicates the reporting lines in relation to the national vegetable extension investment project. Line management would occur through the Hort Innovation E&A Regional Coordinators as per standard matrix arrangements.



Resources Required for Delivery

Current resourcing for VegNET is described in the table below:

	2016-2019	Annual
Total	\$ 5,432,704	\$ 1,810,901
Operating	\$ 2,186,732	\$ 728,911
Salaries	\$ 3,245,973	\$ 1,081,991

Using the current annual figure for salaries of \$1,081,991, based on the current FTE allocation of 10.8FTE across VegNET, this suggests a current average annual remuneration of \$100,184, inclusive of superannuation. Based on a recent analysis of extension career pathways conducted by Coutts J&R, this is an adequate level of investment to attract proficient to expert extension providers.

With regards to operating expenses, the current investment allows for \$67,492 per FTE/annum in operating expenses. While this figure includes specific project activities, vehicles, office expenses etc., and the cost of travel would be greater in some regions, this is a generous figure. The specific allocation would need to be calculated based on projected travel requirements by region, as well as office requirements (ie: some costs are headcount, not FTE based) however as a starting point, \$50,000 for basic operating per FTE/annum is ample and would need to cover all office, travel, training, sitting fees and meeting related expenses.

There is also a requirement under this strategy for the establishment of an innovation fund which needs to incentivise collaborative effort and resource priority action in regions. It is proposed that a fund of \$750,000 be established with \$500,000 put forward as seed funding for national projects and \$250,000 allocated to regions pro-rata based on level of production. It is also proposed that the program be run over 5 years not 3.

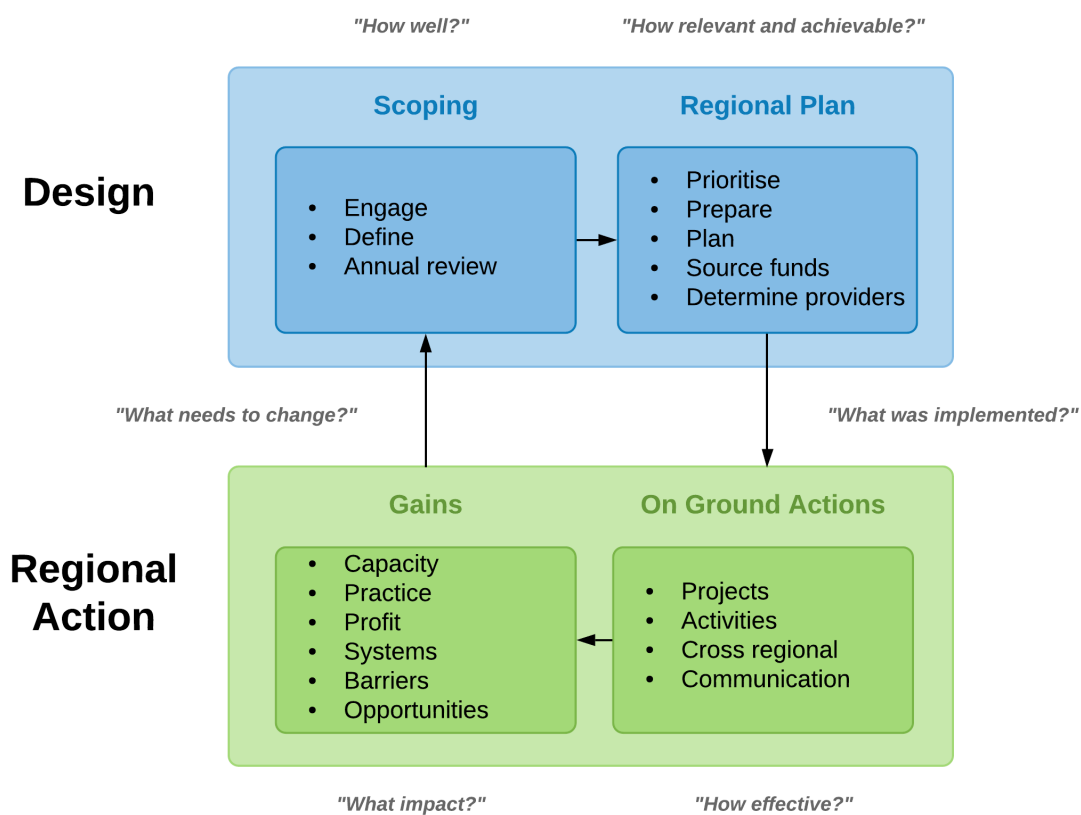
The combined impact of this strategy is a net increase in annual funding of \$741,311, from \$1,810,901 per year to \$2,552,212 per year.

Current	3 year	Annual
Total	\$5,432,704	\$1,810,901
Operating	\$2,186,732	\$728,911
Salaries	\$3,245,973	\$1,081,991
Proposed	5 years	Annual
Total	\$12,761,061	\$2,552,212
Operating	\$3,000,000	\$600,000
Salaries	\$6,011,061	\$1,202,212
Innovation fund	\$3,750,000	\$750,000

Performance Measures and Evaluation

Performance measures associated with extension are traditionally associated with the rate and level of awareness and adoption of specific technologies. Although this continues to be the endgame for extension in a general sense, the difference under this strategy is that the adoption targets are not pre-determined and Vegetable RDOs are working in the tri-roles of: facilitating stakeholder collaboration and design processes (and their annual review), brokering delivery of some projects/activities by other providers and directly participating in key projects designed to bring about improved practice change and associated benefits. These different roles need to be captured in the Monitoring and Evaluation Framework.

The following diagram highlights the circular nature of the design process, the importance of engaging the vegetable community at each stage and the need to capture the impacts along the way.



Monitoring and evaluation then, needs to occur at two levels: (1) the design process; and (2) the delivery and practice change levels. A Monitoring and Evaluation Plan for the Strategy has been developed. Relevant performance measures for the two levels are summarised below.

D1 – Design level

- The extent to which key stakeholders are engaged in and shape the design and delivery stages.
- The extent to which stakeholders are satisfied with their level of engagement and influence over priority setting.
- The extent to which the regional groups feel understood and supported by Hort Innovation within the available resourcing limits.
- The extent to which annual reviews are undertaken and their impact on modifying current projects or initiating new ones.

D2 – Delivery level

- The extent to which non-Hort Innovation resources (funds and/or staff) and expertise are provided to address issues and opportunities developed in the design phase.
- The extent to which Hort Innovation Funds are accessible and accessed and used towards priority projects.

- The extent to which cross-regional projects impact on the region and its priorities.
- The quality of monitoring and evaluation of projects and activities implemented through the design process.
- The extent of engagement with relevant growers and other stakeholders in project activities.
- The impact of activities on the understanding, skills, motivation and actions of relevant growers and stakeholders.
- The resulting practice change, impacts and benefits arising from the delivery of projects and activities implemented as a result of the design process.
- The extent to which identified issues/opportunities have been addressed and benefits resulting from the interventions.

Given an increased reliance on the closer linkage with the Vegetable Communication project, other performance indicators include:

- The extent to which regional stakeholders believe that they are informed about research and technology.
- The extent to which the Communication project explicitly supports priority regional projects.

Given that there is an increased emphasis on national linkages, collaboration and coordination for cross-regional issues and opportunities, further performance measures would include:

- The extent to which RDOs feel connected to the national context and other vegetable RDOs.
- The extent to which the national extension group represents the industry and draws from the regional plans into a cohesive national plan for cross-regional support.
- The extent to which cross-regional projects are developed out of the regional design process, funded and rolled out in relevant regions.

Given that there is a need and emphasis for RDOs to be supported by training and mentoring to be able to fulfil this more strategic role, relevant performance measures would include:

- The type and level of training and mentoring provided and undertaken by RDOs (and other regional stakeholders) – and the impact on understanding, confidence and use of relevant skills and approaches.
- The rate of satisfaction and turnover of RDOs and the reasons for this.