



EcoInsights

# ScenarioPlanning for SustainableLanduse in theNamoi Catchment

## AN INTRODUCTION TO SCENARIO PLANNING

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October, 2007

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# INTRODUCTION

*"Anyone can create scenarios. But it will be much easier if you are willing to encourage your own imagination, novelty, and even sense of the absurd—as well as your sense of realism."*

Peter Schwartz, cofounder of the Global Business Network

*If you want to teach people a new way of thinking, don't bother to teach them. Instead, give them a tool, the use of which will lead to a new way of thinking."*

Buckminster Fuller (Senge 1994)

There are a number of reasons for doing scenario planning, and there are a number of choices to make about which approach will suit your objectives. This paper outlines some of the theory and practice of scenario planning and identifies the approach that we propose to take in the Namoi scenario planning project.

## What is scenario thinking?

Scenario planning arose as a way to deal with increasing complexity and uncertainty, which is the nature of our modern world. A useful definition of uncertainty is "not knowing which forces and trends really matter" (Schoemaker 2002). Scenarios have been described as: "stories about how the future might unfold for our organisations, our issues, our nations, and even our world" (Searce et al 2004). Scenarios are not predictions but thought-provoking and plausible stories about multiple ways that the future might unfold and the sorts of challenges and opportunities that it might pose (Box 1).

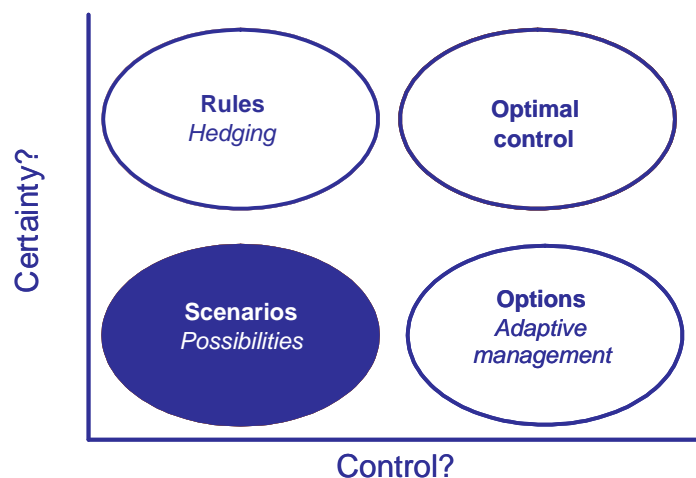


Figure 1

**Some parts of the future are more likely than others. Scenarios are the tool of choice for exploring those parts of the future about which certainty is low and we have little control over the way the future unfolds**

Scenarios are not primarily about those aspects of the future that are within our control or which are to a large degree predictable. They focus on those elements of the future that are important, uncertain and beyond our ability to control (Figure 1). The term "critical uncertainties" describes these elements (Schwartz 1996). The relatively certain aspects of the future are not forgotten, however. They are included in the scenarios along with a range of other aspects, both certain and uncertain. The purpose of developing scenarios is not to pinpoint a single future but to experience multiple futures and to learn from all of them.

### **Box 1: An example of scenarios bringing about major social change (Searce et al 2004)**

Done well, scenarios are a medium through which great change can be envisioned and actualized. Perhaps the clearest illustration of the power of scenarios is the influential set of scenarios developed in South Africa in 1991, when a diverse group of South African leaders—community activists, politicians, unionists, academics, economists, and business leaders—used scenario thinking as a way to envision paths to democracy as the country transitioned out of apartheid. Each resulting scenario described a very different outcome of the political negotiations that were then underway. One scenario, which the group called Ostrich, told of what would happen if the negotiations were to break down between the apartheid government and Nelson Mandela's African National Congress. Another scenario, *Lame Duck*, foresaw a world in which a prolonged transition left the government weak and unable to satisfy all interests. A third scenario, *Icarus*, described a South Africa in which the ANC came to power and its massive public spending resulted in an economic crash. The fourth scenario, *Flight of the Flamingos*, described how the apartheid government, the ANC, and their respective constituencies might slowly and steadily rise together. These scenarios, known as the *Mont Fleur* scenarios, were subsequently shared widely throughout South Africa, and became an instrumental common language that helped facilitate public debate in the transition to democracy.

In a review of scenario planning around the World, Dr Peter O'Brien (O'Brien 1999), previously Director of the Bureau of Rural Sciences in the Australian Government and now Managing Director of the Rural Industries Research and Development Corporation, wrote:

*"Scenario planning takes users beyond the tactical and deterministic, to embrace the uncertainty of "what if". The future is unknowable, but we routinely take decisions now which will play out in an uncertain future. Approaches which systematically focus our thinking on that uncertainty improve our capacity to take decisions now. Our plans are our intentions and our best intentions will take account of uncertainty, be flexible and will play out well in a range of possible futures."*

The time and resources devoted to scenario planning theory vary widely between practitioners, companies, and applications. For example, Royal Dutch Shell and the Global Business Network tend to adopt detailed and deliberate approaches to scenario planning, taking as much as 2 years for one iteration of the process. Similarly the Environment and Defence Departments in the United Kingdom have invested literally millions of dollars over the last decade in scanning for emerging trends and developing discussion papers and strategies to deal with them (Davies et al 2001).

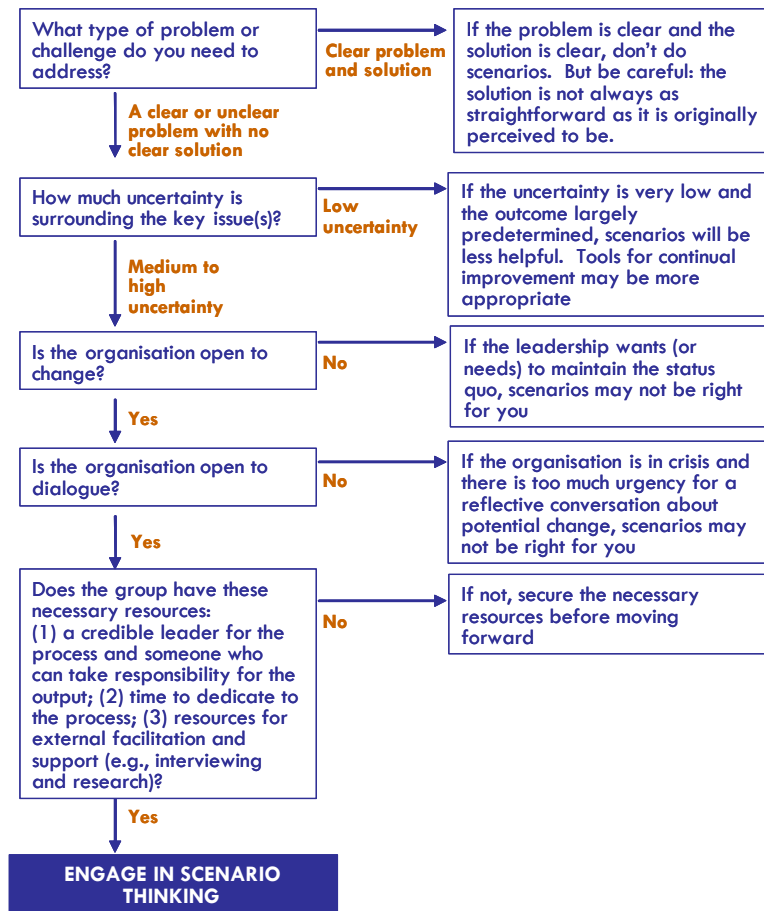
On the other hand, other practitioners believe that it is important to move quickly and get through a first iteration of scenario planning within a few months once organisations decide to start thinking about change (Steil et al 2005). The Henley Centre in the United Kingdom has observed that when groups are not used to doing scenario planning it is advisable to allow them to see an end product quickly so they feel comfortable that the approach is useful. In this way enthusiasm and commitment can be maintained and it is more likely that people will participate in subsequent iterations to refine and deepen their thinking (see Appendix 1 for an assessment of best practice in strategic futures thinking).

### **Is scenario planning the right approach for you?**

Several issues need to be addressed in deciding whether scenario thinking is the most appropriate method to use for your problem or challenge (Figure 2). We conclude from Figure 2 that scenario planning is a suitable approach to thinking about the future of the

## An Introduction to Scenario Planning

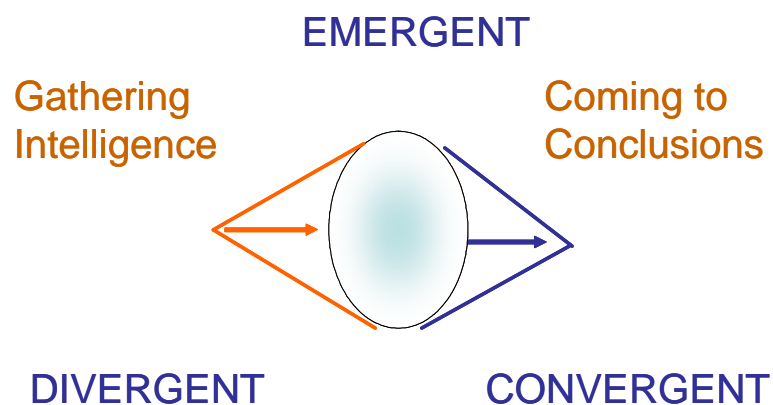
Namoi catchment. Obviously, the next question is "Which style of scenario planning is most appropriate?" We will address this question in the rest of this paper.



**Figure 2**  
**Steps in determining whether scenario thinking is an appropriate tool for addressing your challenge or problem (Searce et al 2004)**

# PRINCIPLES

Scenario thinking is both a process and an ongoing approach to strategic thinking. The process begins by considering factors that might bring about change in the world, such as technology, social change, and environmental change. It then moves on to consider which of these factors are most critical and uncertain and explores the implications of these "critical uncertainties" as they combine in different plausible ways to create a range of possible futures. The process works best when the imagination of participants is stimulated early on so that divergent and new ideas are created. But it is also important once these new ideas have emerged that the process is completed by bringing the thinking together with a focus on the real-world challenges that stakeholders will face here and now (Figure 3).



**Figure 3**  
**The three types of thinking in scenario planning (divergent, emergent and convergent). It is important that all three are encouraged at the right time so that both new ideas and practical conclusions are generated.**

Ideally, scenario planning has its greatest impact when people become so involved that they experience, as far as is possible, the range of possible futures and, in so doing, can have important and powerful insights about the present. This sounds very simple, but in practice there are a number of challenges to address, not the least of which is differences in personality types. Some people, particularly those who are task oriented, find it very hard to deal with unstructured workshop sessions, while those who enjoy thinking laterally are very comfortable with this approach. For this reason, experienced facilitators of scenario planning find ways to structure workshops to include clear tasks as well as freedom to explore ideas, so that all the participants feel that they have made a contribution and feel rewarded for their efforts.

### Box2: Origins of scenario thinking

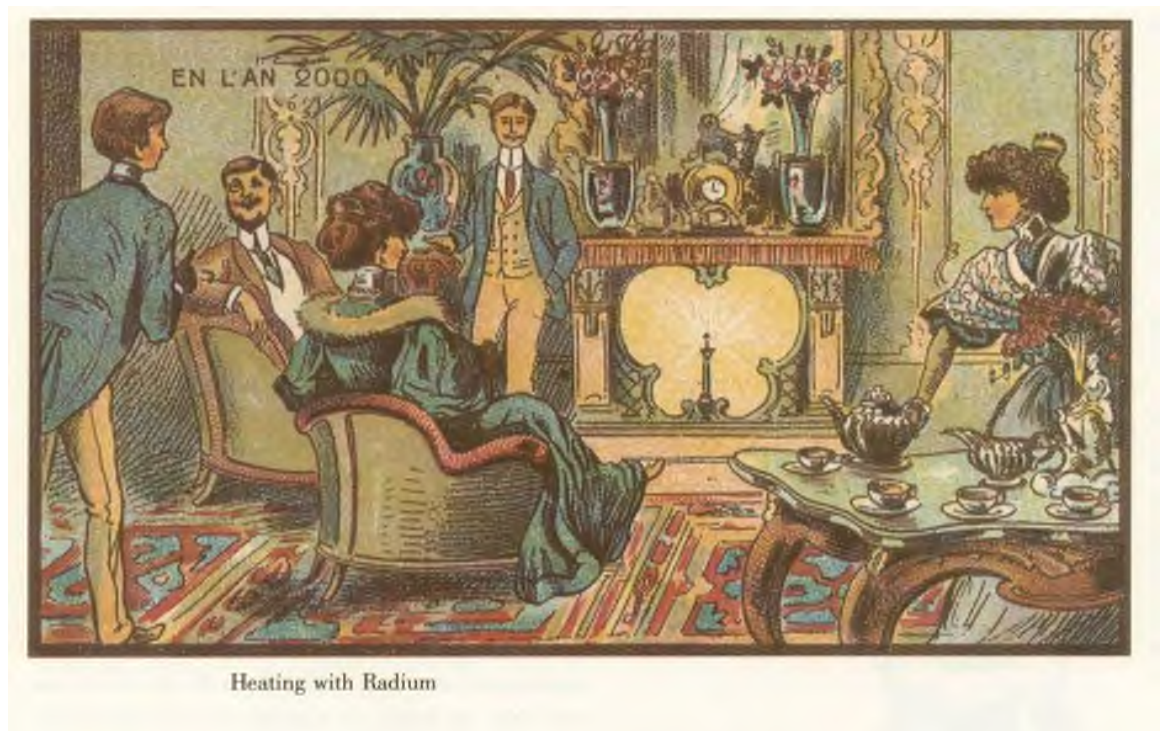
Storytelling is a way of making sense of the past, present and future is an integral part of the human character. Scenarios were used extensively as a tool for strategy during World War 2 in situations where it was not possible to predict what the enemy might do but it was possible to imagine the range of responses that they might have. These approaches were further developed in the business world during the 1960s and 1970s, especially in Royal Dutch Shell. Shell's ability to react quickly to the Arab oil embargo in the early 1970s is often held up as a great example of scenario planning anticipating a major future challenge. However, the real success of scenario planning in Shell at that time was building a culture that both considered the possibility of multiple futures and was already thinking about how to respond. Scenario planning has gone through phases of being very popular and very unpopular since then. One of the greatest challenges is that organisations that most need the capability to think about multiple futures are least ready to engage in the process and often have uncomfortable and under productive experiences with it.

Since the 1980s, scenario planning has been refined by both businesses and academics who have paid considerable attention to the psychology of getting groups of diverse people with diverse skills and experiences to gradually break free of the constraints of everyday "official" thinking and to enjoy the non-threatening world of the future, which nobody owns and nobody needs to defend.

Below, we summarise a set of guiding principles for scenario planning, derived from the work of people like Kees Van der Heijden and Peter Schwartz, who were the pioneers of this discipline (Searce et al 2004).

The **first principle** is that good scenario planning focuses on a point sufficiently far in the future that the trends and drivers of change that we are interested in have started to have their impact. This period of time can vary, although 25-50 years is usually a good starting point. This is called by Peter Schwartz the "art of the long view". For example, people concerned with the impacts of technology on the ultimate survival of the human race currently focus a lot of attention on the period between about 2030 and 2050 when it is expected that rates of change in technologies like computing will become so rapid that they will create huge social and ethical issues for humans that may fundamentally change the nature of our existence (Broderick 2001). On the other hand, decision-makers in the Namoi might consider the long view to be the time when the impacts of our ageing population kick in or when the impacts of the rapid economic development of several developing countries start to really shape our agricultural markets.

The **second principle** is that good scenario thinking must go beyond the familiar and immediate. We are all reduced to thinking about the future in the way that science fiction novels do. Thus, whenever people are asked to contemplate the future they immediately think about technological change, and rarely about substantial social, political, or even economic change (Figure 4).



**Figure 4**

**A French artist's impression of the living room of the year 2000, painted around 1895**

One device to encourage broader thinking is to ask people to work outwards from the immediate context of their issues to larger contexts (for example, regional, national, global) and to consider social, technological, economic, environmental, and political issues explicitly (Figure 5).



**Figure 5**

**Participants in scenario planning processes need to be encouraged to think beyond the immediate environment in which their issues sit**

The **third guiding principle** is that good scenario planning should challenge people's established views of the future, including the wide range of obvious and not so obvious assumptions that people make about the future. For example, when most organisations

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think about the future they imagine themselves as always being part of it. This makes it difficult for them to imagine circumstances in which they might not be the ideal solution to the challenges. The French Futures School (Godet 2001), for example, recommends a process that they call "cliche hunting". It is also a good practice to invite speakers who have different views from those that workshop participants usually hear.

### Scenario planning versus strategic planning

In theory, scenario planning should mesh very comfortably with strategic planning. In practice, however, strategic planning tends to focus on a much narrower range of issues, concentrates on developing a plan more than exploring a range of possibilities, and more often than not assumes implicitly that there is a single predictable future and one that can be largely controlled (Table 1).

**Table 1**  
**Comparison between strategic planning and scenario planning (Inayatullah 2005)**

<b>Strategic planning/ policy</b>	<b>Futures thinking/ scenario planning</b>
Focus is 1-5 years into the future	Focus is 5-50+ years into the future
One policy/ future	Multiple plausible futures
One interpretation of reality	Multiple interpretations of reality
Goal oriented	Vision oriented
Future is under control	Prepare for many futures
Focus is plan	Focus is the process

There is a range of approaches that can be used to bridge the gap between scenario planning and strategic planning. Some of these will be discussed later in this paper. It should be remembered, however, that setting strategic directions is only one possible objective for scenario planning (Figure 6; Table 2). Scenario planning can be a powerful way for groups of people to learn in a relatively non-threatening environment (because no one owns the future) and to build enthusiasm and support for major actions.



**Figure 6**  
**Four reasons why an organisation might invest in scenario planning (Henley Centre 2001)**

Last, but not least, scenario planning can be used to explore visions (that is, desired futures). The processes to develop visions should be done separately from projects to explore challenges and opportunities in alternative futures. This is because exploring a range of future possibilities can be disrupted if these are couched in such a way that one is much more desirable than others. In any scenario planning process, however, it is a good idea once the scenarios have been developed to ask what elements in each are desirable and which elements are undesirable. The depth of thinking developed in a scenario planning process then provides an ideal starting point for developing an informed vision for the future.

### Strengths and weaknesses, and conditions for success in scenario planning

Some key requirements for successful scenario planning (O'Brien 1999; Searce et al 2004) include:

- Being open to hearing multiple perspectives and challenging commonly held assumptions
- Being positioned to change in a meaningful way
- Having a well-positioned leader for the process (and/or having active support from key organisational/ community leaders)
- Being willing to commit the necessary resources
- Including decision makers or "problem owners" in the process
- Having a clear and relevant focal question, decision or strategy to centre the process
- Communicating scenarios through a range of techniques, including experiential ones

### Dealing with large numbers of stakeholders

Although it is possible in large corporations to restrict involvement in scenario planning to a small number of key decision-makers, when dealing with communities it is frequently desirable to involve large numbers of people in thinking about the future and future scenarios. This poses some challenges for running scenario-planning workshops because it becomes very difficult to reach consensus on the key uncertainties to be addressed once the working group gets larger than about 20 to 40 people. In response to this challenge, a number of approaches to futures thinking in large groups have been developed. These usually involve gathering input from large groups, for example using surveys or cafe style focus group sessions, then doing the thinking about critical drivers of change and initial development of scenarios in a small group. The scenarios can then be taken back to larger groups and they can be asked to put themselves into alternative futures and consider the implications.

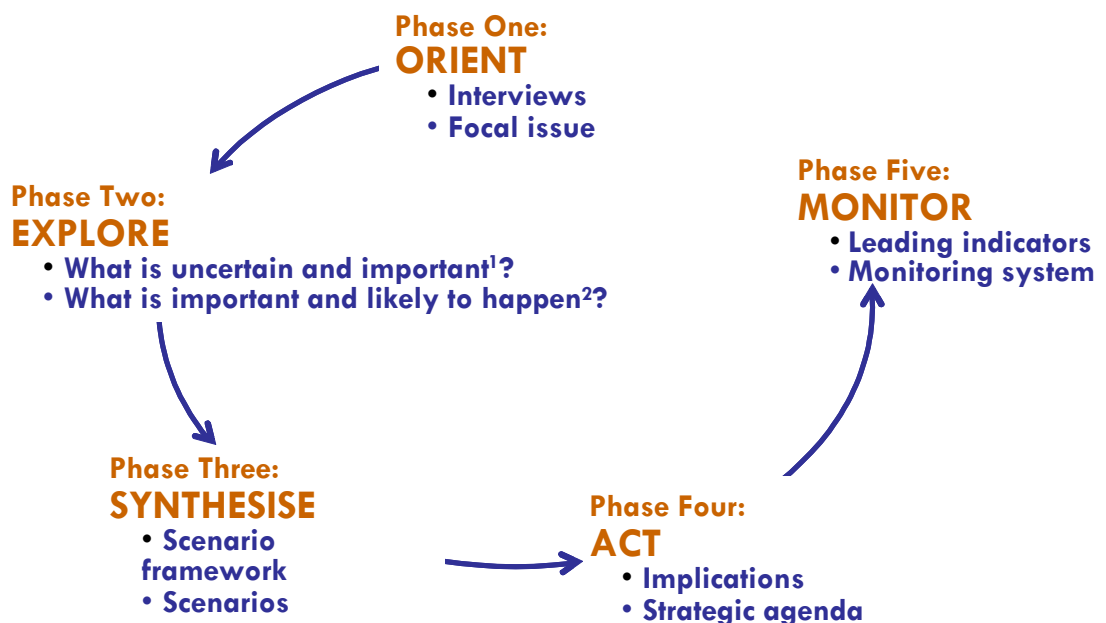
We propose to adopt this sort of approach in the Namoi, by making electronic surveys and the possibility of submitting simple written responses available to all interested stakeholders before the first workshop and through to early 2008. We hope that we can identify a core group of 20 to 40 key stakeholders to take part in the three scenario planning workshops. There will also be some key decisions that are best dealt with within the Steering Committee (for example, making initial decisions about the focal question and the limits to how broad or deep the scenario planning workshops will go). The broader community will be brought back into the process in early 2008 in one or two large workshops. These workshops will involve people breaking into groups of around eight to consider the implications of the scenarios. They will feed their views back to the final scenario workshop, which is currently scheduled for April 2008.

# NAMOI APPROACH

We have found that approaches to scenario planning workshops based around the approach shown in Figure 7 suit a wide range of people, interests, disciplines, and working styles. Therefore, we propose to base the three core scenario workshops on this framework. As we listen to and understand the needs and preferences of the workshop participants, we might modify the approach slightly. We have found that, regardless of the types of people involved in these workshops, it is essential to provide clear task oriented sessions that provide clear written material that can be used as a basis for recording and reporting.

## Focal question

To be successful, scenario planning needs to have a clearly defined focal question (Figure 7). The focal question can be broad and open or narrow and closed (Box 3).



<sup>1</sup> Often called “critical uncertainties”

<sup>2</sup> Often called “pre-determined elements”

**Figure 7**

**The scenario planning process adapted from Searce et al. (Searce et al 2004)**

From the discussion with RCMG in August (Appendix 2), a suitable local question for the Namoi project might be:

*“What factors might aid or hinder the maintenance or improvement of quality of life for residents of the Namoi catchment in the future?”*

### Box 3: Examples of focal questions

Three different examples illustrate the range of focal question that is possible in scenario planning.

(1) In a study exploring the future of a dental school in the United States (Steil et al 2005), the steering committee posed the question:

*"What would it take to be successful in 2013?"*

It then formulated the following three secondary decision questions:

- i. How do we evolve the curriculum in a way that translates science into better oral health?*
- ii. How do we build, maintain, and enrich a committed faculty and staff?*
- iii. How do we attract, maintain, and support quality students?*

(2) The focal question posed by the Scenario Working Group of the Millennium Ecosystem Assessment (Cork et al 2006; MA (Millennium Ecosystem Assessment) 2005) was:

*"What are the consequences of plausible changes in development paths for ecosystems and their services over the next 50 years and what will be the consequences of those changes for human well-being?"*

This key question was then defined through a series of more specific questions:

*"What are the consequences for ecosystem services (ES) and human well-being (HWB) of strategies that emphasize:*

- i. economic and human development (e.g. poverty eradication, market liberalization) as the primary means of management?*
- ii. local and regional safety and protection, and give far less emphasis to cross-border and global issues?*
- iii. development and use of technologies allowing greater eco-efficiency and adaptive control?*
- iv. adaptive management and local learning about the consequences of management interventions for ecosystem services?"*

As is probably evident, the specific questions in the Millennium Assessment were defined after critical uncertainties had been identified. This illustrates how a focal question can, and usually does, change during the course of a scenario planning project.

(3) The participants in the Avon River Basin 2050 scenario planning study (O'Connor et al 2004) identified their focal question as:

*"What critical issues and attendant drivers of change are relevant to community efforts to improve the regional prospects for present and future generations of the Avon River Basin to 2050?"*

## Orientation and exploration

Scenario Workshop 1 (October 2007) will cover the first two phases of Figure 7 (Orient and Explore). As discussed above, the first important objective in the orientation phase of scenario planning workshops is to identify the focal question. This is best done by interviewing key decision-makers. We made a start towards this at the RCMG meeting in August. We will discuss the focal question further with the Steering Committee prior to the first workshop, and then briefly review that question with the workshop participants.

The exploration phase will involve identifying factors that are likely to drive change in the catchment in the future. We will encourage participants to consider factors that are both predictable and unpredictable, that relate to their immediate working environments and

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that also will lie outside those environments (Figure 5). To aid in this process, we are producing a range of background material on past and emerging trends, and we will be inviting a small number of guest speakers to present to the workshop participants on the first day of Scenario Workshop 1. We hope also to have received and synthesised some responses to the surveys.

On the second day of Scenario Workshop 1, we will identify which factors driving change are relatively predictable versus those that are unpredictable. We will then identify a small number of critical uncertainties and outline a set of possible scenarios.

The workshop will identify a set of actions that need to be taken before the second workshop to prepare the participants to decide which critical uncertainties they wish to work with. Between Scenario Workshop 1 and the second workshop, the facilitators and any interested workshop participants will address these actions.

### Synthesis

Scenario Workshop 2 (November 2007) will deal with the third phase (Synthesise). This will allow the workshop participants to both describe a set of clear scenarios and pose a set of questions to be addressed in the scenario testing as part of the Namoi 2030 Regional Resources Study through December 2007 and January-March 2008.

		World Development	
		Globalization	Regionalization
Environmental Management	Reactive	 <b>Global Orchestration</b>	 <b>Order from Strength</b>
	Proactive	 <b>TechnoGarden</b>	 <b>Adapting Mosaic</b>

**Figure 8**

**The Millennium Assessment scenarios were based on two critical uncertainties: (1) Whether the world gets more or less connected; and (2) whether environmental management gets more or less proactive. The extremes of these two uncertainties were combined pair-wise into four scenarios.**

In this Second Scenario Planning Workshop, the participants will decide which critical uncertainties they think are most relevant for the future of the catchment and can capture the full range of important issues that need to be considered in the scenarios. An example of how a very large number of drivers of change can be reduced to only two major, over-arching, critical uncertainties is given in Figure 8. This figure illustrates the

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scenarios developed by the Millennium Assessment (Cork et al 2006; MA (Millennium Ecosystem Assessment) 2005), which can be accessed electronically. A quick look at the figures in Appendix 3 shows that basing scenarios on only a small number of critical uncertainties still allows scenario developers to explore a very wide range of issues.

It is not essential to develop scenarios in the way that the Millennium Assessment did (that is, using two critical uncertainties arranged to give four matching scenarios), although this is a very useful and commonly used device. Whether we go with this approach or some alternative ways to decide on a set of scenarios will be determined by what critical uncertainties the group comes up with and how convergent or divergent their views are. For those interested in reading about other approaches to identifying scenarios a very useful publication is "What If?" (Searce et al 2004).

The bulk of this workshop will be devoted to working through the details of these scenarios. This will involve:

- identifying what the future might look like under each of the scenarios and what steps and timelines would have been required to reach that future
- interviewing participants who have expertise in certain areas to gain their views on critical hurdles that might need to be overcome and to identify logical inconsistencies in the scenario storylines
- asking each of the scenario writing teams how the catchment might respond to a set of surprises or shocks as a way to explore the resilience, or lack of it, in the Namoi's people and their institutions in each of the scenarios.

Overall, the objective will be to produce a set of internally consistent scenarios that are plausible and raise important issues that catchment managers and other stakeholders might need to deal with the future.

By the end of the workshop we will have identified a set of well-developed scenarios accompanied by a set of clear questions to pass on to the Namoi 2030 team to address in scenario testing over the following months.

## Acting and monitoring

It is critically important in this project that the scenario planning does not remain separate from the strategic planning and operational planning of Namoi catchment managers. The contributions of the scenario planning to the Namoi 2030 Resources Strategy will be managed by the Namoi 2030 team. However, the scenarios have broader implications for a wide range of planning processes in the Namoi.

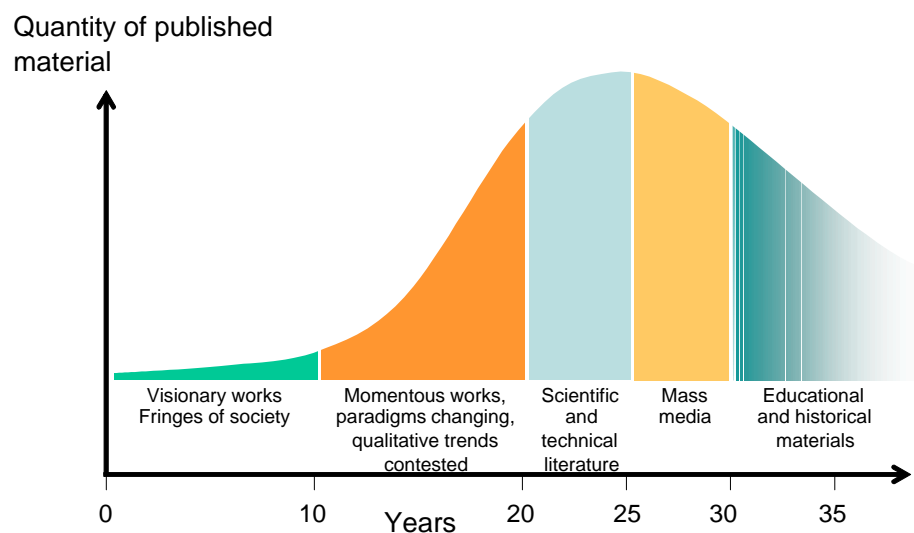
During the several months between the Second Scenario Planning Workshop (November 2007) and the Third Scenario Planning Workshop (April 2008), participants will be asked to consider the strategic implications of what they have learned through the scenario planning process and to consider what events or trends might indicate which scenarios or combinations of scenarios are starting to play out in the future. They will be given a set of guidelines and tools to help them in this task. In the Third Scenario Planning Workshop, participants will be asked to share and consider both their own thinking and feedback from the scenario testing process. There will also have been some large stakeholder workshops to consider the implications of the scenarios, and the outputs of these will be considered in the Third Scenario Planning Workshop. The types of questions that will be posed in this workshop include:

- What assumptions, attitudes, expectations, and visions of the future that we previously had has been challenged or strengthened by the scenario planning process?
- What challenges and opportunities are likely to arise in each of the scenarios?
- What characteristics of the catchments resilience might be enhanced or challenged in different scenarios?

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- What processes those of the catchment currently have that would prepare it for the sorts of challenges and opportunities that might arise under different scenarios?
- What processes or institutions are not currently present, or are not currently working well, that might need to be developed or improved to deal with the challenges and opportunities of different scenarios?
- What risks and risk mitigation strategies might need to be developed to deal with challenges and opportunities in different scenarios, and when would action need to be taken? (Risk management strategies arising from scenario planning really try to prepare for all possibilities in all scenarios, but strike a balance between being prepared for challenges and opportunities that appear to arise in most or all scenarios, and keeping a watchful eye for the emergence of risks that might arise in only some scenarios).

Also from this workshop, we will develop a set of indicators of change that can be monitored in the future to assess whether one or more elements of the scenarios are emerging and to revise the scenarios and the thinking behind them as more information becomes available. We will provide advice on how to set up an environmental scanning process by which catchment manages can do this monitoring. Such processes involved routine scanning of a wide range of media including scientific literature but also magazines, radio, television and print news reports, and even talk shows and fringe Internet sites.



**Figure 9**  
Timeline for emergence of issues (Inayatullah 2005)

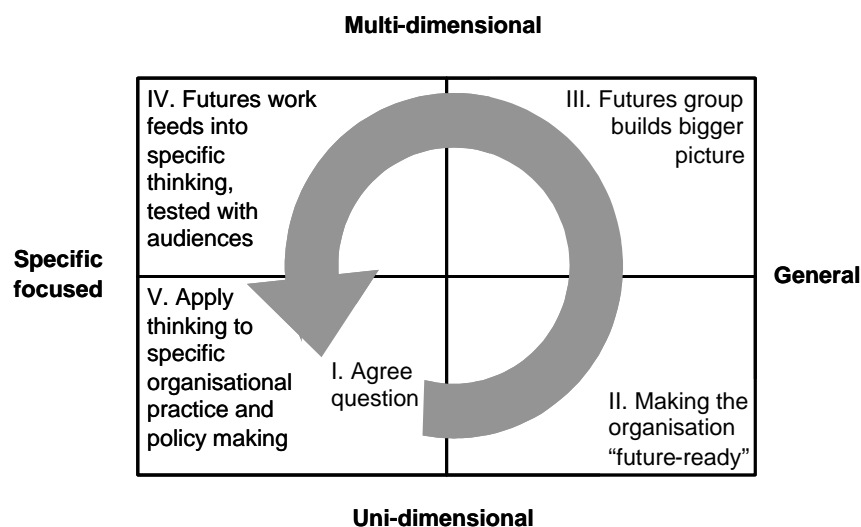
An example of how issues emerge is shown in Figure 9. By the time issues are well established in the scientific literature, and have found their way into the public media and the consciousness of political leaders, they have often been around for as much as 30 years. Good environmental scanning seeks to identify the signs of these emerging issues much sooner.

We hope that there will be expressions of interest from some who have taken part in the scenario planning process to also be involved in ongoing environmental scanning.

# APPENDIX 1: BEST PRACTICE

## A. The Strategic Futures Journey

The Henley Centre have developed the following diagram to illustrate the importance of taking strategic futures thinking through the full cycle from "out of the box" thinking to practical inputs to strategic planning. However, they also emphasise the importance of not confusing scenario planning with strategic planning.



**Figure 10**  
**The Strategic Futures Journey (Henley Centre 2001)**

## B. Best practice strategic futures thinking

The following principles for best practice strategic futures thinking (Table 2) were developed by the Henley Centre from a study of over 50 organisations across Europe.

**Table 2**  
**Ten principles for best practice strategic futures thinking (Henley Centre 2001)**

Principle	Explanation
1. Start early	A key best practice finding is that the benefits of strategic futures work are maximised if it is started sufficiently early. If the organisation waits until it feels the pain from turbulent conditions it is likely to be too late to adequately act on the findings.
2. Understand that strategic futures work is about	The purpose of strategic futures work is not to predict the future but to assist the organisation to prepare for the future by: <ul style="list-style-type: none"> <li>producing a shared understanding as to possible futures and the</li> </ul>

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rehearsal rather than knowledge	<p>opportunities or threats that they represent</p> <ul style="list-style-type: none"> <li>enabling the organisation to better manage turbulent environments by improving the speed and flexibility of response.</li> </ul>
3. Ensure there is clarity about the objectives and intended uses of the work	It is critical to provide a clear strategic remit for any futures work. Thus it is important to allow sufficient time at the beginning of the process to discuss objectives and intended uses of the work.
4. Be patient about the process – it may take time to deliver benefit to the organisation	The benefits of strategic futures work may take time to realise. Overall, the work is more likely to have a significant impact if it is approached as a continuous process of learning rather than a quick one-off exercise. Some futures thinking may filter into the policy area years after it has initially been developed.
5. Ensure senior management buy-in and involvement	It is important that senior management have an understanding of the benefits of strategic futures work, that they are visibly seen to support the process, and that they are exposed to it - thinking about the future can't be entirely delegated.
6. Ensure the buy-in and involvement of other key stakeholders	It is also important to create buy-in and involvement amongst those who are likely to be affected by the work or be charged with taking it forwards. Thus, representatives from key departments should be included in the process of developing strategic futures insight. Ensure that learning about strategic futures thinking is distributed through the organisation as quickly as possible, eg, by incorporating it into appropriate training programmes. Be aware that the media is prone to misrepresent strategic futures work in the public sector as being about 'policy' options rather than improving the quality of thinking about the future.
7. Choose the right people for the job and give them a licence to be different	Select individuals who have an aptitude for and interest in engaging with the future and the will and ability to question existing assumptions. Locate them close to the heart of the organisation, geographically and organisationally. Give this group a brief and grant them a licence to challenge existing management thinking. Accept that the process may cause some organisational discomfort as it tests new and different ideas beyond current received wisdom. Encourage them to build networks which link the organisation to a wide range of appropriate sources of new thinking. Also recognise that the futures group has to be able to do some work which is independent of the needs of immediate sponsors or projects – this may need special funding arrangements.
8. Use an appropriate balance of internal and external inputs	Do not underestimate the value of the knowledge within the organisation. A participatory process should be used to draw out internal knowledge. At the same time, it is also important to include a wide range of external views. The purpose of this is to stimulate new thinking within the organisation and ensure that the process avoids re-creating the existing strategy. If required, external assistance should be used to initiate processes, pass on skills, inject fresh insight and test assumptions.
9. Align the methodology with the purpose of the work and the culture of the organisation	There are several different approaches to developing strategic futures insight. It is important to avoid a 'one size fits all' approach. For example, whilst scenario planning is widely used and can deliver significant benefits is not always the appropriate approach or the only methodology that should be used. The key requirement is to ensure that there is a fit between the approach used, the ultimate objectives of the work and the culture of the organisation. The methodology must have the confidence of the participants and the end-users – or it will need to win that confidence early on in the process.
10. Develop feedback	It is important to ask the questions: How has the work been useful to us? How could the process be improved next time? This insight should then be

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mechanisms to create a virtuous circle of learning	incorporated into any future work. Ensure that the tracking metrics are communicated effectively into the organisation.
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## APPENDIX 2 : RCMG VIEWS

At a meeting in Armidale in August 2007, Regional Coordination and Management Committee (RCMG) members were asked the question "What are the key questions you think the scenario planning should address?"

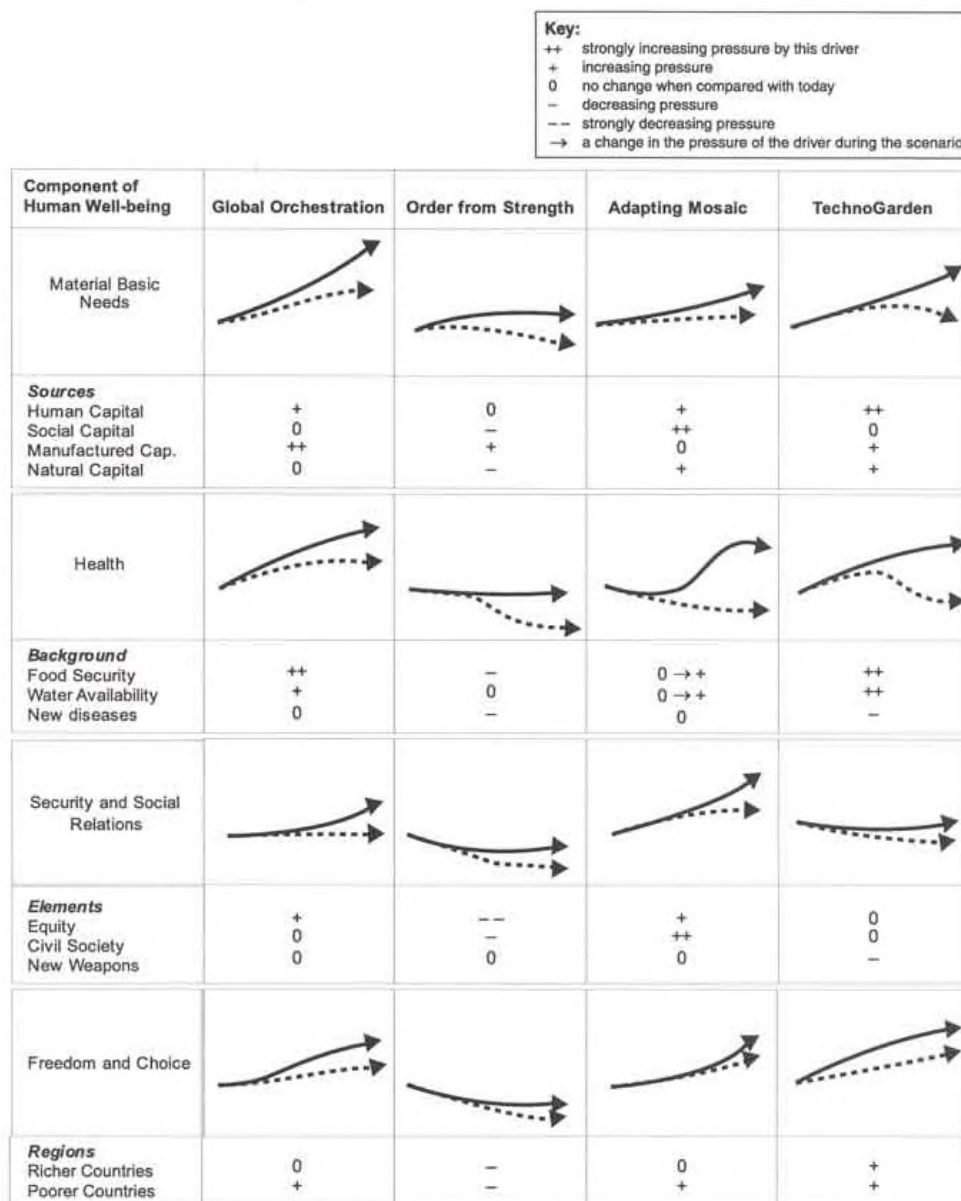
The RCMG members raised the following as key issues to be considered:

- Water (esp. uses to which it is put such as agriculture or mining; pressures for agriculture and highest value economic activity)
- What's in it for people? What is life like in the catchment?
- External influences
- Education (for example, schools are more likely to be influenced by technology and the globalisation of education)
- Employment
- Technologies. What activities will be accomplished through technology (What does technology substitute for?)
- Globalisation
- Creating the future
- Workforce composition (esp. skilling/re-skilling the workforce)
- Housing
- Cultural heritage/Sacred sites
- New uses and values for the land (impacts of legislation like the Land Rights Act)
- Balancing economic growth, equity, and preventing marginalisation of some groups
- Who might make decisions and facilitate change in the future?
- What might government policies and philosophies look like in the future? (For instance, will economic rationalism underpin government approaches?)
- What alternative governance arrangements might be possible and needed in the future?
- How might services (especially emergency services) be delivered under a range of future pressures?
- What risks of natural, economic and social disasters are possible in the future?
- What demands/ needs might there be for infrastructure in the future?
- Will equitable 'access' be an issue (especially transport)? How will this be achieved in the future?
- How do we avoid undesirable outcomes (like reduced resilience) from policies in the future?
- Climate change
- How can residents of the Namoi achieve a high, shared quality of life in the future?

This suggests that an overarching focal question might be "what factors might aid or hinder the maintenance or improvement of quality of life for residents of the Namoi catchment in the future?"













# APPENDIX3: FURTHER EXAMPLES

The Following examples show how a wide range of issues can be addressed in scenarios based on only two key uncertainties. For details of the scenarios, see Figure 8. The figures below (Cork et al 2006), and can be access on line at <http://www.ecologyandsociety.org/vol11/iss2/art11/>. These figures illustrate the best case (solid line) and worst case (broken line) outcomes suggested by the four scenarios.



# An Introduction to Scenario Planning

Key:	
++	strongly increasing pressure by this driver
+	increasing pressure
0	no change when compared with today
-	decreasing pressure
--	strongly decreasing pressure
→	a change in the pressure of the driver during the scenario

	Global Orchestration	Order from Strength	Adapting Mosaic	TechnoGarden
Biodiversity (rate of loss)				
<b>Direct Drivers</b>				
N-S Deposition	++ → +	++	++	+ → 0
Climate Change	++	++	++	+
Invasive Species	++	0	0	++
Land-Use Change	+	++	+ → 0	0
Wetlands (area degraded)				
<b>Direct Drivers</b>				
Land-Use Change	+	++	+ → 0	0
Invasive Species	++	0	0	++
Climate Change	+	+	+	+
Water Schemes	++	0	0 → -	+ → 0
Water Withdrawals	+	++	+ → 0	0
Drylands (area degraded)				
<b>Major Drivers</b>				
Poverty	-	++	+ → 0	+
Climate Change	++	++	+	0
Irrigation	-	+	0	+

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