



The Northern Food Bowl

Virginia and Northern Adelaide Horticultural Plains



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A Framework for Future Action

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A Framework for Future Action

Prepared for: City of Playford
District Council of Mallala
Adelaide Mount Lofty Ranges NRM Board
Department of Primary Industries and Regions SA (PIRSA)
Barossa Regional Development Australia
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EXECUTIVE SUMMARY

This Virginia and Northern Adelaide Plains Horticulture *Framework for Future Action* will assist to secure the long-term sustainability of the horticulture industry in this region. The Virginia and Northern Adelaide Plains (VNAP) is an area worth preserving and protecting for the production of food. It is provisioned with accommodating climate, soils and access to water, and it is in close proximity to labour and easily accessible by freight movements. Furthermore, its proximity to urban areas places it in a commanding position as it can ensure:

- produce freshness
- short supply chains (reduced food miles)
- traceability
- reduced cost to the purchaser

South Australian's strongly value local produce that is fresh, that is grown by people who have compelling stories and rich cultural backgrounds, and that is grown close to our cities and towns.

The area provides a significant economic contribution to the State of South Australia. As a point of comparison:

- it generates double the gross value of production (at the farm gate) than tourists spend on Kangaroo Island
- it brings revenue equivalent to the Barossa horticultural industry
- it brings revenue equivalent to South Australia's wild-catch fishing industry.

Despite this, the contribution of this region has, arguably, long been undervalued. There is less regional branding compared to other highly productive regions (such as McLaren Vale or Kangaroo Island), and insufficient levels of infrastructure supply to support ongoing investments. Poor land management and illegal development, inappropriate waste disposal, unsightliness of many greenhouse structures, poor stormwater management and increased development pressures (as a result of urban expansion) create further challenges. There is no single, powerful industry voice that continually puts the regional horticultural industry on the SA food map. Food security is now a major issue facing the sustainability of our communities and cities.

This framework acknowledges that one of the biggest threats to the longevity of a sustainable horticulture industry is the perceived pressure for urban development – and therefore sets a clear vision for the region as the **Food Bowl of the North**. Minimising further land fragmentation and dwellings on productive land, the delivery of increased and **effective industry training**, creative **marketing and branding**, and the creation and support of a powerful and **unified industry voice** are the key priorities identified in the framework.

It is timely that this *Framework for Future Action* clearly articulates a way forward, informing all future land use, policy, funding and infrastructure initiatives in the region.

THE VISION

Adelaide's Premium Northern Food Bowl is one which produces high quality and fresh produce which is distributed to local, national and international markets. Its growers are collaborative and highly valued for their contribution to the South Australian horticultural industry. They are committed to best-practice and sustainable farming techniques, to the efficient use of water, and they are rewarded for their effort.

THE GOALS

1. Strong Representation with a Powerful and Unified Voice
2. A Smart and Informed Industry
3. Improved Agricultural Methods and Crop Type Selection
4. Improved Land and Waste Management
5. Robust and Economically Viable Industry That Is a Strong Contributor to the Economy
6. Clustering Of Soil and Hydroponic Greenhouses
7. Adaptable and Resilient To Climate Change
8. Protected From Biosecurity Threats
9. Wise Use of Natural Water Resources
10. An Improved Industry Profile That Tells the Story, the Culture and the History of the Growers
11. Infrastructure That Can Respond To Existing and Future Need
12. Secured and Equitably Distributed Supply of Recycled Water
13. A Clear and Consistent Vision for Horticulture Supported by Planning Policy
14. Horticultural Uses Appropriately Located and Zoned
15. Planning Policy that Strongly Discourages Further Land Division (except in Greenhouse Cluster Precincts) or Housing on Productive Land
16. Planning Policy that Supports Industry Requirements for a Diverse Range of Allotment Sizes
17. Planning Policy that Supports Allied Horticultural Land Uses
18. Improved Building Compliance and Design Guidance for Greenhouses
19. Shared Responsibility for Managing Interface
20. Collaborative and Partnership Arrangements that Facilitate a Sustainable and Robust Horticultural Industry

SUMMARY OF KEY ACTIONS

See Sections 6 for a comprehensive list of all actions.

Action: Review representative organisations within the region to better clarify their role, status and effectiveness of their representation (through consultation with growers).

Champion: Regional Development Australia (Barossa) through the VNAP Horticulture Framework Steering Committee) **Background:** Refer State of Play Report, Section 7.2

Action: Strengthen existing (or create new) representative bodies to ensure meaningful, accessible and effective representation that is supported by members.

Champion: VNAP Steering Committee **Background:** Refer State of Play Report, Section 7

Action: Develop a capacity building plan for the region that identifies key knowledge gaps, appropriate modes of learning suitable for the target participants, priorities, resources and responsibilities for delivery.

Champion: VNAP Representative Body **Background:** Refer State of Play Report, Section 7 & 9

Action: Promote improved horticultural production methods through supporting and profiling champion growers in the VNAP.

Champion: VNAP Representative Body **Background:** Refer State of Play Report, Section 7

Action: Support the development of a local packing and storage facility.

Champion: VNAP Representative Body **Background:** Refer State of Play Report, Section 8

Action: Restrict land division within the VNAP horticulture areas (excluding townships and greenhouse precincts – see below) to horticulture uses and allied horticultural uses. The focus of the horticultural land is on horticultural uses and not dwellings.

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 8

Action: Create 'greenhouse precincts' (with the first priority being a precinct near Virginia) and allow limited subdivision to create a minimum size of 2.5 hectare allotments in areas already displaying significant fragmentation of land parcels, proximity to centres and likelihood of efficiency gains. No new dwellings are allowed in these greenhouse allotments.

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 8

Action: Develop a strong branding and marketing arm for VNAP production.

Champion: Regional Development Australia (Barossa) collaboratively with Playford and Mallala Councils **Background:** Refer State of Play Report, Section 7.4

Action: Amend Development Plan policy to support greenhouse precincts

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 8

Action: Develop a climate change adaptation toolkit that focuses on improving growers understanding of the risks of climate change, and improves their capacity to adapt

Champion: AMLRNRM Board **Background:** Refer State of Play Report, Section 3.5

Action: Collaborate with industry to develop improved waste management guidelines

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 7

Action: Initiate an onsite stormwater, capture and treatment and reuse on pilot project for green-house sites

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 4.3

Action: Provide a clear and strong vision for the VNAP horticultural area (Northern Adelaide's Food Bowl) that is consistent between Council Development Plans

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 8

Action: Provide greater guidance regarding protective structures (such as greenhouses) with respect to appropriate siting, appearance and management of stormwater within Development Plan policy

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 8

Action: Ensure future Development Plan policy requires a shared responsibility for managing the interface between horticultural, primary production and residential land uses

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 8

Action: Support land uses that complement the horticultural industry, including produce packing sheds, heating and cooling, water storage, transport associated with horticultural uses, shedding, storage, processing facilities associated with horticulture, education and training facilities, and demonstration farms. These land uses must demonstrate that they adhere to the guiding principles (see page 50)

Champion: Playford and Mallala Councils **Background:** Refer State of Play Report, Section 8

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A FRAMEWORK FOR FUTURE ACTION



1 WHO SHOULD USE THIS FRAMEWORK?

1.1 Growers, Grower Advisors, Grower Representatives, Grower Suppliers

This framework has been prepared first and foremost for the horticultural industry and their representatives within the Virginia and Northern Adelaide Plains. It builds upon feedback from industry representatives, other national and international research and previous investigations (in particular the *State of Play Report*, 2013; the 2012 *Parliamentary Select Committee on Sustainable Farming Practices*; and the *Development of Horticulture Industry on the Adelaide Plains – A Blue Print 2030*; 2007).

It will assist the industry by:

- Defining the nature and scope of the existing individual horticultural industries – their profiles, their diversity, their economic and social contributions
- Informing industry (providing greater clarity) about future government directions
- Creating greater confidence amongst growers and investors in the future of the horticultural industry
- Informing industry about investment decisions relating to their operations
- Informing industry about location decisions regarding future operations
- Providing industry with a range of ideas about the ways in which they can improve profitability and sustainability

1.2 Policy Makers and Government Agencies

Secondary users of the framework are policy makers in both State and Local tiers of Government as well as economic development authorities. It will assist agencies in:

- Boosting the profile of the region through providing a sound framework for action
- Improving planning and development policies
- Understanding key areas where government can help to facilitate development
- Future information provision and training
- State of Play reporting requirements

- Conceiving and developing future projects
- Prioritising future projects
- Assigning responsibilities for the initiation of projects
- Informing future research and policy direction
- Funding applications for future projects

2 HOW SHOULD THIS FRAMEWORK BE USED?

2.1 Vision – Section 4

Section 4: Vision describes the overall vision for the industry and provides a clear direction about the strengths of the industry, and where it seeks to be heading.

This vision should be used to inform all future discussions, negotiations and funding submissions for future building, land and infrastructure investment, policy decisions, marketing, branding and representation.

2.2 Goals – Section 5

Section 5: Goals lists a series of goals, which address:

- Industry Representation
- Capacity Building
- Sustainable Farm Management
- Economic Returns and Contributions
- Natural Resource Management
- Branding, Marketing, Profiling
- Gas, Electricity, Water and Telecommunications Infrastructure
- Land Use Planning Policy
- Collaboration

2.3 Actions – Sections 5 and 6

Sections 5 and 6 outline actions that support the goals of Adelaide's Premier Northern Food Bowl. In Section 6, all of the actions are listed, numbered, given a priority and assigned to a relevant agency and/or stakeholder to assist in a coordinated and timely framework for implementation.

3 BACKGROUND TO THE FRAMEWORK

3.1 Who Prepared the Framework and Who Had Input?

Consultant Team

This framework has been prepared by a consultant team, led by Jensen Planning + Design and in collaboration with Econsearch, Scholefield Robinson, Avante Mapping Solutions, and Wallbridge & Gilbert. The team was commissioned by the City of Playford, the District Council of Mallala, the Adelaide Mount Lofty Ranges NRM Board, Hortex, the Department of Primary Industries and Regions SA (PIRSA) and the Barossa Regional Development Authority (RDA).

Steering Committee and Reference Group

The team has worked closely with a Steering Committee consisting of representatives from each group listed above. Members of the consultant team and Steering Committee were also informed by a Reference Group consisting of a number of industry representatives from a range of horticultural agencies and businesses within the region.

Industry Stakeholders

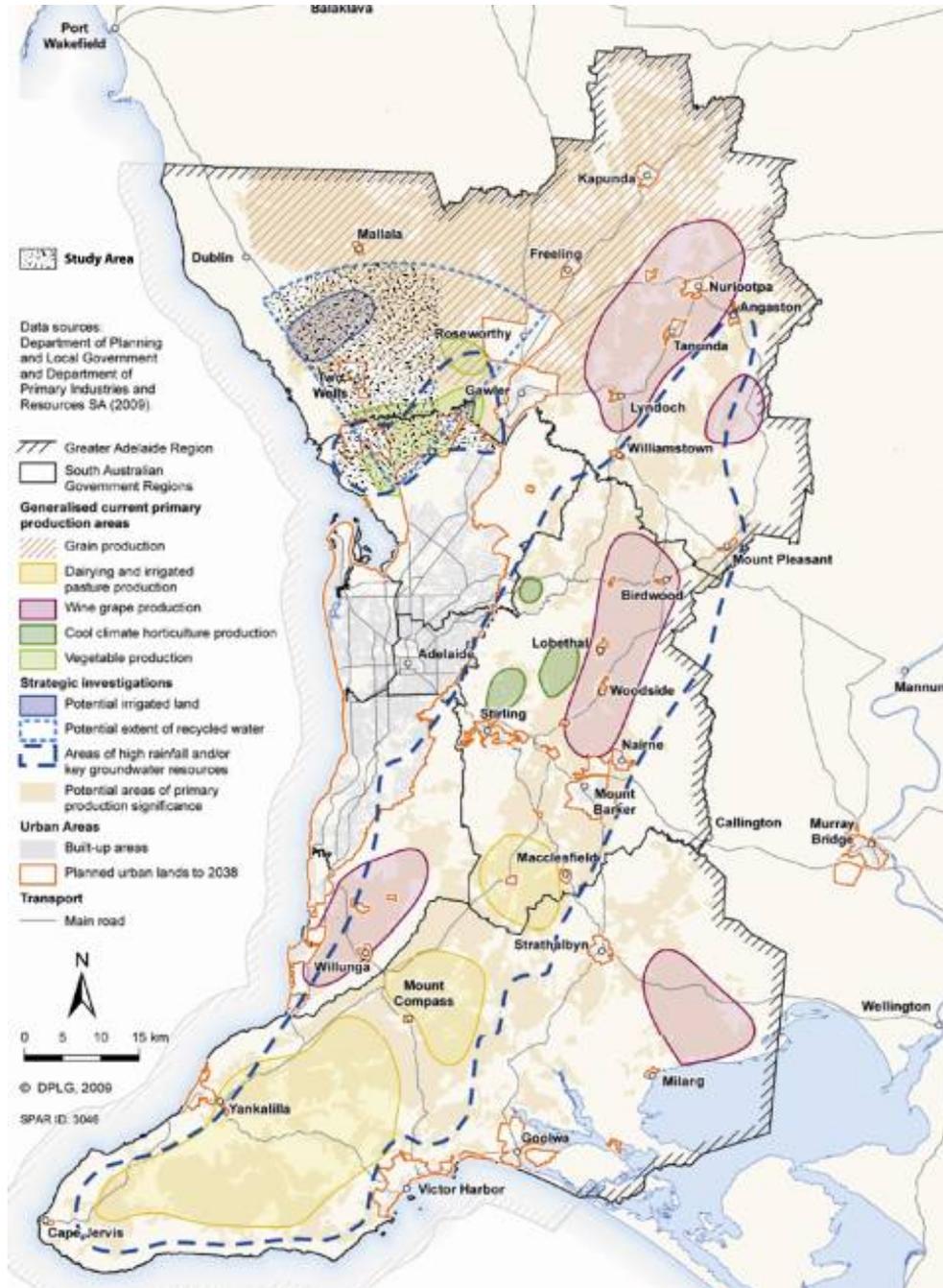
A series of one-on-one interviews with local growers, industry suppliers and other stakeholders were held during the research period for this Framework. A draft of this Framework was put on public consultation and during this period, feedback was received through a range of measures including an online and written survey, written submissions, and attendance at the Big BBQ held for growers at the Virginia Institute.

The research findings and the list of growers and agencies consulted are documented in the *State of Play Report (See Section 3.3)*

3.2 Where Does The Virginia And Northern Adelaide Plains Framework Apply?

The Study Area is located north of Adelaide, to the west of Gawler and Roseworthy, south of Mallala and north of Elizabeth. It is traversed by the Gawler River. It encompasses a variety of agricultural and horticultural land uses as well as a number of rural townships and residential growth areas. The Study Area is shown on the map to follow, which has been adapted from the 30-Year Plan for Greater Adelaide.

Areas nominated by the South Australian Government for future residential growth (and shown in the 30-Year Plan) have been excluded from the Study Area. Within the Study Area, horticulture is largely concentrated north and south of the Gawler River. The areas around Virginia, Angle Vale and, more recently, Two Wells, collectively form the largest concentration of greenhouse vegetable production in Australia. The areas north of the River are more predominantly used for rain-fed field crop productions.



The Study Area (map adapted from 30-Year Plan for Greater Adelaide – D11 (SA Government 2010, p. 89)

As shown in the Study Area Map, significant residential expansion will occur within and close to the study area. Notable growth areas include Buckland Park (an additional 33 000 people), Virginia, east of the Northern Expressway around Macdonald Park, Angle Vale and Two Wells.

There is sufficient supply of residential land in these areas into the future to ensure that the nominated horticultural areas are protected from further future urban encroachment.

The study area is in a strong position geographically – it has easy access to inner-metropolitan Adelaide, arterial roads and freeways for interstate distribution, suitable climate and soil, existing access to water (which may potentially be improved), access to local consumer markets and local employment. For these reasons, there is strong justification for a comprehensive framework that both protects and nurtures horticulture in this peri-urban region.

3.3 The Background Research to this Framework – The State of Play Report

The State of Play Report is the precursor to this Framework. Its outcomes and findings have informed the observations and recommendations of this Framework. The State of Play Report:

- Summarises the baseline findings related to the profile and characteristics of the horticultural industry in the Virginia and Northern Adelaide Plains Region
- Informs future considerations of a range of land use planning, economic, marketing and environmental management approaches that aim to facilitate a vibrant and sustainable industry within the Study Area

It is broken down into the following baseline information:

- Economic
- Natural Resources
- Physical Infrastructure
- Land Use
- Policy Context
- Industry Character
- Land Use Planning Approaches
- Industry Requirements

A copy of the State of Play report is available online at www.playford.sa.gov.au and www.mallala.sa.gov.au

PLANNING AHEAD: VISION, GOALS & ACTIONS

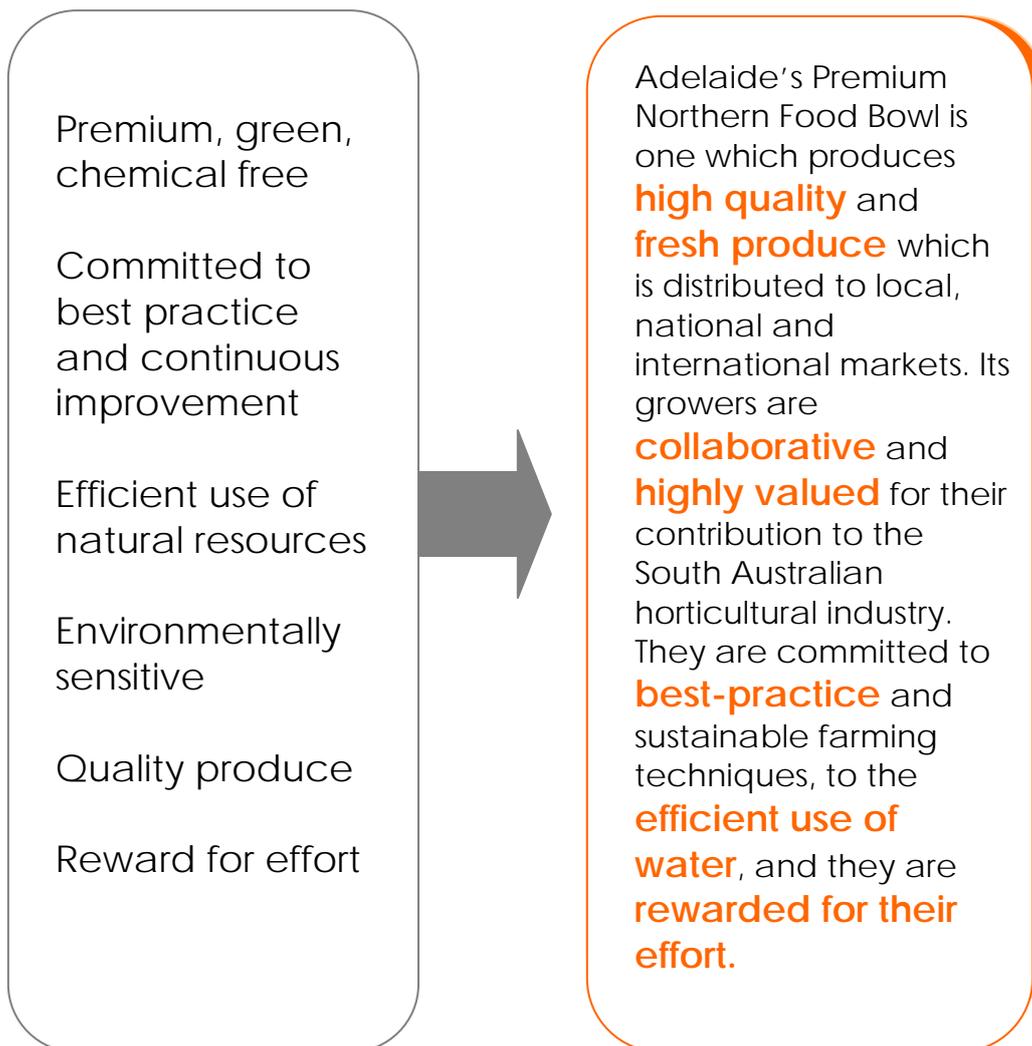
This section details the overarching vision for the horticulture industry in the Virginia and Northern Adelaide Plains (Section 4). The Vision is supported by Goals and Actions (Section 5 + 6). The Goals and Actions are listed under the following headings:

- Industry Representation
- Information And Training
- Sustainable Land Management
- Economic Returns and Contributions
- Natural Resource Management
- Branding, Marketing and Profiling
- Infrastructure
- Land Use Planning and Building Policy
- Collaboration

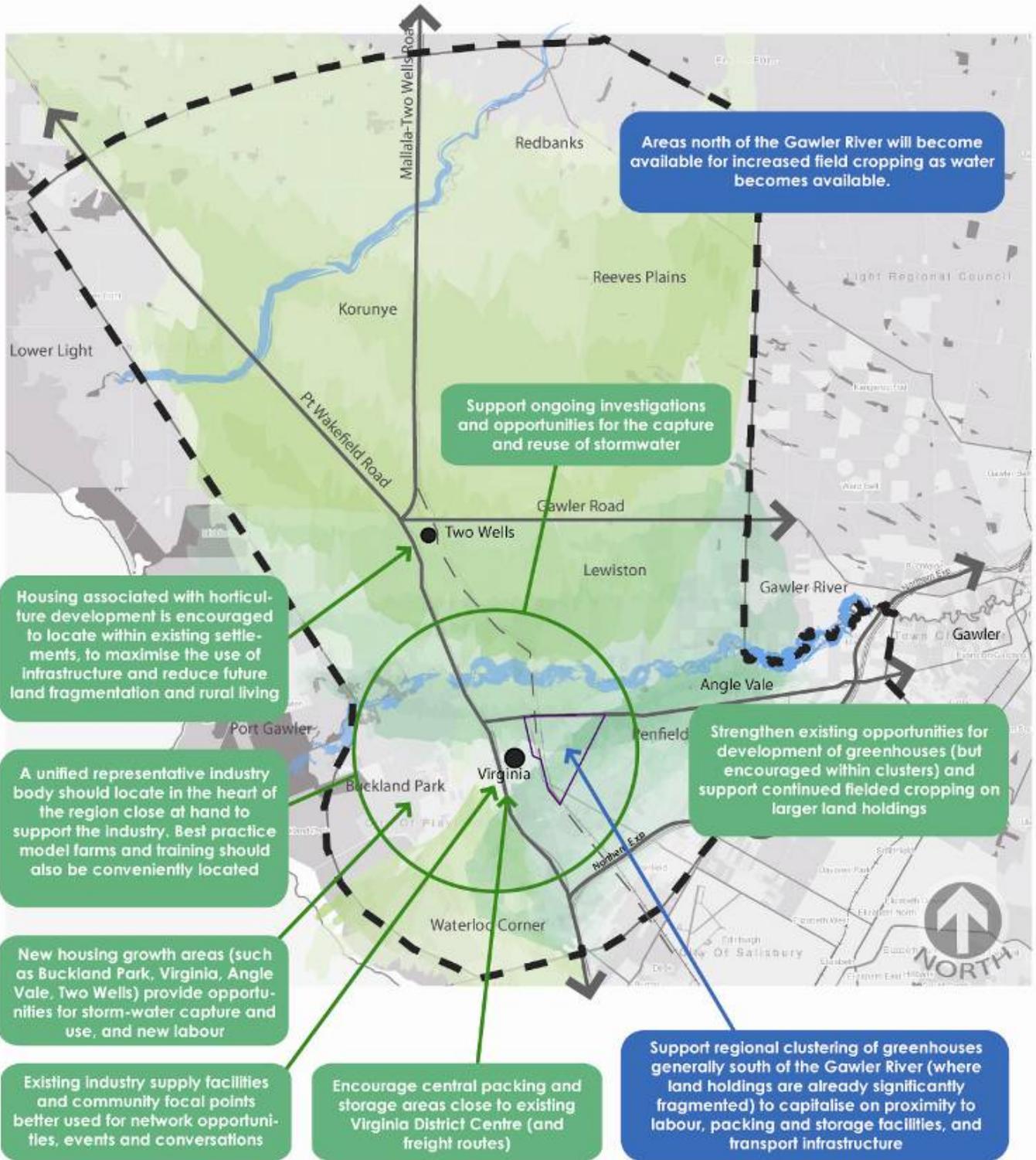
A more detailed discussion of the background behind all of the actions is found in the *State of Play Report, 2013*.

4 A VISION FOR ADELAIDE'S NORTHERN FOOD BOWL

Adelaide's Premium Northern Food Bowl is green and fresh, and distributes its produce to local, national and international markets. Its growers are committed to quality produce, best-practice and sustainable farming techniques, efficient use of water, and they are rewarded for their effort.



A Vision for Adelaide's Northern Food Bowl



5 GOALS AND ACTIONS

5.1 Industry Representation

GOOD NEWS STORY

The New Barossa Grape and Wine Association (BGWA)

The Barossa Grape & Wine Association (BGWA) is a highly respected association that strongly promotes the Barossa Brand. Its website is an example of the level of organisation and professionalism that comes with a strong revenue base from members.

The association serves as the guardian for communicating the Barossa Vision through highlighting its people and places. This involves collaborative regional branding, promoting self sustainability of the industry and region, and nurturing of the integrity and reputation of the Barossa.

Its success in part has been :

“to bring the key principal working groups closer than ever before to form a true and united industry association for the first time”

The united common goal is for collaborative regional branding, self sustainability of the industry and the region, and the integrity and reputation of the Barossa.

How was it formed?

This association was borne out of a grass roots grower’s movement to strengthen the unified voice of growers and their ability to effectively contribute to the growth of their industry. They invited the winemakers group to join them in a united cause and the Barossa Grape and Wine Association Incorporated was formed.

Membership Base

Membership base is close to 800 strong. Members are diverse – with growers that grow less than 10 hectares to over 1000 hectares and winemakers producing wine from 10 tonnes to 15,000 tonnes.

Funding and Management Structure

Its funding is sourced through the Barossa Wine Industry Fund established under the Primary Industry Funding Schemes Act 1998.

The permitted uses of the fund are as described in the Barossa Wine Industry Management Plan prepared by the BGWA. Contributions to the fund are established based on crop tonnage (variable for crop types). There is a Board of Management comprising the Chair, 4 winegrowers and 4 winemakers.

Strategic Partnerships Initiative

Strategic partnerships have been formed with like minded companies that will provide mutually beneficial value. These partnerships are dynamic in nature, providing ample opportunities for vital communications and potential business growth.

Goal: Strong Representation with a Powerful and Unified Voice

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 7 Industry Character and Trends](#)

The horticultural community within the VNAP area consists of a complex and diverse group of growers ranging from very small, low technology greenhouses growing crops such as tomatoes and eggplants, cucumbers and capsicums, and field crops such as potatoes and carrots, through to large, multi-million dollar hydroponic greenhouses.

Not only is there a broad spectrum of technology adopted by these growers but there is also a wide diversity of cultural backgrounds including Cambodian, Vietnamese, Italian and Greek.

The complexity of differing horticultural types and growers means that singular, effective representation is challenging.

In 1978 PIRSA established an office and supported the industries in the Virginia area with an experienced extension officer as well as backup from researchers, plant pathologists, entomologists and soils/nutrition specialists from the nearby Northfield Research Centre. The office closed in 1996 when the Virginia Horticulture Centre (VHC) was established as a more permanent resource providing a broader range of services to the industry.

In 2013, there are a number of organisations that play a role in representing and supporting the VNAP growers in some way, including:

Grow SA, a not-for-profit organisation, which started as the Virginia Horticultural Centre and provides a range of services spread across a number of horticultural regions of the State. Grow SA provides political lobbying for the region, training and developed a vision for the Adelaide Plains as outlined in its Blueprint 2030. Grow SA is the South Australian representative of AusVeg, the national vegetable industry body.

Hortex, is also a not-for-profit organisation, formed within the last 3 years, which seeks to support and promote sustainable production systems in South Australia (with a focus on the Northern Adelaide Plains). The organisation currently supports a number of soil based glasshouse growers (the 'Virginia Best' group) as well as a number of high-tech hydroponic growers within the VNAP region.

City of Playford, DC of Mallala, Barossa RDA and other local government bodies play a supporting role to the industry such as funding, waste management and stormwater management. They also have roles in facilitating economic development and in land-use planning.

Adelaide Mount Lofty Ranges NRM Board oversees broader NRM matters like water resources, soil management, weed and exotic disease incursions and supports local projects to ensure management of the environment is undertaken at an acceptable level.

PIRSA, DEWNR, SA Water, DPTI and other state agencies provide technical support and infrastructure to the region and the industry with land management, water management, supply of treated waste water, produce marketing, horticultural statistics (for example the PIRSA 'industry scorecard'), etc.

Vietnamese and Cambodian Grower Associations are present in the VNAP region and provide support to their members in the growing of crops and other related matters.

Suppliers providing chemicals, fertilisers and other materials for growers are arguably some of the most effective disseminators of production and industry information to growers.

However, currently there is no single group that fully represents, nurtures, coordinates and lobbies on behalf of all diverse interests within the VNAP horticultural industry. The lack of this group has a broad range of impacts on the region. For instance, this presents a significant challenge to the future of the industry as coordinated action, vision and momentum is often critical to securing new infrastructure and support from Federal, State and Local Government. Likewise, a lack of coordination can limit buying power and access to existing and potential new buyers.

An effective and highly representative body is required. Generally speaking, a new representative body may be formed by:

- Interested stakeholders creating a new organisation
- An existing stakeholder organisation that adapts itself to increase its ability to effectively represent the diverse array of growers and stakeholders
- Government authorities taking a lead role to charge a new or existing group, assisting with formulating initial scope, goals and framework – this could possibly transition to a private sector body after establishment

Actions

1. Conduct a review of representative organisations within the region to better clarify their role, status and effectiveness of their representation (through consultation with growers).
2. Strengthen existing (or create a new) representative body to ensure meaningful, accessible and effective representation that is supported by members. This body will need to be resourced, and work closely with local government, PIRSA and the NRM Board, to ensure that their role and efforts are coordinated and consistent with other state, local and regional goals, policies and projects.

3. The creation of a sustainable and robust representative body should consider the following questions:
 - What should the make up of the representative body look like?
 - What is the best way to engage growers and organisations to be actively involved in the representative body?
 - What does “balanced” representation mean and what does it look like?
 - How can appropriately broad representation be ensured?
 - Where do resources come from?
 - What should be the structure?
 - What structures can support the technical, policy, legal, operational aspects of the body's roles?
 - What structures can support (and not stifle) innovation?
 - What are the core roles of the group?
 - Are there functions that should not be part of the group's activities?
 - To what extent does the representative group need to support different horticultural industries or sectors differently?
 - How should local and state government be involved in the representative body?
 - What are the advantages and disadvantages of different levels of government involvement?
 - What types of arrangements may allow for both an initial government role, and then a possible transition to a private sector leadership?

5.2 Capacity Building

GOOD NEWS STORY

Existing opportunities

There are a number of existing training opportunities available to farmers within the VNAP region and local 'champions' that should be recognised for the work they do and supported for the work they wish to do.

These include (to name a few):

Grow SA have run a number of courses directly targeted to meet horticulturalists needs.

Tom Lioulios, a good capsicum grower, wants to share his growing knowledge with smaller growers. He made a submission to the Select Committee on Sustainable Farming Practices at the Virginia hearing in October 2012. He sees the industry needing to produce higher yields, better quality and safer produce in a cost effective way. Tom has a teaching philosophy of showing people what to do rather than just telling them. He is interested to develop a working greenhouse on his property that growers can come and spend an afternoon with him showing them what he is doing throughout the life cycle of the crop.

Hortex recently conducted the "Step Up Soil Condition" project with funding from the Federal "Caring for Our Country" program. This project was designed to expose growers to the benefits and ways to improve soil health and increase soil carbon levels. This project has been very successful and we have seen the benefits on the property of Phuong Vo.

Trevor Linke of BizWize is working with a group of medium size hydroponic growers to share information and improve their production and business skills. Trevor is also working with a small group of Vietnamese and Cambodian growers to collectively market their high quality produce under the banner "Virginia Best". The expectation is that by marketing the growers and their high quality produce that better prices will be achieved more consistently.

Hieu Ly, a second generation hydroponic tomato grower at Virginia, was awarded a Nuffield Australia Farming Scholarship in 2010 to investigate "Converting soil grown production methods to Hydroponics in protected cropping." He visited greenhouse production regions in Holland, France, United Kingdom and Japan. His report (Project No 1014) is available on the Nuffield Australia website.

The **AMLNRNRM Board** conducts irrigation and soil field days to show growers the benefits of good soil and water management as well as the environmental benefits.

Goal: A Smart and Informed Industry

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 2.4 and 2.5 Economic and Social Baseline](#)

There are diverse grower profiles within the VNAP region exhibiting a range of understandings about the various aspects of the industry. Resilience and adaptation measures are also highly variable amongst the growers.

A number of common knowledge gaps have been identified and include:

- climate change
- drainage and potential for water reuse
- packing
- marketing
- soil management (for long-term sustainability)
- compliance
- drought proofing

While a number of training options are currently available to growers within the region (as canvassed in the preceding 'good news' story), it is clear that there is still more capacity for farmers to refine their practices and continue to improve their operations. Changes in practice requires behavioural change, as well as improved knowledge and understanding.

Key to this is the ability for organisations to effectively engage with the various industry growers and provide training that is sensitive to their current levels of understanding, language barriers and working limitations.

Actions

1. **Develop an overall capacity building plan for the region that identifies key knowledge gaps, appropriate modes of learning suitable for the target participants, priorities, resources and responsibilities for delivery.**
2. **Support a Centre for Excellence and Demonstration Farms.**
3. **A key capacity building priority is training about the 'ins and outs' of getting produce to market and techniques for securing a higher return, including the need to understand:**
 - sorting
 - packing
 - quality control
 - marketing
 - collaborations
 - relationship building (with buyers and markets), and
 - long-term business strategy (rather than 'best price for today')

4. A second key capacity building priority is about business management including the need to understand:
 - business structure
 - regulation
 - taxation, and
 - employment/workplace requirements
5. A third key capacity building priority is about supporting grower adaptation to climate change, specifically considering :
 - crop types and crop management
 - integrated water management
 - managing heat wave events
 - managing pests and disease, and
 - production cycle cost projections
6. Assist growers to understand where assistance can be obtained to develop or manage new businesses.
7. Ensure that content and method of delivery not only builds knowledge but also creates and maintains relationships and collaborative opportunities.
8. Ensure that training is provided locally, and is interactive and relevant to the diversity of grower needs (with a focus on 'hands on' training rather than 'classroom' learning).
9. Develop a Purchaser's Toolkit that provides information to potential purchasers of horticultural business or property, and prior to the development of new crops. The toolkit could provide information such as:
 - realistic and verifiable costs and returns for growing the proposed crop
 - discount factors (such as 1-year-in-10 chance of crop failure)
 - predicted climate change implications
 - interest rate implications
 - importance of financial safeguards
 - importance of market 'homework' (for example, understanding of what is happening with the proposed crop elsewhere in the VNAP, interstate and overseas)
 - new technology relevant to the crop
10. The toolkit should be relevant to diverse cultures, languages, cropping systems, and existing level of knowledge / competency in the region (and may need to be developed in a number of differing ways and in collaboration with the various representative bodies).
11. Promote the training opportunities through a variety of communication methods such as through representative bodies, information in local horticultural suppliers, on pin up boards in local shops, cafes and post offices, etc.
12. Build management capability, such as business strategy, leading staff, leadership and team building.

5.3 Sustainable Land Management

GOOD NEWS STORY

Virginia Greenhouse Growers Reducing Chemical Use and Converting to “Beneficial Insects”

Horticulturalists have always struggled with how to deal with pests. Introduced weeds in particular often provide an ideal breeding site for pests such as western flower thrips, which are common on many horticultural farms. The thrip transmits Tomato Spotted Wilt Virus (TWSV), a serious disease that causes major horticultural crop losses.

Currently, the control of thrips and other pest insects relies heavily on insecticides as well as the use of herbicides to manage the weeds that provide a refuge for them. However, increasingly there is a strong demand for chemical free “green” produce.

“Beneficial Insects” – which encourage the good bugs to breed up in sufficient numbers to feed on the bad bug - have great potential to manage insects and reduce reliance on chemicals. This method has been successfully trialed with capsicum growers in Virginia and now includes a number of growers who are well into their first growing season and very happy with the program.

Outcomes from the AMLRNRM supported trials so far show that pests are well controlled using about 5 different bio-control agents for thrips, mites, aphids and whitefly.

The good bugs (or bio-control agents) are being supplied by two businesses who visit every month or two to stay in touch with the program and discuss strategies and any issues with growers. This collaborative approach has been important to ensure that biological control is supported with an initial pesticide program to keep pests very low until the plants are flowering and can support these key predators.

What are growers saying? The most common comment is probably the relief growers experience from not spraying in terms of time saved and personal health. They also tend to remark on the greatly improved plant vigour once the bio-control agents are released and pesticides are largely withheld.



GOOD NEWS STORY

FREE, EASY TO USE SOFTWARE TO HELP GROWERS AND REPRESENTATIVE BODIES DETERMINE WHAT LAND MANAGEMENT INNOVATION'S ARE MOST USEFUL AND ACCEPTABLE

It is often difficult to determine what kind of improved land management practices are going to bring the greatest benefits, or will be most accepted and used by growers.

One tool to assist in the adoption of agricultural innovations has been recently developed by a group based at CSIRO in Adelaide. The approach is based around ADOPT (Adoption and Diffusion Outcome Prediction Tool), an MS Excel-based tool that evaluates and predicts the likely level of adoption and diffusion of specific agricultural innovations with a particular target population in mind.

The tool uses expertise from multiple disciplines to make the knowledge surrounding the adoption of innovations more available, understandable and applicable to researchers, extension agents and research managers.

ADOPT is structured around four categories of influences on adoption:

- characteristics of the innovation
- characteristics of the target population
- relative advantage of using the innovation
- learnings of the relative advantage of the innovation.

ADOPT users respond to questions about each of these categories. Going through this process helps users build their knowledge about how the categories relate to each other, and how they influence how easily the land management innovation can be adopted or used more broadly in the region.

ADOPT is particularly useful for people and organisations with an interest in the adoption of agricultural innovations such as:

- agricultural R&D organisations
- government departments
- catchment management boards, NRM groups
- agriculture extension officers

Given the low level of adoption of innovative practices in the VNAP, this approach would be extremely useful for grower representative bodies and the NRM Board, who could provide the impetus for more effective uptake of new ideas and technology.

The great news is that the software is freely available from CSIRO and training is available from the developers.

Goal: Improved Agricultural Methods and Crop Type Selection

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 2.4 and 2.5 Economic and Social Baseline and Section 3 Natural Resource Baseline Data.](#)

There are simple things that could be done better to improve performance and long-term sustainability of horticultural practices within the VNAP Region.

For example, Hortex have initiated a program to improve soil organic matter levels by using composted animal manures or green waste material. This program has demonstrated benefits to soil structure, water and nutrient retention in the root zone, and better plant growth and production.

The use of beneficial insects in greenhouses is increasing (as per the *Good News Story*). It is interesting that the highly technical hydroponic growers are strong advocates of the use of beneficial insects as part of their integrated pest management (IPM) programs in their greenhouses. They are not necessarily aiming for production systems that are chemical free but rather a system that uses all of the pest control tools available, including beneficial insects and "soft" chemicals that are compatible with beneficial insects. Fungal and bacterial plant diseases cannot be controlled by beneficial organisms but breeding of new varieties with some resistance to major diseases has made control easier and chemical use less frequent.

The bottom line is that innovative and best-practice agricultural methods can result in lower costs to producers, a reduced risk of a build up of resistance in pests and diseases to some chemical control methods, and a lower level of chemical residues in produce. This equates to better business.

Actions

1. Promote improved horticultural production methods through supporting and profiling champion growers in the VNAP.
2. Develop specific programs covering the wide range of grower skills in the VNAP related to soil management and pest and disease control. The focus should be on the smaller greenhouse growers.
3. Initiate medium term extensions to training programs to ensure that growers are aware of the best practices and understand how to implement them on their properties.
4. Given the low level of adoption of innovative practices in the VNAP, consider using the ADOPT software to assist in the decision making process about what sorts of land management innovations are most appropriate to the VNAP growers. This software would be extremely useful for grower representative bodies, the NRM Board (etc.) and provide the impetus for more effective uptake of new ideas and technology.

Goal: Improved Land and Waste Management

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 4.2 Physical Infrastructure Baseline Data](#).

There is generally poor landscape management within the VNAP (particularly south of the Gawler River and associated with low-tech greenhouses) and noted issues of unsightliness, illegal waste disposal and stormwater damage. Disposal of waste has been identified time and time again by many growers as one of the key challenges they face, particularly since legislative changes limit on site burning. In South Australia, there is traditionally a reliance on rules and regulations to promote management of land. This presents significant challenge to the relevant authorities within the VNAP region (including the Councils and EPA) due to resourcing limitations and the question of responsibility (with the SA regulations generally requiring that owners take responsibility for land management, but many farms are managed through leases, etc). The high number of lessees arguably also limits the care and concern for the proper management of land.

There has been a number of community programs in the VNAP to encourage and assist growers in the disposal of used chemical containers, plastic irrigation lines, cladding from greenhouses and plant residues after the crop has finished. Grow SA and the City of Playford have supported these programs. Feedback received from growers indicated that these programs did not meet the grower expectations as they wanted a program that would resolve their waste management issues for them rather than assist them to solve the waste problems for themselves. This suggests that greater education regarding the shared responsibility of these issues is needed.

Voluntary improvements

Involvement in 'aesthetic clean up' programs is often voluntary. They try to appeal to a landholders' altruistic desire or appeal to their self-interest to maintain the land in good condition and tend to rely on self regulation, which land managers tend to find less invasive than coercion. However, programs are unlikely to be widely adopted if they rely on altruism but bestow few direct short term financial benefits on primary producers, or where the benefits are difficult to quantify.

Codes of Practice

One example of a voluntary incentive is an industry code of practice (CoP). This is a collection of voluntary rules or procedures drafted by an industry to communicate to its members how to apply best management practices. Compliance with a CoP is voluntary. Benefits of adherence to a CoP may include more efficient use of farm resources, reduction of waste, recognition by the community and purchasers as an environmentally sustainable industry, and improved aesthetics. In Europe, farmers are encouraged to adopt landscape management practices and environmentally friendly farming procedures that comply with Good Agricultural and Environmental

Condition CoPs – in short, farmers are given financial incentives such as rate rebates to keep their land in better aesthetic and environmental condition.

Economic Incentives

As well as voluntary incentives and CoPs, the last decade has seen several economic incentive schemes provided by the State and Commonwealth Governments to South Australian landholders in order to promote land management activities with environmental benefits. There has been a move away from making fixed payments for specific actions (such as fencing), towards competitive market based incentive systems such as auctions for the provision of different services.

Biodiversity benefits have been the focus of many of the incentive programs conducted in South Australia and interstate (e.g. Bushbids, Caring for our Country). Other programs have focused on soil quality (soil conservation tenders on the Eyre Peninsula), water quality (River Tender, Victoria) and carbon capture (River Murray Forestry, SA). Improved aesthetics are a co-benefit of many of the programs listed above, although they are not directly targeted.

It would be possible to create an economic incentive scheme for provision of aesthetic benefits. A requirement for this would be a clear definition of 'aesthetic benefits' (which is unlikely to currently exist). Work may also have to be done to justify expenditure of Government funds on improving aesthetic values of private agricultural properties. Payments to landholders for the provision of environmental benefits are justifiable because environmental benefits are primarily a public good. Whether this justification can be extended to aesthetic benefits may be a cause for some contention. While benefits of improving the aesthetic of an agricultural region are likely to be felt more diffusely, there is likely to be a significant component of private benefit owing to improved landscape aesthetics, such as improved capacity for regional branding and value adding, or increased tourism opportunities. This merits more exploration.

Actions

1. **Relevant authorities should partner to consider the issues of land management and methods for encouraging improved management, endeavouring to develop a culture of grower responsibility for waste management.**
2. **Provide incentives to growers to better manage waste and achieve improved levels of compliance to land and waste management.**
3. **Infrastructure or systems for the disposal of recyclable and other waste from horticultural properties are located where growers will willingly use them and take responsibility for disposal of the waste they generate.**
4. **Support and promote research and trials into innovative waste management reduction (such as using recyclable twine).**

5.4 Economic Returns And Contributions

Goal: Robust and Economically Viable Industry that is a Strong Contributor to the Economy

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 2 and Section 7 Industry Character and Trends](#).

Growers seek certainty for their industry's future so that they can invest in its land resource and products with confidence. Economic certainty is also required for future infrastructure and resource investment.

A viable and sustainable horticulture industry should significantly contribute to the local, regional and state economy through the generation of employment and income earning opportunities, the demand for inputs and services from associated businesses along the supply chain and the creation of investment opportunities for both industry participants and potential investors currently outside the industry.

Currently, economic contributions are strong (as a point of comparison, the contribution of the VNAP horticultural industry (including viticulture) to the VNAP region is very similar to the contribution of the viticulture industry in the Barossa and the wild-catch fishing industry to the state, and industry gross value of production (at the farm gate) is double the total annual expenditure by tourists on Kangaroo Island). However, the industry has poor representation, a poor profile and brand, significant infrastructure limitations, poor levels of collaboration, and is perceived to be located in an area earmarked for future urban growth. Therefore it is economically fragile.

Specific measures (in addition to all other actions described in this Framework) to strengthen the industry's economic viability and growth are required.

Actions

1. Through a representative body, develop a clear picture of cost of production and contribution to the economy so that it can be used in seeking funding opportunities (in collaboration with RDA).
2. Develop improved market price and consistency through collaborating on the timing of production across a number of growers (this may be through the operations of the representative body).
3. Encourage the private sector to co-invest in critical infrastructure provision.
4. Partner with local residential developers to encourage the support for localised food purchase (including opportunities for marketing residential growth within and near the VNAP as offering 'unmatched' access to fresh, clean and green produce).
5. Support the development of additional local packing, storage and distribution facilities, and promote their use amongst growers through incentives.

6. Explore whether funding that was provided for packaging equipment a number of years ago has resulted in the purchase of equipment that may still be in the region and could potentially be accessed by growers.
7. Investigate value adding opportunities for horticulture in the region and seek support for implementation. This could be increasing the value of the product or could be manufactured to transform products (e.g. bottling, canning, drying, etc).
8. Conduct a study to determine the type and amount of food waste in the region, and investigate commercial opportunities to use that food waste and seek support for implementation (e.g. for soup, chips, etc).
9. Conduct a study to map the supply chain and distribution in the region and evaluate and implement improvements in efficiency.

Goal: Clustering of Soil and Hydroponic Greenhouses

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 7.6 Industry Character and Trends](#).

The benefits of clustering are widely known in the western economy, particularly in the European Union and the United States of America. The benefits of clustering are detailed extensively and are high on economic development agendas. Benefits relate very clearly to collaborations, marketing, branding, economic infrastructure provision, improved chains of production, research and training – all identified within this Framework as key components of a sustainable VNAP horticultural region.

The European Commission's Innovation Policy states that:

"Clusters are powerful engines of economic development and drivers of innovation in the European Union. They provide a fertile business environment for companies, especially SMEs, to collaborate with research institutions, suppliers, customers and competitors located in the same geographical area".

The US EDA Mission states that clustering should:

"Lead the federal economic development agenda by promoting innovation and competitiveness, preparing American regions for growth and success in the worldwide economy".

From the research, it would seem essential that horticultural activities are clustered within the VNAP regional – particularly clustering of greenhouses. The benefits include:

- an improved recognition of horticulture as a core wealth creator in the region and improved chances of attracting investment
- discouraging further fragmentation of large allotments that currently provide opportunities for field cropping for greenhouses within the region (outside of the cluster) because there are more advantages to the grower to locate within the cluster than elsewhere
- capitalising on existing land fragmentation and suitably small allotments close to the Virginia Township
- business productivity, as companies operating in a cluster operate more efficiently by taking better advantage of economies of scale and shared resources
- innovation and knowledge transfer, as part of a cluster, companies can better source new knowledge and pursue innovation opportunities through stronger links with institutions, service providers and educational establishments
- market awareness, as clustering allows companies to serve existing markets better and to respond to future market changes, through the establishment of closer links with local clients and markets
- companies also act cooperatively to source market data.

Actions

1. Engage further with the industry to assess interest in clustering. If there is interest, a cluster engagement strategy should be initiated in conjunction with supporting associations and government organisations.
2. Investigate funding to initialise the strategy and appoint a cluster facilitator if needed. This should include the Premium Food and Wine regional innovation clusters program through PIRSA.
3. The 'facilitator' of a regional cluster is likely to be Council or RDA with 'support' from State and Federal Governments.
4. Initiate regional cluster development to ensure that regional infrastructure and industry institutions are well aligned (Local Government/RDA).
5. Industry associations (e.g. Grow SA) to encourage development of commercial clusters.

5.5 Natural Resource Management

Goal: Adaptable and Resilient to Climate Change

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 3.5 Natural Resource Baseline](#)

A changing climate could have the following resource implications within the VNAP:

- drought and reduced availability of water
- increases in the incidence of heatwave, hail or flooding
- reduced soil moisture due to reduced water run-off and increased evaporation
- temperature variation and increased temperatures
- a change in presence, frequency and severity of pest and disease outbreaks

Understandably, some implications may have less significance than others. For example, warmer temperatures may allow for earlier planting of some crops or for multiple crops in a season (for instance, lettuces, French bean, tomato, etc).

If these changes occur, producers of annual crops will be better placed than vine or tree crop growers to respond to these changes in climate. The most serious impacts that growers will have to face are related to:

- faster ripening crops
- shorter growth periods for individual crops (due to higher temperatures)
- an increase in demand for water for crops
- higher water use by crops because of higher temperatures
- the need for reliable irrigation supplies
- increased energy costs associated with pumping of water, fertilisers, heating greenhouses, transport and storage of produce or disposal of waste.

In summary, although some horticultural crops are within more controlled environments than field crops (such as in greenhouses), they will still be affected by limitations in water supplies, increases in the incidence of heatwave, hail or flooding and increased energy costs associated with pumping of water, fertilisers, heating greenhouses, transport and storage of produce or disposal of waste.

Growers seek certainty for their industry's future so that they can invest in its land resource and products with confidence. Accordingly, it is important that state agencies engage with the industry to assist it to adapt to the implications of climate change. A current example of this in practice is the DEWNR project titled "Building Adaptive Capacity in Adelaide's Food Bowl". The project seeks to build capacity through assisting the horticultural industry in the VNAP respond to the risks and opportunities of climate change. It aims to engage with the horticultural industry and provide growers with information on the future impacts of climate change, and provide tools that will equip them to adapt to climate change.

Actions

1. Promote the benefits and learnings of taller greenhouse structures amongst growers as one way of adapting to climate change. Taller structures provide greater opportunity for air circulation and minimise risk of heat damage.
2. Develop a climate change adaptation toolkit that focuses on improving growers understanding of the risks of climate change, and improves their capacity to adapt.

Goal: Protected from Biosecurity Threats

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 3.4 Natural Resource Baseline](#)

Plant biosecurity is about managing our land and agricultural livelihood. Sharing biosecurity responsibility (with government) demands collaboration. In a regional sense that means collaboration within and across enterprises, governments and the community. Coordinated efforts to address biosecurity are more likely to be effective than individual efforts, but every effective step requires that responsible and aware individuals are involved.

There are many threats to biosecurity in the region. These include biological pests, diseases and weeds yet to arrive (exotic) and those already present, contaminated inputs and/or those with or limited availability, poor practices related to hygiene, waste removal, lack of human and financial resources, and limited surveillance .

Actions

1. That state agencies commit to working with the industry to improve the management of imports of plant material into the VNAP that pose a potential biosecurity risk to the local industries.
2. That improved agricultural methods and suited crop types that reduce the biosecurity risk are promoted through industry representative bodies, state agencies and champion growers.
3. Elevate awareness of the issue of biosecurity amongst farmers and visitors to the region.
4. Industry collaboration for improved waste management guidelines.

Goal: Wise Use of Natural Water Resources

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 3 Natural Resource Baseline](#)

There is a significant reliance on groundwater, recycled wastewater and mains water, and in particular Bolivar recycled water. There are a number of opportunities for better use of water through the capture, storage and reuse on site, and through alternative use and pricing of the Bolivar recycled water. However, all options are extremely complex, costly, and require significant further investigation.

The management of rainwater run-off from many properties is poor, with examples of the water from the gutters between greenhouses being discharged onto the side of the road for someone else to manage. Good quality water is a valuable resource that should not be wasted in this way.

There are some good examples of methods of water collection and re-use from greenhouses using gutters and storing the water in the on-farm dam for mixing with the WRSV water for irrigation. If a grower has two (2) hectares of greenhouses, this could provide nine (9) million litres of water capture, assuming an average rainfall, which could be re-used (less evaporation losses). The summer season price for WRSV water is \$140/ML, which would mean that the 9MLs could save over \$1,000 per season (notwithstanding the capital costs for guttering, pipes and storage of the water). More so than monetary savings, onsite capture and reuse is a more sustainable method and will assist stormwater management within the VNAP.

There are also opportunities for improved soil management through training and better practice techniques (including leeching, crop rotation and use of organic soil conditioners, etc).

The Bolivar recycled water distribution system is at full capacity in peak season at 24,000ML (with 95% is being used throughout the VNAP). One issue relates to the "take or pay" clause in reclaimed water agreements which results in water being taken and not used (i.e. it is irrigated out even when it is not required so that growers avoid penalty costs). This results in water logging. Another issue is that the salinity of the reclaimed water may pose a risk to the productivity of some crops (particularly beans, carrots, onions and lettuce) without improved management practices.

Actions

1. Establish a collaborative pilot project to explore the use of captured stormwater, treatment and reuse on green-house sites. Ideally this should be located in proximity to the 'green-house clusters' to ensure potential for a collaborative approach and distribution of benefit amongst clustered greenhouses.

2. Promote careful management through training and best practice model farms of soils and irrigation practices to minimise potential impacts of salinity on some crops. These strategies may include improved:
 - irrigation scheduling
 - irrigation timing
 - irrigation methods
 - mulching of plants
 - irrigation of seedlings
 - maintenance of soil structure
3. Support ongoing research and investigations into resolving leaky wells, which has been identified as a significant problem for growers.
4. Promote and support improved management of soils through training and best practice model farms. Improved practices may include:
 - leeching
 - crop rotation
 - use of organic soil conditioners

5.6 Branding, Marketing, Profiling

GOOD NEWS STORY

The Barossa Wine and Grape Association successfully promote a wide range of Local Barossa Food Stories through its marketing and profiling activities. The benefits of telling the food story as part of the marketing, branding and profiling are numerous and well documented.

The Barossa Food story is a multi-faceted, continually evolving ode to seasonality and regionality.

"It tells of fruit ripened to perfection and vegetables bursting with real flavour. Of milk and cheese that taste of goodness and of poultry, pork and lamb that are fed well and nurtured with kindness. Of artisan food prepared with care and passion. And of time-honoured recipes passed down through six generations.

It is a story that weaves tradition and innovation into an edible, timeless tapestry.

Inspired by the Barossa's culinary pedigree, a fresh crop of talented and energetic food producers are on the scene with products as diverse as cheese, pastry, bread and olive oil. Now the Barossa shopping list has expanded further to include unpredictable offerings such as chocolate, coffee and tea"

Image and stories courtesy of BWGA

"YOUR CUSTOMERS LOVE A GOOD STORY – SO TELL ONE!"

The Steicke's beautiful 32 acre property has been in their family for fifty years. Just outside of Angaston, it is a traditional mixed farm, with 8 acres devoted to fruit orchards (the source of Gully Gardens dried fruit and natural confectionary).

Rick and Rosemary sold all their fruit to large companies for many years but in 2006, as market changes occurred, they began to produce their own dried fruits. That year, they opened the Farm Shop offering dried and fresh fruit. As their popularity increased, they added new lines, all produced on their Gully Gardens property.

The Steickes continue to source fruit from their own orchards, hand picked, hand cut, dried and packaged on site, maintaining a treasured Barossa tradition.



Goal: An Improved Industry Profile that Tells the Story, the Culture and the History of the Growers

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 7.4 Industry Character and Trends](#)

The VNAP has a low profile in the wider community and many consumers would not know where their fruit and vegetables are grown. The area is flat and un-vegetated, hot, dry and windy, and not well known. It lacks the “sophisticated” or “trendy” marketing image of more attractive well known regions such as McLaren Vale, the Adelaide Hills and the Barossa Valley.

There is no single body in the VNAP representing the diversity and full extent of the industry that can tackle improved profiling and marketing. The growers are also generally uncoordinated in these marketing approaches.

The positives are that the region is extremely accessible to metropolitan Adelaide and therefore is a natural contributor to the *locavore* movement - one often cited, but not universal, definition of “local” food is food grown within 100 miles of its point of purchase or consumption.

There is significant opportunity to promote a “green product” both to Australian consumers as well as overseas markets, especially China.

Telling the story behind the produce is essential. In order for the VNAP horticulture brand to survive and grow, it will require messaging and content that tells grower stories that will connect and draw in customers. Consumers want to know more than what products the business is selling, they want to know who grows them, where the growers come from, what business philosophy inspires them. This is a significant opportunity for the VNAP region.

Actions

1. **Build upon the strengths of the *SA Grown* brand but recognise that marketing needs to build upon the characteristics of the VNAP region (rather than the generic ‘SA’ brand). This may require development of a new, unique VNAP brand. It will require collective marketing involving a range of stakeholders involved in active promotion and branding of the region.**
2. **Consider alternatives for creating a brand ‘linked to place’ that builds upon the strengths and localism offered by the VNAP region.**
3. **Build a range of compelling stories that are attractive to the increasing numbers of food consumers who want to know more about where the products come from, the journey that the products have taken from the farm gate to the table, and that the growers themselves will directly benefit from the sale.**
4. **Use these stories in a range of promotional and branding activities – websites, print media, interviews, point of sale, in sales negotiations.**

5. Learn from successful marketing and profiling activities that have been built around other SA food cultures/landscapes such as:
 - Italians (Southern Vales – association with wine, pasta, tomatoes)
 - German (Hahndorf, Adelaide Hills, Barossa – Beerenberg Jam, wine, mettwurst)
 - Kangaroo Island (green, organic, etc.)
6. Promote growers' stories amongst growers – spread the word, help growers understand how to use their stories to their advantage.
7. Inform consumers about the local, fresh, "green" produce and the growers' stories – at the checkout and in the media.
8. Investigate industry funding opportunities (existing levy arrangements or PIFS scheme) to assist the resourcing of "collective" activities such as branding and marketing.
9. Increase market share through regional development strategies.

5.7 Gas, Electricity, Water and Telecommunications Infrastructure

Goal: Infrastructure That Can Respond to Existing and Future Need

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 4 Physical Infrastructure Baseline](#)

The electrical, gas and telecommunications services are provided on a demand basis (generally based on urban demands). Should a greater demand be required, a group must submit usage information to the service provider to determine the scope of upgrades required.

There are many examples where demand is not appropriately met. In some instances, growers have required additional gas or electricity, however generally they have been unsuccessful in their individual representations to infrastructure providers in getting additional infrastructure to support their operations. In other instances, a group of growers/advocates who collectively have presented a coordinated and justified case to infrastructure providers have had success in getting additional infrastructure.

Future demand for electricity, gas and telecommunications must be met if industry viability is to be guaranteed. A coordinated, collaborative and well justified case for further energy provision seems to be a prerequisite for a favourable outcome – and this will be assisted through the clustering of activities and reinforced by an improved profile for the region (as per previous discussion and recommended actions).

Actions

1. Identify future requirements based on anticipated increased number of growers in particular clusters.
2. Present well justified business cases to state agencies and infrastructure providers, highlighting the value of the VNAP region to the State economy, and the benefit of improved resource allocation and new infrastructure investment (such as expansion of recycled waste-water schemes).

Goal: Secured and Equitably Distributed Supply of Recycled Water

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 4.3 Physical Infrastructure Baseline](#)

Currently, the primary water source to the VNAP region is treated wastewater from Bolivar. At peak seasons (in the hot summer months), the capacity of the system cannot meet demand. Whilst there is also access to mains water, this supply is very expensive. There are currently also a number of stormwater harvesting and reuse schemes administered through regional Council initiatives but these schemes do not yet extend into the VNAP region. Individual property stormwater harvesting is also limited – although there is a lot of potential for onsite capture, storage of water can be challenging and is always expensive.

Demand for water is currently fragmented and the case for increased supply is not well justified in a coordinated manner that is representative of the wide and diverse interest group in the VNAP.

There is scope to increase the supply of water through extension of the Bolivar pipeline's capabilities, extending existing stormwater harvesting (either regional or on site) through the Gawler reuse scheme, or through a number of other regional schemes (at various stages of planning and implementation).

There is also scope to harvest stormwater from the urban growth planned for the townships and settlements in the region.

The key for supply is ensuring a strong business case by demonstrating the demand throughout the region; otherwise infrastructure is less likely to be extended.

Actions

1. **Secure an increased and consistent supply of recycled water is secured for the VNAP region. The roll out should be coordinated and integrated. The diverse range of grower should be able to equitably and efficiently access water over all cropping cycles.**
2. **Initiate a feasibility study that considers investment into additional pipelines and water storage (either through aquifer recharge or similar) for winter-generated recycled Bolivar water, to increase the availability of water for irrigation in summer.**
3. **By 2018, SA Water will take over the distribution of reclaimed water from WRSV to growers. This presents an opportunity to explore alternatives to the "take or pay" clause that is unpopular amongst some growers.**
4. **Continue to support further research and investigations into stormwater capture reuse and harvest associated with increasing urban development in the region, and ways in which this water could be used economically and equitably by growers.**

5.8 Land Use Planning And Building Policy

GOOD NEWS STORY

The interface between the VNAP and the surrounding urban areas is important to the long-term sustainability of the industry.

In British Columbia, rather than simply abutting primary production zones against residential, a model is used whereby both uses share responsibility for the interface. The farmers have a right to farm up to their boundary but are expected to maintain high quality management techniques to limit impacts of noise, spray drift and storm-water, while residential development transitions to lower densities at the edge with integrated buffers *within* the residential developments. This method is then complemented with widespread marketing and information that highlights both parties commitment to sharing the responsibility for managing the interface.

There are a range of tools used successfully in North America by planning departments to improve awareness and understanding of what it means to live close to a productive landscape. These include signage, property disclosure statements provided when purchasing, information packages and buffers.



"The property owner acknowledges that the lots are in close proximity to the Agricultural Land Reserve where some or all of the following impacts arising from agricultural practices may occur:

- noise from farm operations at various times of the day, including propane cannons and other devices used to deter wildlife
- farm smells and chemical spray
- aesthetic appearance of fields (unkempt fields, storage of materials, etc)
- light from greenhouses."

Goal: A Clear and Consistent Vision for Horticulture Supported by Planning Policy

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 6 Policy Context and Section 7 Land Use Planning Requirements](#)

Planning policy should provide guidance and clear direction about the future character, look, feel and function of an area. It is one tool (amongst many others) that assists to promote a desired character, to build industry and investment confidence in the future. Strong policy statements assist to secure finance, encourage long term planning and investment decisions, and direct non-horticultural land uses (such as housing, rural living, light industry) to more appropriate areas.

There is currently no clear statement about the desired future for the VNAP region. This desired future should relate firmly to the region being part of Adelaide's Food Bowl and support the future brand and longevity of the industry.

Currently, there is limited direction provided by either the District Council of Mallala or City of Playford within their Development Plans regarding the desired character sought within the VNAP horticultural area.

The benefits of an improved character statement not only will support the industry but may assist to limit property speculation. For example, there remains a strong perception amongst many growers that their land will one day become used for housing. They rely on land values reflecting this use for future economic gain. With no strong policy statement to the contrary, this perception is not unsurprising.

It is acknowledged that whilst the Development Plan plays only a small part in squashing the misconceptions and setting a clear vision for the future of the region, it is nonetheless important and should be supported through other complementary State Government policy, industry policies and marketing.

Actions

1. That the vision for the area be described through a strong Desired Character Statement that is replicated in each Development Plan and sets a vision of the area being "Adelaide's Northern Food Bowl".
2. The existing zoning of land outside of the VNAP core horticultural area (i.e. north of the District Council of Mallala's Horticultural Zone) be reviewed during a DPA process for its consistency with the vision and to ensure that, whilst allowing for other forms of productive uses in the short-to-medium term, does not limit the expansion of horticultural pursuits when water (and other infrastructure) becomes available.
3. Future Development Plan policy should be flexible and adaptable to respond to changes to the industry whilst ensuring that the industry is protected from unproductive or incompatible uses within the region.

Goal: Horticultural Uses Appropriately Located and Zoned

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 6 Policy Context and Section 7 Land Use Planning Requirements](#)

More could be done to direct uses with particular synergies and form to discreet areas within the VNAP – specifically greenhouse, glasshouse and hydroponic operations. These uses do not require large land parcels and, in the case of hydroponics, are not reliant upon soil conditions.

What they do require is infrastructure (including access to water, electricity and gas). Encouraging the clustering of these uses in appropriate areas may limit further fragmentation of larger allotments best suited for field crops and unprotected farming techniques, whilst providing a critical mass and demand for infrastructure.

The location of field crops is heavily dependent upon water availability and appropriately sized allotments to enable efficient land management. Planning policy should remain flexible so as not to prejudice future horticultural cropping further north of the river when a secure supply of water to this northern region becomes available into the future.

Actions

1. Establish one Zone (or Policy Area of the Primary Production Zone) to encompass the VNAP core horticultural area. This should be replicated within both the City of Playford and District Council of Mallala Development Plans. This area generally encompasses all existing Primary Production areas south of the Gawler River and all Horticulture Zones north of the Gawler River, *but should be further refined through a Development Plan Amendment (DPA) process.*
2. All forms of horticultural uses should be supported within the VNAP region.
3. Greenhouse clustering should be encouraged where there are industry benefits for doing so. The locations for greenhouse clustering will be explored during a DPA process and should be consistent with the guiding principles (see Action 69).
4. Formalise regional clustering of greenhouses around Virginia township in accordance with the guiding principles of clustering through a Development Plan Amendment (DPA). Other clustering opportunities may also exist.
5. Greenhouse clustering throughout Playford and Mallala councils should occur in a location that meets the guiding principles below:
 - already displays existing patterns of subdivided land and is not being primarily used for field crops (i.e. where land is already significantly subdivided)
 - is close to labour and living opportunities
 - has a greater chance of improved infrastructure provision
 - is in close proximity to transport (primarily freight)
 - is in close proximity to packing and sorting facilities
 - is in close proximity to a district centre

- does not result in smaller allotments with large (productive) allotments between.
- does not exacerbate risk of flood damage

Goal: Planning Policy that Strongly Discourages Further Land Division (except in Greenhouse Cluster Precincts) or Housing on Productive Land

For more detailed observations see Virginia and Northern Adelaide Plains State of Play Report, Section 7.6 Trends in Greenhouse Operations, Section 8.2.3 Allotment Size/Land Division

Observations

The 'food bowl' status of this region is strongly justified. The region exhibits special soil and climate characteristics pertinent to the vegetable industry, and that are well recognised and valued. The productivity potential of the region is heightened because of its vicinity to Adelaide consumers, vicinity to a strong employment base, and accessibility to services and infrastructure. Whilst it is recognised that further land division will create economic benefits for individual land owners, it does not benefit a vibrant and sustainable horticultural industry.

Land division will further fragment the existing allotments and increase the possibilities of non-horticultural development such as housing on the productive landscape. Once that land is built upon, it can not be returned to horticulture, and so the productive potential is lost. Fragmentation will also exacerbate the challenges already faced by field crop operators relating to farm management on productive units that are too small to farm efficiently.

Notwithstanding, areas that are already severely fragmented (and are too small and expensive to efficiently provide for field cropping) provide opportunities to support greenhouse development through clustering as discussed. Land division within these areas may be possible provided it is carefully managed and supports the development of a greenhouse cluster.

However, land division should not be allowed for the purpose of developing a house on a horticultural allotment. There is a plethora of diverse and affordable housing in the nearby (and future) townships of Virginia, Two Wells, Buckland Park and Angle Vale – further housing outside of townships is not supported.

Actions

1. Land division should be non-complying – other than in the proposed new greenhouse cluster – so to limit further fragmentation of land holdings (particularly within the area south of the Gawler River and within the Mallala Horticulture Policy Area).
2. Land division for the purpose of residential development within the VNAP horticultural area is at odds with the future needs of the industry and should not be supported.

3. A greenhouse cluster should allow limited subdivision to 2.5 hectares. This is seen as a viable unit size for small-to-medium scale greenhouses that are likely to be attracted to the cluster. Smaller parcels of land may be achieved for greenhouses through leasing arrangements.
4. There are currently restrictions governing the amount of time a land parcel can be leased for before Development Approval is required. In order to provide more flexibility and opportunities for small greenhouse growers, explore how leasing arrangements of land for the purpose of greenhouses may enable the lesser to extend the lease period for a longer length of time and therefore give the lessee greater certainty.
5. There should be no dwellings in the greenhouse clusters.
6. There should be no dwellings (urban development or rural living) within the VNAP region other than already earmarked by the 30-Year Plan. This should be made explicitly clear by Development Plan policy. The 30-Year Plan provides for an adequate supply of housing opportunities to cater for demand. Once land is removed from productive use to residential purposes, it is highly unlikely that it will return to productive uses in future.

Goal: Planning Policy that Supports Industry Requirements for a Diverse Range of Allotment Sizes

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 7.6 Trends in Greenhouse Operations, Section 8.2.3 Allotment Size/Land Division and Section 5 Land Use Baseline](#)

A “one size fits all” approach to allotment sizes does not reflect the highly diverse nature of the differing horticultural pursuits. Over time, technology, farm management, knowledge, investors, markets, productivity rates and resources will change. Policy must be flexible to accommodate and facilitate changing industry requirements. The recommended approach therefore is to not stipulate a “one size fits all” minimum allotment size.

However, specifying a minimum allotment size as a tool for controlling land use activities is currently used by several councils. Policy provisions range from minimum allotment sizes of 4 ha (in the Rural Zone in Gawler) to 8 ha (in the Horticulture Policy Area in Mallala) to 33 ha (in Primary Industry Zone in Light) through to 40 ha (in the General Farming zone in Mallala).

Actions

1. Policy should not specify uniform or minimum allotment sizes in the VNAP region (apart from in the greenhouse cluster precincts where a minimum of 2.5 minimum ha is recommended).

Goal: Planning Policy That Supports Allied Horticultural Land Uses

Observations

For more detailed observations see *Virginia and Northern Adelaide Plains State of Play Report, Section 8.2.5 Value Adding Activities, Section 5 Land Use Baseline*

There is often pressure within the VNAP region for the development of alternative or allied land uses on productive land. Common land uses include the parking of trucks. Other future potential allied land uses that the industry may pursue include:

- demonstration farms
- centres for excellence/training facilities
- small – medium scale processing facilities (juices, chips, sauces, etc.)
- more office facilities associated with horticultural uses
- heating and cooling
- water storage
- transport associated with horticultural uses
- storage facilities
- packing and storage facilities

Some of these uses are not currently envisaged by planning policy within the relevant Development Plans and/or are overly restrictive.

Guiding Principles for type and location of allied horticultural land uses

When considering the suitability of alternative uses for the horticultural area, the following criteria should be considered:

- it should support the vision for the VNAP region
- it should support and add value or be necessary for ongoing functioning of horticultural pursuits
- it should provide legitimate opportunities to grow the industry
- it should not cause adverse impacts such as noise or pollutants on nearby residents or other commercial, industrial or rural land uses
- it should not jeopardise the vision for the VNAP region and the use of the land for horticulture in the future
- it should be located in close proximity to the allied horticultural pursuit
- it should be adequately serviced by infrastructure
- it should have convenient access to labour (for example, for an office use or large processing facility).

When considering the suitability of alternative and/or allied land uses, above all else, consideration must be given to the implications on ***horticulture*** as this is the intended use of the region.

Actions

1. Through planning policy, enable and support the development of allied and value-adding horticultural use that meet the following guiding principles:
 - it should support the vision for the VNAP region
 - it should support and add value or be necessary for ongoing functioning of horticultural pursuits
 - it should provide legitimate opportunities to grow the industry
 - it should not cause adverse impacts such as noise or pollutants on nearby residents or other commercial, industrial or rural land uses
 - it should not jeopardise the vision for the VNAP region and the use of the land for horticulture in the future
 - it should be located in close proximity to the allied horticultural pursuit
 - it should be adequately serviced by infrastructure
 - it should have convenient access to labour (for example, for an office use or large processing facility).

Allied and value adding horticultural uses include:

 - offices (associated with the management of the day-to-day onsite operations of a horticultural use)
 - packing sheds and small-to-medium scale processing facilities (ensuring that the activity supports the local horticultural uses and utilises at least part local produce)
 - educational establishments (associated with horticultural focus such as a Centre for Excellence or demonstration farm)
 - heating and cooling
 - water storage
2. Through planning policy, tolerate the controlled use of horticultural land for the parking of trucks (Class 5 or less), provided that the use of the land in this way is associated with horticulture activity on the site, and is not located in a rural living or residential zone.
3. Uses such as horse-keeping and other animal keeping must be well managed so to not compromise future land productivity or capability for horticultural pursuits.
4. Ensure envisaged uses in the VNAP area are protected as a 'right' and do not require unreasonable consultation or procedural requirements.

Goal: Improved Building Compliance and Design Guidance for Greenhouses

Observations

Many structures within the VNAP horticultural area are constructed without required Council consent and without due regard to engineering, access and stormwater management standards. This has created issues for the area with respect to flooding, general stormwater management and unsightliness. To date, there are no reported incidences of injury or property damage due to poor construction techniques but there are frictions noted that are caused by plastics from greenhouses / shadehouses pulling away from their supporting structures and creating a nuisance to adjoining property owners.

There is a need for greater assistance within the industry to understand the requirements for seeking appropriate Council consents for structures to be built to support horticultural pursuits. Likewise, a streamlined process for assessment may be required to further support the industry pursuits.

Actions

1. Provide greater guidance regarding greenhouses with respect to appropriate siting, appearance and management of stormwater within Development Plan policy.
2. Initiate a joint task-force between the City of Playford, District Council of Mallala and Department of Planning, Transport and Infrastructure to consider the issues relevant to building compliance within the VNAP horticultural area.
3. Lobby for additional clarification regarding the application of the Building Code of Australia with respect to the assessment of structures that provide protection to horticulture and their appropriate classification.
4. Establish a baseline for levels of acceptability for greenhouse building compliance within the VNAP area.
5. Build relationships with property owners to inform them of compliance requirements for horticulture structures. Work with them collaboratively to ensure that structures on every site appropriately manage stormwater, provide safe access and are structurally sufficient.
6. Improve information available to the industry regarding building compliance and publish in a number of languages (including the development of a Growers Toolkit that provides information regarding gaining approvals and abiding to regulations). This information should be easily available within the VNAP region – in key horticultural suppliers (such as Muir and Sons), in the local post office or general store. Council should be proactive in distributing the information within the community, rather than only providing it when an application is before them.
7. The joint task-force should consider appropriate methods for encouraging compliance such as providing an amnesty on illegal building works – provided that growers seek approval in a timely manner.

Goal: Shared Responsibility for Managing Interface

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 8.2.4 Interface Management](#).

There are inconsistencies between Development Plans relevant to the VNAP horticultural area regarding the approach to managing the interface between a horticultural use and other uses (specifically, residential land uses).

Experiences in British Columbia, Canada have shown that a thriving peri-urban horticultural area is a result of a collaborative effort between the industry and the communities that adjoin these horticultural / agricultural uses. This is referred to as a 'shared responsibility' and has been established in Canada through planning processes as well as marketing and community information.

This approach requires the industry to commit to improving its ongoing management of activities to limit, where practicable, the impact of their activity on nearby residential uses (such as noise, lighting, spray drift, hours of operation, etc). Conversely, the adjoining residential areas are designed with vegetative buffers and larger, 'lifestyle' allotments at the interface of the two uses.

In addition to the residential interface, it is acknowledged that horticultural uses currently interface, and will increasingly interface, with other agricultural uses – particularly if land north of Lewiston becomes available for horticulture due to increased water supply. One of the main issues regarding this interface is the impact of spray drift. Planning policy is a blunt tool for managing an issue such as this but can still provide some guidance for support by a collaborative approach between adjoining growers/farmers and their respective representative bodies.

Actions

1. Ensure future Development Plan policy requires a shared responsibility for managing the interface between *horticultural* and *residential land uses* rather than relying on the industry to provide buffers and limit activities in close proximity to residential development.
2. Support Development Plan policy that encourages a shared responsibility for managing the interface between *horticulture* and other *agricultural uses*, supported by a collaborative approach between adjoining growers/farmers and their respective representative bodies.
3. Similarly, the industry should be informed of the need for a shared approach to managing interface issues, and that as part of this, the industry should commit to a culture of continuous improvement of horticultural activities – specifically within close proximity to sensitive land uses.

4. Publish information (in several languages) for distribution throughout the nearby VNAP communities that describes the vision for the industry, the reasons why there is a strong desire to support the industry and what this means for residents and businesses. It should describe that there needs to be a shared approach to managing interface issues, and that some tolerance is required by residents choosing to live in a horticultural region.

5.9 Collaboration

GOOD NEWS STORY

“Virginia’s Best”

VIRGINIA BEST is a collective of highly skilled soil based vegetable growers farming in the VNAP Region. It was formed through the assistance of Hortex and partnerships formed with local growers committed to quality and their industry.

The growers appreciate the benefits of a collaborative approach. Their experience is that by working collectively – sharing ideas, supporting each other, adopting best practice and implementing high levels of quality control – they can offer “buyers” of their produce a superior product.

They are collectively committed to working in a way to produce the highest quality vegetables they can. This means they can provide buyers with the ability to source fresh “in season” superior tasting produce, and also buy larger volumes of excellent quality produce sorted into premium lines.

In the case of commercial buyers they offer the opportunity to develop a strong, professional and mutually beneficial relationship with an expanding group of the best “produce growers” in Virginia and South Australia.

Meet the growers:

Sen Thac – Sen began twenty years ago when he established his farm on some very tough soil. He has learnt a great deal from the constant challenges that his soil creates, but it does produce some truly exceptional tasting capsicums and cucumbers under his experienced hand. Sen believes in growers helping each other and is now supported by his highly motivated son Vyras. In recent years Sen has been involved in various training programs and has a Diploma of Horticulture. Sen and Vyras operate a medium scale glasshouse operation on soil and only grow high quality produce for the top end markets.



Vyras Thac - Vyras has rejoined the family farm full time and is committed to the farm’s future through horticultural training, innovative thinking and hard work. He has set himself the task of helping his father Sen to conquer their challenging soil, improve their production infrastructure and achieve the longer term goals of presence in the market that his father has cherished for 20 years. He is researching all technical options that can make their business more productive and profitable in its output of top quality produce for discerning markets. This includes close observation and travel to international farming regions of excellence.



Phoung Vo – Phoung is a highly experienced and skilful grower. He specialises in capsicums and eggplants. Over recent years has put a lot of emphasis on soil and plant management with outstanding successes. The improvement of his soil with compost and natural fertilisers has allowed a big reduction in synthetic fertilisers and an increase in plant spacing, with overall improved soil and plant health and higher yields of quality fruit. His outstanding results have seen his farm become a benchmark for other growers and industry observers and his produce is highly sought after. Phoung is a highly skilled farmer and has a Diploma of Horticulture.



Van Nguyen – Van has farmed in Virginia for over 20 years. He has grown premium tomatoes (“old style”) for the eastern state markets almost since he began. He also grows capsicums or cucumbers to provide some crop rotations to assist soil health. He minimises chemical use (fertilisers and pesticides) by only applying them when required. He stresses that the quality is the main thing and good growers know this, but consumers rarely get the chance to see what they are missing. His produce is in high demand especially his “old style tomatoes” which have an amazing taste. Van has a Diploma of Horticulture and is committed to growing his skills.



Giang Tu – Giang came to Australia around 20 years ago and has steadily built up his glasshouse operation from around 16 originally to nearly 100 now. Giang specializes in capsicums and cucumbers and puts a lot of emphasis on improving his soil with compost and reducing chemical inputs based on soil test results. He has watched these changes make a big difference to plant health and reduce disease levels, with savings on fertilisers enabled by healthier, more efficient plant roots. Giang has a Diploma of Horticulture and is committed to building business capacity and the quality of his produce. Giang is a committed grower with a strong understanding and ability to produce superior produce.



Goal: Collaborative and Partnership Arrangements that Facilitate a Sustainable and Robust Horticultural Industry

Observations

For more detailed observations see [Virginia and Northern Adelaide Plains State of Play Report, Section 7 Industry Character and Trends](#)

In addition to legislative approaches to supporting the industry, there are a myriad of other opportunities that will support the horticultural industry. One important opportunity is educational and training partnership between government, non-government and private growers.

For example, in Milwaukee, USA, not-for-profit Growing Power Inc. establishes such partnerships and provides opportunities for struggling youths to gain training and employment within peri-urban agricultural regions – learning new life skills and providing accessible labour. Model and best practice horticultural farms that showcase best practice techniques can also be collaborative arrangements between growers, and supported by government or industry.

Commercial clustering is one type of collaboration whereby alliances between small groups of companies network to achieve aims they cannot realise alone. The cluster will have a strong commercial focus and the proponent of this cluster could be an individual company but more likely an industry association/organisation. Benefits include enabling growers to develop the critical mass to compete more effectively - through input supplies and servicing, technical aspects of production, logistics (transport, storage & distribution) and marketing.

Actions

1. Provide a Centre for Excellence that is based on research and industry collaboration and facilitates 'hands on' collaboration with local industry, research and development. This may be similar to a type of 'Waite' Centre for excellence campus in Virginia.
2. Engage the State (DFEEST, PIRSA, Skills for All programme) and Commonwealth (DEEWR, DIISR, DAFF, Skills Connect programme) Governments to develop a collaborative workforce plan for the industry addressing short and long-term opportunities in the industry and supply chains with a focus on local employment.
3. Explore education and training partnerships available through TAFE, local secondary schools and other training facilities that can promote knowledge and careers in VNAP horticulture industry amongst youths.
4. Establish a demonstration farm(s) and demonstration projects that can incorporate a range of activities relevant to the long-term sustainability of the industry including methods of stormwater capture, storage and reuses, alternative soil conditioning, advanced high-tech growing techniques and experimental crop types (specifically to fill niche markets locally, nationally and internationally).
5. Support the horticulture industry through collaborations with other local partners on community strengthening projects involving the growing and harvesting, preparing and consuming food. For example, collaborate with OPAL team (Playford Council) to implement the OPAL Food Plan.

IMPLEMENTATION: WHEN AND BY WHOM?



6 ACTION PRIORITIES & CHAMPIONS

6.1 Representation

	Action	Priority	Champion
1.	Conduct a review of representative organisations within the region to better clarify their role, status and effectiveness of their representation (through consultation with growers).	H	Regional Development Australia (Barossa) through the VNAP Horticulture Framework Steering Committee)
2.	Strengthen existing (or create a new) representative body to ensure meaningful, accessible and effective representation that is supported by members. This body will need to be resourced, and work closely with local government, PIRSA and the NRM Board, to ensure that their role and efforts are coordinated and consistent with other state, local and regional goals, policies and projects.	H	VNAP Steering Committee
3.	<p>The creation of a sustainable and robust representative body should consider the following questions:</p> <ul style="list-style-type: none"> ▪ What should the make up of the representative body look like? ▪ What is the best way to engage growers and organisations to be actively involved in the representative body? ▪ What does “balanced” representation mean and what does it look like? ▪ How can appropriately broad representation be ensured? ▪ Where do resources come from? ▪ What should be the structure? ▪ What structures can support the technical, policy, legal, operational aspects of the body's roles? ▪ What structures can support (and not stifle) innovation? ▪ What are the core roles of the group? ▪ Are there functions that should not be part of the group's activities? ▪ To what extent does the representative group need to support different horticultural industries or sectors differently? ▪ How should local and state government be involved in the representative body? ▪ What are the advantages and disadvantages of different levels of government involvement? ▪ What types of arrangements may allow for both an 	H	VNAP Steering Committee

	Action	Priority	Champion
	initial government role, and then a possible transition to a private sector leadership?		

6.2 Capacity Building

	Action	Priority	Champion
4.	Develop an overall capacity building plan for the region that identifies key knowledge gaps, appropriate modes of learning suitable for the target participants, priorities, resources and responsibilities for delivery.	H	VNAP Representative Body
5.	Assist growers to understand where assistance can be obtained to develop or manage new businesses.	H	VNAP Representative Body
6.	Support a Centre for Excellence and Demonstration Farms.	M/L	VNAP Representative Body
7.	A key capacity building priority is training about the 'ins and outs' of getting produce to market and techniques for securing a higher return, including the need to understand: <ul style="list-style-type: none"> ▪ sorting ▪ packing ▪ quality control ▪ marketing ▪ collaborations ▪ relationship building (with buyers and markets), and ▪ long-term business strategy (rather than 'best price for today') 	M/L	VNAP Representative Body
8.	A second key capacity building priority is about business management including the need to understand: <ul style="list-style-type: none"> ▪ business structure ▪ regulation ▪ taxation, and ▪ employment/workplace requirements 	M/L	VNAP Representative Body
9.	A third key capacity building priority is about supporting grower adaptation to climate change, specifically considering : <ul style="list-style-type: none"> ▪ crop types and crop management ▪ integrated water management ▪ managing heat wave events ▪ managing pests and disease, and ▪ production cycle cost projections 	M/L	VNAP Representative Body
10.	Ensure that content and method of delivery not only builds knowledge but also creates and maintains relationships and collaborative opportunities.	M/L	VNAP Representative Body

11.	Ensure that training is provided locally, and is interactive and relevant to the diversity of grower needs (with a focus on 'hands on' training rather than 'classroom' learning).	M/L	VNAP Representative Body
12.	Develop a Purchaser's Toolkit that provides information to potential purchasers of horticultural business or property, and prior to the development of new crops. The toolkit could provide information such as: <ul style="list-style-type: none"> ▪ realistic and verifiable costs and returns for growing the proposed crop ▪ discount factors (such as 1-year-in-10 chance of crop failure) ▪ predicted climate change implications ▪ interest rate implications ▪ importance of financial safeguards ▪ importance of market 'homework' (for example, understanding of what is happening with the proposed crop elsewhere in the VNAP, interstate and overseas) ▪ new technology relevant to the crop 	M/L	VNAP Representative Body
13.	The toolkit should be relevant to diverse cultures, languages, cropping systems, and existing level of knowledge / competency in the region (and may need to be developed in a number of differing ways and in collaboration with the various representative bodies).	M/L	VNAP Representative Body
14.	Promote the training opportunities through a variety of communication methods such as through representative bodies, information in local horticultural suppliers, on pin up boards in local shops, cafes and post offices, etc.	M/L	VNAP Representative Body
15.	Build management capability, such as business strategy, leading staff, leadership and team building.	M/L	VNAP Representative Body

6.3 Sustainable Land and Waste Management

	Action	Priority	Champion
16.	Promote improved horticultural production methods through supporting and profiling champion growers in the VNAP.	H	VNAP Representative Body
17.	Provide incentives to growers to better manage waste and achieve improved levels of compliance to land and waste management.	H	Playford, Mallala Councils
18.	Infrastructure or systems for the disposal of recyclable and other waste from horticultural properties are located where growers will willingly use them and take responsibility for disposal of the waste they generate.	M	Playford, Mallala Councils

	Action	Priority	Champion
19.	Develop specific programs covering the wide range of grower skills in the VNAP related to soil management and pest and disease control. The focus should be on the smaller greenhouse growers.	M/L	VNAP Representative Body
20.	Initiate medium term extensions to training programs to ensure that growers are aware of the best practices and understand how to implement them on their properties.	M/L	VNAP Representative Body
21.	Given the low level of adoption of innovative practices in the VNAP, consider using the ADOPT software to assist in the decision making process about what sorts of land management innovations are most appropriate to the VNAP growers. This software would be extremely useful for grower representative bodies, the NRM Board (etc.) and provide the impetus for more effective uptake of new ideas and technology.	M/L	AMLRNRM Board
22.	Support and promote research and trials into innovative waste management reduction (such as using recyclable twine).	M/L	AMLRNRM Board

6.4 Economic Returns and Contributions

	Action	Priority	Champion
23.	Through a representative body, develop a clear picture of cost of production and contribution to the economy so that it can be used in seeking funding opportunities (in collaboration with RDA).	H	Regional Development Australia (Barossa) Playford and Mallala Councils
24.	Partner with local residential developers to encourage the support for localised food purchase (including opportunities for marketing residential growth within and near the VNAP as offering 'unmatched' access to fresh, clean and green produce).	H	VNAP Representative Body Playford and Mallala Councils
25.	Support the development of additional local packing, storage and distribution facilities, and promote their use amongst growers through incentives.	H	VNAP Representative Body
26.	Develop improved market price and consistency through collaborating on the timing of production across a number of growers (this may be through the operations of the representative body).	M	VNAP Representative Body
27.	Encourage the private sector to co-invest in critical infrastructure provision.	M	VNAP Representative Body

	Action	Priority	Champion
28.	Explore whether funding that was provided for packaging equipment a number of years ago has resulted in the purchase of equipment that may still be in the region and could potentially be accessed by growers.	M	VNAP Representative Body
29.	Investigate value adding opportunities for horticulture in the region and seek support for implementation. This could be increasing the value of the product or could be manufactured to transform products (e.g. bottling, canning, drying, etc).	M	VNAP Representative Body
30.	Conduct a study to determine the type and amount of food waste in the region, and investigate commercial opportunities to use that food waste and seek support for implementation (e.g. for soup, chips, etc).	M	VNAP Representative Body Playford and Mallala Councils
31.	Conduct a study to map the supply chain and distribution in the region and evaluate and implement improvements in efficiency.	M	VNAP Representative Body
32.	Engage further with the industry to assess interest in clustering. If there is interest, a cluster engagement strategy should be initiated in conjunction with supporting associations and government organisations.	M	Regional Development Australia (Barossa) Playford and Mallala Councils
33.	Investigate funding to initialise the strategy and appoint a cluster facilitator if needed. This should include the Premium Food and Wine regional innovation clusters program through PIRSA.	M	Regional Development Australia (Barossa) Playford and Mallala Councils
34.	The 'facilitator' of a regional cluster is likely to be Council or RDA with 'support' from State and Federal Governments.	M	Regional Development Australia (Barossa) Playford and Mallala Councils
35.	Initiate regional cluster development to ensure that regional infrastructure and industry institutions are well aligned (Local Government/RDA).	M	Regional Development Australia (Barossa) Playford and Mallala Councils
36.	Industry associations (e.g. Grow SA) to encourage development of commercial clusters.	M	VNAP Representative Body

6.5 Natural Resource Management

	Action	Priority	Champion
37.	Develop a climate change adaptation toolkit that focuses on improving growers understanding of the risks of climate change, and improves their capacity to adapt.	H	AMLNRNM Board

	Action	Priority	Champion
38.	Industry collaboration for improved waste management guidelines.	H	Playford and Mallala Councils
39.	Establish a collaborative pilot project to explore the use of captured stormwater, treatment and reuse on green-house sites. Ideally this should be located in proximity to the 'green-house clusters' to ensure potential for a collaborative approach and distribution of benefit amongst clustered greenhouses.	H	Playford and Mallala Councils
40.	Support ongoing research and investigations into resolving leaky wells, which has been identified as a significant problem for growers.	M	AMLRNRM Board VNAP Representative Body
41.	Promote and support improved management of soils through training and best practice model farms. Improved practices may include: <ul style="list-style-type: none"> ▪ leeching ▪ crop rotation ▪ use of organic soil conditioners 	M	VNAP Representative Body
42.	Promote the benefits and learnings of taller greenhouse structures amongst growers as one way of adapting to climate change. Taller structures provide greater opportunity for air circulation and minimise risk of heat damage.	M	AMLRNRM Board
43.	That state agencies commit to working with the industry to improve the management of imports of plant material into the VNAP that pose a potential biosecurity risk to the local industries.	M	PIRSA
44.	That improved agricultural methods and suited crop types that reduce the biosecurity risk are promoted through industry representative bodies, state agencies and champion growers.	M	Playford and Mallala Councils AMLRNRM Board VNAP Representative Body
45.	Elevate awareness of the issue of biosecurity amongst farmers and visitors to the region.	M	AMLRNRM Board
46.	Promote careful management through training and best practice model farms of soils and irrigation practices to minimise potential impacts of salinity on some crops. These strategies may include improved: <ul style="list-style-type: none"> ▪ irrigation scheduling ▪ irrigation timing ▪ irrigation methods ▪ mulching of plants ▪ irrigation of seedlings ▪ maintenance of soil structure 	M	AMLRNRM Board

6.6 Branding, Profiling And Marketing

	Action	Priority	Champion
47.	Build upon the strengths of the SA Grown brand but recognise that marketing needs to build upon the characteristics of the VNAP region (rather than the generic 'SA' brand). This may require development of a new, unique VNAP brand. It will require collective marketing involving a range of stakeholders involved in active promotion and branding of the region.	H	Regional Development Australia
48.	Consider alternatives for creating a brand 'linked to place' that builds upon the strengths and localism offered by the VNAP region.	H	Regional Development Australia
49.	Investigate industry funding opportunities (existing levy arrangements or PIFS scheme) to assist the resourcing of "collective" activities such as branding and marketing.	H	Regional Development Australia
50.	Build a range of compelling stories that are attractive to the increasing numbers of food consumers who want to know more about where the products come from, the journey that the products have taken from the farm gate to the table, and that the growers themselves will directly benefit from the sale.	M	Regional Development Australia
51.	Use these stories in a range of promotional and branding activities – websites, print media, interviews, point of sale, in sales negotiations.	M	Regional Development Australia
52.	Learn from successful marketing and profiling activities that have been built around other SA food cultures/landscapes such as: <ul style="list-style-type: none"> ▪ Italians (Southern Vales – association with wine, pasta, tomatoes) ▪ German (Hahndorf, Adelaide Hills, Barossa – Beerenberg Jam, wine, mettwurst) ▪ Kangaroo Island (green, organic, etc.) 	M	VNAP Representative Body
53.	Promote growers' stories amongst growers – spread the word, help growers understand how to use their stories to their advantage.	M	VNAP Representative Body
54.	Inform consumers about the local, fresh, "green" produce and the growers' stories – at the checkout and in the media.	M	VNAP Representative Body
55.	Increase market share through regional development strategies.	M	Regional Development Australia

6.7 Gas, Electricity, Water And Telecommunications Infrastructure

	Action	Priority	Champion
56.	Secure an increased and consistent supply of recycled water is secured for the VNAP region. The roll out should be coordinated and integrated. The diverse range of grower should be able to equitably and efficiently access water over all cropping cycles.	H	VNAP Representative Body
57.	Initiate a feasibility study that considers investment into additional pipelines and water storage (either through aquifer recharge or similar) for winter-generated recycled Bolivar water, to increase the availability of water for irrigation in summer.	H	VNAP Representative Body / PIRSA Regional Development Australia
58.	Identify future requirements based on anticipated increased number of growers in particular clusters.	M	Regional Development Australia
59.	Present well justified business cases to state agencies and infrastructure providers, highlighting the value of the VNAP region to the State economy, and the benefit of improved resource allocation and new infrastructure investment (such as expansion of recycled waste-water schemes).	M	Regional Development Australia
60.	By 2018, SA Water will take over the distribution of reclaimed water from WRSV to growers. This presents an opportunity to explore alternatives to the "take or pay" clause that is unpopular amongst some growers.	M	SA Water
61.	Continue to support further research and investigations into stormwater capture reuse and harvest associated with increasing urban development in the region, and ways in which this water could be used economically and equitably by growers.	M/L	Playford and Mallala Councils

6.8 Land Use Planning And Building Policy

	Action	Priority	Champion
62.	That the vision for the area be described through a strong Desired Character Statement that is replicated in each Development Plan and sets a vision of the area being "Adelaide's Northern Food Bowl".	H	Playford and Mallala Councils
63.	Future Development Plan policy should be flexible and adaptable to respond to changes to the industry whilst ensuring that the industry is protected from unproductive or incompatible uses within the region.	H	Playford and Mallala Councils

	Action	Priority	Champion
64.	Establish one Zone (or Policy Area of the Primary Production Zone) to encompass the VNAP core horticultural area. This should be replicated within both the City of Playford and District Council of Mallala Development Plans. This area generally encompasses all existing Primary Production areas south of the Gawler River and all Horticulture Zones north of the Gawler River, but should be further refined through a Development Plan Amendment (DPA) <i>process</i> .	H	Playford and Mallala Councils
65.	The existing zoning of land outside of the VNAP core horticultural area (i.e. north of the District Council of Mallala's Horticultural Zone) be reviewed during a DPA process for its consistency with the vision and to ensure that, whilst allowing for other forms of productive uses in the short-to-medium term, does not limit the expansion of horticultural pursuits when water (and other infrastructure) becomes available.	H	Playford and Mallala Councils
66.	All forms of horticultural uses should be supported within the VNAP region.	H	Playford and Mallala Councils
67.	Greenhouse clustering should be encouraged where there are industry benefits for doing so. The locations for greenhouse clustering will be explored during a DPA process and should be consistent with the guiding principles (see Action 69).	H	Playford and Mallala Councils
68.	Formalise regional clustering of greenhouses around Virginia township in accordance with the guiding principles of clustering through a Development Plan Amendment (DPA). Other clustering opportunities may also exist.	H	Playford and Mallala Councils
69.	Greenhouse clustering throughout Playford and Mallala councils should occur in a location that meets the guiding principles below: <ul style="list-style-type: none"> ▪ already displays existing patterns of subdivided land and is not being primarily used for field crops (i.e. where land is already significantly subdivided) ▪ is close to labour and living opportunities ▪ has a greater chance of improved infrastructure provision ▪ is in close proximity to transport (primarily freight) ▪ is in close proximity to packing and sorting facilities ▪ is in close proximity to a district centre ▪ does not result in smaller allotments with large (productive) allotments between. ▪ does not exacerbate risk of flood damage 	H	Playford and Mallala Councils
70.	Land division should be non-complying – other than in the proposed new greenhouse cluster – so to limit further fragmentation of land holdings (particularly within the area south of the Gawler River and within the Mallala Horticulture Policy Area).	H	Playford and Mallala Councils

	Action	Priority	Champion
71.	Land division for the purpose of residential development within the VNAP horticultural area is at odds with the future needs of the industry and should not be supported.	H	Playford and Mallala Councils
72.	A greenhouse cluster should allow limited subdivision to 2.5 hectares. This is seen as a viable unit size for small-to-medium scale greenhouses that are likely to be attracted to the cluster. Smaller parcels of land may be achieved for greenhouses through leasing arrangements.	H	Playford and Mallala Councils
73.	There should be no dwellings in the greenhouse clusters.	H	Playford and Mallala Councils
74.	Land division should be non-complying – other than in the proposed new greenhouse cluster – so to limit further fragmentation of land holdings (particularly within the area south of the Gawler River and within the Mallala Horticulture Policy Area).	H	Playford and Mallala Councils
75.	Land division for the purpose of residential development within the VNAP horticultural area is at odds with the future needs of the industry and should not be supported.		
76.	Policy should not specify uniform or minimum allotment sizes in the VNAP region (apart from in the greenhouse cluster precincts where a minimum of 2.5 minimum ha is recommended).	M	Playford and Mallala Councils
77.	There are currently restrictions governing the amount of time a land parcel can be leased for before Development Approval is required. In order to provide more flexibility and opportunities for small greenhouse growers, explore how leasing arrangements of land for the purpose of greenhouses may enable the lesser to extend the lease period for a longer length of time and therefore give the lessee greater certainty.	M	Playford and Mallala Councils
78.	Through planning policy, enable and support the development of allied and value-adding horticultural use that meet the following guiding principles: <ul style="list-style-type: none"> ▪ it should support the vision for the VNAP region ▪ it should support and add value or be necessary for ongoing functioning of horticultural pursuits ▪ it should provide legitimate opportunities to grow the industry ▪ it should not cause adverse impacts such as noise or pollutants on nearby residents or other commercial, industrial or rural land uses ▪ it should not jeopardise the vision for the VNAP region and the use of the land for horticulture in the future ▪ it should be located in close proximity to the allied horticultural pursuit ▪ it should be adequately serviced by infrastructure it should have convenient access to labour (for example, for	M	Playford and Mallala Councils

	Action	Priority	Champion
	<p>an office use or large processing facility).</p> <p>Allied and value adding horticultural uses include:</p> <ul style="list-style-type: none"> ▪ offices (associated with the management of the day-to-day onsite operations of a horticultural use) ▪ packing sheds and small-to-medium scale processing facilities (ensuring that the activity supports the local horticultural uses and utilises at least part local produce) ▪ educational establishments (associated with horticultural focus such as a Centre for Excellence or demonstration farm) ▪ heating and cooling ▪ water storage 		
79.	Through planning policy, tolerate the controlled use of horticultural land for the parking of trucks (Class 5 or less), provided that the use of the land in this way is associated with horticulture activity on the site, and is not located in a rural living or residential zone.	M	Playford and Mallala Councils
80.	Through planning policy, tolerate the controlled use of horticultural land for the parking of trucks (Class 5 or less), provided that the use of the land in this way is associated with horticulture activity on the site, and is not located in a rural living or residential zone.	M	Playford and Mallala Councils
81.	Ensure envisaged uses in the VNAP area are protected as a 'right' and do not require unreasonable consultation or procedural requirements.	M	Playford and Mallala Councils
82.	Provide greater guidance regarding greenhouses with respect to appropriate siting, appearance and management of stormwater within Development Plan policy.	M	Playford and Mallala Councils
83.	Initiate a joint task-force between the City of Playford, District Council of Mallala and Department of Planning, Transport and Infrastructure to consider the issues relevant to building compliance within the VNAP horticultural area.		
84.	Lobby for additional clarification regarding the application of the Building Code of Australia with respect to the assessment of structures that provide protection to horticulture and their appropriate classification.	M	Playford and Mallala Councils PIRSA
85.	Establish a baseline for levels of acceptability for greenhouse building compliance within the VNAP area.	M	Playford and Mallala Councils
86.	Build relationships with property owners to inform them of compliance requirements for horticulture structures. Work with	M	Playford and Mallala Councils

	Action	Priority	Champion
	them collaboratively to ensure that structures on every site appropriately manage stormwater, provide safe access and are structurally sufficient.		
87.	Improve information available to the industry regarding building compliance and publish in a number of languages (including the development of a Growers Toolkit that provides information regarding gaining approvals and abiding to regulations). This information should be easily available within the VNAP region – in key horticultural suppliers (such as Muir and Sons), in the local post office or general store. Council should be proactive in distributing the information within the community, rather than only providing it when an application is before them.	M	Playford and Mallala Councils
88.	The joint task-force should consider appropriate methods for encouraging compliance such as providing an amnesty on illegal building works – provided that growers seek approval in a timely manner.	M	Playford and Mallala Councils
89.	Ensure future Development Plan policy requires a shared responsibility for managing the interface between horticultural and residential land uses rather than relying on the industry to provide buffers and limit activities in close proximity to residential development.	M	Playford and Mallala Councils
90.	Similarly, the industry should be informed of the need for a shared approach to managing interface issues, and that as part of this, the industry should commit to a culture of continuous improvement of horticultural activities – specifically within close proximity to sensitive land uses.	M	Playford and Mallala Councils
91.	Publish information (in several languages) for distribution throughout the nearby VNAP communities that describes the vision for the industry, the reasons why there is a strong desire to support the industry and what this means for residents and businesses. It should describe that there needs to be a shared approach to managing interface issues, and that some tolerance is required by residents choosing to live in a horticultural region.	M	Playford and Mallala Councils

6.9 Collaboration

	Action	Priority	Champion
92.	Engage the State (DFEEST, PIRSA, Skills for All programme) and Commonwealth (DEEWR, DIISR, DAFF, Skills Connect programme) Governments to develop a collaborative workforce plan for the industry addressing short and long-term opportunities in the industry and supply chains with a	H	Playford and Mallala Councils

	Action	Priority	Champion
	focus on local employment.		
93.	Provide a Centre for Excellence that is based on research and industry collaboration and facilitates 'hands on' collaboration with local industry, research and development. This may be similar to a type of 'Waite" Centre for excellence campus in Virginia.	H	VNAP Representative Body
94.	Explore education and training partnerships available through TAFE, local secondary schools and other training facilities that can promote knowledge and careers in VNAP horticulture industry amongst youths.	M	Regional Development Australia (Barossa)
95.	Establish a demonstration farm(s) and demonstration projects that can incorporate a range of activities relevant to the long-term sustainability of the industry including methods of stormwater capture, storage and reuses, alternative soil conditioning, advanced high-tech growing techniques and experimental crop types (specifically to fill niche markets locally, nationally and internationally).	M	VNAP Representative Body
96.	Support the horticulture industry through collaborations with other local partners on community strengthening projects involving the growing and harvesting, preparing and consuming food. For example, collaborate with OPAL team (Playford Council) to implement the OPAL Food Plan.	M/L	VNAP Representative Body PIRSA Playford and Mallala Councils

CONCLUSION



7 CONCLUSION

World trends in horticulture clearly show that food security is a major issue for our globe. Increasingly, communities are valuing locally grown, fresh produce and wish to support local economies through their purchasing power.

Hydroponic operations need to become smarter – with the main variables influencing outputs and efficiencies including skills and knowledge, technological advancement, climate change resilience and adaptation, business acumen and availability of required services, infrastructure and labour. Allotment size is only part of the influence on hydroponic efficiencies.

Local trends in the Virginia and Northern Adelaide Region reflect, to some extent, these global trends, but there is significant diversity amongst growers in terms of their resilience and ability to adapt.

In order to address these trends, this document provides a framework to implement a wide range of activities and measures. Some of the measures (such as land division policy) are very blunt instruments and won't in themselves achieve a sustainable long term future for the industry. Land use planning measures must be supported by the full suite of other financial, infrastructure, educational and marketing measures which may offer more tangible and long term industry support.

The framework values and supports diversity within the region – smaller growers as well as middle sized and large intensive operations. It supports field crops as well as greenhouse operations (soil based and hydroponics). This diversity is recognised as characteristic of the “face” of the industry in the region.

The high priority measures relate to improved training and education, the need for meaningful, accessible and effective representation, improved waste facilities and better branding and marketing. Improved and consistent water security and supply is also noted as a major requirement.

Other measures include land use planning tools including the restriction of further land division in horticultural areas, apart from the creation of smaller allotments to 2.5 ha in a nominated greenhouse cluster. These smaller allotments will provide some opportunities for smaller growers who have less financial resources to purchase greenhouse allotments in greenhouse cluster areas.

This document provides a solid framework for a prosperous and sustainable horticultural industry, one that is strongly valued as *Adelaide's Premium Northern Food Bowl* and one which produces *high quality and fresh produce* for South Australians and further afield for many years to come.