

Using scenarios to build a resilient community: lessons learnt in Sunraysia

Jenny Treeby, Kirsten Henderson, Pam Strange, Caroline Welsh and Stuart Putland

Department of Primary Industries, PO BOX 905, Mildura, Victoria 3502

Email: Jenny.Treeby@dpi.vic.gov.au

Abstract. The ‘Sunraysia’ region is Australia’s premier producer of irrigated horticultural foodstuffs such as wine grapes, table grapes, dried fruit, vegetables and tree crops (citrus, olives, almonds and pistachios). Located on the borders of Victoria, New South Wales and South Australia at the confluence of the Murray and Darling Rivers, the region is facing broad challenges and opportunities associated with issues such as climate change, reduced water security, drought, and market volatility. These issues require industries and communities to change their ‘business as usual’ practices in order to assure their continued sustainability in the region. This requires informed planning involving the integration and coordination of stakeholders’ views on how to meet the challenges ahead. A series of workshops held with representatives from producer associations, water authorities, local government, rural financial counsellors and catchment management authorities identified the key influences on the region and formulated four scenarios for the future of Sunraysia. These scenarios are being presented back to regional groups for incorporation into strategic plans that will help each industry/business/agency to anticipate and respond to change in a confident and co-ordinated manner and build a resilient agribusiness community in Sunraysia. Three key lessons learnt from the project were:

- A *locally based* project team with a thorough understanding of the region, its issues and industries, as well as excellent connections with the agribusiness community is vital for the success of this type of project.
- Devolving leadership of the project to participants ensures ownership of the project and a willingness to share knowledge and ideas.
- The scenarios act as ‘boundary objects’ around which different world views can be brought together ‘without requiring the establishment of one shared perspective’ (Novak 2007: 3), enabling constructive and cooperative planning across a range of sectors.

Introduction

The tri-state region of ‘Sunraysia’, located on the borders of Victoria, New South Wales (NSW) and South Australia at the confluence of the Murray and Darling Rivers is facing broad challenges and opportunities associated with issues such as climate change, reduced water security, drought, and commodity market volatility. The region uses around 600 gigalitres (GL) of water per annum to produce fruit and vegetables worth more than \$ 1billion at the farm gate (Sunraysia Mallee Economic Development Board, 2006). Horticultural production then drives at least three times that value in support and processing industries. This production base sits amongst world class environmental assets such as the [Hattah Lakes](#), the Chowilla Floodplain and Lindsay-Walpolla Islands, and the [River Murray Channel](#). Incorporated into this landscape are the activities and aspirations of a 57,000 strong community, clustered around the centres of Mildura in Victoria and Wentworth in New South Wales.

Many of the above mentioned issues (particularly limited and less reliable water supply, poor returns on investment and the prospect of decreased rainfall and increased temperatures due to climate change) will require industries and communities in the Sunraysia region to change their current operating practices. These changes will have flow-on effects to supply chains, market presence and investment in horticulture in the region. Achieving economic, environmental and social sustainability in this region will depend on informed planning involving the integration and coordination of many stakeholders’ views on how to meet the challenges ahead.

The Resilient Agribusiness project aimed to facilitate this process by using a scenario building method adapted from the principles of the Irrigation Futures of the Goulburn Broken Catchment project (Wang et al. 2007). Scenario building is a process that involves a creative, forward looking search for patterns that might emerge in the future. Resultant scenarios can be used to construct specific strategies to cope with changes that are indicated by these patterns. Four facilitated workshops, involving invited stakeholders across the irrigated horticulture agribusiness chain, identified the key influences on the region and formulated four scenarios for the future of Sunraysia. These were built around three prime drivers for change: water access/climate change; the changing nature of farming; and consumer trends and marketing imperatives. These scenarios can be incorporated into strategic plans that will help each industry/business/agency to anticipate and respond to change in a confident and co-ordinated manner and build a resilient agribusiness community in Sunraysia.

Method

The basis of the methodology is scenario building and active community engagement. Scenarios are stories describing a plausible and internally consistent future, that identify significant events, the main actors and their motivations, and which convey a sense of how the world functions (Shell International 2003). They involve multi-point forecasting and 'changing our mental maps of the future' (Wilson and Ralston 2006). The aim of scenario building is not 'to get the future right' but 'to avoid getting it wrong' (Bawden et al. 2005). Resulting scenarios can then be used as a tool for strategic planning that aims to embrace or avoid implications arising from the scenarios.

1. Focal question and stakeholders

The Resilient Agribusiness project was guided by the following focal question: *What is the future of irrigated horticulture in Sunraysia in 2018?* To help address this question a stakeholder leadership committee (SLC) was established in order to gain input and expertise into the project from a wide cross section of the irrigated horticultural agribusiness community in Sunraysia. The SLC included representatives from producers of the major commodities grown in Sunraysia, the water authorities, catchment management authorities, the Drought Taskforce (including rural financial counselling services and Centrelink) that was established to deal with the low water availability within the region, and local government. The committee was unique because it had representatives from both sides of the NSW-Victorian border. This was important because one of the aims of the project was to develop strategies for the region as a whole rather than focussing only on the Victorian portion of the region. This necessitated the coordination across both sides of the river border that was provided by the SLC.

A key component of the project was that the participants, via the SLC, would take the lead in building the scenarios. The project team took the role of *facilitating* this process but it was the SLC that identified and prioritised the issues that will shape the future of the Sunraysia region. The SLC also took the lead role in identifying people to participate in the series of workshops using their knowledge and assessment of the skills-set that each person would bring to the process. This proved to be an excellent method for obtaining a broad range of 'strategic thinkers' at the workshops which in turn contributed to the success in building the scenarios.

2. Construction of plausible future scenarios for the region

The scenario building process for the Resilient Agribusiness project involved four facilitated workshops. These took the participants through a series of exercises aimed at building plausible future scenarios for the region using up to date information on the predicted impacts of climate change, social-demographic changes and market forces on the region. Once formulated, the scenarios are currently being incorporated into strategic plans that will help each industry to anticipate and respond to change in a confident and co-coordinated way (Henderson and Treeby 2008; Henderson et al. 2008).

Workshop 1 'set the scene' by delivering information identified and prioritised by the SLC as issues that will shape Sunraysia's future. The issues nominated as most critical were water issues, productivity and market trends, regional impacts of climate change and social demographics of the region. These were researched and collated by the project team, published as a *Snapshot of Issues that will Shape the Sunraysia Region* and made available to workshop participants prior to the first session via a website (resilientagribusiness.com.au). At the workshop, expert speakers gave presentations on water policy, climate change and social demographics of the region.

A 'poster session' was also held to draw out the participants' knowledge of the region and industries. Using the *Snapshot* document, the project team had summarised the key issues facing each of the major commodities produced in the region and published them as posters. The group was broken into 6 sub-groups (one for each poster). Each group was given five minutes of discussion at each poster to identify observations and opportunities based on the information on the poster, and the participants' own knowledge. These observations and opportunities were recorded for later consideration during the scenario writing process.

Workshop 2 reviewed the key messages and observations from workshop 1, then moved on to identify past achievements, current status and future goals of the region in order to clarify the potential drivers of change. This involved a number of steps including the identification of important events and their drivers between 1978 and 2008 on an international, national, regional and local scale as well as prioritising these drivers in terms of potential impact on the region. All the information from this workshop was recorded for use in the next session.

Workshop 3 used the material from the previous two workshops to establish the outline of future scenarios and draft broad implications for Sunraysia in 2018. Again this involved a series of exercises including the prioritisation of the trends and drivers identified in Workshop 2 in terms of their importance and uncertainty, grouping those drivers in terms of similarity of focus e.g. climate change, water security and availability, and the rise of the environmental movement, and constructing plausible scenarios from the grouped drivers of change.

Workshop 4 used the resulting scenario to develop four scenarios for Sunraysia. This workshop involved a group of ten of the original participants as well as the project team. The process used with this group was based on the scenario building techniques of the Neville Freeman Agency (Bawden et al. 2005). The key drivers identified in the previous workshops, nature, politics, culture, society, economics and technology were categorised in terms of their realm of influence. From these a preferred future in 2018 was imagined and a timeline of events which would deliver that preferred future was identified. An assessment of the certainty of the preferred future was then made by mapping influences on a matrix indicating their importance and predictability.

As the preferred future relies on many uncertain and high impact influences, its status is doubtful. It must be recognised that many futures are possible so alternative futures (or scenarios) should be created by retrieving the timelines and list of influences used to create the preferred future and imagining events and influences that are different. This is the key part of the exercise because *identification of diversions from each event and different responses to influences leads to different futures*. This allows for the construction of a number of scenarios that are distinctly different from each other. Doing this is very important for subsequent strategic planning because the aim is to work with a *set* of scenarios, rather than choosing one scenario and aiming to reach or avoid it. Four scenarios for the future of irrigated horticulture in Sunraysia in 2018 were developed entitled Embrace the Chameleon (utopia), Making a Difference, Status Quo and Modern Mungo (dystopia) (Mungo refers to Lake Mungo, located about one hours drive from Mildura. The lake last experienced permanent water 10,000 years ago and, although it has recorded continuous indigenous habitation for 40,000 years, the thriving community that once lived there no longer exists).

Discussion

Scenario building in a regional context: lessons learned

Scenario building is frequently undertaken within the context of the planning cycle of a single organisation, often as a management directed activity. The most well-known exponent of this is the oil company Shell (Shell International 2003). High level support has the effect of assured participation and commitment of time, energy and resources to the process. It also means scenario building generally takes place within a shared culture where organisational history and goals are understood and agreed upon. This was not the context in this project and therefore presented some issues. Representatives from eighteen different organisations were involved and the challenge was to maintain their engagement as well as manage a diversity of views on 'what the future of irrigated horticulture in Sunraysia' might look like.

The key to maintaining participant engagement in the project was the appointment of the SLC and the devolution of decision making on important aspects of the project to them. This allowed a sense of ownership of the project and for its outcomes to develop within the group. The engagement of the SLC was a long and time consuming process involving regular communication between the group and the project team (such as via a website, a Wikipedia site, telephone calls, email and one to one meetings for participants unable to attend committee meetings). However, this process was integral to ensuring that the Committee was engaged and supportive of the project.

The SLC identified the issues that would shape the future of Sunraysia, identified the participants for the workshops and ultimately signed off on the content of the four scenarios. The SLC members have become key scenario planning 'champions' playing the important role of advocates for the use of the scenarios in the strategic planning cycles for their organisations. This has been important as ultimately decisions about how to use the scenarios in a planning context need to be made by the organisations themselves, without direction from the project team. The ongoing enthusiasm of participants for the project and the development of four workable scenarios for the region is worth devolving some of the project decision making to the stakeholders.

In terms of managing a diversity of views, analysing the history wall had the valuable consequence of gaining broad agreement on the key drivers of change, an important process in terms of sense making. The process of sense making is about how people take meaning out of

an event or series of events. 'Acts of sense making are concerned with finding small details that fit together and flesh out hunches to create meaningful worlds where sensible decisions can be taken' (Weick 1995). In this case, the series of events is climate change, water scarcity and market volatility. Writing the scenarios allowed participants to 'create meaningful worlds where sensible decisions can be taken' (Weick 1995) while leaving room for disagreement over the content of those worlds. This is especially true when there is a set of 'futures' that range from wholly positive to wholly negative stories. Everybody can see their ideas recorded somewhere within that range. Thus the project team was able to get a diverse range of participants to work together in the project and consider the issues in an open and constructive manner. The scenarios acted as 'boundary objects' around which different world views can be brought together 'without requiring the establishment of one shared perspective' (Novak 2007).

Recommendations

Some of the challenges facing the Sunraysia are specific to the region, but a large range of the drivers of change that were identified would also have significant impacts on other horticultural and dry-land agricultural regions. For instance many communities are facing issues of population decline, population ageing, declining terms of trade and impacts of climate change. A consideration of the drivers and the scenarios and their effects on Sunraysia could help other communities articulate the issues that apply to them.

It would be even more useful, however, if other communities undertook a similar exercise for themselves. This would ensure the production of scenarios with total relevance to individual regions. The sequence of steps in the scenario building process undertaken here is typical of many other scenario building projects, but as it took place on a regional scale (rather than on organisational level) key recommendations for other communities wishing to undertake the process are:

- 1. A locally based project team** with a thorough understanding of the region, its issues and industries, as well as excellent connections with the agribusiness community is vital for the success of this type of project.
- 2. Careful selection based on industry knowledge, standing within the community, openness and strategic thinking of the SLC** is necessary for active and ongoing project engagement.
- 3. Use of SLC and project team contact networks** allows selection of participants able to contribute in a positive manner and who are open to differing views.
- 4. Personal written invitations** with follow-up telephone calls and meetings enables engagement and participation. Ensuring that the same team member spoke with the same participant each time reminder or feedback calls were made is a key. This builds a rapport between the team and the participants, and ensures consistency of message to the participants.
- 5. Regular and ongoing communication** between team and participants about the aims, arrangements and outcomes of each step in the project is vital for maintaining engagement.
- 6. Devolving leadership of the project to participants** ensures ownership of the project and a willingness to share knowledge and ideas.
- 7. Commitment to allowing the SLC to drive the process** on the part of the project team was important to maintaining SLC engagement and ultimately the relevance of the scenarios to the wider community.
- 8. Inviting and acting on feedback** ensures smooth running and continuing improvement of the project. This is important in a process where participants are taking the lead. Also with a relatively unpredictable process such as scenario building where the team as much as the participants are learning it is important to show that participants' views are heard.
- 9. Establishment of project organisational groups with clear terms of reference and roles** within the project and regular communication between the groups ensures smooth running of the project.
- 10. Skilled facilitators** to guide the group through the unfamiliar process of scenario building.
- 11. Clear explanation and constant re-emphasis** of what the scenario building process is, especially its difference to problem solving is important for keeping participants on track. A key point to stress here is that the scenarios are ultimately a tool to use for strategic planning purposes.
- 12. A clear framework** is required to build a set of relevant and detailed scenarios that are distinctly different from each other and useful for strategic planning.

13. Participants need a starting point from which to launch discussions about alternative scenarios

14. Debrief for the project team and facilitators, preferably immediately after each workshop, enables better planning for the next workshop, especially when combined with participant feedback.

Building on the resilient agribusiness project

As O'Connor et al. (2005) write 'scenarios provide regions with plausible futures rather than predictions'. The Resilient Agribusiness project revealed that twenty-one of the forty-five drivers of change identified were important yet had uncertain outcomes. This makes any attempt at accurate forecasting extremely difficult. Over the next ten years and beyond the Sunraysia region is likely to experience considerable change. The scope of such change has already been indicated by the range of changes that were recorded on the history wall. The Resilient Agribusiness project therefore aimed to empower the region's agribusiness leaders to reject the 'business as usual' mind-set and build the capacity to plan for change. Currently the project team is working with a number of the participant organisations to assist them analyse the scenarios in terms of the implications for their businesses/organisations and develop their specific strategic plans to cope with those issues.

References

- Bawden R, Dare H, Freeman O, Rippon G and Williams M 2005 *Open Book Scenarios. Teaching for an Uncertain Future*, The Neville Freeman Agency.
- Henderson K, Treeby J, Putland S, Welsh C and Strange P 2008 *Scenario Building: Lessons Learnt in Sunraysia*, Report to ORLe, June 2008, Department of Primary Industry Industries, Victoria.
- Henderson K and Treeby J 2008 *Resilient Agribusiness for Victoria's Future – Dealing with Climate Change and Drought*, Report to ORLe, June 2008, Department of Primary Industry Industries, Victoria.
- Novak J 2007 'Helping Knowledge Cross Boundaries: Using Knowledge Visualization to Support Cross-Community Sensemaking', Proceedings of 40th Hawaii International Conference on System Sciences, Hawaii, January 02-06, 2007 accessed from www.ifi.uzh.ch/im/fileadmin/user_upload/personen_downloads/novak.hicss07.camready.v1.9.pdf 23/01/09
- O'Connor MH, McFarlane M, Fisher J, MacRae D and Lefroy T 2005 'The Avon River Basin in 2050: scenario planning in the Western Australian Wheatbelt', *Australian Journal of Agricultural Research*, 56: 563-580.
- Shell International 2003 *Scenarios: An Explorer's Guide*, Shell International
- Sunraysia Mallee Economic development Board 2007 *Mildura Region Economic Profile 2006*, Sunraysia Mallee Economic Development Board
- Wang QJ, Robertson D, Soste L, Chaffe R 2007 *Regional Scenario Planning in Practice: Irrigation Futures of the Goulburn Broken Region* Department of Primary Industry Industries, Victoria.
- Weick KE 1995 *Sensemaking in Organisations*, Sage Publications, Thousand Oaks, California.
- Wilson I and Ralston WK 2006 *The Scenario Planning Handbook. Developing Strategies in Uncertain Times* South-Western Educational Publishing

Acknowledgements

The authors wish to acknowledge the time, enthusiasm and input from the Governance Committee, the Stakeholder Leadership Committee and all the workshop participants.

