



 Australian Government

 Image: Australian Government

 Land & Water Australia

 Department of the Environment and Heritage



CHANGE AND CONTINUITY IN PERI-URBAN AUSTRALIA Peri-Urban Futures & Sustainable Development

Darryl Low Choy, Cassara Sutherland, Brendan Gleeson, Jago Dodson and Neil Sipe



Urban Research Program Monograph 4 May 2008

CHANGE AND CONTINUITY IN PERI-URBAN AUSTRALIA: Peri-Urban Futures & Sustainable Development

Darryl Low Choy Cassara Sutherland Brendan Gleeson Jago Dodson Neil Sipe

Monograph 4 Urban Research Program May 2008

> Urban Research Program Griffith University Brisbane, QLD 4111 www.griffith.edu.au/centre/urp

Change and Continuity in Peri-Urban Australia: Peri-Urban Futures & Sustainable Development

Monograph 4 of 4

Change and Continuity in Peri-urban Australia is a collaborative research project by researchers from Griffith University's Urban Research Program, Griffith School of Environment and RMIT University's School of Global Studies, Social Science and Planning.

Funded by:

Land and Water Australia and the Commonwealth Department of Environment and Heritage.

Copyright 2008 ©

Darryl Low Choy, Cassara Sutherland, Brendan Gleeson, Neil Sipe and Jago Dodson.

Copyright protects this material. Except as permitted by the Copyright Act, reproduction by any means (photocopying, electronic, mechanical, recording or otherwise), making available online, electronic transmission or other publication of this material is prohibited without the prior written permission.

ISBN 978-1-921291-28-9

Published by Griffith University, Nathan, 2008

Urban Research Program Griffith School of Environment Griffith University Nathan Campus 170 Kessels Road, Nathan Brisbane, Queensland, 4111

Australia.

Citation details: Low Choy, D., Sutherland, C., Gleeson, B., Sipe, N. and Dodson, J. (2008) *Change and Continuity in Peri-Urban Australia: Peri-Urban Futures & Sustainable Development.* Monograph 4, Griffith University, Brisbane.

Cover Photograph: High Tech Agriculture, Peri-urban areas surrounding De Lier, Westland, The Netherlands: Darryl Low Choy

Acronyms & Abbreviations

ABS	Australian Bureau of Statistics
AT	Aspirational Target
CMA	Catchment Management Authority
CSA	Case Study Area
DEH	Department of Environment and Heritage
DOI	Department of Infrastructure (Victoria)
DIY	do-it-yourself
HLOF	Healthy Land-Our Future
LGMS	Local Growth Management Strategy
LWA	Land and Water Australia
NIMBY	not in my backyard
NRM	natural resource management
OUM	Office of Urban Management
PP&WP	Port Phillip & Western Port
PRG	Project Reference Group
RCS	Regional Catchment Strategy
RCT	Resource Condition Target
SEQ	South East Queensland
SEQRP	South East Queensland Regional Plan
UGB	urban growth boundary
VPO	Vegetation Protection Overlay

Preface

This is the fourth monograph produced as part of research into peri-urban areas in Australia funded by Land and Water Australia (LWA) and the (former) Commonwealth Department of Environment and Heritage (DEH). The research project, *Change and Continuity in Peri-urban Australia*, aims to help redress the relative lack of attention given to peri-urban regions in Australia and to contribute to a growing international literature on these areas.

The project has produced four monographs. The first, *Change and Continuity in Periurban Australia, State of the Peri-urban Regions: A Review of the Literature* was published in October 2006. This monograph was intended to inform the later project work, and provided:

- a critical review of Australian and international research and evidence encompassing conceptual and policy literatures;
- an identification of key empirical and knowledge gaps nationally and regionally;
- an identification of key conceptual, governance and institutional arrangements and issues for peri-urban regions in Australia, as well as methodological issues, typologies, and policy responses, and the implications of these factors for peri-urban change; and
- a preliminary outline of sectoral and cross-sectoral concerns which apply to Australian peri-urban regions.

The second and third monographs are case studies of two Australian peri-urban regions, the Extended Western Corridor to the west of Brisbane and the Bendigo corridor north-west of Melbourne. They analyse spatial, land use, environmental, social and economic trends; describe and analyse governance, institutional, policy and management arrangements and evaluate their adequacy; and examine the implications of change for future land use and land management.

This fourth monograph models possible future land use, development and management scenarios. This has involved a review of relevant literature, concepts and methods, and assesses change and continuity in two Australian peri-urban regions – South East Queensland (SEQ) and the greater Melbourne region in Victoria.

The project involves a team of researchers working in collaboration from RMIT University's School of Global Studies, Social Science and Planning, and Griffith University's Urban Research Program (Griffith School of Environment). The RMIT team was responsible for the drafting and finalisation of Monograph 1. The RMIT University team prepared Monograph 2, and the Griffith University team was responsible for preparing Monographs 3 and 4. Joint project chief investigators are Associate Professor Michael Buxton, RMIT University, and Associate Professor Darryl Low Choy, Griffith University.

The Griffith University research team consisted of Darryl Low Choy, Cassara Sutherland, Sally Scott, and Kylie Rolley with support from Brendan Gleeson, Neil Sipe and Jago Dodson. Administrative and technical support was provided by

Stephen Horton, Joanne Pascoe, Rick Evans and Aubrey Chandica. We also thank the members of the Project Reference Group for their contributions. The reference group consisted of Simon Warner, Mick Capelin and Janet Frost from Queensland, and Mick Lumb, Carolyn Cameron, Jim Crosthwaite and Ian Morris from Victoria.

Michael Lester, Noel Beynon and Laura Harris, from Land and Water Australia, provided valuable liaison on the project.

Executive Summary

This Monograph reports the findings of a scenario planning exercise which has been undertaken as the third and last phase of the *Peri-urban Continuity and Change* project by a joint research team from RMIT University and Griffith University. Phase 3 was undertaken by the Griffith University team.

The third phase was completed within the context of the project's principal aims which have been to identify the nature and extent of contemporary peri-urban Australia and the likely future patterns of socio-economic, cultural and particularly, natural resource developments in peri-urban landscapes. Phase 3 has extended the work of the two previous phases of the project, being a search of the international and national literature to establish the contemporary research frontier (Phase 1), and case study research into two peri-urban areas in the country's two fastest growing metropolitan regions – the South East Queensland and the greater Melbourne regions (Phase 2).

This last phase has involved the construction of two scenarios of possible futures for the two case study regions under investigation. This was done in order to test the robustness of the regions' "official" land use planning strategies and NRM plans to perform under the circumstances of these hypothetical scenarios and address a range of landscape management challenges predicted to be associated with these possible futures. This was achieved through a scenario planning approach which provided a systematic method for the development and testing of plans and strategies in an uncertain environment through the creation of these possible futures to test them in.

It saw the development of two opposing scenarios to address a theoretical debate in the contemporary literature which provides two opposing views that endeavour to explain the ability of peri-urban areas to withstand certain drivers of change associated with the forces of urbanisation. The resulting *Agriculturally Declining* and *Agricultural Revival* scenarios for the SEQ and greater Melbourne regions served as a "test bed" to assess the likely performance of these region's current planning and management instruments. These land use strategies and NRM plans are the principal means available to address the peri-urbanisation process which have been active in these regions for the past two to three decades and which appear from current evidence will continue to influence these regions in the foreseeable future.

The 'wind tunnel tests" provide an insight into this phase's Focal Question which asked:

What are the plausible changes in the SEQ/greater Melbourne region's agricultural industry over the life of the SEQ Regional Plan 2005-2026 /Melbourne 2030 Plan and the Regional NRM Plan/s, and what will be the consequences of those changes for existing peri-urban areas in these regions?

They have also served to address the secondary question: What steps are necessary to achieve sustainable peri-urban landscapes in SEQ and Melbourne regions in the medium to long term?

The assessment of the performance of the strategies and plans within the possible scenarios suggest that whilst the peri-urbanisation process will continue, the context in which it will do so could vary greatly from circumstances exemplified by the *Agriculturally Declining scenario* through to the *Agricultural Revival* scenario.

Two findings stand out in both case studies. Firstly, the past spatial fragmentation of these landscapes will continue in the near future and be dominated by activities associated with ongoing peri-urbanisation processes. This study has shown that existing statutory planning attempts to prevent this continued fragmentation will not be sufficient to address future peri-urbanisation resulting from the sale and split up of multi-titled farms comprised of a number of small lots – in the case of SEQ, each below the regulated minimum subdivision size of 100 hectares.

Secondly, its has been noted from the Phase 2 investigations and supported by the findings of Phase 3, that both case study regions have experienced the increasing investment in intensive high capital forms of agricultural production along with the increasing dominance of non urban industries including the equine industry and related activities of a growing 'horse community'.

These emergent trends of spatial fragmentation and land use intensification within the peri-urbanisation process present a quandary for current planning and landscape management efforts which must strive to maintain flexibility to support future regional needs whilst responding to community aspirations within a context of ensuring a sustainable landscape.

This phase has built on the conclusions and recommendations of previous phases and has proposed a series of immediate and short term steps to address the deficiencies in current planning and management approaches that were identified through the scenario planning assessments. This phase has proposed a series of immediate steps to address:

- vertical alignment of planning
- landscape fragmentation
- the process of peri-urbanisation
- understanding the new landscape managers
- discrete policy attention for agriculture
- economic development
- climate change impacts and adaptation
- biosecurity threats

Additionally, the following short term steps have been proposed to address:

- internal coordinating frameworks
- a suite of peri-urban planning tools
- horizontal alignment of planning
- new forms of agricultural production
- new forms of non urban industries
- the advent of tree farming
- a possible new form of settlement

The actual scenario planning exercise of this phase has involved the principal planners, policy makers and natural resource managers in land use planning and natural resource management from the case study regions along with key

stakeholders from the agricultural industry with an interest in the specific peri-urban areas. Utilisation of a small select group of this nature, whilst recommended from a methodological perspective, does not ensure that the lessons of the scenario planning exercise are widely disseminated to a wider community of stakeholders who would benefit from these scenarios and the considerations of possible futures that must be prepared for. Hence, it is important that the scenarios are communicated to a wider audience of stakeholders so that they can benefit from the reflection of the scenarios and their consequences. The scenarios can provide a useful 'hypothetical' to engage stakeholders about the uncertainties of the future, especially in the context of a wider regional planning and visioning exercise.

This phase has reached the conclusion that within the context of continuing periurbanisation involving an evolving and maturing "new settlement" landscape – one that is neither truly 'rural' nor truly 'urban' – the regions investigated are at the crossroads of significant change. The sustainable management of these peri-urban landscapes will require robust planning and management instruments supported by consistent and strong political support and commitment which the present study has show are the immediate perquisites to achieving the community's vision of a sustainable landscape in both regions.

The project was funded by Land and Water Australia (LWA) and the (former) Department of Environment and Heritage (DEH).

Table of Contents

Preface		iv
Executive S	ummary	vi
Table of Co	ontents	ix
List of Tab	les	x
List of Figu	Ires	x
List of App	endices	x
1. Introd	uction	1
2. Peri-ui	banisation processes and Emergent Peri-urban Communities	3
2.1. Ba	ackground	3
2.2. Ty	/pology of Peri-Urbanisation	4
2.3. TI	ne New Peri-Urban Frontier	5
2.4. TI	ne Peri-urban Agriculture debate	9
3. Scenar	io Planning	10
4. Metho	dology	
4.1. Fo	ocal Question	12
4.2. Se	cenario Development	15
4.3. Te	esting Existing Strategies and Plans	16
5. The Ca	ase Study Areas	
5.1. TI	ne South East Queensland Region	18
5.1.1.	Key Findings and Trends – Phase 2 Case Study Research	19
5.1.2.	Challenges Identified for the SEQ Region	20
5.1.3.	The SEQ Regional Plan 2005-2026	24
5.1.4.	A New Peri-urban Landscape	25
5.2. TI	ne greater Melbourne region	25
5.2.1.	Key Findings and Trends – Phase 2 Case Study Research	26
5.2.2.	Identified Challenges for the Greater Melbourne region	31
5.2.3.	Melbourne 2030 Plan	32
6. The So	enarios	
6.1 A	Rapid Decline of Agriculture Scenario	38
6.1.1.	An Agriculturally Declining SEQ Region	39
6.1.2.	An Agriculturally Declining Melbourne Metropolitan Region	43
6.2. A	Revival of Agriculture Scenario	47
6.2.1.	An Agriculturally Revived SEQ Region	47
6.2.2.	An Agriculturally Revived Melbourne Metropolitan Region	49
7. The 'W	(ind Tunnel Tests'	53
7.1. S	EQ Region Responses	
7.1.1.	Regional Land Use Planning Initiatives	
7.1.2.	Regional NRM Planning Initiatives	
7.1.3.	Summary of SEQ Scenarios	75
7.2 G	reater ivielbourne kegion kesponses	
7.1.4. 	Regional Land Use Planning Initiatives	
7.1.5.	kegional INKIVI Planning Initiatives	87

7.1.6	6. Summary of greater Melbourne Scenarios	
8. Con	fronting the Future	
8.1.	Signposts	
8.2.	Immediate Steps	
8.3	Short Term Steps	
9. Con	clusions	
Bibliogra	iphy	
Appendi	ces	1

List of Tables

Table 1:Testing Regime for "official" Strategies & Plans against Scenarios	17
Table 2:Scorecard for SEQRP Policy response to an Agriculturally Declining Scenario	58
Table 3: Scorecard for SEQRP Policy response to an Agricultural Revival Scenario	60
Table 4: Scorecard for HLOF Policy response to an Agriculturally Declining SEQ Scenario	70
Table 5:Scorecard for HLOF Policy response to an Agriculturally Revived SEQ Scenario	72
Table 6: Scorecard for Melbourne 2030 Policy response to an Agriculturally Declining	80
Table 7: Scorecard for Melbourne 2030 Policy response to an Agricultural Revival	82
Table 8: Scorecard for PP&WP RCS Policy response to an Agriculturally Declining Scenario	89
Table 9: Scorecard for PP&WP RCS Policy response to an Agricultural Revival Scenario	91

List of Figures

Figure 1: Peri-Urban Typologies	4
Figure 2: Landscape Management Challenges in the Peri urban Zones	7
Figure 3: Social & Economic Challenges in the Peri urban Zones	8
Figure 4: Change and Continuity in Peri Urban Australia - Phase 3 Methodology	14
Figure 5: Multi driver Spider web for Construction of Scenarios	17
Figure 6: Global (Exogenous) Drivers of Change	36
Figure 7: National (Exogenous) Drivers of Change	36
Figure 8 Regional (Endogenous) Drivers of Change	37

List of Appendices

Appendix A: Fact Sheets Developed for SEQ and Melbourne Scenario Planning Workshops

- Appendix B: Scenario Planning Workshop Outline
- Appendix C: Scenario Planning Workshop Participants

1. Introduction

For a number of decades now, planning, natural resource and landscape management agencies throughout Australia have sought to develop satisfactory responses to the challenges presented by the spontaneous urban related growth on the fringes of our urban centres. This growth, which has resulted in land use conversation of former rural lands into fragmented closer subdivisions, has subsequently developed varying dependencies on their nearby urban centres for a range of economic, employment, social and cultural purposes. This dynamic periurbanisation process has been characterised by the temporary mix of urban and rural activities and functions in a blurred transitional zone which exhibited a high degree of heterogeneity, continual change and conflicting values. However these periurbanisation processes have been imperfectly understood and past planning and policy responses have not been underpinned by a thorough theoretical basis.

The *Peri-urban Continuity and Change* project, of which this Monograph is part, has been funded by Land and Water Australia (LWA) and the (former) Department of Environment and Heritage (DEH) to commence the redress of these deficiencies by focusing on a number of broad strategic issues related to peri-urbanisation. Essentially, the principal aims of the project were to:

- 1. identify the nature and extent of contemporary peri-urban regions in Australia; and
- 2. examine the likely future patterns of socio-economic, cultural and particularly, natural resource development in peri-urban landscapes.

Addressing the project's first aim involved a two state examination of environmental, social and economic trends and the adequacy of current governance, institutional, policy and management arrangements in the peri-urban areas within two of the nation's fastest growing metropolitan regions. The selected case study areas (CSA) were the extended Brisbane-Ipswich corridor to the west of Brisbane in South East Queensland (SEQ) and the Bendigo corridor to the north west of the Melbourne metropolitan area in Victoria. These case study reviews were completed within the context of a proceeding review of the national and international literature.

Secondly, the project has outlined the implications of environmental, natural resource, and socio-economic changes to future land use and management in two case study regions containing the CSAs through the development of scenarios that address possible futures for these regions.

The project has produced four monographs. The first, *Change and Continuity in Periurban Australia*, *State of the Peri-urban Regions: A Review of the Literature* reported the findings from Phase 1 of the project. This monograph informed the later project work and provided:

- a critical review of Australian and international research and evidence encompassing conceptual and policy literatures;
- an identification of key empirical and knowledge gaps nationally and regionally;
- an identification of key conceptual, governance and institutional arrangements and issues for peri-urban regions in Australia, as well as methodological

issues, typologies, and policy responses, and the implications of these factors for peri-urban change; and

• a preliminary outline of sectoral and cross-sectoral concerns which apply to Australian peri-urban regions.

The second and third monographs are case studies of the two Australian peri-urban areas, the Extended Western Corridor to the west of Brisbane and the Bendigo corridor north-west of Melbourne. Monographs 2 and 3 reported the Phase 2 case study investigations in terms of:

- the environmental, natural resource, agricultural, economic, land use and social trends that were evident in the study areas and how the key factors interacted;
- the key drivers of these trends;
- the institutional, legislative, policy and other instruments that are in place to manage the trends and the adequacy are these instruments to anticipate and respond to the likely changes; and
- the factors that could influence how rural and peri-urban lands are used in the future.

This fourth monograph reports the findings of Phase 3 of the project. This last phase addressed the following key research questions:

- 1. What alternative scenarios of future development, change and impacts of urban growth are possible in the two case study areas?
- 2. What policy, institutions, governance, regulations and other measures would be assumed under different scenarios?

These questions were addressed through a scenario planning exercise. Scenario planning is a systematic way to develop and test plans and strategies (and decisions) in uncertain times by creating futures to test them.

The aim of Phase 3 was to develop a number of scenarios embracing future uncertainty in the mid to long term in which to test a range of existing strategies related to the management of peri-urbanisation and existing peri-urban areas in South East Queensland (SEQ) and the greater Melbourne region.

2. Peri-urbanisation processes and Emergent Peri-urban Communities

2.1. Background

Rural areas adjacent to urban centres which they influence and expand into have been variously referred to as the urban fringe, metropolitan fringe, rural-urban fringe or the urban-rural interface (Theobald, 2001: 21), the 'near-urban' (Budds and Minaya, 1999), the 'pre-urban' (Adell, 1999), exurban (Nelson and Dueker, 1990), urban hinterlands, or peri-urban, a term which combines the others. The latter term attempts to transcend the traditional urban-rural dichotomy. However, the literature on peri-urban regions and the process of peri-urbanization reveals a range of definitions for these terms, and experiences that vary from country to country (see Monograph 1).

Many researchers regard peri-urban development as a new and distinct form of settlement. Nelson and Dueker (1990: 91), for example, state that:

There is emerging across the continental United States a new form of urban development. It extends far into the rural countryside but within the limits of commuting range to urban and suburban employment opportunities (Herbers, 1986). It is settled by households willing to spend large amounts of their income and commuting budget in pursuit of splendid isolation.

However, the peri-urban area often defies the precise separation between urban and rural settlements, with both rural and urban activities taking place in these areas (Allen, 2003). Commonly, pockets of suburban housing, large residential and rural residential lots, a range of farming activities including intensive agriculture and shed based agriculture, resource extraction activities, utility installations and major urban infrastructure and services facilities such as airfields, landfills, schools, churches, retail and commercial premises, and tourist and recreational uses coexist. Similarly, natural resources, environmental values, and social and economic systems exist together. The blurring of uses and occupations is one of the dominating characteristics of much of the peri-urban area.

Nelson (1999: 137) argues that the exurban area is "a polyglot of landscapes that include farms of all sizes, small towns, isolated rural subdivisions, a few mobile home parks scattered throughout for good measure, and large-tract residential estates". Audirac (1999: 13) describes "a jumble of rural, urban and suburban, light industrial and high-tech landscapes ... mixed-use-developments featuring hotels, office and recreation space, convenience retail, shopping malls and cultural centres, and undeveloped farmland", along with warehouses, motels, franchised outlets, hobby farmers, gated communities and mobile home parks. As a result, the distinction between city and countryside may be indistinct. Transitional urban related uses can eliminate the distinction between town and countryside leading to undifferentiated sameness and regional placelessness (Healy, 1985).

Walker (1987) elsewhere speaks of the peri-urban zone as invaded countryside threatened by urban expansion in much the same way as Pahl (1956 in Furuseth and Lapping 1999) describing peri-urban change as like a new population invading traditional local communities.

2.2. Typology of Peri-Urbanisation

The previous phases of this study have highlighted a distinctive peri-urban landscape – one shaped by a dynamic urbanising process that can involve the closer subdivision, fragmentation and land use conversation of former rural lands. It involves high levels of non metropolitan growth and results in a blurred transitional zone comprised of temporary mixes of urban and rural activities and functions. The resulting peri-urban landscape will comprise a range of land use activities that exhibit a high degree of heterogeneity, continual change and conflicting values.

If this phenomenon is seen as a process, then it can be related to a number of spatial contexts, many of which will not always be associated with the fringes of metropolitan centres. Hence peri-urbanisation and its distinguishing attributes can also be recognised in a range of urban and non-urban settings outside of more familiar and reported peri-metropolitan regions.

The Phase 2 research has confirmed that peri-urbanisation does occur across a range of metropolitan and non metropolitan landscape settings including: adjacent to a metropolitan centre; adjacent to a (non metropolitan) regional centre; adjacent to an urban centre within the commuter hinterland of a metropolitan centre; adjacent to an urban centre within the rural landscape; or linear contexts along growth corridors, transit routes or amenity landscape settings. Hence it is possible to refine the nature of traditional peri-urbanisation and identify a comprehensive typology of contemporary relevance. This multi-setting typology is illustrated in Figure 1.



Figure 1: Peri-Urban Typologies

The typology acknowledges the traditional inner and outer peri-metropolitan zones commonly associated with polycentric or multi-centric metropolitan centres which in fact are comprised of a random and confusing mix of land uses with urban and rural activities coexisting without apparent order. Peri-urbanisation can also be associated with urban centres that lie within the commuting zone of a metropolitan centre where these peri-urban areas and their urban centre can both share a relationship (economic, employment, social, cultural etc) with the nearby metropolitan centre.

Peri-urbanisation can occur in the vicinity of non metropolitan regional centres where the urbanising processes have overspilled the regional centre's boundary into its surrounding rural hinterland. Likewise, peri-urbanisation can also be distinguished in relation to small discrete urban centres within rural areas well separated from the influences of larger urban and metropolitan centres.

The fourth peri-urban type is usually of a linear nature commonly associated with transit routes, growth corridors or landscape settings favoured for amenity/residential/lifestyle purposes (eg ridge lines, watercourses, coastlines).

A range of diverse residential types including rural residential, hobby farms and lifestyle properties have been associated with the populating peri-urbanisation process. One distinguishing and common characteristic is that none of the new owners/occupants of these properties will use them as a commercial agricultural enterprise that becomes their primary source of income. However, in this mix of temporary land uses, commercial agriculture may still be occurring. This mix of urban oriented and traditional rural activities is often characterised by conflicting values and social disharmony.

2.3. The New Peri-Urban Frontier

Phase 2 has highlighted an evolving peri-urban community, now comprise of a far greater diversity of residents and stakeholders than hitherto. It is this new and evolving community that now has principal stewardship responsibilities for the periurban landscape previously described. Hence, future engagement will need to be directed to this new set of peri-urban landscape "actors" who have been characterised to include the following groups:

The Seekers: including for example "sea/tree change" life stylers, "blockies", religious communities and alternative life stylers;

The Survivors: including DIY home builders, the horse community, "truckies" and "adaptive" farmers;

The Speculators: including farm stays & retreats, the pet industry, boutique farmers, recreational providers, landscape suppliers, the equine industry and developers & real estate agents; and

The Strugglers: characterised by the "holding-on" farmers.

The previous Phase 2 review of the case studies has identified a number of reoccurring distinctive and defining management challenges that are associated with the typologies previously discussed. This complex set of management challenges have been noted across this range of peri-urban settings to include:

- a dynamic zone undergoing constant and rapid change;
- a location within the sphere of influence of adjacent urban centres where growth is related to the growth of those centres;
- a growing population often dependent on the nearby metropolitan/urban centre for employment, cultural, social and recreational needs;
- an area in transition dominated by the temporary nature of land uses;
- low to ultra low housing densities;
- a heterogeneous population;
- an increasing diverse range of heterogeneous and conflicting rural and urban land uses;
- an increasingly fragmented landscape;
- a poorly planned and managed landscape;
- highly contested activities and values; and
- an increasingly illegible landscape character.

The range of management challenges that have been identified as commonly resulting from the peri-urbanisation of these landscapes have been categorised into two groups, comprising:

Landscape Management Challenges: identified as including loss of biodiversity, weeds infestation, pest animals, loss of scenic amenity, water quality decline, changes to hydrological regime, bushfires prevalence, and the landscape management capacity of the incoming peri-urban residents; and

Social & Economic Challenges: these can involve skewed population (loss of youth/young adults & ageing population), social conflicts, social disadvantage, increasing social divide, loss of a 'sense of community', increasing economic divide, emergence of new local and regional economies, and the intensification of agricultural activity.

The relationships between the global, national and regional drivers of peri-urban change and the new set of landscape managers who now have responsibility for the management of the evolving peri-urban landscape, along with the groups of landscape management and socio-economic challenges are illustrated in Figures 2 and 3.

The case study reviews revealed that the challenge for planners and policy makers who are charged with deriving appropriate response measures to manage these challenges at the heart of these rapidly evolving peri-urban landscapes, will be to establish responses that can account for the confusing milieu of land uses, community values and aspirations which bear little resemblance to past approaches. All too commonly, an integrated institutional and management response which can address the range of emergent peri-urban environmental and natural resource management challenges will need to be established.

Figure 2: Landscape Management Challenges in the Peri urban Zones



Landscape Management Challenges



Figure 3: Social & Economic Challenges in the Peri urban Zones



Social & Economic Challenges



2.4. The Peri-urban Agriculture debate

The previous project phases have noted that a common characteristic of peri-urban areas has been the notion of their transitional nature. This notion may imply either a distinct zone between urban and rural areas, or a rural area being transformed into an urban area. Peri-urban areas can either be changed rapidly from rural to urban activities or they can change through a transitional period of land uses change, population increases and settlement intensification. Consequently, the peri-urban zone is either diminished if it is finite, or its inner and outer boundaries move further outward from the dominant urban centre.

Hence, the peri-urban area can be considered a "zone of impermanence", an urban land bank awaiting use, the "residual zone" (Pryor 1968: 205), or "an area of transition, where land, as well as occupational and social structure, await transformation into suburbia" (Friedberger, 2000: 503). Alternatively, it may also be considered "a band of land not yet built up nor provided with public services but irrevocably committed to future urban use" (Audirac, 1999: 16). This impermanent state suggests a situation of constant change that is usually irreversible. In most instances, it would be highly improbable for rural land, once transformed into urban land to revert to agricultural land. Likewise, increases in rural land values on the urban fringe or changes to higher value agricultural uses are highly unlikely to return to lower agriculture uses.

The literature contains two contrasting perspectives on the peri-urban growth question – one associated with the notion of urban dispersal and a second, advocating urban containment. This debate involves a rural perspective where urban expansion is regarded primarily as a threat. By contrast, the urban perspective acknowledges the needs of the city and regards the adjacent rural areas as the means to satisfy urban needs by providing land and resources.

Bunce and Walker (1992) have proposed a conceptual framework exemplifying the rural perspective. They see rural areas as resilient and urbanization is a weak force which only moves into rural areas because the emptying countryside and agricultural transformations create a near vacuum and present opportunities for encroachment. To them, this zone is not "a fragile shell just waiting for the impact of urban invasion" (Bunce and Walker, 1992: 54). They argue that the underlying cause of change in peri-urban areas is not the pressure exerted by the nearby urban centre but declining returns from agricultural activity.

In contrast, the opposing urban view holds that amenity landscapes close to urban centres are subject to the greatest pressure for residential development Barr (2003, 2005). This view acknowledges the role of land speculation as a major cause of the conversion of rural land and not the declining financial returns from agricultural production. It is argued that such declines are characteristic of agricultural land generally and only rural land close to urban centres is generally sought by urban dwellers. Hence, rural land owners close to an urban centre are able to take advantage of their comparative proximity to that centre, irrespective of their motives or declining agricultural returns. Essentially, this view sees proximity to nearby urban centres, along with sought after amenity values of the fringe areas as the critical factors affecting the development of peri-urban land.

3. Scenario Planning

Scenario planning is a strategic tool. It provides a systematic approach for the development and testing of plans and strategies in an uncertain environment through the creation of possible futures to test them in (O'Brien, 2000). Scenario planning creates possible futures to inform present decision-making. Developed during World War 2 and then pioneered by the Royal Dutch Shell Company, the technique is now widely used to consider the future by the public and private sectors worldwide.

Futures thinking needs a structured systematic approach to explore the range of possible futures rather than relying on the prediction of a single expected or 'most-likely' future (Cork et al, 2005). To this end, scenario planning involves:

- the identification of a focal issues or question;
- assessing certain and uncertain drivers of the issue or question over a selected timeframe;
- the development of options based on those drivers i.e. creation of scenarios (plausible and coherent pictures of possible futures);
- the development of narratives from the present to the possible futures (including a 'roadmap' for each scenario with signposts that could indicate if one future is becoming more likely than another) and
- testing existing plans/strategies against each scenario.

Scenario planning is instructive for a decision context that involves a particular question or problem that demands action now but will play out in an uncertain future (O'Brien, 2000). It involves the systematic exploration and description of the range of ways in which uncertainties could be played out and their impact on the focal question. Each scenario involves the consideration of: likely trends; uncertainties; and possible shocks and surprises (welcome and unwelcome).

There is no one way to do scenario planning with most variations being in their qualitative verses quantitative approaches. However, it is important to distinguish that scenario planning is based on the generation of descriptions of possible futures involving a high degree of uncertainty and are not predictions of a particular future. In this sense scenario planning does not involve forecasting or modelling which normally deal with the short term and are based on predetermined elements particularly from the past and the present. Current evidence suggests that two or four scenarios work well with any greater number leading to levels of complexity that potentially dampens engagement. Three scenarios it is suggested, inadvertently promotes the idea that the 'middle' scenario is the most likely most probable future (O'Brien, 2000).

Scenario planning is based on the premise that the future is not "knowable" – any statements, stories, narratives or scenarios about the future are hypothetical possible futures that may or may not be realised (O'Brien, 2000). However they should be built from research that can identify the predetermined and the uncertain elements of the future with the objective being the creation of plausible, coherent pictures/ descriptions of possible futures and the identification of their drivers.

Cork et al (2005) have identified the following steps to futures analysis:

- identify factors that brought about change in the past;
- identify factors that could bring about change in the future;
- separate what is relatively certain from what is uncertain about the future;
- explore the range of ways in which uncertainties could play out (often using carefully constructed 'stories' or 'scenarios' to test logic and communicate key messages); and
- identify what needs to be done now to prepare for later.

This should include the development of "Roadmaps" (plausible narratives) from the PRESENT to these possible FUTURES. It also involves the identification of "sign posts" which are indicators of possible futures being realised such as events, occurrences or observations that can be scanned from the real world. It is also important to log the deliberations and discussions during the scenario construction process in the form of a "Decision Track".

Once constructed, the scenarios can then be used in a "wind tunnel" or "test beds" approach to evaluate and refine existing strategic plans or policies or decisions.

Scenario planning should attempt to involve the key decision-makers – the 'owners' of the problem (focal question). Meaningful scenario planning will be enhanced if participants can bring imagination, expert knowledge, experience and judgement to complement their analysis of empirical data.

Because the actual scenario panning exercise normally involves a small select group, it is important that the scenarios are communicated to the wider audience of stakeholders so that they too can benefit from the reflection of the scenarios and their consequences. The scenarios can provide a useful 'hypothetical' to engage stakeholders about the uncertainties of the future, especially in the context of a wider regional planning and visioning exercise.

4. Methodology

The address of the research questions for this phase required the application of a scenario planning framework. This approach led to the creation of a number of futures to test plans and strategies (and decisions) in times of uncertainty.

Phase 3 Research Questions				
What alternative scenarios of future development, change and impacts of urban growth are possible in the two case study areas?				
What policy, institutions, governance, regulations and other measures would be assumed under different scenarios?				

Phase 3 has involved the development of a number of mid to long term scenarios that embraced the uncertainty facing peri-urban areas. These scenarios facilitated the testing of a range of existing strategies related to the management of peri-urbanisation and existing peri-urban areas in South East Queensland (SEQ) and the greater Melbourne region.

The general methodology for Phase 3 is outlined in Figure 4. It involved the following steps:

- Confirmation of the focal issues and focal question;
- Assessment of certain and uncertain drivers of the focal issues and question over the selected timeframe;
- Development of options based on those drivers ie creation of a set of scenarios (plausible and coherent pictures of possible futures) – asking the "what if?" question;
- Development of narratives from the present to the possible futures (including a 'roadmap' for each scenario with signposts that could indicate if one future is becoming more likely than another);
- Testing a number of existing strategies against these scenarios (eg regional land use strategies and NRM plans); and
- Communication of the scenarios (this Monograph).

4.1. Focal Question

Having established the focus of this phase on the peri-urban agriculture question (see Section 2.4), it was then necessary to develop a focal question that was capable of facilitating exploration of an existing decision or strategy (the 'official future'). Hence, in terms of this study, the focal question needed to embrace the (official) existing regional land use planning strategies and natural resource management plans that were relevant to the two case study regions. It was then logical to frame the focal question in terms of the expected performance of these (official) plans within the two hypothetical scenarios and ask:

What are the plausible changes in the SEQ/greater Melbourne region's agricultural industry over the life of the SEQ Regional Plan 2005-2026 /Melbourne 2030 Plan and the Regional NRM Plan/s, and what will be the consequences of those changes for existing peri-urban areas in these regions?

The focal question gave rise to a secondary question which was addressed subsequent to the scenario planning workshop, viz: What steps are necessary to achieve sustainable peri-urban landscapes in SEQ and Melbourne regions in the medium to long term?

Hence, the "official" land use strategies and NRM plans that related to the case study regions that were available for testing in this manner included:

SEQ: South East Queensland Regional Plan 2005-2026 (SEQRP) and Healthy Land – Our Future (HLOF) – see Section 7.1 SEQ Region Responses; and

Greater Melbourne: *Melbourne 2030 Plan* and the *Port Phillip and Western Port Regional Catchment Strategy 2004-2009* (PPWP RCS) – see Section 7.2 Greater Melbourne region Responses.



Figure 4: Change and Continuity in Peri Urban Australia - Phase 3 Methodology

trends and how adequate are these instruments to anticipate and respond to

- changes? What are the factors that could influence how rural and peri-urban lands are used in 3. the future?
- 4. What are the alternative ways in which Australian society might respond to these factors, in particular, changes to current statutory, legislative, institutional and policy directions/arrangements and the types of land use?

Note:

* from Melbourne 2030 & SEQ Regional Plan 2005-2026

4.2. Scenario Development

Consistent with the previously discussed advice (see Section 3), two scenarios were developed to address the principal issues relevant to the focal question and to the case study areas' (CSAs) specific issues of peri-urbanisation. Scenarios were developed to highlight the specific issues of peri-urban residential, agriculture and NRM. The theoretical considerations related to peri-urban agriculture that underpinned the future of the CSAs and their regions have been discussed in Section 2.4 and in previous monographs (see especially Monograph 1). The summary of these considerations, outlined in the following textbox, was introduced into the scenario planning workshops.

Theoretical Underpinning for Scenarios

This study has defined 'peri-urbanisation' as:

a dynamic urbanising process that can involve the closer subdivision, fragmentation and land use conversation of former rural lands. It involves high levels of non metropolitan growth and results in a blurred transitional zone comprised of temporary mixes of urban and rural activities and functions. The resulting peri-urban landscape will comprise a range of land use activities that exhibit a high degree of heterogeneity, continual change and conflicting values

The notion of transition implies that a peri-urban area is an urban land bank awaiting use – a "residual zone" subject to an "impermanence syndrome".

Two fundamentally important contrasting perspectives on peri-urban regions and growth are held between advocates of separating cities from rural hinterlands, and those who desire rural-urban unification. A rural perspective regards urban expansion primarily as a threat, although at times, by introducing new income and skills into areas outside cities, as an opportunity. An urban perspective will concentrate on the needs of the city, and will regard nearby non-urban areas as the means to satisfy urban needs by providing land and resources. These perspectives underpin much debate on peri-urban issues, for example, between advocates of urban dispersal and urban containment.

A notable example of a rural perspective has the peri-urban zone as invaded countryside threatened by urban expansion where peri-urban change is likened to a new population invading traditional local communities. But this view of the rural environment as a fragile shell just waiting for the impact of urban invasion is challenged by the view that rural life is resilient and urbanisation is a weak force which only moves into rural areas because the emptying countryside and agricultural transformations create a near vacuum and present opportunities for encroachment. Under this scenario, the underlying cause of change in peri-urban areas is not the pressure exerted by the nearby city but declining returns from agricultural activity.

In contrast, peri-urban areas are often regarded as those areas within the sphere of influence of adjacent metropolitan/urban centres. The types of influence may vary greatly and include the effect of cities on the productivity of land, land prices, habitat and the maintenance of biological diversity, landscapes, and commuting patterns.

On the other hand, amenity landscapes close to cities are subject to the significant pressure for residential development. This view recognises the contribution of land speculation as a major cause of the conversion of rural land. In Australia, proximity to cities along with sought after amenity features are the critical factors affecting the development of peri-urban land. Declining financial returns from agricultural production are not the major factor affecting the transformation of rural land to urban purposes because, although such decline is a feature of agricultural land generally, only rural land close to cities generally is sought by city dwellers.

Based on these theoretical consideration surrounding the peri-urban agriculture question, the two scenarios that were developed to provide contrasting set of possible futures to assess the existing strategies and policies against included:

Scenario 1 "Decline of Agriculture"; and

Scenario 2 "Revival of Agriculture".

The research outputs of the project's Phases 1 and 2 provided the foundations for the development of these scenarios. For the purposes of the scenario planning workshops, a series of twenty-one Fact Sheets were prepared that covered the following matters:

General Matters: Scenario Planning; What is Peri-urbanism?

Peri-urban Drivers (National, State and regional): Demographics; Government Policies; Housing; Lifestyles and Affluence; Outdoor Recreation; Work Arrangements.

Global Drivers: Oil Vulnerability; Carbon Trading and BioBanking; Climate Change; Globalisation; Support for Peri-Urban Farmers.

The new Peri-urban Landscape Managers (The "Actors")**:** The Seekers; The Survivors; The Speculators; The Strugglers.

Regional Management Issues: Landscape Management Challenges; Social and Economic Challenges; Peri Urbanisation & the South East Queensland Regional Plan; Peri Urbanisation & Melbourne 2030.

The full set of these Fact Sheets are contained in Appendix A.

Aided by the outputs of the Phase 2 case study research and the Fact Sheets, the scenarios were constructed using variations of considerations for the multiple drivers of peri-urbanisation. The conceptual arrangement and possible variations of these multiple drivers of peri-urbanisation is illustrated in Figures 5. Whilst this figure highlights the principal drivers, others were introduced during the course of scenario building during the workshops.

4.3. Testing Existing Strategies and Plans

The final task involved the testing of existing ("official") strategies and plans currently in operation in the case study regions against each of the scenarios. The plans and strategies involved were those previously described above (see Section 4.1). Each of the four strategies/plans was tested against both scenarios (*A Decline in Agriculture* and *A Revival of Agriculture* scenario) that were developed for the two case study regions. This testing regime is illustrated in Table 1 (below).



Figure 5: Multi driver Spider web for Construction of Scenarios

		Regional Land Use Strategies/Plans		Regional NRM Plans	
		SEQRP	Melbourne 2030	HLOF	PP&WP RCS
A Decline in Agriculture scenario	SEQ region	\checkmark		\checkmark	
	Greater Melbourne region		\checkmark		\checkmark
A Revival of Agriculture scenario	SEQ region	\checkmark		\checkmark	
	Greater Melbourne region		\checkmark		\checkmark

5. The Case Study Areas

The two case study areas, the subject of Phases 2 and 3, are contained within the fastest growing regions in Australia. The South East Queensland and the greater Melbourne regions represent major growth areas for their respective states and as a consequence, State and Local Governments and other landscape managers in both regions face the challenges of planning and managing this growth.

5.1. The South East Queensland Region

The SEQ region is one of the largest planning regions in the world. It extends 250 kilometers north-south and 160 kilometers east-west, and comprises an area of 2.2 million hectares (23,700 km²). The region has been dominated by sustained urban growth over the past two to three decades with much of that growth associated with the metropolitan core centred on the LGA of the City of Brisbane and the immediate areas of its contiguous LGAs.

Peri-urban development has dominated this region now for a number of decades and it has largely been associated with the growth of the dominant Brisbane metropolitan centre. The resulting peri-urban areas accord with the theoretical models and experience noted elsewhere – one of a disorderly mix of rural and urban land uses coexisting in ill-defined zones at distance from the dominant centre. It has also resulted in a dynamic landscape where it is difficult to identify where the peri-urban area ends and the truly rural area begins.

Much of the emphasis of peri-urban work to date has been associated with metropolitan centres, hence the focus on the peri-metropolitan region. This has been the case for the Brisbane metropolitan area. The extent of the broader SEQ periurban zone was identified through first approximation mapping during Phase 2 (see Monograph 3). This was designed to provide a generic identification and interpretation of the approximate peri-urban area for the region under investigation during Phase 2. It involved the identification and mapping of the peri-urban zones contiguous to the Brisbane metropolitan area using McKenzie's (1996) methodology and then a confirmation using the Burnley and Murphy (1994) methodology. McKenzie's (1996) Exurban model identifies an Inner Exurban Zone (areas containing less than 50% urbanised and contiguous to the metropolitan area), and an Outer Exurban Zone (areas within 100km radius from CBD but not contiguous to metropolitan area). The Peri-metropolitan model of Burnley and Murphy (1995b) identifies a number of components including edge urban, edge rural, peripheral urban and peripheral rural.

This project has focused on the development of an enhanced typology based on the previous work of McKenzie (1996) and Burnley and Murphy (1995b) extending beyond the traditional peri-metropolitan region. The findings of this research support and confirm the broader application of peri-urbanisation in SEQ.

5.1.1. Key Findings and Trends – Phase 2 Case Study Research

Socio-Economic Aspects

Strong growth experienced during the early 1980s and 1990s and dynamic social and environmental changes have characterised the SEQ case study area (CSA) – defined and mapped in Monograph 3. Between1980 to 1990 the CSA had an average annual growth rate of 3.7%. For the years 1991 to 2001, this figure declined to 1.2%, indicating that the primary wave of peri-urbanisation occurred nearly two decades ago.

Out-migration of the young adult population (aged 24-35 years) from the CSA, especially the Rural Balance, occurred over the period 1981 to 2001. In contrast, people aged over 60 years grew. The Rural Balance had a relatively high proportion of people aged less than 19 years for this 20 year period.

Employment within the CSA has generally been associated with physical labour including occupations such as labourers and tradespeople, while industries of employment such as manufacturing and agriculture, fishing and forestry dominate the CSA.

Levels of disadvantage (compared to the remainder of SEQ) within the CSA have improved, with the population becoming less disadvantaged in terms of low income, and unemployment over the years 1996 to 2001.

Land Use Aspects

Rural residential development and primary production are the dominant land uses in the CSA, accounting for 19.3% and 38.3% of land respectively. The greatest percentage of land within the CSA is comprised of lots greater than 40 hectares (36.0%), while the smallest percentage of lots sizes is comprised of those less than 1 hectare (5.7%). This demonstrates the remaining availability of larger areas for agricultural production.

Eighty-four percent of the land within the CSA is freehold title being managed by private land holders on an individual property basis. This situation has the potential to exacerbate fragmentation of the landscape in general including areas of high biodiversity such as wildlife corridors.

Agriculture

Diverse agricultural activities exist across the CSA, playing a significant role in the production of agriculture at both the local and regional scale. SEQ generally is also significant to production within Queensland. Commodities such as poultry, mushrooms, strawberries and nurseries produced in the CSA comprise a large proportion of the value of state production.

Agricultural establishments in general have been decreasing in size and number, whilst production of crops including lettuce has increased and a shift towards crops suitable to intensive farming is taking place.

Declining establishments and increasing intensification are growing trends in the production of crops such as mushrooms, with the majority of growth occurring between 1991 and 1996. Production of mushrooms for example, increased by 98% whilst the area under production remained relatively stable.

The emergence of lifestyle horticulture including turf farms, cut flowers and nurseries has also been noted in the CSA, with the industry becoming one of Queensland's fastest growing. The growth in this industry is consistent with the continued and sustained population growth occurring in SEQ. This growth and subsequent demand for lifestyle horticultural products is potentially threatened by urban encroachment into the peri-urban area and by the severe water shortages associated with the recent drought in SEQ.

Biophysical Threats

Land which was not viable for agriculture and subsequently left largely in an undeveloped state, represents regionally significant pockets of remnant vegetation (including biodiversity corridors) and some of the CSAs highest biodiversity values. However, these areas are now under serious threat as they are now highly sought after for rural residential purposes.

Fragmentation of remnant vegetation and loss of habitat and wildlife corridors has occurred in the CSA resulting from vegetation clearing for settlement purposes. Many rare, vulnerable or endangered species inhabit the peri-urban area and further land fragmentation in addition to increasing densities of residential development may result in further biodiversity losses. Clearing of woody vegetation for pasture or settlement has been high with minimal efforts undertaken towards revegetation.

Competition and demand for land, especially for lifestyle properties, has resulted in subdivisions being approved in locations which are valued for their scenic amenity value but also having a moderate bushfire hazard rating. This can have significant impacts on scenic amenity through interrupting sightlines and losses of remnant vegetation. Increasing peri-urban activities can exacerbate the spread of alien flora and fauna and the impacts from popular peri-urban activities such as those related to the keeping of horses, have to date been underestimated.

As urbanisation occurs, the limited water resources currently available are required to be utilised for urban consumption at the expense of agricultural use. Some identified impacts from peri-urbanisation include an altered hydrological regime, over-extraction of groundwater and deteriorating water quality. Persistent drought conditions will place increased pressure on groundwater reserves as surface water availability becomes more limited.

The scale and distribution of natural resource issues makes it difficult for local government to successfully address with few resources and specialist skills at their disposal. Smaller peri-urban local authorities commonly experience a lack of funds and dedicated staff available for NRM activities.

5.1.2. Challenges Identified for the SEQ Region

The diverse nature of peri-urban areas generally, and the CSA specifically, presents numerous challenges of both a socio-economic and landscape management nature. This study has identified a range of peri-urban challenges and presents a focus for future priorities in terms of land management. The following challenges can be expected to confront the management of other peri-urban areas in the SEQ region and beyond.

Landscape Management Challenges

Loss of Biodiversity

There has been a significant loss of habitat within the CSA especially for endangered, vulnerable and rare taxa. Clearing of woody vegetation has occurred in an inconsistent and fragmented manner between 1988 and 2003. This was mainly for the creation of pastures (to the north-east of Gatton Shire and the north-west of Laidley Shire) and to facilitate settlement and infrastructure.

The subdivision and resulting fragmentation of land has resulted in loss of wildlife corridors throughout the CSA. Remnant areas of biodiversity correlate with the remaining wildlife corridors further enhancing the importance of maintaining and protecting such areas. Regionally significant wildlife corridors exist to the east of Laidley township, to the southern side of the Warrego Highway, in addition to an area to the north of Helidon. A larger corridor rated as being of state significance is located on the escarpment to the east of Toowoomba. All of these areas require protection from rural residential development.

Pests Animals/Weed Infestation

A number of pests within the CSA are becoming more widespread compared to their past distributional localisation. Pest animals becoming more widespread include the feral cat, fox and wild dog. Continued peri-urbanisation and the accompanying increase in rural residents will increase the likelihood of growing numbers of domestic animals escaping to the wild.

There is a high incidence of alien flora in the CSA. The distribution of prevalent species remains relatively constant, however, the extent of weed infestation is becoming more prevalent within each locality. Weeds becoming extremely common and problematic include mother of millions, groundsel bush and *Parthenium* (a weed of national significance).

Loss of Scenic Amenity

Scenic amenity in the CSA is highest in the more vegetated areas, particularly along ridge lines in the lower Laidley and Gatton Shires. Conversely, scenic amenity was the lowest in sections adjacent to the Warrego Highway. The areas of highest scenic amenity correlate with areas of highest biodiversity suggesting even greater protection and management should be sought for these areas. This is particularly pertinent given the ever-increasing loss of biodiversity in the CSA. Scenic amenity has the potential to be reduced by increasing fragmentation of the landscape through increasing subdivision and urban related development.

Water Quality Decline

The water quality in the CSA and its related catchments has remained poor over the period 2001 to 2006. Despite some improvement being recorded in stream quality, overall the principal drainage systems in the CSA, the Lockyer and Bremer catchments performed poorly across all indicators such as wellbeing and health of aquatic macro invertebrates, fish species, ecosystem health, nutrients and physical/chemical processes. The Mid-Brisbane catchment downstream of the Lockyer Creek catchment performed fairly across all indicators. The implications for

water quality resulting from increasing rural residential developments that rely on onsite sewage disposal have yet to be ascertained.

Changes to Hydrological Regime

The Lockyer Valley has been recognised as a stressed groundwater system where extraction of water has exceeded a sustainable rate. Low to medium flows within waterways has occurred in upstream areas and the stream flow in the middle and lower sections of the valley have been altered causing ponding in some areas. Permanent loss of stream flow and lowering of the alluvial watertable has been accompanied by losses in aquatic and riparian vegetation.

Significant quantities of surface water have been captured in numerous farm dams that litter the rural residential landscape in increasing numbers, thus depriving the natural hydrological system of its usual flows.

Impacts to Groundwater Resources

Over extraction of groundwater has resulted in salinity and long term impacts such as falling water tables. Increasing housing densities will reduce infiltration of precipitation into the water table particularly where these developments have been inappropriately sited over groundwater recharge areas. Currently groundwater extraction is largely unregulated.

Bushfire Prevalence

The bushfire hazard in the CSA is predominantly low to medium, with a small area classed as high risk on the northern side of the escarpment. The vegetated escarpment is predominantly classed as medium bushfire risk, whilst the lowland valley is largely a low bushfire risk area. The nature of the CSA, particularly where settlement has extended into densely vegetated areas, makes bushfire risk an increasing management issue.

Landscape Management Capacity

The ability of landscape managers (existing and new) in the peri-urban areas to manage the landscape is governed by indicators such as awareness, previous experience, skills and experience, resources available, time and willingness to contribute to NRM. A preliminary assessment using these indicators showed that urban newcomers may have capacity in terms of available time to devote to their property given their employment status, however, it also suggests that they may not have the knowledge, skills, educational background or surplus resources available to devote to landscape management.

Social and Economic Challenges

Social Conflicts

Examining the extent of social conflicts between new and long-term residents in the CSA was beyond the scope of this study. However, anecdotal evidence suggests that conflicts do exist particularly between the incoming urban life-stylers and the traditional farming community. There appears to be far from satisfactory dispute resolution processes in place to deal with these conflict or strategies to minimise their occurrence. The continued and changing nature of land use in the peri-urban CSA

from predominantly rural to increasingly urban has the potential to further exacerbate these conflicts.

Social Disadvantage

Levels of social disadvantage in the CSA have declined since 1996. Marked improvements were observed in terms of income, employment levels, improved housing stocks and the number of people with vehicles. The following trends were noted:

- improvement in the percentage of early school leavers, meaning people are staying on at school for longer periods;
- the percentage of people with low income has declined especially around Gatton township; and
- minimal public housing is available in the CSA and is generally confined to the town of Laidley and to the south of Gatton.

Some disadvantage remains however, with increases in poorly serviced areas, particularly the more remote areas of the CSA.

Increasing Economic and Social Divide

An increasing divide in terms of economic wellbeing within peri-urban areas may be influenced by the changing nature of land use and traditional enterprises within the area. The movement of investors and wealthy urbanites into the peri-urban CSA has the potential to displace current residents, especially the low income or disadvantaged. This process could increase the social divide between people who are economically secure and those that are not, potentially causing further conflict. This could impact on the availability of services and social infrastructure as well as affordable housing and rental properties. Alteration of existing conditions in workforce, employment and community services may also increase the divide between new and long-time residents.

Loss of a 'Sense of Community'

The sense of community demonstrated through long-time residents can be disturbed when new residents move into an area through changing land uses from rural to urban or peri-urban. This is particularly the case if that process occurs in a rapid and fragmented manner. The peri-urban transformation of the former rural CSA into an increasingly urban-oriented area has the potential to disrupt its existing social networks and community values through the introduction of residents with differing values and beliefs. These changes can disrupt and even alter the existing sense of community inherent in these established communities which ironically may be the very attraction that is drawing many of the former urbanites to these locations.

The high degree of population mobility characterised in many peri-urban communities, (both in and out migration), further complicates the ability to reestablish a sense of community in these emergent peri-urban settlements.

Skewed Population

The age structure of the CSAs population illustrates characteristics associated with structural ageing and a noticeable loss of young adults. As previously noted, this has involved a decline in young adults aged between 24 and 35 years and an increase in

those aged over 55, with greater numbers aged less than 14 years. This skewed population, characterised by a greater proportion of very young and older people with a declining young adult population, necessitates special attention in social services which differs from traditional urban and rural areas.

Emergence of New Local and Regional Economies

The changing nature of the peri-urban CSA has seen the emergence of new land uses, industrial networks and new enterprises significant for both the local and regional economy. The location of the CSA within a relatively rural area, yet still close to a major metropolitan centre, enables the utilisation of the landscape for boutique farming catering for affluent urbanites. For instance, the transformation of traditional agriculture has seen the rapid appearance of vineyards and wineries in many peri-urban areas. The CSA is becoming utilised for intensive animal husbandry (including kennels and catteries), horse agistment and turf farms and nurseries servicing both local and regional communities.

Intensification of Agriculture

Agriculture in the CSA has intensified over the ten years to 2001, with production increasing despite declining numbers of establishments. Over this time, the area of holding has declined as a proportion of SEQ from 39.8% to 26.4%. The majority of agricultural growth in the CSA occurred from 1991 to 1996 and trends indicate the remaining significance of the CSA to the overall agricultural production of SEQ.

While growth in total area of land holding was experienced during the mid 1990's, the subsequent steady decline is consistent with the intensification of agricultural production in the CSA. Commodities such as lettuce and mushrooms are suited to intensive growing conditions. In the case of lettuce, the number of establishments has declined, yet production showed marked increases. The same trend is seen for commodities such as nurseries products and poultry.

5.1.3. The SEQ Regional Plan 2005-2026

Current planning in the SEQ region is managed under the *SEQ Regional Plan 2005-2026* and its associated Infrastructure Plans. As the State's first statutory regional plan, it represented an important milestone for planning in Queensland. Provisions in the plan such as the instatement of an Urban Growth Boundary, Rural Living Areas and Investigation Zones are tool used to guide future growth of the region. Local Governments are required to update their statutory planning schemes to reflect the provisions of the Regional Plan as well as prepare Local Growth Management Strategies (LGMSs) which direct growth according to population targets identified in the Regional Plan. However, LGMS are only applicable to the Urban Footprint and do not influence the Regional Landscape and Rural Production Area which coincides with the region's peri-urban areas.

Four major regional outcomes of the Regional Plan are encompassed in the following:

Urban Footprint

The urban footprint confines urban development to particular areas, and protects the regional landscape and rural production areas beyond the urban growth boundary.

The urban footprint is designed to accommodate the existing and future population (an additional 1 million people to 2026) at a modest average density of 15 dwellings per hectare.

Protection of Regional Landscape and Rural Production Values

The regional landscape reflects many interests and values including agriculture, outdoor recreation, cultural heritage, scenic amenity, open space and environmental conservation. Polices address issues such as the preservation of scenic amenity, greater recognition of indigenous heritage, the provision of opportunities for outdoor recreation as well as open space networks. The Regional Plan also places an emphasis on the protection of and sustainable use of, regional natural resource and rural production areas. The Plan's statutory provisions include a '100 hectare minimum subdivision size' regulation that is application over the Regional Landscape and Rural Production area.

Rural Futures

The Regional Plan acknowledges the economic value of rural production areas and seeks to maximise the wellbeing of rural communities and address locational disadvantage by providing improved services, facilities and infrastructure; ensuring the continual population growth of rural towns and villages; maintaining viable farm sizes; and protecting good quality agricultural land from encroaching incompatible land uses.

Western Corridor

The Regional Plan makes a major commitment towards facilitating future urban growth along the corridor radiating west from Brisbane. This 'western' corridor was selected as it is considered to have 'significant areas of available land' and that growth in this area may reduce the demand on coastal areas for development (OUM 2005: 12).

5.1.4. A New Peri-urban Landscape

The SEQ study has presented evidence to suggest that the CSAs population is maturing through a stabilising resident population, a broadening employment base, less commuting to nearby larger urban and metropolitan areas, improved housing stock, and declining evidence of social disadvantage. These trends are consistent with overseas experience which suggests that in these circumstances there is a strong possibility that these peri-urban areas may be evolving into a new form of settlement – one distinct from traditional forms of urban and rural settlements. This also acknowledges that many of these areas will never become fully urbanised in the sense of the traditional urban growth model. Statutory regional planning initiatives such as the SEQ Regional Plan's designated "Urban Footprint" provides additional weight to these possible outcomes. Recent indications suggest that peri-urban growth in the CSA will continue and has recently experienced an exponential increase from previous periods.

5.2. The greater Melbourne region

Melbourne's peri-urban area consists of inner and outer peri-urban belts. The inner belt comprises Melbourne's green wedges and a broader green belt situated
between the urban growth boundary (UGB) at the metropolitan edge and the outer rural boundary of 17 fringe area metropolitan councils. These two boundaries to the green belt are defined by the metropolitan planning policy, *Melbourne 2030*. The outer peri-urban zone extends from the rural boundary of the green belt for an indeterminate distance generally estimated at 100 kilometres from the UGB. Both these parts of the peri-urban zone were examined during Phase 2 and reported in Monograph 2.

Melbourne's outer peri-urban zone is defined as a belt of land between the outer boundary of the green belt and an outer limit defined structurally by such factors as population density, or functionally by processes such as commuting distance to the city. Widespread commuting is occurring from peri-urban coastal and inland locations to the Melbourne metropolitan area and to regional urban centres.

This CSAs growth is being driven largely by in-migration from Melbourne attracted by landscape, cultural, life-style and amenity factors, more affordable housing, changed employment arrangements, and improved infrastructure allowing a combination of telecommuting and commuting. Changes in the nature of work and the growth of knowledge and information based economies are also influencing peri-urban development.

Bendigo, located 150 kilometres north of Melbourne, is the service centre for central and northern Victoria. The Bendigo Corridor includes a range of townships and rural areas. The municipalities in this corridor cover an area of some 6,500 square kilometres with an estimated population of more than 181,900 in 2005. The largest population centres in the corridor are Bendigo, Gisborne and Castlemaine. In addition, there are a large number of towns with populations between 1000 and 5000 persons.

The settlement pattern is characterised by a large number of relatively small towns generally characterised by significant heritage character dating from the gold rushes of the mid 1850s, separated by non-urban breaks comprising important environmental areas of public land limiting their expansion. Large areas of non-urban land act as water catchment areas and are characterised by high conservation values. Open long distance views with forested hills and mountains are strongly represented in the corridor.

5.2.1. Key Findings and Trends – Phase 2 Case Study Research

A number of major spatial, social, environmental, natural resource and economic issues are emerging in this CSA. All influences on peri-urban regions are reciprocal and interact functionally. Major findings are:

Extensive spatial fragmentation has occurred in the CSA. Most of the rural areas have been subdivided into smaller rural lots of varying sizes, jointly owned as part of larger properties, but with each lot able to be developed separately. This potential will lead to extensive incremental development of dwellings and other uses over time with significant implications for servicing costs to local government, the provision of social services, landscape quality, water use, agriculture and biodiversity.

- A significant area remains in lots over 40 and 100 hectares in size. The subdivision of these lots will lead to further spatial fragmentation. The possibility of lot excisions will exacerbate this trend significantly.
- Agriculture remains an important economic activity in the study area. Extensive grazing is the predominant agricultural use but investment in intensive high capital forms of agriculture is increasing. The retention of larger lots is a significant factor supporting the retention of agricultural businesses and retaining future options for agricultural diversification and production.
- Demand for water is increasing but development is not being adequately integrated with water availability or cost. Environmental allocations have borne a disproportionate reduction in water availability as supply is diminished.
- The CSA retains important natural resources including an extensive area of public land and a range of remnant values on private land. These have significant implications for tourism, although recreation and tourist activity can diminish the values originally prized.
- Important biodiversity values exist in the CSA. However, a mismatch exists between planning tools and sectoral characteristics, particularly for the protection of biodiversity.
- Stronger regulatory land use planning tools and practices are capable of exerting a significant influence on the integrated planning for the region including the protection of biodiversity and retaining some conditions suitable for the continuing practice of agriculture.

Land Use Planning

The current planning system has reduced the influence of planning over rural land use and development compared to that exercised in the planning schemes of many peri-urban municipalities prior to the late 1990s.

The potential scale of rural housing development could seriously diminish the tourism and agricultural potential of the corridor while leading to major infrastructure costs and detrimental environmental impacts. Although there is evidence of considered planning, planning schemes do not adequately protect natural resource and environmental assets in the region. For example, the Vegetation Protection Overlay (VPO) generally has been applied inadequately to protect vegetation types. Of endangered vegetation, for example, the City of Hume protects less than one per cent, the Shire of Macedon Ranges less than 4 per cent and City of Greater Bendigo less than 8 per cent. Vegetation with the highest bioregional significance has low levels of representation under the VPO.

Zones are usually applied inadequately to assist the protection of environmental values such as vegetation or wetlands. The Farming Zone is the most extensively used zone in the region. It covers 71 per cent of the area of the rural zones, including almost all the rural areas in the Shire of Mount Alexander, 72 per cent of the rural zones of the City of Greater Bendigo, and 58 per cent of the rural zones of the Shire of Macedon Ranges. The predominant zone used in the rural areas of the City of Hume is the Green Wedge Zone although the Green Wedge A Zone is also applied extensively to smaller lots. All four municipalities make limited use the rural Living

Zone with the greatest use by the City of Greater Bendigo. All zones contain a wide range of lot sizes suggesting inappropriate zonings or zoning on the basis of other rationales such as land capability, or without clear rationales.

Extensive lot fragmentation is a feature of all rural zones in the corridor. The Farming Zone contains 22,059 lots held by 7,416 properties, the Rural Conservation Zone 6,711 lots held by 4,427 properties, the Rural Living Zone 6,829 lots held by 5,027 properties, and the Green Wedge and Green Wedge A Zones 1,665 lots held by 1,109 properties. A total of 17,483 lots in excess of properties exist in the rural zones of the corridor (the difference between the number of properties and the number of lots). Totalling existing vacant rural lots, potential new lots through subdivision, and potential new lots through excisions, results in a figure of over 26,000 lots which could be built on over time in the corridor under current planning requirements.

Further fragmentation would close off options in the future for agriculture, detrimentally affect the potential of agriculture to adapt to changing conditions, significantly detract from landscape quality and lead to economic impacts such as the demand for extensive new services. Assessing the impacts on biodiversity are complicated by the range of farming practices and by the values and behaviours of incoming small lot holders. However, closer settlement often leads to a range of detrimental impacts on biodiversity.

An analysis of the loss and gain of vegetation between 1989 and 2005 indicated that broad-scale clearance in the study area has been effectively halted, with a reduction of 220 hectares of tree cover on private land and 620 hectares on public land, indicating the effectiveness of vegetation clearance legislation introduced in 1989. However, the most depleted vegetation types continue to experience loss on both private and public land.

Biodiversity

Substantial biodiversity values exist within the peri-urban zone from Melbourne to Bendigo, with important areas of endangered, vulnerable or depleted ecological vegetation classes. In the region, 105 threatened fauna species and 176 threatened plant species are reported.

This continuing loss can be at least partly explained by the failure of the planning system to appropriately control threatened vegetation. Zoning of vegetation in the CSA appears to be unrelated to the conservation value of remnants, with large proportions of endangered and vulnerable vegetation types zoned inappropriately in rural, rural living, residential, business or industrial zones.

Trends in species occupancy between census periods of 1977 to 1981 and 1998 to 2001 suggest that open-woodland species are faring worse in the study region than forest-dependent and fully open habitat specialists, although no major trends were detected in the overall proportion of sites occupied by birds between the two survey periods, and there was no apparent variation in the change in occupancy due to land use type or the proportion of vegetation cover.

Agriculture

The Bendigo Corridor remains a significant agricultural producer. The Total Value of Agricultural Production (EVAO) in the corridor in 2001 was \$157.3m. This was

generated from 1,246 farm properties on 356,000 hectares. This figure underestimates the value of agricultural production in the region as the 2001 ABS Census of Agriculture excludes smaller properties with an EVAO less than \$5,000. The total agricultural area has not altered significantly for decades and remains above 350,000 hectares. Farm property numbers declined in the late 1980s from over 1,700 but rose in the early 1990s to over 1,200 and have remained steady, although this probably reflects changes to data collection methods. Similarly, average farm property size rose significantly in the late 1980s to 400 hectares and was 325 hectares in 2004.

Extensive livestock is the predominant farm business type and extensive and intensive livestock dominate production value results with both significantly exceeding \$50 million in 2004. Intensive agricultural activity has increased significantly demonstrating high continued investment in highly productive agriculture in the region. The area under broadhectare cropping has increased since the early 1990s.

Water resources

Demand for water by a rising population and for development is increasing markedly in the corridor while annual rainfall, stream flows and storage levels have fallen. Large scale diversions through farm dams are continuing. The greatest impacts on reduced water availability have been on environmental allocations. Inter-basin transfers of water will augment town supplies, but environmental impacts of reduced water availability are likely to continue. It is critically important that all future planning for the corridor relate water use, diversions and supply to land use and development.

Peri-urban developments outside the major townships will mean more farm dams constructed for stock and domestic purposes. These dams do not require a water allocation licence and can consume significant volumes of water. In the Maribyrnong catchment for example 60 per cent of the surface water is captured by farm dams with 50 per cent being stock and domestic dams.

Extensive irrigation areas exist either in the northern part of the corridor, or in the northern catchments of major rivers but outside the corridor, or are supplied from storages inside the corridor.

Increasing population growth, tourist and industry development, and urban and ruralresidential development in the study area is leading to increased demand for water. The low rainfall of recent years is reflected in the annual average stream flows of the major rivers of these catchments. The National Land and Water Audit found that the water resources of the Loddon and Campaspe catchments were fully developed and that there was scope for additional development in the Maribyrnong.

Natural resources

The corridor is rich in natural resources and plays an active role in contributing important supplies of sand, stone and other resources to Melbourne and Victoria.

The Bendigo Corridor is a high amenity visual environment, with its attractive mix of farmed landscapes, historic goldfields settlements and homesteads, vineyards, national and state parks and varied terrain. Its visual landscape amenity is constantly under threat from residential, tourism and recreational pressures, and from freeway

and extractive industry projects. Tourism in the corridor contributes between 4.5 and 6.4 per cent of total employment and is generally rising gradually. Improving accessibility through road and rail upgrading has improved accessibility and increased threats to amenity.

About 20 per cent of the area of the corridor is public land. This produces a range of significant natural resource management issues at the interface between private and public land, including the impacts of recreational use on land management, the environmental and amenity impacts of uses of public land such as forestry, pest and weed management, and fire management and prevention.

Land degradation is an important concern in the corridor. Dryland salinity and stream condition is worsening in parts of the corridor. Private land uses in open catchments can also affect water quality in the corridor.

Socio/demographic trends

Population growth in the corridor has accelerated since the year 2000, with population growth for the four year period 2001-2005 equal to or greater than that of the previous decade. The population in Rural Balance Areas in the CSA increased from 21,035 in 1981 to 29,365 in 2001. However, most of this was in the period 1981-1991. While nearly half of the Rural Balance population is living in the Shire of Macedon Ranges, this population and that of Mount Alexander and Sunbury has remained largely unchanged over the ten year period 1991-2001, whereas in the Greater Bendigo (Part B) Rural Balance area the population has continued to grow, though at a significantly reduce rate.

The City of Greater Bendigo has experienced sustained population growth. Between 1996 and 2001, the average annual growth rate was 1.4 per cent. The proportion of the City of Bendigo's population living in non-urban areas increased from 8.6 per cent to 12 per cent between 1981 and 2001.

Mount Alexander Shire has experienced less significant population growth, but is attracting high levels of people relocating from Melbourne. Mount Alexander Shire stagnated relatively between 1991 and 2001 with the population growing less than 3 per cent to 16,173. The non urban areas experienced higher growth rates than the urban areas, illustrating the popularity of these areas with in-migrants. In 2001, Castlemaine accounted for 51 per cent (8,287 persons) of the Shire's total population, with the Rural Balance making up 33 per cent and 16 per cent in small towns.

Macedon Ranges Shire experienced rapid population growth between 1991 and 2001 of nearly 20 per cent. Large towns increased rapidly accounting for almost all the shire's growth. The large towns account for 60 per cent of the population. The Sunbury SLA population grew 30 per cent between 1991 and 2001 but the rural population declined. The population in the study area, like that of Victoria and the rest of Australia is ageing but in an uneven manner.

As household sizes are reducing and the proportion of single and dual person households increase, the number of new dwellings constructed will have the major impacts on peri-urban areas in the corridor. Housing growth, in many areas, is outpacing population growth. Total dwellings in the case study area increased significantly as a percentage against metropolitan and regional Victoria between 1981 and 2001. This indicates that the rate of dwelling increase was greater in the Bendigo corridor study area than in either Melbourne or Victoria, at 96 per cent compared to 33 per cent and 39 per cent respectively. There has been significant housing growth in rural areas and beyond the established fringe of urban areas in the Bendigo region and the towns along the transport corridor.

Agriculture provided 4.5 per cent of employment in 2001, and Finance and Insurance and Property and Business Services 11 per cent. The peri-urban study area contained a higher percentage of persons occupied as managers, professionals and associate professionals than metropolitan Melbourne or Regional Victoria suggesting that the professional/management occupation groups are more attracted to the periurban areas for amenity and lifestyle reasons.

Integration

There is insufficient coordination between local councils, regional management authorities, and state government, and insufficient integration between state government agencies. Institutional structures are primarily sectoral.

5.2.2. Identified Challenges for the Greater Melbourne region

Many challenges face the greater Melbourne CSA. Increasing population growth will place pressure on the environment, existing farmland and rural populations and infrastructure. Further encroachment of urban and inconsistent land uses into the peri-urban area is a major challenge facing the CSA. The following discussion outlines the major land management and socio-economic challenges facing the CSA of greater Melbourne region.

Loss of Biodiversity

Increasing fragmentation of the landscape accompanied by a miss-match of planning tools lacking elements of any real protection value is leading to large losses in biodiversity within the CSA. Loss of habitat due to increasing subdivision and the further possibility of lot excisions under the current planning regimes is likely to exacerbate fragmentation. Potential for thousands of new lots to be created and built on over time in addition to closer settlement patterns is likely to lead to a range of detrimental biodiversity impacts.

Demand for Water

Decline in water quality and the demand for potable water is increasing with population growth and urban expansion into the CSA. New developments are not being adequately integrated with available water resources or appropriate costings. Reductions in water use and allocation are disproportionate to availability as supply is being further diminished.

Land Degradation

Land degradation is a considerable concern for the corridor. Dryland salinity and stream condition is worsening. Private land uses in open catchments can also affect water quality.

Landscape Management Capacity

The ability of landscape managers (existing and new) in the peri-urban areas to manage the landscape is governed by five indicators including previous experience, skills/experience, resources available, time and willingness. An assessment using these indicators showed that urban newcomers may have capacity in terms of available time to devote to their property given their employment status; however it also suggests that they may not have the knowledge, skills, educational background or surplus resources available to devote to landscape management.

Social Conflicts

Potential for conflicts to occur between new and existing residents has emerged anecdotally during this study. An in-depth analysis of this issue was beyond the scope of this study; however there is evidence to suggest that the changing nature of land use in peri-urban areas from predominantly rural to increasingly urban areas has the potential to cause conflicts.

5.2.3. Melbourne 2030 Plan

Melbourne 2030 is a policy document which provides strategic direction for the development of the Melbourne metropolitan area and surrounding regions in a sustainable manner. Given the 30 year life of the plan, it seeks to be adaptable to changing circumstances. Its vision statement is as follows:

'In the next 30 years, Melbourne will grow by up to one million people and will consolidate its reputation as one of the most liveable, attractive and prosperous areas in the world for residents, business and visitors.' (Department of Infrastructure, 2002)

The large majority of strategies supporting this vision deal primarily with urban growth within the urban footprint. However, the plan also places a large emphasis on improving physical, social and economic linkages with regional cities and furthermore the preservation of the green linkages between urban areas (the peri-urban area). The key elements of the Plan are discussed below.

Urban Growth Boundary and Compact Urban Development

The *Melbourne 2030* plan stipulates an urban growth boundary which places limits on further growth beyond the metropolitan fringe. Development is to be achieved by:

- Attempting to confine outer urban development to urban corridors delineated by a boundary; and
- Shifting the proportion of residential growth from the outer corridors to mixed use activity centres in the established metropolitan area linked by public transport. The proportion of outer urban growth in projected to be reduced from the current 38% to 31% and in activity centres from the current 28% to 41%.

Green Wedges

The *Melbourne 2030* Plan identifies a series of 12 green wedges radiating from the urban growth boundary of metropolitan Melbourne. These green wedges

accommodate a variety of non residential functions such as agricultural and recreational uses, as well as major infrastructure assets including waste/ sanitation works, and airports. They also include a number of existing small communities.

A series of initiatives are provided to protect green wedges and prevent them from becoming subdivided for urban or rural living development. These include amending local government planning schemes to 'secure the protection of metropolitan green wedges'; ensuring urban development is consolidated in existing residential areas; and legislating for the protection of areas of 'high environmental and scenic value'. Specifically, further urban growth around the small communities that are present within the green wedges is to be restricted. If urban development is to occur, the Plan states that it should be achieved through intensification and not have any adverse effect on the core non-urban activities undertaken within the green wedges. In particular, it was identified that development should not be permitted along flight paths.

Land use activities which support urban uses such as agriculture and the extraction of mineral resources, are to be protected as the products of these activities have high economic and social values for the metropolitan region. This can be in terms of food supply as well as mineral resources for infrastructure and development.

Networks with Regional Cities

A core component of the *Melbourne 2030* document is the idea of 'networked cities', where linkages are created between metropolitan Melbourne and surrounding regional cities to develop a strong regional economy and provide access to a greater range of places to live and work. A stronger and more interdependent economic region will provide greater leverage to compete on national and international markets. This is to be achieved in part through enhanced transport linkages (particularly road and rail) and greater communication networks with regional cities. Regional areas the focus of this growth include towns along key transport corridors that connect with metropolitan Melbourne including townships in the Latrobe Valley and Ballarat, Bendigo, and Geelong. To protect the inherent character of a number of small towns within the peri-urban area, further urban development or consolidation will not be encouraged.

Whilst urban growth is to be promoted in regional towns and centres through processes such as consolidation, growth is to be limited in non urban areas. The Plan states the following:

'Rural areas will be protected and safeguarded for a range of rural uses and developments, with preference in planning and development outside urban areas going to agriculture, conservation, natural resource-based uses, transport services and tourism, and with protection for important water catchments' (Department of Infrastructure, 2002).

Specifically, rural living development is not a preferred land use and to limit its consumption of the rural landscape the plan identifies that more 'stringent development standards' are required. To support this, the Plan identifies that existing small lots should be amalgamated, and if rural living development is to occur, it should limit natural and environmental resource impacts, and not compromise agricultural or other resource based activities. As part of the State Governments responsibility to promote and cater for water reuse, land suitable for the storage of

treated water is to be protected from encroaching urban land uses. Furthermore priority is to be given to the protection of places of indigenous and non-indigenous heritage from incompatible development and areas of landscape significance.

Environmental Sustainability

Achieving reductions in resource use and waste generation is a key direction of *Melbourne 2030.* This is considered important for the creation of a more environmentally sustainable path, recognising the need for more measures to be taken to reduce human impact on local, regional and global ecosystems. Specific issues targeted include greenhouse emissions, loss of native flora and fauna, and deterioration of ecosystem health. These are to be addressed through improved environmental management.

Implications for the Peri-Urbanisation Process

- Future urban growth is to be confined within the urban growth boundary.
- Urban growth is to be achieved through consolidation and land use intensification, (including towns and villages within the green wedges).
- Urban growth should only be permitted where it can be supported by high capacity public transport.

6. The Scenarios

In order to address the overarching focal question for Phase 3, two 'opposing' scenarios were developed for each case study region. They represented the opposing theoretical points-of-view on the future of peri-urban agriculture that were previously discussed in Section 2.4 and Chapter 4 and included:

Scenario 1 "Decline of Agriculture"; and

Scenario 2 "Revival of Agriculture".

Focal Question

What are the plausible changes in the SEQ/greater Melbourne region's agricultural industry over the life of the SEQ Regional Plan 2005-2026 /Melbourne 2030 Plan and the Regional NRM Plan/s, and what will be the consequences of those changes for existing peri-urban areas in these regions?

Scenario development was aided by two scenario planning workshops which were held in Brisbane and Melbourne during September 2007. These one day workshops had the purpose of addressing the principal issues relevant to the focal question in a manner that considered generic and CSA specific issues of peri-urbanisation including peri-urban residential, peri-urban agriculture and NRM. Appendix B outlines the approach adopted for the conduct of the workshops as well as their detail program.

The workshops assembled the principal planners, policy makers and natural resource managers in land use planning and natural resource management in the regions along with key stakeholders from the agricultural industry with an interest in the specific peri-urban areas. These key stakeholders worked collaboratively towards the development of the scenarios with the members of the respective Project Reference Groups (PRG) and the researchers. Appendix C lists the participants of the workshops. The workshop activities provided the participants with a unique opportunity to collaboratively consider a range of possible futures into which their own work and responsibilities may eventually unfold.

Whilst the scenarios represented hypothetical possible futures that may or may not be realised, they were never-the-less built partly from the research outputs of Phase 2. This provided some clarity over the pre-determined and the uncertain elements of the future and this consequently allowed the creation of plausible, coherent descriptions of possible futures for the regions and the identification of their drivers. Scenario developed drew on a range of potential exogenous and endogenous drivers of peri-urbanisation that could be recognised at global, national and regional levels. A number of multi driver spider webs were introduced to aid the discussion and deliberations during the scenario planning workshops (see Figures 6, 7 and 8).



Figure 7: National (Exogenous) Drivers of Change



Figure 8 Regional (Endogenous) Drivers of Change

The subsequent sections provide outlines of each scenario for both regions. Within the context of the past and current status of agriculture in the Australian social and economic landscapes, each potential scenario has been described.

6.1 A Rapid Decline of Agriculture Scenario

Agriculture in Australia

Farming has always been, and continues to be, an economically, socially and culturally important part of Australian life. However, the Australian agricultural industry has been steadily declining since the mid 1900s. The industry now employs around 370,000 people or 3% of the population with farms still accounting for 60% of Australian land use (Malcolm, Sale and Egan, 1996).

In 2004/05 the gross total of Australian agricultural production fell by \$1.4 billion to \$35.6 billion (ABS, 2006). The Australian agriculture industry is strongly exportoriented producing commodities far in excess of domestic demand with two-thirds of farm production being exported each year.

The relative importance of varying export markets for Australian agricultural industries has been changing over time, reflecting the volatile nature of overseas markets and Australian farming's reliance on them. Given Australia's comparatively small population, most of the growth in Australian agriculture will rely on exports locking the industry into overseas markets and their cycles (DAFF, 2007).

Importance of peri-urban agriculture

The importance of peri-urban agriculture to the overall value of Australian production is exemplified by the annual contribution of this sector. For example, it has been estimated that the production and processing of agricultural products from peri-urban areas accounts for \$6.2 billion of Queensland's \$10.3 billion annual gross value of production (Stockwell, 2006). There are also a diverse range of agricultural enterprises including strawberries, lettuce, cut flowers, turf and poultry processing utilising the peri-urban area and contributing significantly to the State's economy.

Although small in number and relative production size (comprising less than 3% of land utilised for agriculture in the mainland states), peri-urban areas are responsible for nearly 25% of the total gross value of agricultural production (Houston, 2005). Some of the richest agricultural land in Australia is located close to major urban and metropolitan centres (Australian Institute of Agricultural Science, 1974).

With Australia's high dependence on overseas markets, a range of global influences can be acknowledged as potential drivers in a rapid national decline of agriculture scenario. Such drivers could include for example: changing world markets and demands for Australian commodities; uncompetitive commodity prices due to increasing costs of Australian production; and excessive transportation costs to distant overseas markets. Additionally, a number of the other global exogenous drivers of change identified in Figure 6 could also have an influence within this scenario. A rapid decline of peri-urban agriculture can also be expected to be influenced by these global drivers of change. At this scale, other drivers, especially many of the exogenous nature that operate at the national level and exemplified in Figure 7, along with many of the endogenous drivers related to regional scales (see Figure 8), can also be expected to be influential in this scenario.

6.1.1. An Agriculturally Declining SEQ Region

A rapid decline of agriculture would see production and associated systems failing at a pace which would seriously challenge the response of governments at all levels. Whilst it may not necessarily result in an end to all agriculture in the region, this scenario could see the weakening of the region's traditionally strong agricultural systems (such as major commodity crops); the failing of many farm enterprises; the exit of many farmers, especially the struggling and holding-on farmers; and the degeneration and continued degradation of the region's environmental systems and landscape that support agriculture as farmers strive to continue production and maintain viability.

Major drivers such as globalisation, climate change, oil vulnerabilities and associated impacts on the cost of fuels, and an ageing farming population, together with regional drivers such as urban expansion and population pressures could potentially combine to drive these changes leading to rapid agricultural decline.

This situation could also be facilitated by a range of local influences including the unavailability of water, increasing operating costs (e.g. fuels and labour) escalating land prices and competing land uses as a result of unrelenting and unregulated encroachment of the region's urban footprint in the country's fastest growing metropolitan region. A rapid decline may also eventuate within specific agricultural sectors – for example, mill closures in the case of sugar cane production and a lack of alternative uses for the sugar cane crops of the region. These influences would lead to continued and irreversible spatial fragmentation which constitutes one of the most serious threats to the continuation of viable agriculture in the region.

This scenario may also witness the rapid decline of lifestyle horticulture as a result of changing urban demands, changing urban densities limiting traditional urban landscaping requirements; displacement from continued urban encroachment into the peri-urban area; and through water shortages (and possible total water prohibition) resulting from continued and longer periods of severe drought which could result under a climate change regime.

Major Themes and Issues

Population Pressures

- High population projections realised;
- Continued urban expansion;
- Increased fragmentation of the landscape.

Promotion of Affluent Lifestyles

- Continuation of current tax policy allowing deductibility of land costs and infrastructure for 'lifestyle' businesses;
- Continued economic growth underpinning the demand for lifestyle and affluence and the expansion of middle class living.

Growth of New Non Urban Industries

• Growth in intensive high capital agriculture and equine industry.

Changing Nature of Farming

- Increases in contract farming;
- Corporatisation of farming and trends towards larger scale enterprises.

Constraints on Farming

- Increasing production costs outstripping commodity prices;
- Globalisation and increased competition from overseas producers;
- Part-time farmer's face difficulties in maintaining viability;
- Impact of increasing land prices driven by demands for lifestyle properties or expanding rural enterprises.

Land Use Conflicts

- The expectations of new peri-urban residents from urban backgrounds conflict with and inhibit commercial farming practices;
- Other rural uses (eg amenity living, outdoor recreation and tourism, equine industry) out compete traditional agriculture.

Water Quality & Quantity

- Uncertain availability and long-term decline in water for agriculture;
- Competition with urban population and increasing water pricing;
- Declining quality of the surface and ground water;
- Un-competitiveness of traditional farming in an environment of water scarcity;
- Over-allocation of water.

Biosecurity Threats

 Loss of regional competitiveness through risks posed by less regulated areas of the industry.

Collapse of the Ecological System

 Ecological system placed at risk from losses of soil quality, water quality, biodiversity and increasing fragmentation of the landscape.

Climate Change Impacts

- Increases in severe weather events;
- Major long-term drought;
- Changes to the growing season;
- Greater insurance risks associated with extreme weather events.

Key Points

Likely Trends

- The high population projections are realised with continued high demand for urban housing;
- Pressures on the viability of agriculture sees ageing farmers and farming families exit the industry and the region;
- Farmlands forfeited to meet the demand for amenity living and associated infrastructure;
- Displacement of traditional farming activities due to increasing conflicts with new (former urban) residents and the NIMBY syndrome;
- Increase specialisation and diversification of farm enterprises as commercial farmers seek to remain viable and as lifestyle/part-

time farmers supplement income from offfarm sources;

- Changing climatic regime of more frequent and longer droughts, coupled with growing urban demands, results in little to no water available for agriculture;
- Groundwater reserves rapidly depleted;
- Rapid decline in surface and ground water quality;
- Cost price squeeze an agriculture continues;
- Local industries face increasing competition from imported cheaper overseas produce particularly in fruit and vegetables;
- Agricultural activity is increase divorced from land ownership - land will be leased more frequently;

- Increasing turnover of large scale businesses and change occurring at increasingly faster pace;
- Food processors remove factories impacting on the region's manufacturing sector, production and the number of farms;
- Decisions will be made by centralised and distant head offices and corporations rather than local smaller groups and individual farmers;
- Critical mass of farm enterprises is lost resulting in closure and withdrawal of essential agricultural support activities (eg transport and processing) leading eventually to industry collapse;
- Current investments in agriculture rapidly shift from sustainable operations to ones that degrade the environment (including loss of biodiversity) as commercial farmers seek to retain viability;
- Region's agricultural systems eventually collapse and the industry is forced out of the region.

Uncertainties

- Continued popularity of sea change/tree change movement and their focus on periurban areas to meet their lifestyle aspirations;
- The response to peak oil fuel prices from commercial agriculture and peri-urban areas residents/commuters;
- Future of rural tourism and its impacts on land use and regional economies;
- Climate Change impacts limit the extent and nature of agriculture in the region
- Future trends in globalisation in response to climate change effects and the 'food miles' debate;
- Influences of future carbon trading systems;
- Future community values for the regional landscape and environmental and natural resources of the peri-urban landscape;
- Regional community's environmental priorities and concern for their local farming sector;
- Emerging biosecurity threats to regional agricultural systems;

- Reliance and priority placed on food security by domestic/regional populations;
- Change in global markets and the emerging links between grain and bio-fuel prices;
- Movement of land valuations throughout the peri-urban areas;
- Adaptation and resilience of regional ecological systems;
- Rise in consumer affluence and consumerism;
- The continuation of viability for family farms and the capacity to maintain viability;

Possible Shocks and Surprises

- Rapid and extreme climate change prolonged drought leading to serious heat stress and disease;
- Global oil shock higher fuel prices in the short term;
- Unpredicted and rapid decline of ecological systems - major biological/ecosystem collapse. e.g. decline in the bee population;
- Food security shock (e.g. bird flu) its impact on the agriculture industry and affects on consumer sentiment about imported food;
- A long lasting global economic recession;
- Global food shortages;
- Sudden and repeated algal blooms in water supplies;
- Irrigation industries shut down permanently;
- Closure of a major processing plant driven by production costs and declining numbers of farms;
- The inability of infrastructure to cope with increased demand;
- Possibility of major overseas supermarkets entering the Australian market e.g. Wal-Mart;
- Planning scheme takes away the perceived right for a dwelling on a lot - dwellings in rural areas become impact assessable;
- Changes to Federal Government's food import rules;

- Geo-political situation changes war and environmental external shocks e.g. war and climate refugee;
- Major amendments to the SEQ Regional Plan favouring urbanisation and the land

development industry at the expense of non-urban areas and activities;

 Unpredicted population growth away from SEQ to other regions of the State (eg coastal regions such as Far North Queensland).

6.1.2. An Agriculturally Declining Melbourne Metropolitan Region

A rapid decline of agriculture in the greater Melbourne region would be influenced by a variety of changes to environmental, social and economic aspects of the industry. These changes would seriously challenge the response of governments at all levels. The region's traditional agriculture as well as its emerging intensive high capital forms of agriculture and enterprises associated with lifestyle horticulture and the equine industry would also be placed at serious risk. Whilst it may not necessarily result in an end to all agriculture in the region, this scenario could see the weakening of the region's traditionally strong agricultural systems (such as extensive grazing); the failing of many farm enterprises; the exit of many farmers, especially the struggling and holding-on farmers; and the degeneration and continued degradation of the region's environmental systems and landscape that support agriculture as farmers strive to continue production and maintain viability.

Major drivers such as globalisation, climate change, oil vulnerabilities and associated impacts on the cost of fuels, and an ageing farming population, together with regional drivers such as urban expansion and population pressures could potentially combine to drive these changes leading to rapid agricultural decline.

This situation could also be facilitated by a range of local influences including the unavailability of water, increasing operating costs (e.g. fuels and labour) escalating land prices, competing land uses and the erosion of the region's Green Wedges through unregulated encroachment of the region's urban growth boundaries in one of the country's fastest growing metropolitan regions. These influences would lead to continued and irreversible spatial fragmentation which constitutes one of the most serious threats to the continuation of viable agriculture in the region.

This scenario may also witness strong competition emerging between the region's traditional forms of agriculture (eg extensive grazing) and its emerging enterprises characterised by intensive high capital forms of agriculture, lifestyle horticulture and the equine industry.

Major Themes and Issues Population Pressures Pressures from people moving to periurban areas for the lifestyle; A complete freeway and ring-road system is encouraging enterprises to move to the periphery; Urban spread and increased fragmentation of the landscape. Promotion of Affluent Lifestyles Continuation of current tax policy allowing deductibility of land costs and infrastructure for 'lifestyle' businesses;

 Continued economic growth underpinning the demand for lifestyle and affluence and the expansion of middle class living.

Growth of New Non Urban Industries

• Growth in intensive high capital agriculture and equine industry.

Changing Nature of Farming

- Increases in contract farming;
- Corporatisation of farming and trends towards larger scale enterprises.

Constraints on Farming

- Increasing production costs outstripping commodity prices;
- Globalisation and increased competition from overseas producers;
- Part-time farmer's face difficulties in maintaining viability;
- Impact of increasing land prices driven by demands for lifestyle properties or expanding rural enterprises.

Land Use Conflicts

- The expectations of new peri-urban residents from urban backgrounds conflict with and inhibit commercial farming practices;
- Other rural uses (eg amenity living, outdoor recreation and tourism, equine industry) out compete traditional agriculture;
- Right-to-farm movements.

Water Quality & Quantity

- Uncertain availability and long-term decline in water for agriculture;
- Competition with urban population and increasing water pricing;
- Declining quality of the surface and ground water;
- Un-competitiveness of traditional farming in an environment of water scarcity;
- Over-allocation of water.

Biosecurity Threats

 Loss of regional competitiveness through risks posed by less regulated areas of the industry.

Collapse of the Ecological System

 Ecological system placed at risk from losses of soil quality, water quality, biodiversity and increasing fragmentation of the landscape.

Climate Change Impacts

- Increases in severe weather events;
- Major long-term drought;
- Changes to the growing season;
- Greater insurance risks associated with extreme weather events.

Key Points

Likely Trends

- The region's high population growth continues leading to high demand for urban housing and increased demands for lifestyle settlement;
- Pressures on the viability of agriculture sees ageing farmers and farming families exit the industry and the region;
- Farmlands forfeited to meet the demand for amenity living and associated infrastructure;
- Displacement of traditional farming activities due to increasing conflicts with new (former urban) residents and the NIMBY syndrome;
- Increase specialisation and diversification of farm enterprises as commercial farmers seek to remain viable and as lifestyle/parttime farmers supplement income from offfarm sources;
- Changing climatic regime of more frequent and longer droughts, coupled with growing urban demands, results in little to no water available for agriculture;
- Groundwater reserves rapidly depleted;
- Rapid decline in surface and ground water quality;
- Cost price squeeze an agriculture continues;
- Local industries face increasing competition from imported cheaper overseas produce particularly in fruit and vegetables;

- Agricultural activity is increase divorced from land ownership - land will be leased more frequently;
- Decreased broad scale agriculture with commercial agricultural activities restructured and consolidated into larger parcels;
- Increasing turnover of large scale businesses and change occurring at increasingly faster pace;
- Food processors remove factories impacting on the region's manufacturing sector, production and the number of farms;
- Decisions will be made by centralised and distant head offices and corporations rather than local smaller groups and individual farmers;
- Critical mass of farm enterprises is lost resulting in closure and withdrawal of essential agricultural support activities (eg transport and processing) leading eventually to industry collapse;
- Current investments in agriculture rapidly shift from sustainable operations to ones that degrade the environment (including loss of biodiversity) as commercial farmers seek to retain viability;
- Region's agricultural systems eventually collapse and the industry is forced out of the region.

Uncertainties

- Continued popularity of sea change/tree change movement and their focus on periurban areas to meet their lifestyle aspirations;
- The response to peak oil fuel prices from commercial agriculture and peri-urban areas residents/commuters;
- Future of rural tourism and its impacts on land use and regional economies;
- Climate Change impacts limit the extent and nature of agriculture in the region
- Future trends in globalisation in response to climate change effects and the 'food miles' debate;
- Influences of future carbon trading systems;

- Future community values for the regional landscape and environmental and natural resources of the peri-urban landscape;
- Regional community's environmental priorities and concern for their local farming sector;
- Emerging biosecurity threats to regional agricultural systems;
- Reliance and priority placed on food security by domestic/regional populations;
- Change in global markets and the emerging links between grain and bio-fuel prices;
- Movement of land valuations throughout the peri-urban areas;
- Adaptation and resilience of regional ecological systems;
- Rise in consumer affluence and consumerism;
- The continuation of viability for family farms and the capacity to maintain viability;
- Effectiveness of Melbourne 2030 Plan and the outwards movement of its urban growth boundary and preservation of its Green Wedges.

Possible Shocks and Surprises

- Rapid and extreme climate change prolonged drought leading to serious heat stress and disease;
- Global oil shock higher fuel prices in the short term;
- Unpredicted and rapid decline of ecological systems - major biological/ecosystem collapse.
 e.g. decline in the bee population;
- Food security shock (e.g. bird flu) its impact on the agriculture industry and affects on consumer sentiment about imported food;
- A long lasting global economic recession;
- Global food shortages;
- Sudden and repeated algal blooms in water supplies;
- Irrigation industries shut down permanently;
- Closure of a major processing plant driven by production costs and declining numbers of farms;
- The inability of infrastructure to cope with increased demand;

- Possibility of major overseas supermarkets entering the Australian market e.g. Wal-Mart;
- Planning scheme takes away the perceived right for a dwelling on a lot - dwellings in rural areas become impact assessable;
- Changes to Federal Government's food import rules;
- Geo-political situation changes war and environmental external shocks e.g. war and climate refugee;
- Major amendments to the Melbourne 2030 Plan favouring urbanisation and the land development industry at the expense of nonurban areas and activities;
- Unpredicted population growth away from the greater Melbourne region.

6.2. A Revival of Agriculture Scenario

6.2.1. An Agriculturally Revived SEQ Region

The revival of agriculture relies on several elements coming together including: stronger and coordinated planning to focus more on the value of agriculture to the region; innovative farming solutions; protection of the region's natural foundations that support agriculture such as water, soil and ecosystems; and the ability to compete with overseas markets.

Certainty surrounding the supply and quality of water would be a cornerstone to a future where the revival of agriculture occurs.

Farms of the future will be energy efficient, invest in innovative production techniques and be involved in off-farm enterprises and diversification. Traditional forms of agriculture will need to become more cost-effective and environmentally sound.

This scenario may include many elements such as the revitalisation of traditional and existing industries; the emergence of new and innovate industries; recovery of flailing industries and a resurgence in the demand for local and quality produce that is grown in a sustainable manner.

A resurgent interest in health and wellbeing may provide a stepping stone to the development and revival of locally produced and sourced produce. Peri-urban areas may become an even more significant part of agricultural production with the growing trend towards an awareness of 'food miles' and the promotion of a synergy between agriculture and other land uses. In this way, agriculture will be valued and embraced by nearby urban communities and residents of peri-urban areas.

Adaptation to climate change may provide opportunities for the revival of agriculture especially in terms of a modified environment that now favours agricultural enterprises not previously possible.

The original intent of the SEQ Regional Plan will be upheld, maintaining the existing Urban Footprint, limiting rural residential development and providing greater certainty to the Regional Landscape and Rural Production Area, providing greater certainty to a revive agricultural industry. Supporting infrastructure for the region's agricultural industry is provides through the region's Infrastructure Plan and Programs.

Major Themes and Issues

Trends towards Localisation

 Reversal of globalisation trends. A rising awareness of the benefits of locally grown/sourced produce, possibly fuelled by biosecurity risks associated with imported products and acknowledgement of the 'food miles' issue.

Climate Change Opportunities

 Early identification of potential opportunities • The number and type of places and the ability to grow food is increased

Certainty of Water

- Water security and the definitive supply of good quality water for agricultural purposes
- Priced according to productivity allocated to higher value enterprises
- Improved infrastructure
- Recycled water use becomes socially accepted and more widely used

Labour Availability

 Improved labour availability (both skilled and unskilled)

Stronger Application of Planning Principles

- Planning provisions that discourage/stop fragmentation
- Agricultural areas are protected

Co-existence of Agriculture with Other Land Uses

- Improved capacity for agricultural industry to coexist with urban areas and rural residents
- Greater synergy between agriculture and other land use activities e.g. tourism and recreation

Emergence of Innovative Farmers

- Emerging technologies improves production
- Increased popularity of boutique farming (eg growth of indigenous plants for culinary purposes)

Key Points

Likely Trends

- Population increases = increased demand for food;
- Increasing demand for local products interstate/inter-regional movement of produce facilitated;
- Strengthening of the 'buy local' campaign;
- Increased diversity of crops and land uses due to the demand for local food;
- Community and political support for the 'right-to-farm' movement;
- Greater industry self regulation (eg incorporation of structured EMS systems);
- Growing interest in health and chemicalfree foods will provide an opportunity for farmers to enter new markets;
- Increased demand for specialist boutique products for high end markets;
- Improved water availability for agriculture (including recycled water)

Changing Nature and Diversity of Agriculture

- Peri-urban land will become viable for numerous uses such as carbon trading/BioBanking systems even without formal arrangements in place
- Environmental Offsets become the norm through improved community appreciation of regional green space
- Increased recognition of ecosystem services (eg offset scheme)
- Tree farming becomes a major agricultural industry

Increase Intensity of Farming Practices

- Greater intensification in peri-urban areas
- Smaller holdings utilised more intensively
- Increase in high tech agriculture

Higher Value of Production

- Changing consumer demands
- Increased farm gate prices
- Greater adoption of value-adding enterprises
- Acceptance of recycled water for agriculture (eg for piggeries, poultry and vegetable production);
- New business systems and technologies available to support agriculture;
- Greater opportunities to access land (eg leasing of land);
- Intensification of agricultural activities;
- Farmers look to value-add and implement ways to diversify their on-farm operations;
- Changing/diverse forms of energy supply e.g. biofuels;
- Diversification of agriculture into activities such as tree plantations to support carbon trading, environmental offsetting and BioBanking;
- Stronger linkages between agriculture and outdoor recreation and tourism;
- Continued demand for outdoor recreation will place increased awareness on the natural environment;
- Peri-urban agriculturists are supported by supplementary sources of income not

directly linked to the land – alternatively lifestylers could provide capital and labour;

- Community awareness of the environment and the important role of agriculture will be emphasised and supported by government's stewardship provisions;
- Local government supporting and stimulating agricultural growth in their areas;
- Governments provide necessary infrastructure support to rural industries;
- Increasing importance of global financial linkages to SEQ peri-urban region.

Uncertainties

- Trajectory of global economic growth;
- Severity of climate change;
- Timing and extent of oil vulnerability (extent and impacts of rising fuel costs);
- Population change in the SEQ region;
- Availability of water and extent of population growth;
- Community opposition and sentiment against use of recycled water in agriculture;
- Availability of skilled and unskilled farm labour;
- Whether there will be restrictions on the breaking-up of farms;
- Nature of urban-rural conflicts;
- Payment for ecosystem services;
- Consumption of local vegetables. The push by Department of Health and Services to promote consumption;

- Genetic engineering of crops;
- Illegal crops in the peri-urban areas;
- Political will to control urban growth and protect commercial farming through planning instruments.

Possible Shocks and Surprises

- Global petroleum supply shock.
- Severe climate change impacts on local agriculture (includes arrival of large numbers of climate refugees);
- Collapse of world fish stocks and cheaper overseas food supplies;
- Food safety scare;
- Major loss of faith in overseas food imports;
- Loss of overseas agricultural export markets;
- A national scheme to promote development in northern Australia;
- Potential innovations in agriculture e.g. GM foods;
- Change in government policy affecting investment in farming (eg removal of capital gains tax and negative gearing on property);
- Rising militancy amongst the agricultural sector leading to the rise of a political party along the lines of One Nation;
- Outbreak of pathogens in catchments due to intensive agriculture;
- State growth management strategy that facilitates growth outside of SEQ and into other regional areas.

6.2.2. An Agriculturally Revived Melbourne Metropolitan Region

The revival of agriculture in the region relies on several elements coming together including: stronger and coordinated planning to focus more on the value of agriculture to the region; innovative farming solutions; protection of the region's natural foundations that support agriculture such as water, soil and ecosystems; and the region's agricultural industry's ability to compete with overseas markets.

Certainty surrounding the supply and quality of water would be a cornerstone to a future where the revival of agriculture occurs.

Farms of the future will be energy efficient, invest in innovative production techniques and be involved in off-farm enterprises and diversification. Traditional forms of agriculture will need to become more cost-effective and environmentally sound.

This scenario may include many elements such as the revitalisation of traditional and existing industries; the emergence of new and innovate industries; recovery of flailing industries and a resurgence in the demand for local and quality produce that is grown in a sustainable manner.

A resurgent interest in health and wellbeing may provide a stepping stone to the development and revival of locally produced and sourced produce. Peri-urban areas may become an even more significant part of agricultural production with the growing trend towards an awareness of 'food miles' and the promotion of a synergy between agriculture and other land uses. In this way, agriculture will be valued and embraced by nearby urban communities and residents of peri-urban areas.

Adaptation to climate change may provide opportunities for the revival of agriculture especially in terms of a modified environment that then favours agricultural enterprises not previously possible.

The region's agricultural industry will gain greater certainty through the State Government commitments to the intent and provisions of a strengthened Melbourne 2030 Plan and associated statutory land use planning schemes of Local Government. The necessary supporting infrastructure for the peri-urban areas would be delivered through these planning and associated processes.

Major Themes and Issues

Trends towards Localisation

 Reversal of globalisation trends. A rising awareness of the benefits of locally grown/sourced produce, possibly fuelled by biosecurity risks associated with imported products and acknowledgement of the 'food miles' issue.

Climate Change Opportunities

- Early identification of potential opportunities
- The number and type of places and the ability to grow food is increased

Certainty of Water

- Water security and the definitive supply of good quality water for agricultural purposes
- Priced according to productivity allocated to higher value enterprises
- Improved infrastructure
- Recycled water use becomes socially accepted and more widely used

Labour Availability

 Improved labour availability (both skilled and unskilled)

Stronger Application of Planning Principles

- Planning provisions that discourage/stop fragmentation
- Agricultural areas are protected

Co-existence of Agriculture with Other Land Uses

- Improved capacity for agricultural industry to coexist with urban areas and rural residents
- Greater synergy between agriculture and other land use activities e.g. tourism and recreation

Emergence of Innovative Farmers

- Emerging technologies improves production
- Increased popularity of boutique farming (eg growth of indigenous plants for culinary purposes)

Changing Nature and Diversity of Agriculture	Increase Intensity of Farming Practices
 Peri-urban land will become viable for numerous uses such as carbon trading/BioBanking systems even without formal arrangements in place 	 Greater intensification in peri-urban areas Smaller holdings utilised more intensively Increase in high tech agriculture
 Environmental Offsets become the norm through improved community appreciation of regional green space Increased recognition of ecosystem services 	Higher Value of ProductionChanging consumer demandsIncreased farm gate prices
(eg offset scheme)Tree farming becomes a major agricultural industry	 Greater adoption of value-adding enterprises
 Key Points Likely Trends Population increases = increased demand for food; Increasing demand for local products - interstate/inter-regional movement of produce facilitated; Strengthening of the 'buy local' campaign; Increased diversity of crops and land uses due to the demand for local food; Community and political support for the 'right-to-farm' movement; Greater industry self regulation (eg incorporation of structured EMS systems); Growing interest in health and chemical- free foods will provide an opportunity for farmers to enter new markets; Increased demand for specialist boutique products for high and markets; 	 Changing/diverse forms of energy supply e.g. biofuels; Diversification of agriculture into activities such as tree plantations to support carbon trading, environmental offsetting and BioBanking; Stronger linkages between agriculture and outdoor recreation and tourism; Continued demand for outdoor recreation will place increased awareness on the natural environment; Peri-urban agriculturists are supported by supplementary sources of income not directly linked to the land - alternatively lifestylers could provide capital and labour; Community awareness of the environment and the important role of agriculture will be emphasised and supported by government's stewardship provisions;
 products for high end markets; Improved water availability for agriculture (including recycled water) Acceptance of recycled water for agriculture (eg for piggeries, poultry and vegetable production); New business systems and technologies available to support agriculture; Greater opportunities to access land (eg leasing of land); Intensification of agricultural activities; Farmers look to value-add and implement ways to diversify their on-farm operations; 	 Local government supporting and stimulating agricultural growth in their areas; Governments provide necessary infrastructure support to rural industries; Increasing importance of global financial linkages to the Melbourne Metropolitan peri-urban region. Uncertainties Trajectory of global economic growth; Severity of climate change; Timing and extent of oil vulnerability (extent and impacts of rising fuel costs);

- Population change in the greater Melbourne region;
- Availability of water and extent of population growth;
- Community opposition and sentiment against use of recycled water in agriculture;
- Availability of skilled and unskilled farm labour;
- Whether there will be restrictions on the breaking-up of farms;
- Nature of urban-rural conflicts;
- Payment for ecosystem services;
- Consumption of local vegetables. The push by Department of Health and Services to promote consumption;
- Genetic engineering of crops;
- Illegal crops in the peri-urban areas;
- Political will to control urban growth and protect commercial farming through planning instruments.

Possible Shocks and Surprises

- Global petroleum supply shock.
- Severe climate change impacts on local agriculture (includes arrival of large numbers of climate refugees);
- Collapse of world fish stocks and cheaper overseas food supplies;
- Food safety scare;
- Major loss of faith in overseas food imports;
- Loss of overseas agricultural export markets;
- A national scheme to promote development in northern Australia;
- Potential innovations in agriculture e.g. GM foods;
- Change in government policy affecting investment in farming (eg removal of capital gains tax and negative gearing on property);
- Rising militancy amongst the agricultural sector leading to the rise of a political party along the lines of One Nation;
- Outbreak of pathogens in catchments due to intensive agriculture

Whist these scenarios do not predict the future they do offer descriptive insights into two extreme futures that highlight contemporary differences in the theory associated with the evolution of peri-urban areas adjacent to urban and metropolitan centres. Their utility under these circumstances lies in their ability to serve as the basis for the evaluation of existing policies aimed at managing these peri-urban areas and safeguarding the environmental and natural resource values of these landscapes. These matters are explored in the following chapter.

7. The 'Wind Tunnel Tests'

The previously described scenarios, which represent descriptive possible futures for the case study regions of SEQ and greater Melbourne (see Chapter 6), provide the tools with which existing plans and strategies for these regions can be tested in a future environment of uncertainty.

In terms of the focus of this project, both regions are currently managed by two dominant planning instruments, namely a statutory regional land use plan and regional NRM plans. These plans are strategic in nature and have planning horizons that project well into a future in the order of twenty years. Consequently, present-day decision-making that governs and affects contemporary and future land use, environmental and NRM matters is strongly influenced by these plans and their strategies, especially in those cases where statutory provisions are involved. Thus the aim of this component of Phase 3 was to assess the adequacy of these existing strategic plans and their policies through "wind tunnel tests" using the constructed scenarios as the basis of the "test beds".

The "wind tunnel tests" that were conducted were an assessment of the response of the selected policies to achieve the intent of their respective plan under the various scenarios. The tests addressed the major themes and issues expected to be associated with the two scenarios that were developed for each peri-urban region. These themes and issues were originally derived from the scenario planning exercise. More work, beyond the scope of this project, would be required to fully identify the possible outcomes of each policy and therefore their influence on the potential consequences of each scenario.

The following sections discuss observations that have arisen from the "wind tunnel tests" that the respective land use and NRM Plans of the case study regions have been subjected to. These observations have been aided by the deliberations from the scenario planning workshops.

Through the use of "Roadmaps" (the scenario narratives) which describe routes from the PRESENT to the possible FUTURES, a number of "sign posts" have been recognised which represent indicators of the possible futures being realised. These "sign posts" can be in the form of events, occurrences or observations that can be scanned from the real world. They could, for example, be in the form of 'indicators' that State of the Region monitoring could be tasked to undertake. The identified "sign posts" are discussed in Chapter 8.

The ultimate aim of this section is to identify what needs to be done now to prepare for later.

7.1. SEQ Region Responses

The SEQ region is the fastest growing metropolitan region in Australia. The management of the region's environmental and natural resource assets and human activities is highly fragmented. This is reflected in its current governance and associated institutional arrangements. A wide range of institutions exist at three levels of governance and exercise various forms of managerial control over assets and activities across the region.

Recently introduced regional scale approaches have been implemented for the planning and management of land use and natural resources. However, due to the absence of formal governance and institutional arrangement at the regional scale, these initiatives have been completed as collaborative arrangements (horizontal and vertical) between and within the different levels of government and the non government sector.

The principal planning and management instrument in the region is the *South East Queensland Regional Plan 2005-2026* (SEQRP), a joint initiative between the State and Local Governments in the region. Whilst a composite regional NRM Plan for the region has yet to be finalised, *Healthy Land – Our Future* (HLOF), sponsored by the forerunner to SEQ Catchments, the current regional NRM body for South East Queensland has been used as a surrogate. Of the two existing NRM plans that cover parts of the SEQ region, HLOF covers the area of the Phase 2 CSA.

The 2004 amendments to the *Integrated Planning Act 1997* established the SEQRP as the superior planning instrument for the region and relegated State Planning Policies and other regional plans for SEQ (eg regional coastal management strategy, regional nature conservation strategy, regional NRM plan) to support roles. It also required the provisions of the SEQRP to be reflected in all State and local government planning. Local authorities in the region are required to prepare Local Growth Management Strategies (LGMSs) to demonstrate the measures they propose to take to accommodate their allocated population increase through the SEQRP process. Further, all Local Government statutory planning schemes, and the plans and policies of all state agencies had to be realigned to be consistent with the provisions of the SEQRP.

7.1.1. Regional Land Use Planning Initiatives

Current and future planning and growth management in the SEQ region is being guided by the *South East Queensland Regional Plan 2005 -2026* (SEQRP) which was released at the end of June 2005.

The Regional Vision Statement of the SEQRP, which overarches the planning document and provides broad base direction to its policy intentions, provides a broad insight into the regional communities' aspirations for their region and the future of its key environmental and landscape components (see text box below).

REGIONAL VISION

A future for SEQ which is sustainable, affordable, prosperous and liveable; where:

- communities are safe, healthy, accessible and inclusive;
- there are diverse employment opportunities, and quality infrastructure and services, including education and health;
- urban and rural areas are mutually supportive and collaborative in creating wealth for the community,
- development is sustainable, well-designed and the subtropical character of the region is recognised and reinforced;
- ecological and culturally significant landscapes are valued, celebrated and protected, and
- the community has access to a range of quality open space and recreational opportunities.

By 2026, SEQ is a region of inter-connected communities, with excellent accessibility and an extensive and efficient public transport system. At its heart is Brisbane, State capital and subtropical world city. Surrounding the capital, the region contains a number of large urban areas separated by open space and many small to medium-sized towns and villages, each with its own character and identity. It is *a region characterised by choice and diversity, with mountain ranges and hinterlands, the Bay and islands, extensive beaches, parks, bush and farmlands*.

SEQ is well managed with a sustainable quality of life, based on a unique landscape, quality built form and diverse cultures. It has a progressive and well-informed community and enjoys international recognition for leadership in fostering sustainable regional equality and prosperity.

(Qld Govt & SEQROC, 2005: 9)

The Regional Vision does not specifically refer to the region's peri-urban areas, however, it does contain a number of statements which provide an insight into the plan's focus on the non urban environment and its inferred emphasis on the region's peri-urban areas, their communities and land use activities. These statements which have been highlighted in the Regional Vision's text box collectively provide the following summation of the regional community's aspiration for SEQs non urban environment:

"a region characterised by choice and diversity, with mountain ranges and hinterlands ... parks, bush and farmlands (*where*) urban and rural areas are mutually supportive and collaborative in creating wealth for the community; ecological and culturally significant landscapes are valued, celebrated and protected; and the community has access to a range of quality open space and recreational opportunities"

From the SEQRPs twelve Desirable Regional Outcomes (DROs) and associated policies, a selection of policies that had a direct relationship to the scenario's focal question were chosen for testing against the two constructed

scenarios. Their relevance to peri-urbanisation was based on the findings of the Phase 2 case study research. The selected policy groupings from the SEQRP which were selected for testing included: rural industries; rural planning and rural communities and are detailed below:

5.4 Rural Industries

Principle: Maintain a viable rural production sector, capitalising on existing advantages and ready to meet changing circumstances.

Policy 5.4.1: Strengthen rural industries by increasing adaptability, productivity, value-adding and access to markets.

Policy 5.4.2: Identify and support sustainable new rural industries and innovative non-urban uses for rural land.

Policy 5.4.3: Ensure that land use policies do not constrain the development of agriculture, agri-business, appropriate ecotourism and recreation opportunities in rural areas.

5.2 Rural Planning

Principle: Conserve and manage rural areas to enhance their contribution to the regional economy, rural industries and the regional landscape.

Policy 5.2.1: Consolidate future rural population growth around existing towns and villages.

Policy 5.2.2: Encourage sustainable rural areas by supporting innovative planning approaches, including rural precinct planning.

Policy 5.2.3: Maintain the capacity of the region's environmental resources to supply ecosystem services.

5.3 Rural Communities

Principle: Ensure rural communities gain benefits from future growth and participate fully in the planning and development of the region.

Policy 5.3.1: Assist rural communities to identify strategies for economic development and growth, capitalising on their rural character and local attributes.

Policy 5.3.2: Provide and maintain appropriate levels of infrastructure and services to rural towns and villages.

In order to assess the appropriateness of the existing policies to address the major themes and issues expected to be associated with the two scenarios developed for the SEQ region, the "Wind Tunnel Test" centred around the question: what influence would existing policies have on the principal themes and issues expected to be associated with each scenario?

This assessment has been presented in the form of a Scorecard for the respective policies relevant to each scenario (see Tables 2 and 3). The following textbox provides an explanation of the scores.

Key to Scorecard

- \mathfrak{V} : potential to counter or slow down the theme
- →: potential to support or advance the theme
- : no influence on the theme
- n/a: not applicable
- op: (also) addressed by other SEQRP Policies
- *: not specifically addressed by SEQRP

Policies Major Themes*	Establish an urban growth boundary to set clear limits to metropolitan Melbourne's outward development	Protect the Green Wedges of metropolitan Melbourne from inappropriate development	Control development in rural areas to protect agriculture and avoid inappropriate rural residential development	Maintain access to productive natural resources and an adequate supply of well- located land for energy generation, infrastructure and industry	Rectify gaps in the network of metropolitan open space by creating new parks and ensure major open space corridors are protected and enhanced	Ensure that water resources are managed in a sustainable way	Protect groundwater and land resources	Protect native habitat and areas of important biodiversity through appropriate land-use planning	Comments
Population Pressures	×.	- Aller	- North	- All	- Aller	-	×*	n/a	ор
Promotion of Affluent Lifestyles	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*
Growth of new Non Urban Industries	Sur	→	Sur	n/a	- May	- Sur	n/a	n/a	
Changing Nature of Farming	- Mar	- Sur	- Sur	n/a	- Sur	-	n/a	n/a	*
Constraints on Farming	- ANA	- Sur	-	n/a	- Sur	-	n/a	n/a	*
Land Use Conflicts	- North Contraction of the second sec	→	- North Contraction of the second sec	-	- North	n/a	n/a	n/a	ор

Table 2:Scorecard for SEQRP Policy response to an Agriculturally Declining Scenario

Policies Major Themes*	Establish an urban growth boundary to set clear limits to metropolitan Melbourne's outward development	Protect the Green Wedges of metropolitan Melbourne from inappropriate development	Control development in rural areas to protect agriculture and avoid inappropriate rural residential development	Maintain access to productive natural resources and an adequate supply of well- located land for energy generation, infrastructure and industry	Rectify gaps in the network of metropolitan open space by creating new parks and ensure major open space corridors are protected and enhanced	Ensure that water resources are managed in a sustainable way	Protect groundwater and land resources	Protect native habitat and areas of important biodiversity through appropriate land-use planning	Comments
Water Quality and Quantity	-	-	×*	n/a	×*	-	n/a	-	ор
Biosecurity Threats	-	-	×*	n/a	×*	-	n/a	n/a	*
Collapse of Ecological Systems	-	-	-	n/a	-	×*	n/a	n/a	ор
Climate Change Impacts	-	-	-	-	-	-	n/a	-	*

* for an explanation of these themes refer to respective scenario in Chapter 6.

	Ri	ural Industri	es	R	ural Plannin	g	Rural Con		
Policies Major Themes*	Strengthen rural industries by increasing adaptability, productivity, value-adding and access to markets	Identify and support sustainable new rural industries and innovative non-urban uses for rural land	Ensure that land use policies do not constrain the development of agriculture, agri- business, appropriate ecotourism and recreation opportunities in rural areas	Consolidate future rural population growth around existing towns and villages	Encourage sustainable rural areas by supporting innovative planning approaches, including rural precinct planning	Maintain the capacity of the region's environmental resources to supply eccsystem services	Assist rural communities to identify strategies for economic development and growth, capitalising on their rural character and local attributes	Provide and maintain appropriate levels of infrastructure and services to rural towns and villages	Comments
Trends towards Localisation	→	-	→	→	→	→	→	n/a	*
Climate Change Opportunities	-	-	-	-	-	-	n/a	-	*
Certainty of Water	-	-	-	n/a	-	-	n/a	-	ор
Labour Availability	-	-	-	-	-	n/a	n/a	n/a	*
Stronger Application of Planning Principles	-	-	→	→	→	-	n/a	n/a	ор
Co-existence of Agriculture with Other Land Uses	-	-	→	-	→	n/a	→	n/a	
Emergence of Innovative Farmers	→	→	→	n/a	→	n/a	-	n/a	

Table 3: Scorecard for SEQRP Policy response to an Agricultural Revival Scenario

	Rural Industries			R	ural Plannin	g	Rural Con		
Policies Major Themes*	Strengthen rural industries by increasing adaptability, productivity, value-adding and access to markets	Identify and support sustainable new rural industries and innovative non-urban uses for rural land	Ensure that land use policies do not constrain the development of agriculture, agri- business, appropriate ecotourism and recreation opportunities in rural areas	Consolidate future rural population growth around existing towns and villages	Encourage sustainable rural areas by supporting innovative planning approaches, including rural precinct planning	Maintain the capacity of the region's environmental resources to supply ecosystem services	Assist rural communities to identify strategies for economic development and growth, capitalising on their rural character and local attributes	Provide and maintain appropriate levels of infrastructure and services to rural towns and villages	Comments
Changing Nature & Diversification of Agriculture	→	→	→	n/a	→	→	n/a	n/a	
Increasing Intensity of Farming Practices	→	→	→	n/a	→	×*	n/a	n/a	
Higher Value of Production	→	→	→	n/a	→	n/a	n/a	n/a	

* for an explanation of these themes refer to respective scenario in Chapter 6.

The scorecard for the SEQRP policy response to the Agriculturally Declining scenario (see Table 2) indicates that selected SEQRP policies could effectively counter to a degree, the negative themes and influences of that scenario. In particular, *Rural Planning* policy 5.2.2, which encourages sustainable rural areas by supporting innovative planning approaches including rural precinct planning, has the potential to counter or slow down many of the negative themes of this scenario. Similar effects could also be anticipated from the *Rural Industry* policies. This assessment reinforces the intent of the SEQRP to strengthen existing, and establish new sustainable rural industries, which would be capable of countering and slowing down the negative influences and consequences of an *Agriculturally Declining*" scenario.

However, the scorecard also highlights the absence of policy responses to deal with the anticipated future constraints on farming and in particular, potential biosecurity threats and climate change impacts. These latter two themes are seriously underrepresented with appropriate policy responses to the potentially negative effects of this scenario, not only throughout the three policy areas examined, but also throughout the SEQRP. In the other policy absent areas indicated, there is virtually little that a regional plan can do, to counter the effects of what are essentially exogenous global and national drivers of per-urban change that are influencing these types of themes. This conclusion supports the findings of Monograph 3 which found that:

"... there are a number of opportunities to address these challenges along periurbanisation cycles which can be derived for specific management challenges. However, this will require coordinated responses across a number of levels of government as well as the private and non-government sectors." (Low Choy et al, 2007: 136).

This assessment highlights the need to have policies that can deal with the management of a region experiencing 'no growth' or 'negative growth'. Overall the scorecard found that the SEQRP is ill-equipped to provide an adequate response to a scenario involving a rapid decline of agriculture in the region.

In contrast, the SEQRPs *Rural Industry* policies, and to a lesser degree, the *Rural Planning* policies could potentially support and in some cases, advance, important trends noted in relation to the *Agricultural Revival* scenario for SEQ. It has been assessed that many of these policies, if fully implemented, would position the region well to take advantage of an *Agricultural Revival* scenario. On the other hand there were some notable absences of policy, namely in the areas of water certainty, labour availability and climate change. Again, this scorecard serves to highlight the seriously under representation of climate change considerations in these policy groupings and generally throughout the SEQRP.

An overall observation that stems from the assessment of both scenarios is that the SEQRPs policies are not specific in terms of protecting the tradition forms of agriculture as they are with respect to new, innovative forms of non urban activities. Interestingly, only Policy 5.4.3 (Ensuring no constraints from land use policies) makes specific reference to 'agriculture'. Whilst it can be inferred that 'agriculture' is to be considered under the heading of 'rural
industry' there is a need to make specific and unambiguous references to this important peri-urban land use activity.

With the possible exception of "localisation" related policies, it is doubtful if the SEQRP policies would prepare the region, its community and its industries for the possible shocks and surprises anticipated with both scenarios. Many of these issues are outcomes of global and national drivers which a regional plan has little to no influence over. However, biosecurity, water security and climate change again stand out as deficient areas of policy requiring urgent attention which is partly within the sphere of influence of regional planning and management.

The workshop assessments for both scenarios are summarised in the following textbox.

Summary Workshop Assessments

- Rural Industries policies
- Current policies support scenario 2 (Revival of Agriculture).
- Need to commit planning to change and adaptation certainly add strength to the operational aspects of these policies.
- What is meant within the context of sustainability and viability?
- Includes a range of rural industries but not necessarily agriculture.
- Trying to broaden focus but include agriculture in the broader mix of land uses presents a broader rather than narrow viewpoint.
- Viability is about economic issues, ability to farm, right-to-farm. The issue of certainty underlies the notion of viability. Unviable production cycle should be included in the policy eg does it make sense to take agriculture land and then maintain and managed it from the public purse or let farmers manage it in an unviable way e.g. Maroochy cane lands. Current plan restricts alternative uses for these areas.
- Internal contradictions in these policies eg suggests not constraining but doing so anyway.
- Should have policies here to manage decline. Reconciliation of water planning, structural adjustment etc. These will need to be addressed.
- What policy frameworks should we be considering:
 - Mechanisms for structural adjustment in place
 - Capacity to fast track/support new industries
 - Sustaining local communities to support agriculture production.
- Rural Planning policies
- Agricultural industries can add value to ecosystem services rather than them being mutually exclusive. This needs to be stated.
- Ecosystem services only linked to the rural planning policy of SEQRP. Deliberately put there, perhaps not appropriate.
- Sustainability is only mentioned once. Seem to be more a synonym for viability. Unsure where sustainability fits into these policies.
- Ecological systems collapse may trigger scenario 1 (Decline of Agriculture) if sustainability isn't the leading edge consideration then viability may not occur in the long run. The industry won't survive.
- Conservation and management an active notion of these scenarios. Not sufficient to just maintain the capacity need to develop and grow the capacity.

• Rural Communities policies

- Independent of scenario 1 and 2.
- Applies to towns or rural living areas, everyone outside the urban footprint.
- A sustainable agricultural industry is fundamental to the communities in these areas.
- Catch 22 Policy 5.3.2. What is holding these areas back is that they don't have the infrastructure if the infrastructure is there you'll never get these areas back.
- There is a need for another policy area e.g. rural living area. Should we be giving acknowledgment to these areas?
- The intention to support the rural towns and villages rather than the peri-urban areas has not eventuated in reality.

- New rural residential aren't going to get new infrastructure, but these places already exist.
- Should be looking at new forms of residential development as opposed to continuing the current trend. Room to tighten up the policy in the future and need to be looking at developing a new form that is more like the policy.
- Need a policy that is actively discouraging development types that you don't want.
- The peri-urban landscape has a turn over of 3 years. Every new resident has expectations that need to be met. Unless there is a physical barrier it is inevitable. Once the road goes in, it has to end up being semi-watered/semi-sewered. Do it now rather than let it happen over numerous generations. They are not sustainable in the long-term in the state that they are in.
- These are the hard decisions that have had to be made e.g. northern Beaudesert.
- New residential land practices are impacting on the farmer's ability to farm.
- Give each town a footprint and infrastructure structure plan. Start planning now e.g. far north coast regional strategy as an example. This process gives certainty gives structure to it. Be more strategic. Manage on a long-term basis.
- Rural planning concept is a new area. New territory and need to test the waters and try it out.

Whilst a number of the negative effects of this scenario would be countered to some degree by the three selected policy groupings (rural industries; rural planning and rural communities), it was also observed that other policies of the SEQRP could also support the desired outcome. Hence, it is crucial that future SEQRPs include appropriate coordinating mechanisms to more closely link and integrate these complementary policies from across the separate DROs of the regional plan. These other policy areas that should be acknowledged include:

2.1 *Biodiversity* (conserve and manage the region's biodiversity values and maintain supporting ecological processes);

2.5 *Waterways and wetlands* (protect, maintain and enhance the natural functions and environmental, social and economic values of the region's waterways, wetlands, riparian areas and floodplains);

4.1 Natural Resource Management (coordinate the management and use of natural resources to enhance community, economic and environmental values);

8.5 *Rural Residential Development* (contain and limit areas allocated for rural residential development to ensure efficient provision of services and infrastructure and limit future land fragmentation); and

11.7 Rural Water (ensure rural water needs are met in an efficient and sustainable way).

An additional element of the SEQRP that needs to be considered is its regulatory provisions. In respect of the peri-urban question, the Plan includes a number of Regulations that seeks to prevent further subdivision of the non-urban landscape for rural residential purposes. One regulation (R4) makes rural residential development an assessable material change of use. A second (R5), limits subdivision in the Regional Landscape and Rural

Production Area to a minimum lot size of 100 hectares. However, as Monograph 3 has previously concluded, this regulation would have no effect in circumstances where:

"... the SEQ Regional Plan's statutory regulation defining a 100 hectare minimum subdivision lot size for areas outside of the region's Urban Footprints is unlikely to have its desired effect for those circumstances involving the future sale of multititled farms comprised of titles less than 100 hectares to non-farming lifestyle seeking residents." (Low Choy et al, 2007: 135).

7.1.2. Regional NRM Planning Initiatives

It has previously been noted that the SEQ region is covered by two separate NRM plans, one emanating out of the federal government's National Heritage Trust initiative, and the second, from the National Action Plan for Salinity and Water Quality program. In the absence of an integrated NRM plan for the region, the NRM Plan of the former SEQ Western Catchments Group Inc. (SEQWCG), titled: *Healthy Land – Our Future* (HLOF), which covers the Phase 2 case study area, has been used in this assessment of the scenarios.

Healthy Land – *Our Future*'s vision statement provides a broad overarching insight into the documents stance on the importance of agriculture (and other rural activities) to the region (see text box below).

HLOF Vision

The SEQ Western Catchments region is recognised and valued as the main provider of a wide range of services to South-east Queensland and beyond. These include agricultural production, water supply, open space, rural and landscape amenity, recreation, biodiversity, healthy waterways and a good quality air-shed.

Maintaining the quality and sustainable supply of environmental services is the basis of the region's business and industry, land uses and social fabric. Beneficiaries of these services include local residents as well as communities across South-east Queensland.

(SEQWCG, 2004: 4)

HLOF acknowledges that three principles underpin the regional vision and include:

- improvements in the 'liveability' of the region will result from the appropriate management of our natural assets;
- users of the region's natural assets need to recognise their impact on the assets; and
- management responses need to ensure that diverse and viable farming communities are retained as part of the rural social and economic fabric (SEQWCG, 2004: 5).

Interestingly, the HLOF vision does not acknowledge the existence of the region's extensive peri-urbanisation. It does however clearly acknowledge the importance of agriculture and the need to manage the region to facilitate its ongoing viability.

Whilst HLOF comprises seven policy areas, three were chosen for testing against the two scenarios for SEQ. They included: Land Resources; Terrestrial Biodiversity; and Surface Water. Their selection took into account their relevance to peri-urbanisation which was based on the findings of the Phase 2 case study research. The selected HLOF policies are detailed below:

Land Resources

Aspirational Targets

LR-AT1: Pressures of population growth on land resources are managed through appropriate planning mechanisms by 2026

LR-AT2: Land use impacts on soil health are managed by appropriate practices to present no risk to land resources by 2050

Resource Condition Targets

LR-RCT1: No loss of Good Quality Agricultural Land (GQAL) in the western catchments region

LR-RCT2: Reduced risk of salinity damage to priority at risk infrastructure in high salinity risk areas by 2025

LR-RCT3: No net increase in area of salinised land from 2006 baseline level by 2025

LR-RCT4: Land resources managed to capability to minimise soil loss through erosion processes by 2025

LR-RCT5: Soil health condition in priority areas improved by 2025

LR-RCT6: Extent of priority agricultural pests stabilised in priority areas and reduced by 2025.

Terrestrial Biodiversity

Aspirational Targets

TB-AT1: The regions terrestrial vegetation is managed sustainably to a level that presents no risk to the regions terrestrial ecosystems by 2055

TB-AT2: The condition of regional ecosystems within the western catchments of SEQ is such that it supports diverse, resilient and functioning ecosystems by 2055

TB-AT3: Biodiversity management is integrated into productive systems, and seen as an integral part of sustainable production and land use.

Resource Condition Targets

TB-RCT1: Maintain and/or increase the 2001 extent of remnant vegetation (regional ecosystems) by 2025

TB-RCT2: Minimum 24% increase (5,793 ha) in the 2001 extent (24,139 ha) of riparian regional ecosystems in the region by 2025 (579ha/year for next 10 years), including: doubling the current extent of Eucalyptus tereticornis ecosystems on alluvial plains to 4,354 ha (218ha/year for next 10 years)

TB-RCT3: Improve the extent in the region of currently listed endangered and of concern regional ecosystems by at least 10% (2,199ha) by 2025 (147ha/year)

TB-RCT4: Increase the extent of identified regionally and locally significant areas by 2025.

TB-RCT5: Increase indigenous (local native) species diversity from 2005 baseline within identified regionally and locally significant areas by 2025.

TB-RCT6: No further decline in existing populations of identified priority species and no additions or decline in status of species currently listed as endangered, vulnerable or rare by 2025.

TB-RCT7: No decline in status of regional ecosystems by 2025.

TB-RCT8: No new pest species introduced into the region and the extent of existing terrestrial biodiversity pest infestation is declining by 2015.

Surface Water

Aspirational Targets

SW-AT1: Surface water is equitably allocated and managed for environmental, agricultural, industrial and domestic use, including the use of water efficient design and water re-use by 2026

SW-AT2: Water quality is managed to present no risk to agricultural, industrial and domestic users by 2037

Resource Condition Targets

SW-RCT1: Urban, agricultural and industrial users consumption of surface water is within the sustainable yield of the catchment by 2025

SW-RCT2: Water quality of all waterways within the western catchments of SEQ will meet agreed standards and targets by 2020.

SW-RCT3: In-stream electrical conductivity (salinity) levels meet agreed standards for agricultural, industrial and domestic use by 2020

The assessment of the appropriateness of the HLOF policies to address the major themes and issues expected to be associated with the two scenarios developed for the SEQ region was derived from the same "wind tunnel test" which centred around the question: *what influence would existing policies have on the principal themes and issues expected to be associated with each scenario?*

Resource Condition Targets

TB-RCT1: Maintain and/or increase the 2001 extent of remnant vegetation (regional ecosystems) by 2025

TB-RCT2: Minimum 24% increase (5,793 ha) in the 2001 extent (24,139 ha) of riparian regional ecosystems in the region by 2025 (579ha/year for next 10 years), including: doubling the current extent of Eucalyptus tereticornis ecosystems on alluvial plains to 4,354 ha (218ha/year for next 10 years)

TB-RCT3: Improve the extent in the region of currently listed endangered and of concern regional ecosystems by at least 10% (2,199ha) by 2025 (147ha/year)

TB-RCT4: Increase the extent of identified regionally and locally significant areas by 2025.

TB-RCT5: Increase indigenous (local native) species diversity from 2005 baseline within identified regionally and locally significant areas by 2025.

TB-RCT6: No further decline in existing populations of identified priority species and no additions or decline in status of species currently listed as endangered, vulnerable or rare by 2025.

TB-RCT7: No decline in status of regional ecosystems by 2025.

TB-RCT8: No new pest species introduced into the region and the extent of existing terrestrial biodiversity pest infestation is declining by 2015.

Surface Water

Aspirational Targets

SW-AT1: Surface water is equitably allocated and managed for environmental, agricultural, industrial and domestic use, including the use of water efficient design and water re-use by 2026

SW-AT2: Water quality is managed to present no risk to agricultural, industrial and domestic users by 2037

Resource Condition Targets

SW-RCT1: Urban, agricultural and industrial users consumption of surface water is within the sustainable yield of the catchment by 2025

SW-RCT2: Water quality of all waterways within the western catchments of SEQ will meet agreed standards and targets by 2020.

SW-RCT3: In-stream electrical conductivity (salinity) levels meet agreed standards for agricultural, industrial and domestic use by 2020

The assessment of the appropriateness of the HLOF policies to address the major themes and issues expected to be associated with the two scenarios developed for the SEQ region was derived from the same "wind tunnel test" which centred around the question: *what influence would existing policies have on the principal themes and issues expected to be associated with each scenario?*

	Land Re	sources	Terre	estrial Biodive	ersity	Surface	e Water	
Policies	Pressures of population growth on land resources are managed	Land use impacts on soil health are managed by appropriate	The regions terrestrial vegetation is managed sustainably to	The condition of regional ecosystems within the western	Biodiversity management is integrated into productive systems, and	Surface water is equitably allocated and managed for environmental.	Water quality is managed to present no risk to agricultural, industrial and	
Major	through appropriate	practices to present no risk	a level that presents no	catchments of SEQ is such	seen as an integral part of	agricultural, industrial and	domestic users by 2037	
Themes*	planning mechanisms by 2026	to land resources by 2050	risk to the regions terrestrial ecosystems by 2055	that it supports diverse, resilient and functioning ecosystems	sustainable production and land use	domestic use, including the use of water efficient design and water re- use by 2026		Comments
Population Pressures	×*	-	×*	×*	×*	S.	-	
Promotion of Affluent Lifestyles	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*
Growth of new Non Urban Industries	×*	→	×*	×*	×*	→	→	
Changing Nature of Farming	-	→	-	-	-	-	-	*
Constraints on Farming	N.	×.	-	-	-	S.	r and a second s	*

 Table 4: Scorecard for HLOF Policy response to an Agriculturally Declining Scenario

	Land Re	esources	Terre	estrial Biodivo	ersity	Surface	e Water	
Policies Major Themes*	Pressures of population growth on land resources are managed through appropriate planning	Land use impacts on soil health are managed by appropriate practices to present no risk to land	The regions terrestrial vegetation is managed sustainably to a level that presents no risk to the	The condition of regional ecosystems within the western catchments of SEQ is such that it supports	Biodiversity management is integrated into productive systems, and seen as an integral part of sustainable	Surface water is equitably allocated and managed for environmental, agricultural, industrial and domestic use,	Water quality is managed to present no risk to agricultural, industrial and domestic users by 2037	S
	mechanisms by 2026	resources by 2050	regions terrestrial ecosystems by 2055	diverse, resilient and functioning ecosystems	production and land use	including the use of water efficient design and water re- use by 2026		Comment
Land Use Conflicts	×*	-	-	-	×*	→	-	*
Water Quality and Quantity	-	× M	-	×.	-	S.	N	ор
Biosecurity Threats	n/a	× M	-	-	-	-	-	*
Collapse of Ecological Systems	N.	× M	×*	×.	×*	-	N	ор
Climate Change Impacts	-	-	-	- Marine Contraction of the second se	N.	S.	S.	ор

* for an explanation of these themes refer to respective scenario in Chapter 6.

	Land Re	esources	Terre	estrial Biodivo	ersity	Surface	e Water	
Policies Major Themes*	Pressures of population growth on land resources are managed through appropriate planning mechanisms by 2026	Land use impacts on soil health are managed by appropriate practices to present no risk to land resources by 2050	The regions terrestrial vegetation is managed sustainably to a level that presents no risk to the regions terrestrial ecosystems by 2055	The condition of regional ecosystems within the western catchments of SEQ is such that it supports diverse, resilient and functioning ecosystems	Biodiversity management is integrated into productive systems, and seen as an integral part of sustainable production and land use	Surface water is equitably allocated and managed for environmental, agricultural, industrial and domestic use, including the use of water efficient design and water re- use by 2026	Water quality is managed to present no risk to agricultural, industrial and domestic users by 2037	Comments
Trend towards Localisation	-	-	-	-	→	→	→	*
Climate Change Opportunities	-	-	-	→	→	→	-	ор
Certainty of Water	S.	-	n/a	n/a	-	→	→	
Labour Availability	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*
Stronger Application of Planning Principles	→	-	→	→	-	→	n/a	ор

 Table 5:Scorecard for HLOF Policy response to an Agricultural Revival Scenario

	Land Re	esources	Terre	estrial Biodive	ersity	Surface	e Water	
Policies Major Themes*	Pressures of population growth on land resources are managed through appropriate planning mechanisms by 2026	Land use impacts on soil health are managed by appropriate practices to present no risk to land resources by 2050	The regions terrestrial vegetation is managed sustainably to a level that presents no risk to the regions terrestrial ecosystems by 2055	The condition of regional ecosystems within the western catchments of SEQ is such that it supports diverse, resilient and functioning ecosystems	Biodiversity management is integrated into productive systems, and seen as an integral part of sustainable production and land use	Surface water is equitably allocated and managed for environmental, agricultural, industrial and domestic use, including the use of water efficient design and water re- use by 2026	Water quality is managed to present no risk to agricultural, industrial and domestic users by 2037	Comments
Co-existence of Agriculture with Other Land Uses	→	n/a	→	n/a	-	→	n/a	ор
Emergence of Innovative Farmers	→	→	-	→	→	→	→	
Changing Nature & Diversification of Agriculture	→	→	→	→	→	→	→	
Increasing Intensity of Farming Practices	→	→	-	-	→	→	→	
Higher Value of Production	-	n/a	n/a	n/a	n/a	n/a	n/a	*

* for an explanation of these themes refer to respective scenario in Chapter 6.

In the case of the *Agriculturally Declining* scenario (see Table 4), it is evident that HLOF does contain a number of policies that could effectively counter or slow down a number of the negative themes and influences of that scenario. In particular, the negative effects of 'population pressures' and 'the collapse of ecological systems' are reasonably well countered by the three policy groupings assessed. The *Terrestrial Biodiversity* group of policies demonstrated an encouraging set of positive responses to the many negative influences of this scenario. The scorecard highlights a number of important areas where they potentially could effectively counter or slow down a number of the negative themes of this scenario, provided they were implemented to the full extent as intended.

On the other hand however, there are many areas where its policies would be expected to have limited to no influence under this scenario (eg biosecurity threats, promotion of affluent lifestyles and the changing nature of farming).

The introduction of new non urban industries (eg high tech agriculture and the equine industry), with the potential to displace traditional forms of agriculture, may also be supported and advanced by some of these policies to the detriment of agriculture under this scenario.

The Agricultural Revival scenario for SEQ scorecard (see Table 5) shows strong support from the majority of HLOF policies for the advent of innovative farming initiatives and trends towards practices that represent the changing nature and greater diversification of agriculture – in many respects it could be expected that these policies would facilitate their entry in the SEQ region. This scenario suggests that its themes would combine to lead towards greater intensification of land use activity supported and advanced by the majority of the HLOF policies tested.

Seriously implemented robust NRM policy can have the effect of strengthening agricultural systems and provide them with a degree of reliance allowing them to withstand the pressures of urbanisation and population growth whilst facilitating the growth of initiatives associated with the *Agricultural Revival* scenario. Statutory cover for these policies would confer additional support, however, the regional NRM Plan is a non-statutory document that has no legal status over other managerial agencies in the region. It is not connected nor integrated with the region's statutory regional plan – the SEQRP. This omission needs serious address in future planning iterations of both the SEQRP and subsequent regional NRM plans.

In contrast to the SEQRP, climate change effects under both scenarios have received greater attention from the HLOF policies. In the case of the *Agriculturally Declining*" scenario, the policies would generally operate to constrain the negative effects of that scenario whilst the positive opportunities presented by the *Agricultural Revival* scenario would be supported and advanced.

The growth of new non urban industries (eg high tech agriculture and the equine industry) could be at odds with the enhancement and continuation of traditional forms of commercial agriculture, especially in an environment of limited resources. Many of the policies of HLOF and to a lesser degree the SEQRP actually will favour these new emergent non urban industries and as

the assessment of the *Agriculturally Declining SEQ* scenario has shown, this could be at the expense of traditional agriculture.

Again there are a number of scenario themes where the NRM plan has limited effect (eg trends towards localisation). Yet others are outside of the influence of a regional NRM plan such as labour availability and higher value of production issues.

The workshop assessments for both scenarios are summarised in the following textbox.

Summary Workshop Assessments

- Agriculture in RCT1 impacts should be independent of issues non specific.
- Are these policies robust enough to deal with waxing and waning of agriculture?
- If there is a decline in agriculture that creates a space for the new activities we haven't dealt with what takes this space.
- Parthenium could have impacts on human health and people in addition to the impacts on agriculture.
- Not enough recognition of peri-urbanisation.
- External to the industry historical problems inhabited by agriculture, not the broader peri-urban areas.
- Concerns for achieving the policies within the timeframe of a regional body.
- Can't rule out Government intervention to the extent of buying back rural residential blocks.
- There is no circuit breaker like a Wolfdene Dam a cry from the blockies. A backlash from these blockies could be a circuit breaker to address this issue. Intervention to buying back the properties.
- Increase in house prices is making this scenario viable. If oil prices go up considerably it will only compound the issue.
- Rising demand and regional open space in SEQ undersupplied this may be opportunity for the expansion of recreational space and environmental services.

Other HLOF policy groupings that have an indirect bearing on the themes of the scenarios include: atmosphere, groundwater and aquatic ecosystems. The HLOF document does attempt to provide a linking mechanism to identify where certain management actions from one grouping would be expected to have an impact on the management action of another natural resource asset.

7.1.3. Summary of SEQ Scenarios

The two scenarios discussed above provide some insight into the Focal Question originally posed in Chapter 4, which asked:

What are the plausible changes in the SEQ region's agricultural industry over the life of the SEQ Regional Plan 2005-2026 Plan and the regional NRM Plan/s, and what will be the consequences of those changes for existing peri-urban areas in this region?

Interestingly, none of these SEQ planning documents and statutory instruments make strong references to protecting the tradition forms of agriculture in the same manner that they appear to facilitate new, innovative forms of non urban activities for the region. The latter forms of activity are given higher prominence than agriculture which has been the mainstay of the economy of these case study regions for decades.

Additionally, the documents make little to no specific reference of a peri-urban area, by that name nor by any other synonymous name (eg urban fringe, metropolitan fringe, rural-urban fringe, exurban - see Monograph 1). Also the process of peri-urbanisation has not been directly acknowledged and consequently, there are no specific policy initiatives proposed to address this phenomenon and to manage its outcomes.

The scorecards containing the assessment of the region's principal planning instruments against the scenarios has reached similar conclusions to the findings of the Phase 2 case study research for the SEQ region (see Monograph 3). It serves to reinforce the latter's high priority recommendations which argued:

"The continued fragmentation and peri-urbanisation that is potentially possible through future sales of multi-titled farms to non farmers is perhaps the most pressing issue that requires urgent attention by the State and Local governments." (Low Choy et al, 2007: xxv).

... and in direct correlation to the scenarios, it was recommended that priority should also be given to questions related to:

"... the "new settlement" hypothesis, the ability of the new managers ('actors') of the peri-urban landscape to exercise their stewardship responsibilities for their properties, and the requirements to engage them in future NRM initiatives ... (and) The cost, especially to the community, associated with the provision of physical, social and environmental infrastructure to peri-urban areas, specifically to rural residential areas, also needs urgent attention." (Low Choy et al, 2007: xxv).

These conclusions also highlighted specific matters such as

"The question of the role, impact and future of the equine industry in emergent periurban areas is a major issue that has largely been ignored in planning, NRM and landscape management circles to date and is a ubiquitous challenge for NRM across all peri-urban landscapes." (Low Choy et al, 2007: xxv).

Whilst the assessment of the scenarios have highlighted that HLOF does contain policies that potentially can address a number of the negative aspects of these possible futures for the SEQ region, they gain little traction due to their non-statutory standing. Hence, the conclusions stemming from this phase correlate with and reinforce those of the Phase 2 findings, namely:

"The range of major landscape management challenges associated with peri-urban landscapes characterised by the CSA requires a coordinated approach delivered through appropriate institutional arrangements. The current SEQ regional planning initiative has the potential capability to provide for these integrated outcomes. Future management initiatives should focus on the process of peri-urbanisation and not solely on its spatial dimensions. These initiatives can be focussed through the employment of the recommended peri-urbanisation cycles which highlight the critical linkages between the drivers of change, the peri-urban process and its resulting management challenges, and the new 'actors' on the peri-urban scene who now have stewardship responsibility for these peri-urban landscapes." (Low Choy et al, 2007: xxv).

7.2 Greater Melbourne Region Responses

The greater Melbourne region is one of the fastest growing metropolitan regions in Australia. Similar to the previously described SEQ situation, the management of this region's environmental and natural resource assets and human activities is highly fragmented. This is reflected in its current governance and associated institutional arrangements. A wide variety of institutions exist at three levels of governance to exercise various forms of managerial control over assets and activities across the region.

Recently introduced regional scale approaches have been implemented for the planning and management of land use and natural resources. However, due to the absence of formal governance and institutional arrangement at the regional scale, many of the non statutory initiatives have been completed as collaborative arrangements between a range of stakeholders operating at the catchment level.

The principal planning and management instrument in the region is the *Melbourne 2030 Plan*, an initiative of the Victorian State Government. It is intended to serve as the strategic land use and development plan for the metropolitan area. However, as noted in Monograph 1, it is not a fully fledged regional plan (Buxton et al, 2007: 5). The regional NRM plan which covers the majority of the greater Melbourne region is the *Port Phillip and Western Port Regional Catchment Strategy 2004-2009* (PPWP RCS) of the Port Phillip and Western Port Catchment Management Authority (PPWP CMA).

In addition to the provisions of the *Melbourne 2030 Plan* initiative, a number of other planning instruments are employed to manage land use across this region. These additional instruments include the State Planning Policy Framework (SPPF) and the statutory planning schemes of individual local authorities in the region. These latter schemes are standardised planning tools prepared in accordance with State Government directions contained in the Victoria Planning provisions (VPP). Elements of the SPPF can also have implications for the RCS.

7.1.4. Regional Land Use Planning Initiatives

The broad direction for future regional scale development in the region is provided by the *Melbourne 2030 Plan* initiative which was released by the state government in 2002.

The Vision Statement of the *Melbourne 2030 Plan*, which overarches the planning document and sets broad base direction for its policy directions, provides a general insight into the regional communities' aspirations for their region and the future of its key environmental and landscape components (see text box below).

Melbourne 2030 Vision

In the next 30 years, Melbourne will grow by up to one million people and will consolidate its reputation as one of the most liveable, attractive and prosperous areas in the world for residents, business and visitors

(DOI, 2002: ii)

The *Melbourne 2030* vision is a generic statement that provides no specific reference to discrete areas within its region such as the peri-urban areas. However, throughout the document there is reference to an overarching intention to direct growth away from the fringes of the region, exemplified by statements such as:

While a good supply of land for development will be maintained in growth areas, over time there will be a shift away from growth on the fringe of the city ... this will help prevent urban expansion into surrounding rural land.

The *Melbourne 2030 Plan* is comprised of a set of Principles and nine Key Direction statements (or desired results). Five of these Directions contained policies which are relevant to the scenario's focal question and were chosen for testing against the two constructed scenarios. Their selection took into account their relevance to peri-urbanisation which was supported by the findings of the Phase 2 case study research. The selected Direction statements and their relevant policies that were selected for testing included:

Direction 2: Better management of metropolitan growth

Policy 2.1: Establish an urban growth boundary to set clear limits to metropolitan Melbourne's outward development.

Policy 2.4: Protect the green wedges of metropolitan Melbourne from inappropriate development.

Direction 3: Networks with the regional cities

Policy 3.2: Control development in rural areas to protect agriculture and avoid inappropriate rural residential development.

Direction 4: A more prosperous city

Policy 4.1: Maintain access to productive natural resources and an adequate supply of well-located land for energy generation, infrastructure and industry.

Direction 5: A great place to be

Policy 5.7: Rectify gaps in the network of metropolitan open space by creating new parks and ensure major open space corridors are protected and enhanced.

Direction 7: A greener city

Policy 7.1: Ensure that water resources are managed in a sustainable way.

Policy 7.5: Protect groundwater and land resources.

Policy 7.7: Protect native habitat and areas of important biodiversity through appropriate land-use planning.

In order to assess the appropriateness of the selected *Melbourne 2030* policies to address the major themes and issues associated with the two scenarios, the "wind tunnel test" centred on the question: *what influence would existing policies have on the principal themes and issues expected to be associated with each scenario?*

This assessment has been presented in the form of a Scorecard for the respective policies of both major planning instruments that are relevant to each scenario (see Tables 6 and 7). The following textbox provides an explanation of the scoring symbols.

Key to Scorecard

- \mathfrak{V} : potential to counter or slow down the theme
- →: potential to support or advance the theme
- : no influence on the theme

n/a: not applicable

op: (also) addressed by other Melbourne 2030 Policies

*: not specifically addressed by Melbourne 2030

Policies Major Themes*	Establish an urban growth boundary to set clear limits to metropolitan Melbourne's outward development	Protect the Green Wedges of metropolitan Melbourne from inappropriate development	Control development in rural areas to protect agriculture and avoid inappropriate rural residential development	Maintain access to productive natural resources and an adequate supply of well- located land for energy generation, infrastructure and industry	Rectify gaps in the network of metropolitan open space by creating new parks and ensure major open space corridors are protected and enhanced	Ensure that water resources are managed in a sustainable way	Protect groundwater and land resources	Protect native habitat and areas of important biodiversity through appropriate land-use planning	Comments
Population Pressures	- Aller	- North Contraction of the second sec	×*	-	×.	-	-	- North	ор
Promotion of Affluent Lifestyles	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*
Growth of new Non Urban Industries	-	-	→	→	-	-	-	21st	
Changing Nature of Farming	n/a	n/a	→	-	n/a	-	-	-	*
Constraints on Farming	-	n/a	- All	- 1° - 1° - 1° - 1° - 1° - 1° - 1° - 1°	n/a	-	-	n/a	*
Land Use Conflicts	- Aller	-	- All	-	n/a	n/a	-	n/a	

Table 6: Scorecard for Melbourne 2030 Policy response to an Agriculturally Declining Scenario

Policies Major Themes*	Establish an urban growth boundary to set clear limits to metropolitan Melbourne's outward development	Protect the Green Wedges of metropolitan Melbourne from inappropriate development	Control development in rural areas to protect agriculture and avoid inappropriate rural residential development	Maintain access to productive natural resources and an adequate supply of well- located land for energy generation, infrastructure and industry	Rectify gaps in the network of metropolitan open space by creating new parks and ensure major open space corridors are protected and enhanced	Ensure that water resources are managed in a sustainable way	Protect groundwater and land resources	Protect native habitat and areas of important biodiversity through appropriate land-use planning	Comments
Water Quality and Quantity	-	-	-	- Maria	-	- North	×*	n/a	
Biosecurity Threats	n/a	n/a	-	-	n/a	n/a	n/a	n/a	*
Collapse of Ecological Systems	×.	- M	×*	-	×*	×.	- All	×*	
Climate Change impacts	-	-	-	-	-	-	-	-	ор

* for an explanation of these themes refer to respective scenario in Chapter 6.

Policies Major Themes*	Establish an urban growth boundary to set clear limits to metropolitan Melbourne's outward development	Protect the Green Wedges of metropolitan Melbourne from inappropriate development	Control development in rural areas to protect agriculture and avoid inappropriate rural residential development	Maintain access to productive natural resources and an adequate supply of well- located land for energy generation, infrastructure and industry	Rectify gaps in the network of metropolitan open space by creating new parks and ensure major open space corridors are protected and enhanced	Ensure that water resources are managed in a sustainable way	Protect groundwater and land resources	Protect native habitat and areas of important biodiversity through appropriate land-use planning	Comments
Globalisation Vs Localisation	→	-	→	→	-	→	→	-	*
Climate Change Opportunities	-	-	→	-	-	-	→	-	ор
Certainty of Water	-	n/a	-	→	n/a	→	→	-	
Labour Availability	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*
Stronger Application of Planning Principles	→	-	→	→	-	n/a	n/a	-	ор
Agriculture co-exist with Other Land Uses	→	n/a	→	-	n/a	n/a	n/a	n/a	

Table 7: Scorecard for Melbourne 2030 Policy response to an Agricultural Revival Scenario

Policies Major Themes*	Establish an urban growth boundary to set clear limits to metropolitan Melbourne's outward development	Protect the Green Wedges of metropolitan Melbourne from inappropriate development	Control development in rural areas to protect agriculture and avoid inappropriate rural residential development	Maintain access to productive natural resources and an adequate supply of well- located land for energy generation, infrastructure and industry	Rectify gaps in the network of metropolitan open space by creating new parks and ensure major open space corridors are protected and enhanced	Ensure that water resources are managed in a sustainable way	Protect groundwater and land resources	Protect native habitat and areas of important biodiversity through appropriate land-use planning	Comments
Emergence of Innovative Farmers	-	n/a	→	→	n/a	→	→	n/a	
Changing Nature & Diversity of Agriculture	→	→	→	→	→	→	→	>	
Increasing Intensity of Farming Practices	-	n/a	→	→	n/a	→	→	n/a	
Higher Value of Production	n/a	n/a	-	→	n/a	-	-	n/a	*

* for an explanation of these themes refer to respective scenario in Chapter 6.

The scorecard of the *Melbourne 2030* policy response to the *Agriculturally* Declining" scenario (see Table 6) indicates that only a selected number of policies would effectively counter the negative themes and influences of that scenario and that this would be to varying degrees of success. The best prospects for constraining the negative effects of this scenario appear to be offered by Policy 3.2 (part of Direction 3: Networks with the regional cities) which seeks to 'control development in rural areas to protect agriculture and avoid inappropriate rural residential development'. However, the most relevant policy grouping for this scenario is Direction 2 (Better management of metropolitan growth) - specifically Policy 2.1 (limitations imposed through an urban growth boundary) and Policy 2.4 (green wedge protection). The scorecard's assessment indicates that these policies do have the intent to potentially counter or slow down a number of the main negative influences and consequences of an Agriculturally Declining" scenario. There is also a suggestion that a few policies may facilitate the growth of new non urban industries which in turn may have the potential effect of countering or slowing down many of the negative themes of this scenario. However, despite the Phase 2 finding that there was increasing investment in high capital forms of agriculture, there is no explicit policy in Melbourne 2030 that advances this initiative, unlike that focused on the urban areas of the region.

Another perspective of the intended effects of selected *Melbourne 2030* policies indicates that the potential collapse of ecological systems which are likely to accompany this scenario could potentially be countered and slowed down by a large number of policies. However the intent of these policies will need to be cascaded down into lower order planning instruments and as the findings of Phase 2 have shown, this is highly problematic:

"Important biodiversity values exist in the study area. However, a mismatch exists between planning tools and sectoral characteristics, particularly for the protection of biodiversity." (Buxton et al, 2007: 1).

The scorecard also highlights the absence of policy responses to deal with a number of potential constraints on farming, and in particular, potential biosecurity threats and climate change impacts which may arise in the form of 'surprises' or 'shocks', without warning and with potentially widespread effects. These latter two themes are seriously underrepresented throughout all policy areas examined in terms of appropriate responses to the potentially negative effects of this scenario. Whilst *Melbourne 2030* is devoid of biosecurity considerations, it has dealt with climate change issues elsewhere in the document.

A number of other scenario themes, which are also devoid of policy responses, highlight a major challenge for regional planning. For example, in many policy absent areas, there is virtually little that a regional plan can do, to counter the effects of exogenous global and national drivers of per-urban change that are influencing these types of themes. This conclusion supports the findings of Monograph 3 which found that:

"... there are a number of opportunities to address these challenges along periurbanisation cycles which can be derived for specific management challenges. However, this will require coordinated responses across a number of levels of government as well as the private and non-government sectors." (Low Choy et al, 2007: 136).

In contrast, the Agricultural Revival scenario for the greater Melbourne region could potentially be well supported by a number of the selected policies (see Table 7). In particular, Policy 3.2 (control of development in rural areas to protect agriculture) is again prominent and reinforces the need to address these issues directly with agriculture specific policy. A number of other policies, if fully implemented, could also have the effect of positioning the region to take advantage of an Agricultural Revival scenario. These policy areas include: Policy 4.1 (access to productive natural resources and land) supported by the other specific natural resource policies of Policy 7.1 (water) and Policy 7.5 (groundwater and land). These policies have the potential to provide higher degrees of certainty to the non urban industries including agriculture which would potentially facilitate their growth and development under the expected conditions of this scenario. Additional support could potentially come from Policy 2.1 (limitation imposed through an urban growth This assessment reinforces the importance of ensuring that boundarv). strategic policies of this nature are consistently pursued at all levels.

The scorecard also serves to illustrate that in the event of some major changes in societal trends, (eg moves from globalisation to localisation, or changes to the nature and diversity of agriculture), the region could be well position to support these trends if the intended policies were fully implemented.

The assessment of the selected policies under both scenarios indicates that many have the potential intention to counter or slow down the negative themes and issues and to support and take advantage of the positive aspects of the scenarios. However the contemporary trends in reality are indicating a different set of outcomes which has the potential to negate the policy intention and make them ineffectual in the event of these scenarios being approached in the future. A prominent example of these concerns is related to the project's Phase 2 conclusions (see Monograph 2) which has highlighted the ineffectual outcomes with respect to the potential continuation of spatial fragmented of agricultural lands in the region (Buxton et al, 2007).

On the other hand there were some notable absences of policy, namely in areas such as labour availability. Again, this serves to highlight the need for consistent and coordinate policy application all levels of government to address the full suite of drivers of change challenging future management of peri-urban landscapes.

Whilst there is a reasonable range of 'agriculture' specific policies in *Melbourne 2030*, with the potential to address many of the themes and issues associated with both scenarios, there is a contrary lack of policy that address new forms of agricultural production and emergent areas of non urban industries.

Overall, with a few possible exceptions, it is doubtful if the *Melbourne 2030* policies would prepare the region, its community and its industries for the possible shocks and surprises anticipated with both scenarios. Many of these issues are outcomes of exogenous global and national drivers which a regional plan of this nature has little to no influence over. However, specific peri-urban related policy deficiencies such as biosecurity and climate change

requiring urgent attention and this is within the sphere of influence of regional planning and management.

The workshop assessments for both scenarios are summarised in the following textbox.

Summary Workshon Assessments	
 Uncertainty in terms of the extent to which you can rely on these policies - expectation the way in which the policies have been creded 	
especially given the way in which the policies have been eloded.	
• If there was greater political will in pursuing the current Plan, it would have some traction over the scenarios	
 Must address the dynamic nature of the activities around the urban boundary. 	
There is a need to develop strategies and tools to deal with these issues.	
• Policy 2.1:	
 Hasn't got the legislative backing as the metro growth boundary has. Inner and outer peri-urban boundary (green wedges and zones that only apply to these green wedges can't be used outside the boundary of the green wedge). Farming zone is stronger, but has much more liberal provision to allow bourses to go on lots and allow excisions. Currently there is no logic to what 	+
is occurring at all.	ι
• Policy 2.4-:	
 Need to review the provisions of both zones as there is currently a very arbitrary approach between the zones. Should be an integrated approach to the zones for the entire peri-urban area. 	
• Policy 3.2-:	
 Will it be adequate to withstand the pressures from developers and other sources? 	
 Intention to slow development, and change the form of rural residential. Protects existing agriculture, not as much fragmentation. There was a change to this policy - the main change was to incorporate new phrases and a set of consistent zones that should be implemented; less discretionary. The notion that each LGA could have no more than 10 years supply of rural residential land available for future - drifted off. Being less precise about what was a rural residential and hobby farm etc. 	Ł
 A big issue is not that this land is available, but the pressure for the planning approval from the available 17000 lots and the ability to build a house on the property. Pressures coming from developers. 	
 These issues have planners looking for solid and concrete environmental reasons not to approve the application. 	
 Are local governments looking for something to help them? Possibly need some sort of planning guidelines that will address the relevant issues and to help manage the inherent changes. 	t

These scorecards represent hypothetical assessments of the performance and potential of the planning policies of *Melbourne 2030* reviewed against the possible futures represented by the scenarios. The assessments have indicated that a number of the policies do have the intention to counter or slow down the negative effects and influences and to support and take advantage of positive aspects of the scenarios. Additionally, it was also observed that other policies of *Melbourne 2030* could also support that outcome. Hence, it is crucial that future *Melbourne 2030* plans include appropriate coordinating mechanisms to more closely link and integrate these complementary policies from across the separate Directional policy groupings of the plan.

7.1.5. Regional NRM Planning Initiatives

Spatially, the bulk of the greater Melbourne region is covered by the Port Phillip and Western Port Catchment Management Authority (PP&WP CMA) who has statutory responsibility for natural resource management for its region. The planning intentions of the PP&WP CMA for its region are addressed in its regional NRM plan titled: *Port Phillip and Western Port Regional Catchment Strategy 2004 – 2009* (PP&WP RCS).

The RCSs vision statement provides a broad overarching insight into the CMAs stance on the importance of agriculture (and other rural activities and values) to the region (see text box below).

Port Phillip and Western Port Regional Catchment Strategy 2004 – 2009 Vision

The Port Phillip and Western Port region will have people working to achieve productive land, habitat for native plants and animals and clean water in the catchments, rivers and bays, making it healthy, attractive and prosperous place to live, work and visit.

(PP&WP RCS, 2004: 16)

Again there is no specific reference to the region's extensive areas of periurbanisation or to the peri-urban processes in this vision statement. This vision statement's broad generic acknowledgement of 'agriculture' and the non urban environment is further dealt with in a number of specific policies within three of the plan's four major groups of catchment assets, namely: land; biodiversity; and water. The selection of the three policy groupings took into account their relevance to peri-urbanisation which was based on the findings of the Phase 2 case study research. The policies (called "Targets" in the RCS) that were selected for assessment against the two scenarios are outlined below:

Land Goal: Healthy land used appropriately and productively

LO1. Achieve prosperous and sustainable primary production systems.

LO2. Protect and improve the health of land.

LO3. Ensure sensitively located and functional urban and urban-rural fringe areas with minimal impacts on the region's biodiversity, water resources and heritage values.

LO4. Match rural land-use, development and management to land capability and minimise impacts on the region's biodiversity, water resources and heritage values.

LO5. Provide a high-quality network of parks and open space across urban and rural areas managed for community and environmental benefit.

Biodiversity Goal: Healthy and enduring ecosystems with a diversity of habitats and native species

BO1. Achieve a net gain in the quantity and quality of indigenous vegetation.

BO2. Maintain the diversity of indigenous habitats and species in terrestrial, aquatic and marine environments.

BO4. Improve the connectivity and long-term security of indigenous habitats and species.

Water Goal: Sustainable water use and healthy waterways, wetlands, estuaries, coasts and bays

WO1. Ensure efficient management of water resources with minimal new impacts on natural hydrological processes.

WO4. Improve water quality in waterways, aquifers, wetlands, estuaries, bays and seas.

The assessment of the appropriateness of the PP&WP RCS policies to address the major themes and issues expected to be associated with the two scenarios developed for the greater Melbourne region was derived from the same "wind tunnel test" which centred around the question: *what influence would existing policies have on the principal themes and issues expected to be associated with each scenario?*

The scorecard which represents this assessment of selected PP&WP RCS policies is tabulated in Table 8 and 9. The following textbox provides an explanation of the scoring symbols.

Key to Scorecard

♥: potential to counter or slow down the theme

➔: potential to support or advance the theme

- : no influence on the theme

n/a: not applicable

op: (also) addressed by other PP&WP RCS Policies

*: not specifically addressed by PP&WP RCS

			Land Goal			Bio	diversity G	ioal	Water Goal		
Policies Major Themes*	Achieve prosperous and sustainable primary production systems	Protect and improve the health of land	Ensure sensitively located and functional urban and urban-rural fringe areas with minimal impacts on the region's biodiversity, water resources and heritage values	Match rural land-use, development and management to land capability and minimise impacts on the region's biodiversity, water resources and	Provide a high-quality network of parks and open space across urban and rural areas managed for community and environmental benefit	Achieve a net gain in the quantity and quality of indigenous vegetation	Maintain the diversity of indigenous habitats and species in terrestrial, aquatic and marine environments	Improve the connectivity and long-term security of indigenous habitats and species	Ensure efficient management of water resources with minimal new impacts on natural hydrological processes	Improve water quality in waterways, aquifers, wetlands, estuaries, bays and seas	Comments
Population Pressures	.₩	-	.₩	-	-	n/a	n/a	n/a	n/a	n/a	ор
Promotion of Affluent Lifestyles	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*
Growth of new Non Urban Industries	₹¶¢	-	-	S.	n/a	n/a	n/a	n/a	n/a	n/a	
Changing Nature of Farming	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	*
Constraints on Farming	N.	-	N.	-	n/a	n/a	n/a	n/a	n/a	n/a	

Table 8: Scorecard for PP&WP RCS Policy response to an Agriculturally Declining Scenario

			Land Goal			Bio	diversity G	Water Goal			
Policies Major Themes*	Achieve prosperous and sustainable primary production systems	Protect and improve the health of land	Ensure sensitively located and functional urban and urban-rural fringe areas with minimal impacts on the region's biodiversity, water resources and heritage values	Match rural land-use, development and management to land capability and minimise impacts on the region's biodiversity, water resources and	Provide a high-quality network of parks and open space across urban and rural areas managed for community and environmental benefit	Achieve a net gain in the quantity and quality of indigenous vegetation	Maintain the diversity of indigenous habitats and species in terrestrial, aquatic and marine environments	Improve the connectivity and long-term security of indigenous habitats and species	Ensure efficient management of water resources with minimal new impacts on natural hydrological processes	Improve water quality in waterways, aquifers, wetlands, estuaries, bays and seas	Comments
Land Use Conflicts	₩	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	
Water Quality and Quantity	-	- Sing	S.M.	- Sing	-	-	-	-	Ś	- Maria	
Biosecurity Threats	-	-	n/a	-	n/a	n/a	n/a	n/a	n/a	n/a	*
Collapse of Ecological Systems	.₩g	₹¶¢	₹¶¢	S.	-	S.	₹¶¢	28.8	- ANS	- Single	
Climate Change Impacts	-	-	-	-	-	-	-	-	-	-	ор

* for an explanation of these themes refer to respective scenario in Chapter 6.

			Land Goal			Biodiversity Goal			Wate		
Policies Major Themes*	Achieve prosperous and sustainable primary production systems	Protect and improve the health of land	Ensure sensitively located and functional urban and urban-rural fringe areas with minimal impacts on the region's biodiversity, water resources and heritage values	Match rural land-use, development and management to land capability and minimise impacts on the region's biodiversity, water resources and	Provide a high-quality network of parks and open space across urban and rural areas managed for community and environmental benefit	Achieve a net gain in the quantity and quality of indigenous vegetation	Maintain the diversity of indigenous habitats and species in terrestrial, aquatic and marine environments	Improve the connectivity and long-term security of indigenous habitats and species	Ensure efficient management of water resources with minimal new impacts on natural hydrological processes	Improve water quality in waterways, aquifers, wetlands, estuaries, bays and seas	Comments
Trends towards Localisation	→	→	→	→	-	n/a	n/a	n/a	n/a	n/a	*
Climate Change	n/a	-	-	→	-	-	-	-	-	-	ор
Certainty of Water	-	-	-	→	-	n/a	n/a	n/a	→	→	
Labour Availability	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	*
Stronger Application of Planning Principles	→	→	→	→	-	n/a	n/a	n/a	n/a	n/a	

Table 9: Scorecard for PP&WP RCS Policy response to an Agricultural Revival Scenario

	Land Goal					Biodiversity Goal			Water Goal		
Policies Major Themes*	Achieve prosperous and sustainable primary production systems	Protect and improve the health of land	Ensure sensitively located and functional urban and urban-rural fringe areas with minimal impacts on the region's biodiversity, water resources and heritage values	Match rural land-use, development and management to land capability and minimise impacts on the region's biodiversity, water resources and	Provide a high-quality network of parks and open space across urban and rural areas managed for community and environmental benefit	Achieve a net gain in the quantity and quality of indigenous vegetation	Maintain the diversity of indigenous habitats and species in terrestrial, aquatic and marine environments	Improve the connectivity and long-term security of indigenous habitats and species	Ensure efficient management of water resources with minimal new impacts on natural hydrological processes	Improve water quality in waterways, aquifers, wetlands, estuaries, bays and seas	Comments
Agriculture co-exist with Other Land Uses	→	-	-	→	-	n/a	n/a	n/a	n/a	n/a	ор
Emergence of Innovative Farmers	→	→	-	→	-	n/a	n/a	n/a	n/a	n/a	
Changing Nature & Diversity of Agriculture	→	→	-	>	-	→	→	-	n/a	n/a	
Increasing Intensity of Farming Practices	→	→	-	→	-	n/a	n/a	n/a	→	-	
Higher Value of Production	→	→	-	-	n/a	n/a	n/a	n/a	n/a	n/a	

* for an explanation of these themes refer to respective scenario in Chapter 6.

The PP&WP RCSs (selected) policy response to the *Agriculturally Declining* scenario for the greater Melbourne region is outlined in Table 8. The scorecard indicates that the best prospects of countering and slowing down the negative effects of this scenario would rest with the 'Land' group of policies, namely: Policy LO1 (prosperous and sustainable primary production systems) and LO 3(sensitively located and functional urban-rural fringe areas protecting natural resources), and to a lesser degree, Policy LO2 (health of the land) and Policy LO4 (rural activities matched to land capability). The assessment has demonstrated that the negative effects of 'the collapse of ecological systems' and 'water quality and quantity' themes are potentially well countered by the three policy groupings assessed. However, as previously observed, the intent of these policies will need to be cascaded down into lower order planning instruments in a more effective manner in order to redress the current Phase 2 problematic issues previously noted.

This assessment has highlighted similar policy deficiencies (mainly absences) in scenario themes consistent with the findings of previous reviewed planning documents and instruments. Areas where PP&WP RCSs policies would be expected to have limited to no influence under this scenario include the themes of: biosecurity threats, promotion of affluent lifestyles; the changing nature of farming; and climate change impacts. Again, this serves to confirm the previous conclusion that regional planning has limitations on what drivers of peri-urban change it can realistically address. This reinforces the essential need for consistent and coordinated policy application at all levels of government to address the full suite of exogenous and endogenous drivers of change challenging future management of peri-urban landscapes.

The scorecard also highlighted the possible situation that a number of the selected policies, whilst potentially having a direct effect on specific issues (eg water) may not have any direct relevance or effect on many of the other negative themes and issues associate with this scenario. Thus their influence is limited to their specific target issue and broader and secondary effects are non existent or minimal at best.

The scorecard for the greater Melbourne region's *Agricultural Revival* scenario (see Table 9) shows potentially strong support from the majority of PP&WP RCSs 'Land' group of policies. This assessment indicates that the region could potentially be well positioned to take advantage of the positive effects of this scenario if the policies are fully implemented and coordinated. Unlike the absence of policy attention in *Melbourne 2030*, the PP&WP RCS contains a number of policies, largely from the 'Land' group, that have the potential to facilitate the advent of innovative farming initiatives and support any future trends towards practices that represent the changing nature and greater diversification of agriculture. This scenario also suggests that its themes could combine and lead towards greater intensification of land use activity supported and advanced by the majority of the selected PP&WP RCSs 'Land' group of policies.

This assessment compliments previous conclusions which argued that seriously implemented robust NRM policy can strengthening agricultural systems and provide them with a degree of reliance that allows them to withstand the pressures of urbanisation and population growth whilst facilitating the growth of positive initiatives associated with the *Agricultural Revival* scenario. As previously noted, statutory

cover for these policies would confer additional support, however, the PP&WP RCS is a non-statutory document that has no legal standing in regard to the landscape management agencies and freehold landowners in the region. Whilst it is not linked to *Melbourne 2030*, there is recognition in the RCS of the need to:

Align the directions and actions of the RCS with Municipal Strategic Statements, planning schemes and other local government processes related to catchment management (see PP&WP RCS, Action PA7).

This intention needs to be seriously addressed in future planning initiatives at state, regional and local scales, and in particular, in future iterations of both the *Melbourne 2030* plan and the PP&WP RCS.

This scorecard highlights a similar assessment to the *Melbourne 2030* assessment for this scenario, where it was observed that a number of the selected policies, whilst potentially having direct affect on specific issues (eg water, biodiversity) may not have any direct relevance or affect on many of other positive themes and issues associate with this scenario. Thus their influence again, is limited to their specific target issue and broader and secondary effects are minimal to non existent.

Again there are a number of scenario themes and issues where the RCS has limited effect (eg trends towards localisation). Yet others, such as 'labour availability', are outside of the influence of a regional NRM plan. However, in contrast to other plans and strategies assessed, the PP&WP RCS does include an intention to address directly the issues of 'higher value of production' (see Policy LO1, Target LT1).

Finally, this assessment reinforces previous conclusions that the growth of new non urban industries (eg high tech agriculture and the equine industry) could be at odds with the enhancement and continuation of traditional forms of commercial agriculture, especially in an environment of limited resources. Many PP&WP RCSs policies will favour these new emergent non urban industries and as the assessment of the *Agriculturally Declining SEQ* scenario has shown, this could be at the expense of traditional agriculture. In contrast, a number of the themes of the *Agricultural Revival* scenario could potentially be supported and advanced by some of these policies, again, to the detriment of traditional forms of agriculture.

The workshop assessments for both scenarios are summarised in the following textbox.

Summary Workshop Assessments

- An RCS by itself is not capable of helping to manage these changes. It will fail in the case of wanting to maintain a viable agriculture. Some of the impacts of the developments which would occur are not catered for as part of the development assessment criteria.
- The PP&WP CMA is not a referral authority.
- People look to the planning scheme for everything it is not meant to control everything. We could get a closer mix between the two if the right structures are put in place such as performance standards.
- RCS a lot of its content is "light weight" with no decent solutions advanced. Property rights are the big sleepers. Planning and RCS is vital but what is missing is the ability to address the economic interests as they change with growth over time. A boundary will not be enough. What is required are caps on development, footprints etc and to set up mechanisms inside these caps. Still have shifting but within boundaries. A solution could be to purchase habitat, purchase rights to service water, manage waste water, and purchase development rights for the footprints that companies use. In purchasing development rights a pool of money would develop which could be used to purchase pieces of high level biodiversity. Maybe buying out others etc. Rules would have to be national otherwise it will be merely cherry pick.
- Edge expansion has to have a productivity gains as opposed to in the inner suburbs/inner city.
- Expectations that everything within the urban footprint is developable.
- A number of other of elements in the RCS also have impacts on agriculture.
- More powers under the legislation.
- Need a checklist for planners the RCS is not practical for everyday planning.
- RCS' are concepts and overlays are only trigger permits. The system has a philosophy of anti-regulatory. Permits and discretionary uses, very few are prohibited. Hard to get consistency as it is written in a level of generality. We need to be heading in a Code assessment direction.
- Can't rely on the regulatory as only picks up when it is triggered. Won't occur under rapid decline, relates to the way agriculture is practiced.
- We should be able to say what we want the area to look like. We could say no houses, wind turbines etc. These decisions haven't been made in Victoria.
- A regulatory response is required. Use controls, compulsory rural restructure. Re-zone the land.
- Need a vision for rural restructure. Regional planning authorities and local government and involving state government to develop sets of assumptions.
- Requires a serious event. Water and bushfire are the only crisis that will allow the government to make the decisions. As climate change for instance escalates we would be facing a crisis would then see things mandated.
- Industry position VFF split here; one group advocate for GQAL to be retained and the other half believe that at retirement time the land is ready for subdivision.
- We could see an alliance developing between land holders a 'Close the Gate' group. See this getting stronger and pushing pressure back to urban growth areas.
- Land ownership is beyond the financial means of many people. Peri-urban land is comparatively cheap. However, there will be fewer people who want this kind of lifestyle able to make this move as they find that there is a high costs involved in living this chosen lifestyle. Real estate agents will acknowledge a high turnover of these types of properties.
- People who move into these peri-urban areas, traditionally un-serviced, want urban services (i.e. town water, sewerage) eg call for reticulated water when they have chosen to build in a high fire risk area.
- Education and information for people moving into these areas is neglected. Real estate industry needs to be involved and is currently the catalysts for this growth.

7.1.6. Summary of greater Melbourne Scenarios

These two scenarios provide additional insight into the Focal Question originally posed in Chapter 4, which asked:

What are the plausible changes in the greater Melbourne region's agricultural industry over the life of the Melbourne 2030 Plan and the regional NRM Plan, and what will be the consequences of those changes for existing peri-urban areas in this region?

Both greater Melbourne regional planning documents have policies focused on primary production and specifically agriculture. If fully implemented, this can provide an advantage for addressing the critical themes associated with both scenarios as these policies can preposition the region to provide a timely response to the negative effects of the *Agriculturally Declining* scenario or alternatively, to take advantage of the positive opportunities associated with the *Agricultural Revival* scenario. However, this may be negated as the documents make little to no specific reference of a peri-urban area, although the PP&WP RCS does acknowledge an 'urban-rural fringe' in its policies. More importantly, the process of peri-urbanisation has not been directly acknowledged and consequently, there are no specific policy initiatives proposed to address this phenomenon and to manage its outcomes. These findings gain significant importance when considered in the light of a key Phase 2 finding (see Monograph 2) which found that:

"Extensive spatial fragmentation has occurred in the study area. Most of the rural areas have been subdivided into smaller rural lots of varying sizes, jointly owned as part of larger properties, each lot able to be developed. This potential will lead to extensive incremental development of dwellings and other uses over time with significant implications for servicing costs by local government, the provision of social services, landscape quality, water use, agriculture and biodiversity ... A significant area remains in lots over 40 and 100 hectares in size. The subdivision of these lots will lead to further spatial fragmentation. The possibility of lot excisions will exacerbate this trend significantly." (Buxton et al, 2007: 23).

It has been shown with respect to both scenarios that future growth of new non urban industries (eg high tech agriculture and the equine industry) could be at odds with the enhancement and continuation of traditional forms of commercial agriculture. This trend has in fact commenced as was confirmed by the Phase 2 finding that there was increasing investment in high capital forms of agriculture in the region. The management of these ongoing trends is currently disadvantaged through the absence of adequate policies.

The scorecards have also highlighted the absence of adequate policy responses to deal directly with a number of potential constraints on future farming, associated in particular with potential biosecurity threats and climate change impacts which may arise in the form of 'surprises' or 'shocks', without warning and with potentially widespread effects.

The scorecards represent hypothetical assessments of the potential performance of the planning and management instruments in possible futures circumstances represented by the scenarios. However, the contemporary reality may be quite different and as was concluded by the Phase 2 study (see Monograph 2), the greater Melbourne region is characterised by circumstances where:

Available planning tools are often vague and difficult to apply, and land use policies inadequate. Similarly, catchment management policies are often general, difficult to apply and omit the full use of the land use planning system and other regulatory tools as means of implementation. The discretionary nature of planning tools has led to widespread misapplication of these tools. Regional planning is effectively non-existent. There is insufficient coordination between local councils, regional management authorities, and state government, and insufficient integration between state government agencies. Such extensive failure to achieve integrated cross-sectoral policy and planning responses points to serious institutional failure (Buxton et al, 2007: 10).

8. Confronting the Future

This scenario planning exercise has identified a number of policy deficiencies with respect to the land use planning and natural resource management instruments currently being employed with the two case study regions of SEQ and greater Melbourne. Confronting the future in these highly peri-urbanised regions necessitates their address now, in the immediate to short term, largely because of the rapidly of changes that have occurred in these areas and are highly likely to continue in the future. The identification of these tasks will address the secondary question of Phase 3 of this project which asked:

What steps are necessary to achieve sustainable peri-urban landscapes in the SEQ and greater Melbourne regions in the medium to long term?

This undertaking needs to be achieved well in advance of the possible advent of a number of signposts, identified through the scenario planning process, which will provide a degree of early warning that certain scenarios may be being approached.

8.1. Signposts

It was previously noted that the scenario planning process can involve the identification of "sign posts" which could serve as indicators of possible futures being realised. Such "sign posts" could include real world indicators such as events, occurrences or observations (see Chapter 3).

Signposts that could indicate that an *Agriculturally Declining* scenario may be being reached could include:

- Continued decline in water quality (surface and groundwater) accompanied by more frequent and persistent algal blooms;
- Exit of traditional farmers from the industry and the region;
- Sale of commercial farm to non agricultural interests;
- Rising land values of agricultural land moving towards urban levels;
- Closure of a major agricultural enterprise (eg a mill closure);
- Relocation of a major food processing plant;
- Closure or relocation of an agricultural transport firm; and
- Continued fragmentation of the farm landscape.

In contrast, signposts that could signal the advent of the *Agricultural Revival* scenario could include indicators such as:

- Conversion of traditional farming enterprises to high tech agricultural establishments;
- The arrival of new high tech agribusinesses;
- Major investments in carbon trading, BioBanking or environmental offsetting enterprises; and
- Changing consumer demands from the urban community for locally produced commodities.
These signposts can be observed through a monitoring program that should be implemented at the regional level and coordinated by the institution responsible for the land use planning of the region.

8.2. Immediate Steps

In response to the "wind tunnel tests" of the likely performance of current land use planning and natural resource management instruments in the circumstances of the two scenarios, a number of immediate steps are required to prepare for these possible futures, to avoid or minimise unwelcome surprises and shocks later, and thus to achieve sustainable outcomes for the regions concerned.

This will involve revisions to existing policies and the development on new policy. It will also require the establishment of new internal and external procedures and processes to deal with these future management challenges in more effective manners than hitherto. This study has also pointed to some key messages for stakeholders, managers and decision-makers. These immediate steps include:

Vertical Alignment of Planning

There is an immediate imperative to vertically align local level plans with the regional plans to ensure consistency of policy and greater assurance that the regional policy intentions can actually be achieved onground. This has been a consistent message from the case study research of Phase 2 which has now been reinforced by the assessments of the scenarios of Phase 3.

This is crucial in those circumstances where statutory planning responsibilities have been delegated by State Governments to Local Government – a situation that exist in both case study regions. Whilst this has been recognised in a number of cases, it has not yet been fully achieved.

Landscape Fragmentation

Overwhelming evidence has been presented from the findings of the Phase 2 research (see Monographs 2 and 3) that spatial fragmentation of the landscapes of both case study regions is the most significant challenges confronting the sustainable management of these areas now and in the future. Evidence has also been presented that existing planning and policy instruments are ineffectual and will be incapable of managing this highly negative peri-urbanisation process. This is due to the historical subdivision pattern which characterises these landscapes today and the ubiquitous multi titled farm comprised of a number of small to medium lot sizes – in the case of SEQ, below the minimum regulation of 100 hectares. Consequently, it has been demonstrated that continued fragmentation is highly probably under both scenarios.

Urgent attention is required in the form of developing a full suite of costed policy options that are available to state and local governments to address this greatest threat to these landscapes.

Addressing the Process of Peri-urbanisation

The existing planning documents and instruments for the case study regions make little to no reference to peri-urban areas and the process of peri-urbanisation. There needs to be greater and more specific reference to these deficiencies. This research has consistent shown that the peri-urbanisation process requires specific policy attention in order to address this phenomenon and to manage its outcomes. This can only effectively be achieved through a coordinated approach involving all levels of government, industry and the non government sector. To this end, a number of peri-urbanisation cycles which highlight the critical linkages between the drivers of change, the peri-urbanisation process and its resulting management challenges, and the new 'actors' on the peri-urban scene who now have stewardship responsibility for these peri-urban landscapes, have been recommended (see Monograph 3).

Understanding the New Landscape Managers

Evidence was presented from the Phase 2 study and supported by the assessment of the scenarios of Phase 3 that the peri-urban landscapes of the case study regions have under gone significant changes in terms of who now has managerial responsibilities for these landscapes. Both scenarios strongly suggest that this trend will continue. Whereas once this was the exclusive domain of the traditional farmer with generations of land management experience to draw upon, the capacity, capabilities and willingness of the new landscape managers is largely unknown and untested.

Hence, this remains a high priority research undertaking in order to more appropriately inform policy, engagement strategies and education and capacity building initiatives addressed to the new landscape managers of increasingly larger areas of the peri-urban landscapes.

Discrete Policy Attention for Agriculture

The various assessments highlight the need to provide agriculture in the peri-urban areas with discrete policy attention if there is an intention to maintain it as a viable land use in the immediate future and in the longer term.

Such a range of discrete policies would position a peri-urban region well to withstand the negative effects of peri-urbanisation processes normally associated with *Agriculturally Declining* scenarios, and at the same time allow it to take full advantage of the positive influences of *Agricultural Revival* scenarios.

The Phase 2 case study research has demonstrated that the regions contain early signs of changing forms of agricultural production (intensive high capital forms). If this trend continues, and if there is a community aspiration to retain these areas for agricultural production, then the immediacy of this policy requirement becomes apparent, particularly in view of the existing and potential spatial fragmentation of the landscape in these regions.

Economic Development

Associated with the increased policy attention for agriculture and the peri-urban areas, an economic assessment of these environments should be undertaken in advance of the preparation of a specific economic development strategy covering existing and emergent peri-urban agricultural functions and associated activities – including those suggested by the assessment of the scenarios. This initiative could also serve to provide more definitive insight into the possible advent of new forms of agricultural production and new non urban industries.

This initiative would have the overarching objective of better preparing the peri-urban case study regions for the negatives of the *Agriculturally Declining* scenarios and positioning them to take full advantage of the opportunities likely to be offered by the *Agricultural Revival* scenarios.

Climate Change Impacts and Adaptation

The (complete) lack of attention to climate change in the relatively recent planning instruments reviewed serves to highlight the rapidity that management issues and challenges can and do arise. This reinforces the need to have adaptive and continually evolving policy responses that are informed by ongoing monitoring programs that include a range of appropriately designed indicators that can serve as the essential 'sign posts' that certain pre-thought out scenarios are being approached, thus enabling timely responses to be placed into position.

A second example which reinforces this observation is provided by the inadequate policy for dealing with water issues especially water security for agriculture and particularly during periods of prolonged drought.

Biosecurity Threats

Whilst the concerns for future biosecurity threats has major implications for higher level of government (international and national) and needs to be addressed at those levels, there are also regional and local scale initiatives which can be considered and put in place to better prepare peri-urban regions for this potential eventuality. Again, in light of recent biosecurity events such as the equine flu outbreak, the urgency of this requirement becomes apparent.

8.3 Short Term Steps

Of no less important are a number of other steps which may require longer to set up or to implement. However, as in the case of the immediate steps, these short term steps similarly address the overall requirement to prepare the case study regions for the possible futures described by the scenarios and to avoid or minimise unwelcome surprises and shocks.

These steps also involve revisions to existing policies and the development on new policy. They also could require the establishment of new internal and external management procedures and processes. Again there are a number of key messages for stakeholders, managers and decision-makers. These short term steps include:

Internal Coordinating Frameworks

At the next integration of planning at the regional level, as existing plans and strategies are reviewed, consideration should be given to the incorporation of an internal coordinating framework within the respective documents. This initiative would have the objective of improving the coordination of policy across the various themes of possible scenarios that require policy attention. Such a coordinating framework would also bridge across the discrete policy disciplines thus creating a whole-of-landscape approach to management.

In the case of 'agriculture' and 'peri-urbanisation', an internal coordinating framework would bring all relevant policy areas together, allowing inconsistencies to be resolved and presenting a united front to address these issues. In effect, it would perform as a discrete action plan to deal with these specific issues.

A Suite of Peri-urban Planning Tools

The processes of peri-urbanisation are complex and driven by many drivers of change originating from, and operating at, many levels. This necessitates a multilevel but coordinated, policy and management response. Clearly, no one approach will suit all circumstances – where 'duty-of-care' cannot be guaranteed under a particular management regime, then the landscape and the changes affecting it, must be managed through a legislative/regulatory approach in order to safeguard important landscape values. In contrary circumstances, all that may be required is the application of voluntary incentives to achieve the desired outcome of a sustainable landscape.

Whilst typical responses to the scenarios examined should embrace a suite of planning and management tools ranging from statutory instruments through to voluntary incentives, there needs to be an overarching regional planning instrument of statutory standing that is capable of providing the regional scale response in an unambiguous and consistent manner to the peri-urbanisation processes which dominate this crucial landscape especially those closely associated with our urban and metropolitan centres.

Planning tools will be needed to address the range of peri-urban landscape management and socio economic challenges previously identified, including:

Landscape Management Challenges: loss of biodiversity, weeds infestation, pest animals, loss of scenic amenity, water quality decline, changes to hydrological regime, bushfires prevalence, and the landscape management capacity of the incoming peri-urban residents; and

Social & Economic Challenges: skewed population (loss of youth/young adults & ageing population), social conflicts, social disadvantage, increasing social divide, loss of a 'sense of community', increasing economic divide, emergence of new local and regional economies, and the intensification of agricultural activity.

Horizontal Alignment of Planning

The scenario assessments have demonstrated the need to improve the alignment between a region's NRM plans and their land use strategies which normally enjoy a degree of statutory standing. In this manner, the NRM plans could draw support and cover from the latter which normally is decreed as the superior planning instrument by a State Government.

However, 'joined-up' planning of this nature goes beyond policy consistence to ensure alignment of aspirational goals and vision statement, alignment of management targets and time frames, to ultimately, collaborative implementation.

New Forms of Agricultural Production

The Phase 2 research of the CSA in both states has noted the emergence of a range of new forms of agricultural production to compete with the traditional forms of field grown agriculture. These current forms include: artificial growing environments such as greenhouses; and high tech agriculture involving hydroponics. Whilst the current enterprises are still of a small scale compared to overseas examples, there is the highly probably prospect that this could change in the near future – this trend has been supported by the assessments associated with the *Agricultural Revival* scenarios.

Anti-globalisation trends towards localisation will present a number of opportunities in this regard and will most likely serve as one of a number of possible triggers for this change. This eventuality presents a number of quandaries for policy makers and landscape managers. On the one hand spatial fragmentation of these peri-urban landscapes must be brought under control in order to retain flexible options for future land use options involving the traditional forms of agriculture – on the other hand, many new forms of agricultural production can occur on small lots.

New Forms of Non Urban Industries

The assessment of the scenarios has demonstrated the highly likely introduction of new forms of non urban industries into peri-urban areas, especially those in close proximity to large urban and metropolitan centres. In addition to intensive high capital agriculture discussed previously, a second major example includes the equine industry. The Phase 2 research as previously highlighted the existence of the equine industry (and the recreational horse community) throughout the peri-urban landscape, the Phase 3 assessments have indicated the increased presence of these horse related land use activities under both scenarios. These conclusions go to reinforce previous recommendations of the Phase 2 monographs that the nature and landscape impacts of the equine industry (and recreational horse community) needs to be more fully understood in order to develop appropriate management responses through land use planning policy and appropriate NRM targets.

Additionally, as it is highly likely that theses new industries will be located on former farmlands, thus displacing traditional forms of commercial agriculture, this also presents a quandary for policy makers and landscape managers in a similar manner to that previously outlined above in respect to "new forms of agricultural production".

The Advent of Tree Farming

The scenarios have indicated that peri-urban land could become increasingly viable for a range of larger scale tree farming initiatives, displacing traditional form of commercial agriculture. Increasingly, governments are seriously considering a range of environmental offsets schemes which could stimulate interest in tree farming on many scales in the peri-urban areas in close proximity to urban centres. The scenarios have pointed to the possible emergence of a number of schemes which could potentially have similar effects, especially in view of the peri-urban areas close proximity to the large urban and metropolitan centres from which these schemes are likely to originate from. They include carbon trading and BioBanking systems and future offsetting schemes associated with the formal recognition of ecosystem The wider community's growing appreciation of the environment, the services. greenhouse gas challenges, climate change and regional green space could all potentially combine to provide a short term catalyst for the introduction of these The scenarios also suggest that these modified forms of agricultural activity. initiatives could potentially arise even without formal arrangements in place. The existing land use planning strategies and NRM plans of the case study regions will need to address these likely trends in peri-urban activity.

A Possible New Form of Settlement

Evidence was presented from the Phase 2 work that many peri-urban areas are showing indications of a maturing settlement into a form that is neither true 'urban' nor true 'rural'. This eventuality has been given additional support by the declaration of urban growth boundaries, urban footprints and 'minimum subdivision lot sizes'. In view of the Phase 3 scenarios, it would be prudent to prioritise research into this "new settlement" hypothesis to better inform future policy development for these periurban landscapes and to achieve a holistic approach to the management of future landscape change.

9. Conclusions

The application of the *Agriculturally Declining* and *Agricultural Revival* scenarios to the SEQ and greater Melbourne regions has served to test the ("official") planning and management instruments currently being applied in those regions. These land use strategies and NRM plans are the principal means available to address the periurbanisation process which have been active in these regions for the past two to three decades and which appear from current evidence will continue to influence these regions in the foreseeable future. The assessment of the scenarios suggest that whilst the peri-urbanisation process will continue, the context in which it will do so could vary greatly from circumstances exemplified by the *Agriculturally Declining scenario* through to the *Agricultural Revival* scenario.

The 'wind tunnel tests" that were carried out using the scenarios provide an insight into the Focal Question for this Phase of the overall study, which asked:

What are the plausible changes in the SEQ/greater Melbourne region's agricultural industry over the life of the SEQ Regional Plan 2005-2026 /Melbourne 2030 Plan and the Regional NRM Plan/s, and what will be the consequences of those changes for existing peri-urban areas in these regions?

They have also served to address the secondary question: What steps are necessary to achieve sustainable peri-urban landscapes in SEQ and Melbourne regions in the medium to long term?

As a consequence of these deliberations into how well the current planning and management instruments for each region would perform in the event of either scenario coming into being, the study has recommended that a number of immediate and short term steps be undertaken to improve the policy intent to safeguard the essential values of these peri-urban areas by providing a greater degree of resilience of the existing planning and management instruments. These recommendations include a raft of immediate steps to address: vertical alignment of planning; landscape fragmentation; the process of peri-urbanisation; understanding the new managers; discrete policy attention for agriculture; landscape economic development; climate change impacts and adaptation; and biosecurity threats. These measures were complemented with a range of proposed short term steps to address: internal coordinating frameworks; a suite of peri-urban planning tools; horizontal alignment of planning; new forms of agricultural production; new forms of non urban industries; the advent of tree farming; and a possible new form of settlement.

This project has only examined two scenarios - the minimum number recommended for a scenario planning exercise of this nature. Both scenarios were centred on the peri-urban agriculture question and provided two extreme insights into possible futures for these dynamic areas which are subject to a number of international, national, state, regional and local drivers of change. However, other scenarios could also be developed for other questions regarding the possible futures of these regions beside the agriculture one chosen. This could be undertaken in order to gain a fuller appreciation of the adequacy of existing policies and other landscape management instruments in use by various levels of government and natural resource managers. However, the biggest challenge confronting the achievement of sustainable landscapes in these peri-urban areas depends on whether there is sufficient and consistent political commitment to the stated visions and policies of the land use planning strategies and the NRM plans for their respective regions. This is the "Big Question" confronting the future of these peri-urban regions. It was consistently noted as a major issue during the course of Phase 2 - the case study research into the SEQ and greater Melbourne regions. It was again to the fore as a result of the deliberations of the assessments of how the existing strategies and plans would be expected to perform under the two scenarios.

It has been repeatedly shown that political commitment must be consistently applied to uphold the intent of the policies and not to dismiss them nor water them down, especially in the face of increasing pressures from a multitude of drivers of change. This will be the only way that the major challenges confronting the future of these peri-urban areas, such as continued spatial fragmentation of the landscape, can be successfully addressed. This must not only be comprehensively pursued but it is absolutely crucial that there is a consistent application of the agreed policy. Industry and the community demand certainty, especially when confronting uncertain futures and rapidly changing circumstances and landscapes which were exemplified by the scenarios describing possible futures for these case study regions.

The "wind tunnel" tests suggest that we are probably at the cross-roads or fast approaching it in terms of a range of significant changes for peri-urban areas characterised by the case study regions of SEQ and greater Melbourne. What will become of these peri-urban lands in future generations? This is not necessarily an intergenerational question – the scenarios are being played out now and there are serious prospects that they could rapidly unfold much faster than our traditional planning and management approaches can respond. Our challenge is to enhance this response.

The Front Cover for Monograph 4: A Glimpse into the Future?

The Monograph's front cover depicts an aerial photograph of high tech agriculture in the peri-urban areas surrounding De Lier, Westland, The Netherlands. Square kilometres of former field grown agriculture has been replaced by artificial growing environments of glasshouses and covered fields with computers managing the controlled artificial hydroponic growing environments.

Bibliography

Adell, G. (1999) *Theories and models of the peri-urban interface: a changing conceptual landscape*, Strategic Environmental Planning and Management for the Peri-urban Interface Research Project, Development Planning Unit, University College London, London.

Allen, A. (2003) "Environmental planning and management of the peri-urban interface: perspectives on an emerging field", *Environment & Urbanization*, 15(1), 135-147.

Aslin, H., Kelson, S., Smith, J., & Lesslie, R. (2004). *Peri-urban landholders and bio-security issues - a scoping study.* Bureau of Rural Sciences, Commonwealth Government.

Audirac. I (1999) "Unsettled views about the fringe: rural-urban or urban-rural frontiers?" in O. J. Furuseth and M. B. Lapping (Eds.) *Contested Countryside: The Rural Urban Fringe in North America,* Ashgate, Aldershot, UK.

Australian Broadcasting Corporation (ABC). (2007). Crude: The incredible journey of oil. ABC Television 2007.

Australian Broadcasting Corporation (ABC). (2007). *Research plays down economic concerns of carbon trading.* The World Today Transcript 4 June 2007.

Australian Bureau of Statistics. (2002). *Australian demographic statistics, December 2002*: Commonwealth Government.

Australian Bureau of Statistics. (2005). Year Book 2005: Commonwealth Government.

Australian Bureau of Statistics. (2006). *Value of Agricultural Commodities Produced. Australia (2004-05)*: Catalogue Number: 7503.0.

Australian Bureau of Statistics. (2007). Social Atlas 2007: Commonwealth Government.

Australian Institute of Agricultural Science (Victorian Branch). (1974). *Agriculture on the urban fringe*. Proceedings of a seminar organised by the Land Use Project Committee of the Victorian Branch of the Australian Institute of Agricultural Science May 28, 1974.

Barr, N. (2003) "Future Agricultural Landscapes", Australian Planner, 40(2),

123-127.

Barr, N. (2005) The Changing Social Landscape of Rural Victoria, Department

of Primary Industries, Tatura, Victoria.

Barr, N., Karunaratne, K., & Wilkinson, R. (2005). *Australia's farmers: Past, present and future*.: Land and Water Australia.

Budds, J. and Minaya, A. (1999) *Overview of initiatives regarding the management of the peri-urban interface*, Strategic Environmental Planning and Management for the Peri-urban Interface Research Project, Development Planning Unit, University College London, London, http://www.ucl.ac.uk/dpu/pui, (Viewed 11/8/2005).

Bunce, M. and Walker, G. (1992) "The Transformation of Rural Life", in I. Bowler, B. C and C. M. Nellis (Eds.) *Contemporary Rural Systems in Transition, Volume 2, Economy and Society,* Redwood Press, Melksham, pp. 49-61.

Buxton, M., Tieman, G., Bekessy, S., Budge, T., Mercer, D., Coote, M., et al. (2006). *Change and Continuity in Peri-urban Australia: State of the Peri-urban Regions – A Review of the Literature*, Monograph 1 - Change and Continuity in Peri-Urban Australia, RMIT University.

Buxton, M., Tieman, G., Bekessy, S., Budge, T., Butt, A., Coote, M., Mercer, D., O'Neill, D. and Riddington, C., (2007) *Change and Continuity in Peri-urban Australia, Peri-Urban Case Study: Bendigo Corridor*, Monograph 2 - Change and Continuity in Peri-Urban Australia, RMIT University, Melbourne.

Commonwealth Department of Transport and Regional Services. (2007). *Auslink Programs.*, from http://www.auslink.gov.au/funding/projects/roads.aspx

Commonwealth Government. (2007). Australian farms and farming communities.Retrieved23October,2007,fromhttp://www.cultureandrecreation.gov.au/articles/farms

Cork, S., Dealney, K., & Salt, D. (2005). *Futures Thinking...about landscapes, lifestyles and livelihood in Australia*: Land and Water Australia.

Davies, K. (2002). Globalisation. Australian Focus on Issues. Educational Concepts.

Department of Agriculture, Forestry and Fisheries. (2007). *Australian Agriculture, Fisheries and Forestry: At a Glance*: Commonwealth Government.

Department of Agriculture, Forestry and Fisheries. (2007). *Landcare*. Retrieved 29 August 2007, from http://www.daf.gov.au/natural-resources/landcare

Department of Agriculture, Forestry and Fisheries. (2007). *Sustainable Industries.* Retrieved 29 August 2007, from http://www.daff.gov.au/naturalresources/landcare/national-landcare-programme/sustainable

Department of Environment and Climate Change (DECC) (NSW). (2007). *Biodiversity Certification and BioBanking – A new initiative for threatened species protection*, information sheet.

Department of Environment and Conservation NSW. (2006). *Bio-banking - A biodiversity offsets and banking scheme: Conserving and restoring biodiversity in NSW.* Working Paper. New South Wales Government.

Department for Environment, Food and Rural Affairs (UK). (2007). *Fresh Start Initiative*. Retrieved 28 August 2007, from http://www.defra.gov.uk/farm/working/new-entrants/freshstart/index.htm

Department of Infrastructure (VIC). (2002). *Melbourne 2030 - Planning for Sustainable Growth*: Victorian Government, State of Victoria.

Department of Sustainability and Environment (VIC). (2007). *Victorian Population Bulletin 2007.* Spatial Analysis and Research, Victorian Government.

Department of Transport and Regional Services. (2007). *Funding Programs.* Retrieved 29 June 2007, from http://www.auslink.gov.au/funding/index.aspx

Dodson, J., & Sipe, N. (2005). Oil Vulnerability in the Australian City. Urban Research Program, Research Paper 6, December 2005.

Friedberger, M. (2000) "The Rural-Urban Fringe in the Late Twentieth Century", *Agricultural History*, 74(2), 502-514.

Furuseth, O. and Lapping, M. (Eds.) (1999) *Contested Countryside: the Rural Urban Fringe in North America,* Ashgate Publishing, Aldershot, UK.

Guide, G. (2002). *What is Globalisation? Presentation*. Retrieved 28 June 2007, from http://www.globalisationguide.org/_globalizationvic.ppt

Hamilton, C. (2002). Overconsumption in Australia: The rise of the middle-class battler. *Discussion Paper Number 49, The Australia Institute*.

Hamilton, C. (2003). The Politics of Affluence. Arena Magazine, 64, April-May 2003.

Harding, A., & Fischer, A. (1996). A portrait on affluence: patterns and other characteristics of the top 10 percent of Australians. *25th Conference of Economists*. Canberra.

Healey, J. (2001). Issues in Society: Globalisation. Vol. 151. (The Spinney Press.).

Healy, R. (1985) *Competition for Land in the American South*, The Conservation Foundation, Washington D.C.

Herbers, J. (1986) The New Heartland, Times Books, New York.

Houston, P. (2005). Re-evaluating the fringe: Some findings on the value of agricultural production in Australia's peri-urban region. *Australian Planner, 40*(3), 43-45.

Hu, E. (n.d.). The core of the global warming problem. Journal of Global Energy Issues.

Kiewa, J., Brown, T., & Hibbins, R. (2001). South East Queensland Recreational Demand Study September to November 2001. Queensland Government.

Landcare Australia. (2007). *Landcare Carbon SMART.* Retrieved 29 August 2007, from http://www.carbonsmart.com.au

Low Choy, D.C. (2008). "The SEQ Regional Landscape Framework: *Is Practice Ahead of Theory?*" *Urban Policy and Research*, 26(1), 111-124.

Low Choy, D.C. (2007). Taking the plunge: Towards a proactive joined up planning process for coastal management. *2007 Queensland Coastal Conference*.

Low Choy, D.C. (2006). *Towards a Regional Landscape Framework: Is Practice Ahead of Theory?*, Urban Research Program Research Paper 9, November 2006

Low Choy, D., & Buxton, M. (2007). Change and drivers of change in peri-urban Australia: Implications for land use policy, *State of Australian Cities Conference*. Adelaide, November 2007: (Forthcoming).

Low Choy, D., Sutherland, C, Scott, S, Rolley, K., Gleeson, B., Sipe, N. and Dodson, J. (2007) *Change and Continuity in Peri-Urban Australia: Peri Urban Case Study South East Queensland*, Monograph 3 - Change and Continuity in Peri-Urban Australia, Griffith University, Brisbane.

Lowe, K., Baum, S., & Gleeson, B. (2007). Climate change, health impacts and urban adaptability: a case study of the Gold Coast region.: Gold Coast Climate Change - Workshop Outcomes 2007. (Unpublished).

Malcolm, B., Sale, P., & Egan, A. (1996). *Agriculture in Australia: An introduction*. Melbourne: Oxford University Press.

Melbourne City Council. (2001). Social Housing Strategy – Linking People, Homes and Communities 2001-2004.

National Emissions Trading Taskforce. (2007). Possible designs for a national greenhouse gas emissions trading scheme – Final framework report on scheme design.

Nelson, A. C. (1999) "The exurban battleground", in O. J. Furuseth and M. B. Lapping (Eds.) *Contested Countryside: The Rural Urban Fringe in North America,* Ashgate, Aldershot, UK.

Nelson, A. C. and Dueker, K. J. (1990) "The Exurbanization of America and its Planning Policy Implications", *Journal of Planning and Education Research*, 9(2), 91-100.

O'Brien, P. (2000). *Scenario Planning - A Strategic Tool*: Bureau of Rural Science, Department of Agriculture, Fisheries and Forestry Australia. Commonwealth of Australia.

O'Brien, P, (undated) *Scenario Planning – A Strategic Tool*, Bureau of Rural Science, Department of Agriculture, Fisheries & Forestry Australia, Commonwealth of Australia.

Office of Economic and Statistical Research (OESR). (2007). *Local Government Area Profile: Ipswich, Laidley, Gatton and Esk.*: User Generated.

Office of Economic and Statistical Research (OESR). (2007). *Queensland Regional Profiles: Brisbane and Moreton Statistical Divisions*. Queensland Department of Treasury.

Office of Urban Management (OUM). (2005). *South East Queensland Regional Plan 2005-2026*: Queensland Government.

Office of Urban Management (OUM). (2006). SEQ Regional Plan 2005-2026 Draft Amendment 1, March 2006: Queensland Government.

Office of Urban Management (OUM), & Department of Local Government, P., Sport and Recreation. (2005). *South East Queensland Infrastructure Plan and Program 2005-2026.* Brisbane. Queensland Government.

Parks Victoria. (2007). State of the Parks Report 2007: Victorian Government.

Planning Information and Forecasting Unit (PIFU). (2006). *Population growth: Highlights and trends Queensland 2006.* Department of Local Government and Planning, Queensland Government.

Planning Information and Forecasting Unit (PIFU). (2006). *Population and Housing Fact Sheet: South East Queensland.*: Department of Local Government and Planning, Queensland Government.

Planning Information and Forecasting Unit (PIFU). (2006). *Total Residential Land Activity Fact Sheet: September Quarter 2006 SEQ Region.* Department of Local Government and Planning.

Planning Information and Forecasting Unit (PIFU). (2007). *Population and Housing Fact Sheet: SEQ Region*: Department of Local Government and Planning.

Planning Institute of Australia - Queensland Division. (2004). Sustainable regional and urban communities adapting to climate change. Issues Paper, June 2004.

Port Phillip and Westernport Catchment Management Authority. (2004). Port Phillip and Western Port Regional Catchment Strategy 2004-2009.

Pryor, R. J. (1968) "Defining the Rural-Urban Fringe", Social Forces, 47(2), 202-215.

Queensland Transport. (2005). Smart travel choices for South East Queensland: A transport green paper. Discussion Paper. .

Real Estate Institute of Queensland (REIQ). (2007). Latest Queensland property sales data *Queensland Property and Lifestyle: The latest in real estate trends. Autumn 2007, Issue 21.*

Rural Finance.com.au. (2007). *About Us.* Retrieved 28 August 2007, from <u>http://www.ruralfinance.com.au</u>.

SEQ Western Catchments Group (SEQWCG) (2004) *Healthy Land – Our Future*, SEQ Western Catchments Group NRM Plan, SEQ Western Catchments Group Inc, Brisbane.

Stockwell, B. (2006). Cultivating a sustainable future for peri-urban agriculture in SEQ: Priorities for Policy and Strategic Planning Research and Development Extension.

Taygefeld, P. (2006). Exploring the stance of state and local government departments in SEQ towards peak oil. *Australian Planner, 43*(4), 14-21.

Theobald, D. M. (2001) "Land-use Dynamics Beyond the American Urban Fringe", *Geographical Review*, 91(3), 544-564.

Tourism Queensland. (2007). Nature-based Activities: Year Ended December 2006.

Tourism Queensland. (2007). *Visitation to National Parks: Year Ended December 2006*.

Tourism Queensland. (2007). Wildlife Tourism: Year Ended December 2006.

Townsend, M. (2006). Why not go for a picnic in the park? Change and stress in modern society, and the role of nature-based leisure as an antidote. *Vhetta Journal, 45*(1), 6-10.

Victorian Trails Co-ordinating Committee. (2004). *Victorian Trails Strategy 2005-2010.*: The State of Victoria, Parks Victoria.

Walker, G. (1987) *An Invaded Countryside: Structures of Life on the Toronto Fringe,* Geographical monograph no. 17, Atkinson College, York University, Toronto.

Appendices

Appendix A	Fact Sheets Developed for SEQ and Melbourne Scenario Planning Workshops				
Appendix B	Scenario Planning Workshop Outline				
Appendix C	Scenario Planning Workshop Participants				

Appendix A

Fact Sheets Developed for SEQ and Melbourne Scenario Planning Workshops

General Matters: Scenario Planning; What is Peri-urbanism?

Peri-urban Drivers (National, State and regional): Demographics; Government Policies; Housing; Lifestyles and Affluence; Outdoor Recreation; Work Arrangements; Support for Peri-Urban Farmers.

Global Drivers: Oil Vulnerability; Carbon Trading and BioBanking; Climate Change; Globalisation.

The new Peri-urban Landscape Managers (The "Actors")**:** The Seekers; The Survivors; The Speculators; The Strugglers.

Regional Management Issues: Landscape Management Challenges; Social and Economic Challenges; Peri Urbanisation & the South East Queensland Regional Plan; Peri Urbanisation & Melbourne 2030



Change and Continuity in Peri-Urban Australia Fact Sheet: Scenario Planning



What is Scenario Planning

Scenario planning is a strategic tool. It provides a systematic approach for the development and testing of plans and strategies in an uncertain environment through the creation of possible futures to test them in (O'Brien, 2000). Scenario planning creates possible futures to inform present decision-making. Developed during World War 2 and then pioneered by the Royal Dutch Shell Company, the technique is now widely used to consider the future by the public and private sectors worldwide.

Futures thinking needs a structured systematic approach to explore the range of possible futures rather than relying on the prediction of a single expected or 'most-likely' future (Cork et al, 2005). To this end, scenario planning involves:

- 1. the identification of a focal issues or question;
- 2. assessing certain and uncertain drivers of the issue or question over a selected timeframe;
- 3. the development of options based on those drivers i.e. creation of scenarios (plausible and coherent pictures of possible futures);
- 4. the development of narratives from the present to the possible futures (including a 'roadmap' for each scenario with signposts that could indicate if one future is becoming more likely than another) and
- 5. testing existing plans/strategies against each scenarios;.

Scenario planning is instructive for a decision context that involves a particular question or problem that demands action now but will play out in an uncertain future (O'Brien, 2000). It involves the systematic exploration and description of the range of ways in which uncertainties could be played out and their impact on the focal question. Each scenario involves the consideration of: likely trends; uncertainties; and possible shocks and surprises (welcome and unwelcome).

There is no one way to do scenario planning with most variations being in their qualitative verses quantitative approaches. However, it is important to distinguish that scenario planning is based on the generation of descriptions of possible futures involving a high degree of uncertainty and are not predictions of a particular future. In this sense scenario planning does not involve forecasting or modelling which normally deal with the short term and are based on predetermined elements particularly from the past and the present. Current evidence suggests that two or four scenarios work well with any greater number leading to levels of complexity that potentially dampens engagement. Three scenarios it is suggested, inadvertently promotes the idea that the 'middle' scenario is the most likely most probable future (O'Brien, 2000).

Scenario planning is based on the premise that the future is not "knowable" – any statements, stories, narratives or scenarios about the future are hypothetical possible futures that may or may not be realised (O'Brien, 2000). However they should be built from research that can identify the predetermined and the uncertain elements of the future with the objective being the creation of plausible, coherent pictures/ descriptions of possible futures and the identification of their drivers.

Cork et al (2005) have identified the following steps to futures analysis:

- 1. identify factors that brought about change in the past;
- 2. identify factors that could bring about change in the future;
- 3. separate what is relatively certain from what is uncertain about the future;
- 4. explore the range of ways in which uncertainties could play out (often using carefully constructed 'stories' or 'scenarios' to rest logic and communicate key messages); and
- 5. identify what needs to be done now to prepare for later.

This should include the development of "Roadmaps" (plausible narratives) from the PRESENT to these possible FUTURES. It also involves the identification of "sign posts" which are indicators of possible futures being realised such as events, occurrences or observations that can be scanned from the real world. It is also important to log the deliberations and discussions during the scenario construction process in the form of a "Decision Track".



Change and Continuity in Peri-Urban Australia Fact Sheet: Scenario Planning



Once constructed, the scenarios can then be used in a "wind tunnel" or "test beds" approach to evaluate and refine existing strategic plans or policies or decisions.

Scenario planning should attempt to involve the key decision-makers – the 'owners' of the problem (focal question). Meaningful scenario planning will be enhanced if participants can bring imagination, expert knowledge, experience and judgement to complement their analysis of empirical data.

Because the actual scenario panning exercise normally involves a small select group, it is important that the scenarios are communicated to the wider audience of stakeholders so that they too can benefit from the reflection of the scenarios and their consequences. The scenarios can provide a useful 'hypothetical' to engage stakeholders about the uncertainties of the future, especially in the context of a wider regional planning and visioning exercise.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Cork, S, Delaney, K & Salt, D, (2005) Futures Thinking ... about landscapes, lifestyles and livelihood in Australia, Land & Water Australia.

O'Brien, P, (2000) **Scenario Planning – A Strategic Tool**, Bureau of Rural Science, Department of Agriculture, Fisheries & Forestry Australia, Commonwealth of Australia.



Change and Continuity in Peri-Urban Australia Fact Sheet: What is Peri Urbanism?



INTRODUCTION: THE PERI-URBAN LANDSCAPE

WHAT IS PERI-URBAN?

Peri-urbanisation is a dynamic urbanising process that can involve the closer subdivision, fragmentation and land use conversion of former rural lands. It involves high levels of non metropolitan growth and results in blurred transitional zone comprised of temporary mixes of urban and rural activities and functions. The resulting peri-urban landscape will comprise a range of land use activities that exhibit a high degree of heterogeneity, continual change and conflicting values.

A peri-urban area is commonly defined as a "zone of transition from urban to rural land uses" existing between the outer limits of the urban area and the beginning of the truly rural. Seen this way, it is a distinct settlement pattern, an identifiable "middle landscape" between the boundary of an urban area and rural pursuits

Peri-urban areas are "not quite urban but not quite rural" in contrast to truly rural areas which are situated well beyond reasonable commuting range of urban areas and isolated from urban markets.

Other terms for peri-urban include the urban fringe, metropolitan fringe, rural-urban fringe or the urban-rural interface, the 'near-urban', the 'pre-urban', 'peri-metropolitan', exurban or urban hinterlands.



Figure 1: Peri-Urban Typologies

The multi-setting typology illustrated in Figure 1 acknowledges the following four instances of periurbanism:

1) Traditional Inner and Outer Peri-metropolitan zones (PU1a/b);

- 2) Urban centres that lie within the commuting zone of a metropolitan centres where both areas can share a relationship with the nearby metropolitan centre (PU2);
- Occurring in the vicinity of non-metropolitan regional centres where the urbanising processes have spilled over into the regional centre's boundary and into its surrounding hinterland (PU3a/b); and
- 4) Linear nature commonly associated with transit routs, growth corridors or landscape settings favoured for amenity/residential purposes (e.g. ridge lines, watercourses, coastlines) (PU4a/b).

CHARACTERISTICS OF A PERI-URBAN AREA

The peri-urban area may contain a disorderly jumble of residential, commercial, rural-residential, often interspersed or alternatively following radial highways and varied agricultural uses. Periurban areas usually are not homogenous and may have differing characteristics and dynamics. They are dynamic areas and the focus of significant non-metropolitan growth, both in Australia and internationally.

The peri-urban area often defies the precise separation between urban and rural settlements, with both agricultural and urban activities occurring randomly and sometimes in competition with each other.

Commonly pockets of suburban housing, large residential and rural residential lots, a range of commercial farming activities including intensive agriculture and shed based agriculture, resource extraction activities, utility installations and major urban infrastructure and services facilities such as airfields, landfills, schools, churches, retail and commercial premises, and tourist and recreational uses coexist. Similarly, natural resources, environmental values, and social and economic systems exist together.

INFLUENCES ON PERI-URBAN AREAS

Growth in Peri-urban areas can be regarded from two perspectives: rural and urban. A rural perspective regards urban expansion primarily as a threat by introducing new income and skills into areas outside cities, while an urban perspective will concentrate on the needs of the city, and will regard nearby non-urban areas as the means to satisfy urban needs by providing land and resources.

Nearby metropolitan areas influence the productivity of land, land prices, habitat and the maintenance of biological diversity, landscapes, and commuting patterns. Peri-urban areas are not just limited to the periphery of major metropolitan regions. Regional centres, outside of the influence of metropolitan centres, are exerting their own peri-urban pressures on smaller towns in their periphery.

Areas on the extreme fringe on metropolitan areas have been transformed because of their role and function being related to meeting the needs of a distant metropolitan area such as the weekend holiday resorts and the like. Amenity landscapes close to cities are subject to the greatest pressure for residential development. The proximity to cities and sought after amenity features are the critical factors affecting the development of peri-urban land.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Low Choy, D. and Buxton, M. (2007) Change and Drivers of Change in Peri-Urban Australia: Implications for Land Use Policy. (Forthcoming) State of Australian Cities Conference, Adelaide, November 2007.

Low Choy, D. (2007) Taking the Plunge: Towards a Proactive Joined Up Planning Process for Coastal Management. Paper presented at 2007 Queensland Coastal Conference.

Low Choy, D., Sutherland, C, Scott, S, Rolley, K., Gleeson, B., Sipe, N. and Dodson, J. (2007) Change and Continuity in Peri-Urban Australia: Peri Urban Case Study South East Queensland. Monograph 3 - Change and Continuity in Peri-Urban Australia. (In Press)



Change and Continuity in Peri-Urban Australia

Fact Sheet: Demographics

Key National Perspective

CURRENT SITUATION

GROWING POPULATION

- In 2005 Australia's population was 20.3 million
- Australia's population has grown by 12.5% over the last decade
- From 1955 to 2005 the proportion of Australia's population living in Queensland increased from 14.7% to 19.5%

AGEING POPULATION

- Australia's population is ageing due to:
 - Fewer children are being born and
 - Life expectancy is increasing a situation which results in proportionally more older people in the population
- The median age has increased. In 2005 the median age of Australians was 36.6 years, compared to 1985 when the median age was 30.8 years.
- In 1955 Australia had a greater proportion of people aged 0-14 years.
 In 2005 Australia the proportion of people aged 0-14 years declined, while the proportion of people aged 15-64 years and 65 and over increased compared to 1955.
- The average age of a farmer continues to increase, with the median age in 2001 around 50 years, up from 44 years in 1981.

CHANGING POPULATION

- Lone person households are increasing, and expected to account for between 28% and 34% of all households in 2026
- Couple families were the most common type from 1991 to 2001. As a proportion, this category has declined, with other family types increasing.
- Couple families without children and empty nesters increased by 10%, while one parent families increased by 38% between 1991 and 2001.
- Average Household Size is falling: 1911 = 4.5 people per household 1954 = 3.6 people per household 2001 = 2.6 people per household

MIGRATION AND MOBILITY

- 42.4% of Australia's population aged over 5 years moved residence between 1996 and 2001. Of these 86% of people moved within the same State/Territory, while 11% moved interstate.
- Queensland, New South Wales and the south-west corner of Western Australia had net migration gains between 1996 and 2001.
- During 2004/05, 358,000 Australians moved from one state or territory to another

FUTURE TRENDS

- Maximum predications have the Australian population growing upwards to reach between 24.9 and 33.4 million by 2051.
- Average Household Size is expected to decline further to between 2.2 and 2.3 people per household in 2026
- The population of Australia will continue to age.

Key Regional Perspective:

South-East Queensland

CURRENT SITUATION

GROWING POPULATION

- In 2006, SEQ had a population of almost 2.7 million people and accounted for 66.3% of the total Queensland population
- Growth has varied since 1992 however it has generally remained positive. While lower growth was experienced between 1996 and 1998, growth recovered to a peak in 2003.
- Brisbane ranked 2nd of all capital city statistical divisions in terms of growth, behind Melbourne and exceeding Perth and Sydney

AGE STRUCTURE

- SEQ's median age in 2001 was 35.
- In June 2005, 19.7% of the population was aged 0-14 years, 68.2% of the population was aged 15-64 years and 12.2% of the population was aged 65 or over. These figures are consistent with the national trend of an ageing population and are expected to continue.

MIGRATION

- SEQ receives the majority of Queensland's overseas migration.
- In the period 1996 to 2001, SEQ Region (excluding Brisbane) had a net internal migration of rate of 8.2%, while Brisbane saw a rate of 3.3%.

FUTURE TRENDS

- The population of SEQ is projected to increase to 3.9 4 million by 2026.
- With continuing strong growth the percentage share of SEQ's population is projected to expand to 68.8% of the state by 2026, increasing the concentration in the SEQ corner.
- The median age of the SEQ population is expected to increase to 41 years in 2026, further compounding the ageing of the region's population
- Population in Ipswich, Gatton, Laidley and Esk LGAs will increase from just over 170,000 in 2001 to almost 415,000 in 2026
- The annual average growth rate between 2001 and 2026 is projected to be 3.6% compared with 1.7% for Queensland.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Australian Bureau of Statistics (2002) Australian Demographic Statistics, Dec 2002. Commonwealth Government. Australian Bureau of Statistics (2007) Social Atlas 2006. Commonwealth Government.

Barr, N., Karunaratne, K. and Wilkinson, R. (2005) Australia's Farmers: past, present and future. Land and Water Australia. Department of Local Government and Planning (2006) Population Growth: Highlights and Trends Queensland 2006. Office of Economic and Statistical Research (2007) Local Government Area Profile: Ipswich, Laidley, Gatton and Esk – User generated.

Planning and Information Forecasting Unit (PIFU) Queensland Department of Local Government, Planning, Sport and Recreation.

Department of Local Government and Planning (2006) Population and Housing Fact Sheet: South East Queensland.



Change and Continuity in Peri-Urban Australia



Fact Sheet: Demographics

Key National Perspective

CURRENT SITUATION

GROWING POPULATION

- In 2005 Australia's population was 20.3 million
- Australia's population has grown by 12.5% over the last decade
- From 1955 to 2005 the proportion of Australia's population living in Queensland increased from 14.7% to 19.5%

AGEING POPULATION

- Australia's population is ageing due to:
 - Fewer children are being born and
 - Life expectancy is increasing a situation which results in proportionally more older people in the population
- The median age has increased. In 2005 the median age of Australians was 36.6 years, compared to 1985 when the median age was 30.8 years.
- In 1955 Australia had a greater proportion of people aged 0-14 years.
 In 2005 Australia the proportion of people aged 0-14 years declined, while the proportion of people aged 15-64 years and 65 and over increased compared to 1955.
- The average age of a farmer continues to increase, with the median age in 2001 around 50 years, up from 44 years in 1981.

CHANGING POPULATION

- Lone person households are increasing, and expected to account for between 28% and 34% of all households in 2026
- Couple families were the most common type from 1991 to 2001. As a proportion, this category has declined, with other family types increasing.
- Couple families without children and empty nesters increased by 10%, while one parent families increased by 38% between 1991 and 2001.
- Average Household Size is falling: 1911 = 4.5 people per household 1954 = 3.6 people per household 2001 = 2.6 people per household

MIGRATION AND MOBILITY

- 42.4% of Australia's population aged over 5 years moved residence between 1996 and 2001. Of these 86% of people moved within the same State/Territory, while 11% moved interstate.
- Queensland, New South Wales and the south-west corner of Western Australia had net migration gains between 1996 and 2001.
- During 2004/05, 358,000 Australians moved from one state or territory to another

FUTURE TRENDS

- Maximum predications have the Australian population growing upwards to reach between 24.9 and 33.4 million by 2051.
- Average Household Size is expected to decline further to between 2.2 and 2.3 people per household in 2026
- The population of Australia will continue to age.

Key Regional Perspective:

Melbourne Region

MELBOURNE

- Separate houses dominate dwelling types
 - Separate Houses 73.4%
 - Semi-detached 10.4%
 - Flat, Unit, Apartment 14.7%
- Household composition is dominated by couples with children
 - Family couple with children 36.8%
 - Family couple without children 23.5% Total Family 72.6%
 - Family single parent 10.4%
 - Group Households 4.2%
 - Lone Person Household 23.2%
- Floor area of dwellings has increased from 176m2 to 253m2 between 1991-92 and 2003-04
- Median house price has continued to increase \$75,200 in 1985 to \$311,250 in 2004
- Manufacturing remained the largest employment industry in 2001 with 16% of workers employed. This had reduced from 26.9% in 1981. The next largest employment industry in 2001 was Retail Trade with 14.6% and Property and Business Services with 13.1%. These sectors have grown significantly since 1981.
- Majority of workers are full-time (61.5%) compared to part-time with 29.1%. 6.6% of people are unemployed.
- The majority of the labour force is aged between 25 and 34 years (25.8%), while 24.8% are aged between 35 and 44 years. A considerable percentage (21%) is aged between 21 and 54 years.

REGIONAL VICTORIA

- Regional Victoria has a higher median age (37 years) compared to Melbourne. This is mostly due to the low number of people aged between 20 and 34 years in regional Victoria.
- There has been a consistent decline in the number of young people moving from Regional Victoria to Melbourne. Conversely older age groups are attracted to Regional Victoria for retirement which contributes to an older regional age profile.
- 16% of the population in Regional Victoria are born overseas compared to Melbourne which has 36% of the population born overseas.
- The projected population of Regional Victoria is expected to grow from around 1.3 million in 2001 to 1.7 million in 2031. Growth areas include coastal and inland areas surrounding Melbourne, major regional centres and immediate hinterlands, and irrigation areas along Goulburn and Murray Rivers.
- In the year ending 30 June 2006, Regional Victoria showed strong growth of 1.4% making the population 1,406,637. This growth rate was significantly above the average annual growth rate experienced in the last 5 years.
- More than 40% of the population in the study area aged 15 years and over held some form of post-school educational qualification in 2001.

Future Trends

- The population will continue to age
- Growth in population in expected to continue in peri-urban areas

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Australian Bureau of Statistics (2007) Social Atlas 2006. Commonwealth Government. Department of Sustainability and Environment (2007) Victorian Population Bulletin 2007. Spatial Analysis and Research



Change and Continuity in Peri-Urban Australia

Fact Sheet: Government Policies

Key National Perspectives

NATIONAL AND STATE PROGRAMS

Government policies act as drivers of social, economic and environmental change at many levels. High-order policies developed at the national or state level can and do impact on the processes that occur in peri-urban areas at regional and local scales.

Many policies have been brought about by a Government's need to address the priorities of rural people. Whilst many were conceived for other purposes, these policies have produced a significant impact on peri-urban communities - for instance road upgrading policies originally designed to enable easier commuting have often resulted in attracting peri-urban developments. The following programs are examples of policies implemented that have resulted in significant peri-urban related impacts that were not necessarily the initial intent of the policy.

Roads to Recovery

The Roads to Recovery program was introduced in November 2000 as a specific intervention instrument by the Commonwealth Government to address targeted problem roads at the local level, where their ongoing maintenance or replacement was beyond the resources of the local government. In the first four years after inception, the Roads to Recovery program provided \$1.2 billion to local council for local road improvements.

Black Spot Program

The National Black Spot Program was introduced by the Commonwealth Government in 1996/97 as part of the commitment to reduce crashes on Australian roads. The program targets roads where frequent crashes occur. Included in the program are funding measures such as traffic signals and roundabouts as well as other measures to reduce the risk of crashes occurring.

Strategic Regional Program

This program rewards land transport concepts that support growth of region industry, strengthen local social and economic opportunities and respond to structural change.

Key Regional Perspectives:

South East Queensland

In the same way that national polices can shape the economic, social and environmental nature of areas, so to can regional initiatives that are often implemented in the form of a regional plan such as Melbourne 2030, the SEQ Regional Plan 2005-2026 and its associated SEQ Infrastructure Plan.

REGIONAL PLANS Refer to Fact Sheet – for a description and discussion of the South East Queensland Regional Plan 2026

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Department of Transport and Regional Services (2007) *Funding Programs*. Accessed: 29/06/2007. <u>http://www.auslink.gov.au/funding/index.aspx</u>



Change and Continuity in Peri-Urban Australia Fact Sheet: Government Policies



Key National Perspectives

NATIONAL AND STATE PROGRAMS

Government policies act as drivers of social, economic and environmental change at many levels. High-order policies developed at the national or state level can and do impact on the processes that occur in peri-urban areas at regional and local scales.

Many policies have been brought about by a Government's need to address the priorities of rural people. Whilst many were conceived for other purposes, these policies have produced a significant impact on peri-urban communities - for instance road upgrading policies originally designed to enable easier commuting have often resulted in attracting peri-urban developments. The following programs are examples of policies implemented that have resulted in significant peri-urban related impacts that were not necessarily the initial intent of the policy.

Roads to Recovery

The Roads to Recovery program was introduced in November 2000 as a specific intervention instrument by the Commonwealth Government to address targeted problem roads at the local level, where their ongoing maintenance or replacement was beyond the resources of the local government. In the first four years after inception, the Roads to Recovery program provided \$1.2 billion to local council for local road improvements.

Black Spot Program

The National Black Spot Program was introduced by the Commonwealth Government in 1996/97 as part of the commitment to reduce crashes on Australian roads. The program targets roads where frequent crashes occur. Included in the program are funding measures such as traffic signals and roundabouts as well as other measures to reduce the risk of crashes occurring.

Strategic Regional Program

This program rewards land transport concepts that support growth of region industry, strengthen local social and economic opportunities and respond to structural change.

Key Regional Perspectives:

Melbourne Region

In the same way that national polices can shape the economic, social and environmental nature of areas, so to can regional initiatives that are often implemented in the form of a regional plan such as Melbourne 2030.

REGIONAL PLANS

Melbourne 2030 - Melbourne's regional plan commenced in October 2002 - a visionary document which provides strategic direction for the development of the Melbourne metropolitan area and surrounding regions in a sustainable manner. Given the 30 year life of the plan, it seeks to be adaptable to changing circumstances.

Vision Statement

'In the next 30 years, Melbourne will grow by up to one million people and will consolidate its reputation as one of the most liveable, attractive and prosperous areas in the world for residents, business and visitors.'

Urban Growth Boundary

Melbourne 2030 stipulates an urban growth boundary which places limits on further growth beyond the metropolitan fringe. Development is to be achieved through infill development around activity centres integrated into key transport corridors

Green Wedges

Melbourne 2030 identifies 12 green wedges radiating from the urban growth boundary of metropolitan Melbourne. The purpose of these wedges is to accommodate non-residential functions such as recreational and agricultural uses. Land use activities which support urban uses such as agriculture and the extraction of mineral resources are to be protected due to their high economic and social values for the metropolitan region.

Networks with Regional Centres

Whilst urban growth is to be promoted in regional towns and centres through processes such as consolidation, growth is to be limited in non-urban areas. Rural development is not a preferred land use and to limit its consumption of the rural landscape the plan identifies amalgamation of smaller lots where appropriate and if rural development is to occur natural and environmental resource impacts should be minimised.

The government is seeking to introduce the basis of a network city approach. The main land use factors affecting the case study region have been:

For the inner metropolitan peri-urban area comprising Melbourne's green belt (including the green wedges):

- the introduction of the urban growth boundary at the metropolitan edge in the Shire of Melton, and
- introduction of four new zones.

For the outer peri-urban area beyond the green belt:

 the introduction of four new zones (three different from the green belt zones). These zones introduce a stronger level of statutory control over land uses than provided by the previous main rural zone (the Rural Zone).

Environmental Sustainability

Achieving reduction in resource use and waste generation is a key direction of *Melbourne* 2030. Reduction of greenhouse gas emissions, loss of native flora and fauna and the deterioration of ecosystem health are all noted as specific issues within the plan.

NATURAL RESOURCE MANAGEMENT PLANS

The development of regional natural resource policy and management responses is carried out by CMAs operating under the Catchment Management Act. The principal policy and management tool of CMAs are the Regional Catchment Management strategies, but they often have developed other targeted policies and plans. Generally inadequate integration has occurred between the Catchment Management Act administered by CMAs, and the Planning and Environment Act administered by councils.

Port Phillip and Western port Regional Catchment Management Strategy 2004-2009

The Regional Catchment Strategy describes the catchment assets and how they are inter-related. The Strategy outlines the Vision for the region:

'the region will have people working to achieve productive land, habitats for native plants and animals and clean water in the catchments, rivers and bays, making it a healthy, attractive and prosperous place to live, work and visit'

The four main groups of catchment assets include:

Water – sustainable water use and healthy waterways, wetlands, estuaries, coasts and bays Land – healthy land used appropriately and productively

Biodiversity – healthy and enduring ecosystems with a diversity of habitats and native species People – community valuing, understanding and celebrating the region's catchment assets and working to achieve sustainability

For each catchment asset/goal objectives, targets and actions are established.

The RCS contains a risk analysis methodology which will enable us to ascertain the most important tasks for prioritisation. In addition, this methodology assures the value of each of the 97 actions is considered for its environmental, social and economic benefits and costs.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Commonwealth Department of Transport and Regional Services (2007) Auslink Programs. Commonwealth Government. Department of Infrastructure (2002) Melbourne 2030 – Planning for Sustainable Growth. State of Victoria. Port Phillip and Westernport Catchment Management Authority (2004) Port Phillip and Western Port Regional Catchment Strategy 2004-2009.



Change and Continuity in Peri-Urban Australia

Fact Sheet: Housing

Key National Perspective

BACKGROUND

Housing is an essential aspect of human life and comes in many forms. Population growth and its accompanying increases in demand for housing has placed pressure on the supply of existing and new housing stock forcing prices upwards.

CURRENT SITUATION HOUSING REQUIREMENTS

- A dominant feature of Australia's urban development is separate, detached houses situation on 'quarter acre blocks'.
- In 2003/04 there were a total of 7.7 million households comprised of: 80% separate houses;
 - 11% flats, units or apartments; and
 - 8% in semi-detached, row or terrace houses or townhouses.
- Australian households are becoming smaller on average while conversely dwelling size (i.e. number of bedrooms) is increasing

HOUSING COSTS & AFFORDABILITY

- In 2003/04 the proportion of the Australian population without a mortgage was 42%, while the proportion of people with a mortgage rose to 35%.
- Housing costs are the largest regular household expense. For the majority of owner and renter households the cost of housing represented about 25% of household income, but in some cases it was more than 50%. In 2003/04, 9% of private renters and 7% of owners with a mortgage spent more than half of their income on housing costs.
- Since 1994/95, the proportion of households renting from State/Territory housing authorities has declined while the proportion of those renting increased to 21%, indicating people on lower incomes wanting to access public housing are being forced into the private renting market and in some cases unsuitable dwellings.

Access to affordable housing has been decreasing. During the last decade the following trends have been observed:

- Average house prices relative to income have almost doubled
- The proportion of first home buyers has fallen by about 20%
- Average monthly payments on new loans have risen by about 50% (\$500)
- The proportion of low-rent homes has fallen by at least 15%
- Opportunities to rent public housing have fallen by at least 30%

Consequently more than 750,000 lower income households are forfeiting housing costs that exceed 30% (a commonly accepted benchmark) of their income.

HOUSING STOCK

- Household size has declined from 2.7 to 2.5 over the 9 years to 2003/04.
- The number of bedrooms has slightly increased from 2.9 to 3.0 in the 9 years to 2003/04
- Couple families with children accounted fro 27% of all households
- Between 1994/95 and 2003/04 approximately 1.5 million new dwellings were completed, representing just under 1/5 of households.
- •

FUTURE TRENDS

- Recent trends have promoted higher density housing in order to provide a greater choice in housing types and to make better use of existing infrastructure.
- Higher numbers of dwellings are anticipated in the future.
- Increases in lone person households, more childless couples and fewer children to families that have them.
- An additional 579,900 new dwellings are expected in SEQ between 2004 and 2026.

Key Regional Perspective: South East Queensland

CURRENT SITUATION

DWELLING APPROVALS

- Lots approved in SEQ to September 2006 comprised: Urban Residential 86.9%, and Rural Residential - 13.1%.
- Dwelling activity in the year ending December 2006 declined by 3.0%
- A total of 15,004 lots were approved to the September quarter in 2006. This was a decline of 38.8% compared with 2005.
- In terms of building format, single detached dwellings remained the majority (56.1%), while Units accounted for 27.4% and Townhouses for 16.5%.
- At year ending December 2006, 58.7% of the total building approvals were classed as residential.

New Dwellings

- Over the period to 2021, SEQ will house the majority of Queensland's new dwellings. 75% of the demand being placed on Queensland dwellings will be in South East Queensland in the short-term.
- Townhouses are becoming increasingly popular in SEQ somewhat because of reduced land available and the diversification of dwelling types to meet housing demand in the region.
- There has been a 14.2% increase in occupied dwelling stock in SEQ for the period 1996 to 2001.

HOUSING AFFORDABILITY

- Housing affordability is an issue in SEQ as it is nationally.
- The median sale price for a house year ending December 2005 in Brisbane LGA was \$382,000. This is an increase of 6.3% on the previous year when the median house price was \$360,000, and a 99.9% increase on 5 years previous when the median price was \$191,500.
- Cheaper prices on the fringes of metropolitan areas are attracting people to these areas who would not normally have the opportunity to build their own home closer to the city.
- The process of building a home on the fringe has seen a higher proportion of improvised dwellings (caravans, sheds etc.) being located in peri-urban areas, particularly those in rural areas on the outskirts of country towns.

FUTURE TRENDS

Continued population growth, placing pressure on housing supply coupled with expected increases in house prices, is likely to see affordable housing remain an issue for some time. Continued diversification of dwellings is also likely to occur given the demands.

Cheaper fringe land may become less so, forcing people to move even further out to be able to afford land and a house. Whilst extending commuting distances, housing in peri-urban settlements may become an increasingly attractive option form many in a future environment of escalating urban housing costs and declining availability. This process will also exacerbate urbanisation of the rural landscape placing increased pressure on and competition for resources.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Office of Economic and Statistical Research (OESR) (2007) Queensland Regional Profiles: Brisbane and Moreton Statistical Divisions. Queensland Department of Treasury. Office of Urban Management (2006) SEQ Regional Plan 2005-2026 Draft Amendment 1 March 2006. Planning Information and Forecasting Unit (PIFU) Total Residential Land Activity Fact Sheet: September quarter 2006 SEQ Region. Department of Local Government and Planning. Planning Information and Forecasting Unit (PIFU) Population and Housing Fact Sheet: SEQ Region. Department of Local Government and Planning.

Real Estate Institute of Queensland (REIQ) (2007) Queensland Property and Lifestyle: The Latest in Real Estate Trends. Autumn 2007, Issue 21.



Change and Continuity in Peri-Urban Australia



Fact Sheet: Housing

Key National Perspective

BACKGROUND

Housing is an essential aspect of human life and comes in many forms. Population growth and its accompanying increases in demand for housing has placed pressure on the supply of existing and new housing stock forcing prices upwards.

CURRENT SITUATION

Housing Requirements

- A dominant feature of Australia's urban development is separate, detached houses situation on 'quarter acre blocks'.
- In 2003/04 there were a total of 7.7 million households comprised of:
 - 80% separate houses;
 - 11% flats, units or apartments; and
 - 8% in semi-detached, row or terrace houses or townhouses.
- Australian households are becoming smaller on average while conversely dwelling size (i.e. number of bedrooms) is increasing

HOUSING COSTS & AFFORDABILITY

- In 2003/04 the proportion of the Australian population without a mortgage was 42%, while the proportion of people with a mortgage rose to 35%.
- Housing costs are the largest regular household expense. For the majority of owner and renter households the cost of housing represented about 25% of household income, but in some cases it was more than 50%. In 2003/04, 9% of private renters and 7% of owners with a mortgage spent more than half of their income on housing costs.
- Since 1994/95, the proportion of households renting from State/Territory housing authorities has declined while the proportion of those renting increased to 21%, indicating people on lower incomes wanting to access public housing are being forced into the private renting market and in some cases unsuitable dwellings.

Access to affordable housing has been decreasing. During the last decade the following trends have been observed:

- Average house prices relative to income have almost doubled
- The proportion of first home buyers has fallen by about 20%
- Average monthly payments on new loans have risen by about 50% (\$500)
- The proportion of low-rent homes has fallen by at least 15%
- Opportunities to rent public housing have fallen by at least 30%

Consequently more than 750,000 lower income households are forfeiting housing costs that exceed 30% (a commonly accepted benchmark) of their income.

HOUSING STOCK

- Household size has declined from 2.7 to 2.5 over the 9 years to 2003/04.
- The number of bedrooms has slightly increased from 2.9 to 3.0 in the 9 years to 2003/04
- Couple families with children accounted fro 27% of all households
- Between 1994/95 and 2003/04 approximately 1.5 million new dwellings were completed, representing just under 1/5 of households.
- •

FUTURE TRENDS

- Recent trends have promoted higher density housing in order to provide a greater choice in housing types and to make better use of existing infrastructure.
- Higher numbers of dwellings are anticipated in the future.
- Increases in lone person households, more childless couples and fewer children to families that have them.
- An additional 579,900 new dwellings are expected in SEQ between 2004 and 2026.

Key Regional Perspective:

Melbourne Region

HOUSING AFFORDABILITY

In response to the issues associated with Affordable Housing, many local governments in Victoria have developed strategies. Both metropolitan and regional councils have developed housing policies that address housing issues.

Melbourne City Council

Melbourne City's Social Housing Strategy: Linking People, Homes and Communities 2001-2004 identifies issues that continue to affect access to affordable housing and contribute to housing related disadvantage residents. Three major areas have been identified and addressed:

Accessibility

Homelessness continues to be an issue resulting from:

- Reduced level of income support;
- Economic decline forcing migration to inner city areas; and
- Increasing and unmet demands for and supply of housing assistance.

Availability

Diminishing availability of low-cost housing resulting from:

- Shortage of low-cost accommodation;
- Shifts in public housing policy towards a focus on provision of rental assistance instead of housing stock;
- Lack of diversity and capacity within existing stock affecting the ability to respond to increasing demand.

Affordability

- Lack of low-cost housing contributes to households paying excessive amount of their incomes towards housing;
- Increasing land values have resulted in increased rents; and
- 40% of people living in rental accommodation are low income earners and housing burden affects 20% of people living in capital cities.

TRENDS

• There has been significant housing growth in rural areas and beyond the established fringe of urban areas in the Bendigo region and the towns along the transport corridor. As a proportion of the total area population and new dwellings, growth in the non-urban areas is steadily increasing.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Australian Bureau of Statistics (2007) Social Atlas 2007. Commonwealth Government. Melbourne City Council (2001) Social Housing Strategy – Linking People, Homes and Communities 2001-2004.



Change and Continuity in Peri-Urban Australia Fact Sheet: Lifestyles and Affluence

Key National Perspective

CURRENT SITUATION

CHANGING ATTITUDES, VALUES AND PRIORITIES

The traditional view of society in terms of classes has undergone a transformation. The sustained growth of the Australian economy has elevated the bulk of the working class to higher income levels that were traditionally typical of the wealthier past generations. Consequently, the boundaries separating the consumption patterns of the working, middle and upper classes have blurred. This has resulted in the emulation of the spending and consumption habits of the rich becoming a general feature in society, with a general up-selling of lifestyle expectations.

- 62% of Australian's believe they cannot afford to buy everything they need
- Australia has a greater proportion of people who are referred to as 'suffering rich' (that is people who have relatively good incomes but who still feel poor due to large debts etc.), even greater than the United States which is considered to be the most obsessed nation in terms of money.
- The growth of luxury and the scaling up of 'needs' has often outpaced the growth of incomes. The process of 'relentless ratcheting up of standards' comes with the increasing pressure to consume at higher and higher levels.
- Examples of this luxury growth include:
 - The Average Household Size has fallen steadily of the last 50 years in contrast to the rapid growth in house size.
- The emergence of the lifestyle property has altered peri urban areas and there appear to be several factors driving this desire. Some motivations behind the migration into these areas are related to the closeness of peri-urban areas to the metropolitan centres, in addition to the lure of cheap land (affordable housing) and the "promise of an idyllic rural lifestyle and the possibility of generating a modest income".
- The competitive consumption of resources was created by the most affluent of society through escalating lifestyles. This occurred alongside the desire to meet a particular social standard, irrespective of the financial ability to maintain such a lifestyle.
- Increasingly, rural landscapes are being marketed with images of elite consumption and lifestyles.

GREATER ACCESS TO FINANCE

- Overconsumption is being financed by increasing consumer debt
- Australians are borrowing 10 times more for housing each year than they were 15 years ago. The ANZ Bank notes that over the past 12 years the ratio of mortgage debt to average household income has risen from 32% to 95%
- Credit card debt now exceeds \$21 billion (2002 figures)
- Alongside escalating consumer debt has been a decline in savings. The idea of saving to buy a home has been replaced with the desire the have it all now. In the 1970s Australians saved 14% of their net income and despite the nearly doubling of incomes we now save only 2.5% of our net income.

FUTURE TRENDS

It is likely that the consumer debt will continue to fuel Australia's love of consumerism. Credit card debt is expected to increase in addition to Australia's obsession with wealth and money.

Key Regional Perspectives: South East Queensland

CURRENT SITUATION

- Changing attitudes demonstrated at the national level are mirrored in South East Queensland.
- The affluent lifestyles of people seeking a 'sea-change' or 'tree-change' are reflected in the growth of areas such as the Gold and Sunshine Coasts. For people wanting a 'country life-style', peri-urban areas adjacent to cities such as Brisbane create these opportunities.
- The continual growth of South East Queensland (SEQ) as a holiday and residential destination, and the stable increases in population from interstate indicate that SEQ has and can continue to provide the lifestyle that people with affluence are seeking.
- The environmental qualities unique to SEQ have promoted growth in the region, with people from interstate seeking the lifestyle attached to such values.

FUTURE TRENDS

It is likely that the population growth in the SEQ corner, coupled with escalating consumer debt will continue to fuel consumerism in SEQ. Continuing interstate migration to the SEQ region will see increasing pressures on the availability of the lifestyle that people are voraciously seeking, a situation which may result in the degradation of the environmental qualities that this lifestyle aspiration is built on.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Hamilton, C. (2002) Overconsumption in Australia: The rise of the middle-class battler. Discussion Paper Number 49. The Australia Institute.

Hamilton, C. (2003) The Politics of Affluence. Arena Magazine 64 April-May 2003.

Harding, A. and Fischer, A. (1996) A portrait of affluence: patterns and other characteristics of the top 10 per cent of Australians. 25th Conference of Economists, Canberra, 23-25 September 1996.



Change and Continuity in Peri-Urban Australia Fact Sheet: Lifestyles and Affluence



Key National Perspective

CURRENT SITUATION

CHANGING ATTITUDES, VALUES AND PRIORITIES

The traditional view of society in terms of classes has undergone a transformation. The sustained growth of the Australian economy has elevated the bulk of the working class to higher income levels that were traditionally typical of the wealthier past generations. Consequently, the boundaries separating the consumption patterns of the working, middle and upper classes have blurred. This has resulted in the emulation of the spending and consumption habits of the rich becoming a general feature in society, with a general up-selling of lifestyle expectations.

- 62% of Australian's believe they cannot afford to buy everything they need
- Australia has a greater proportion of people who are referred to as 'suffering rich' (that is people who have relatively good incomes but who still feel poor due to large debts etc.), even greater than the United States which is considered to be the most infatuated nation in terms of money.
- The growth of luxury and the scaling up of 'needs' has often outpaced the growth of incomes. This process of scaling up comes with the increasing pressure to consume at higher and higher levels.
- Examples of this luxury growth include:
 - The Average Household Size has fallen steadily of the last 50 years in contrast to the rapid growth in house size.
- The emergence of the lifestyle property has altered peri urban areas and there appear to be several factors driving this desire. Some motivations behind the migration into these areas are related to the closeness of peri-urban areas to the metropolitan centres, in addition to the lure of cheap land (affordable housing) and the "promise of an idyllic rural lifestyle and the possibility of generating a modest income".
- The competitive consumption of resources was created by the most affluent of society through expanding lifestyles. This occurred alongside the desire to meet a particular social standard, irrespective of the financial ability to maintain such a lifestyle.
- Increasingly, rural landscapes are being marketed with images of elite consumption and lifestyles.

GREATER ACCESS TO FINANCE

- Overconsumption is being financed by increasing consumer debt
- Australians are borrowing 10 times more for housing each year than they were 15 years ago. The ANZ Bank notes that over the past 12 years the ratio of mortgage debt to average household income has risen from 32% to 95%
- Credit card debt now exceeds \$21 billion (2002 figures)
- Alongside escalating consumer debt has been a decline in savings. The idea of saving to buy a home has been replaced with the desire the have it all now. In the 1970s Australians saved 14% of their net income and despite the nearly doubling of incomes we now save only 2.5% of our net income.

FUTURE TRENDS

It is likely that the consumer debt will continue to fuel Australia's love of consumerism. Credit card debt is expected to increase in addition to Australia's obsession with wealth and money.

Key Regional Perspectives: Melbourne Region

CURRENT SITUATION

- Changing attitudes demonstrated at the national level are mirrored in the Greater Melbourne Region.
- The affluent lifestyles of people seeking a 'sea-change' or 'tree-change' are reflected in the growth of areas extending from Melbourne's metropolitan areas to the north-western edge of the City of Bendigo.
- Peri-urban areas adjacent to cities like Melbourne create opportunities for people seeking a country life experience.
- The continual growth of the Melbourne hinterland as a residential destination and the stable increases in population from interstate indicate that the Greater Melbourne region can provide opportunities for rural lifestylers.
- The 'tree change' trend is characterised by high population growth rates with the highest occurring in the peri-urban municipalities closest to Melbourne.
- Commuting has been facilitated by major road and rail infrastructure projects linking periurban and metropolitan areas.
- Manufacturing in the region has declined and employment in part-time to small and medium sized firms offering business and professional services has increased.
- Cultural and environmental assets of the peri-urban area are major attractors of people from the Greater Melbourne region.

FUTURE TRENDS

It is likely that the population growth in the Melbourne region, coupled with escalating consumer debt will continue to fuel consumerism in Victoria. Continuing movement into 'lifestyle' areas will see increasing pressures on the availability of properties that people are continually seeking, a situation which may result in the degradation of the environmental qualities that this lifestyle aspiration is built on.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Hamilton, C. (2002) Overconsumption in Australia: The rise of the middle-class battler. Discussion Paper Number 49. The Australia Institute.

Hamilton, C. (2003) The Politics of Affluence. Arena Magazine 64 April-May 2003.

Harding, A. and Fischer, A. (1996) A portrait of affluence: patterns and other characteristics of the top 10 per cent of Australians. 25th Conference of Economists, Canberra, 23-25 September 1996.



Change and Continuity in Peri-Urban Australia

Fact Sheet: Outdoor Recreation

Key National Perspective

BACKGROUND

The time devoted to work in Australia has changed with a greater proportion of people working nonstandard hours. Modifications to the structure of work have resulted in a change in the structuring of time for leisure and participation in outdoor recreation.

CURRENT SITUATION: CHANGING PATTERNS, STYLES AND DEMANDS

- There is a continuing shift in preference towards nature based and outdoor recreation. Participation in leisure and recreation enhances health at various levels, but it is particularly important in managing stress.
- There is evidence that leisure involving nature is ideal in combating stress and increasing evidence suggests that being in natural environments as a source of leisure is effective in providing a range of benefits including: stress relief; family togetherness and experiences with nature. Recuperation from illness is also sped up by outdoor recreation.
- Traditionally time off work or holidays were taken in large blocks where the couple or family would take a long break. However, nowadays, increasingly holiday time is being taken in smaller lots, with people preferring to take more smaller breaks than one large break throughout the year.
- 80% of Australians surveyed in a Nature-based Tourism Report indicated that they were interested in at least one nature-based product.
- 5.8 million Australians visited national parks or state parks at year ended December 2006.
- The majority of people undertaking nature-based and outdoor recreation are aged between 25 and 44 years. This age cohort mostly visited World Heritage Areas, National and State Parks ((2000/2001 figure).
- 27% of nature based visitors to Qld are from Brisbane, 29% from the remainder of Qld and 13% are from Sydney.
- 14% of all domestic visitors to Australia at year ended December 2006 participated in naturebased activities during their trip. 2.5 million Australians participated in overnight wildlife activities, increasing by 4.4% annually. Queensland has seen greater increases with 7.6% increase per year on average over the period 2002 to 2006.
- Growth in nature-based tourism has been on the rise since 2002, despite a minimal decline in overall visitor number between 2002 and 2006. Average annual growth was:
 - o Bushwalking: 0.2%
 - Visiting National/State Park: 8.6%
 - Water Activities: 13.7%
 - Wildlife Watching: 5%
 - All Nature-Based Activities: 2.9%
- Over the last four years, the number of domestic tourists visiting national or state parks across Australia has increased by 8.6% annually on average.

FUTURE TRENDS

It is likely that the growth in outdoor recreation will continue, along with the rising importance of areas offering opportunities for nature-based recreation increasingly seen a key quality of life component for an increasing urban population. Because of their proximity to metropolitan and urban centres, peri-urban areas will come under increasing pressures as venues for outdoor recreation pursuits for urbanites and visitors.

Key Regional Perspective: South East Queensland

BACKGROUND

Demand for outdoor recreation is being maintained at a relatively high level in SEQ, and with expected continuation of population growth in the region, it is anticipated that this demand will continue placing greater pressure on outdoor recreational spaces.

There has been a shift to where people prefer to experience very natural settings for activities, suggesting people are preferring recreational activities in as natural setting as possible.

CURRENT SITUATION

There is an increasing preference of SEQ residents to make use of more natural environmental areas for their recreation. 49% of people participated in walking and nature study in the 12 months to 2001, while 33% participated in camping. Whilst walking and nature study were viewed as being slightly less popular people who were involved did so on a more frequent basis of around 12 times per year. The following table presents some relevant findings from the two Outdoor Recreation Demand Studies (1998 and 2001).

Activity	Percentage who participated in previous 12 months		Frequency	Activity Events per Year
	1998	2001		
Horse Riding	7%	7%	2	266,100
Driving 4WD Vehicles	20%	23%	5	1,748,652
Driving 2WD Vehicles	31%	24%	5	2,289,850
Walking or Nature Study	60%	49%	12	11,176,176
Campina	25%	33%	2	1.254.468

Key points to note include:

- Increase in participation of 4WD driving;
- Walking or nature study was the 2nd most popular activity behind water activities indicating the relative importance of peri-urban areas close to population concentrations and their provision of outdoor recreation;
- Increase of 8% in the participation in camping activities.

Within the WESROC region (which includes the case study area), a greater involvement in activities such as horse riding and driving of vehicles was noted. These activities showed strong increases in the percentages of activities conducted in totally natural landscapes. Of the residents in this region, 46% were involved in outdoor recreation in the 12 months prior.

FUTURE TRENDS

In general, there is an increasing demand for outdoor recreation. With continual population growth anticipated in SEQ, this demand is likely to be exacerbated. The survey also noted respondents concerns for the encroaching urban development and the consequent loss of natural areas, and crowding of remaining sites. This is particularly an issue related to peri-urban areas given that the majority of natural areas are located on the urban fringe in peri-urban areas.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Tourism Queensland. (2007) Visitation to National Parks. Year Ended Dec 2006. Tourism Queensland. (2007) Wildlife Tourism. Year Ended Dec 2006. Tourism Queensland. (2007) Nature-Based Activities Year Ended Dec 2006. Townsend, M (2006) Why not go for a picnic in the park? Change and stress in modern society, and the role of nature-based leisure as an antidote. Vhetta Journal **45** (1) pp. 6-10. Kiewa, J. Brown, T. and Hibbins, R. (2001) South East Queensland Recreational Demand Study September to November 2001. Queensland Government.


Change and Continuity in Peri-Urban Australia



Fact Sheet: Outdoor Recreation

Key National Perspective

BACKGROUND

The time devoted to work in Australia has changed with a greater proportion of people working nonstandard hours. Modifications to the structure of work have resulted in a change in the structuring of time for leisure and participation in outdoor recreation.

CURRENT SITUATION: CHANGING PATTERNS, STYLES AND DEMANDS

- There is a continuing shift in preference towards nature based and outdoor recreation. Participation in leisure and recreation enhances health at various levels, but it is particularly important in managing stress.
- There is evidence that leisure involving nature is ideal in combating stress and increasing evidence suggests that being in natural environments as a source of leisure is effective in providing a range of benefits including: stress relief; family togetherness and experiences with nature. Recuperation from illness is also sped up by outdoor recreation.
- Traditionally time off from work or holidays were taken in large blocks where the couple or family would take a long break. However, nowadays, increasingly holiday time is being taken in smaller lots, with people preferring to take more smaller breaks than one large break throughout the year.
- 80% of Australians surveyed in a Nature-based Tourism Report indicated that they were interested in at least one nature-based product.
- 5.8 million Australians visited national parks or state parks at year ended December 2006.
- The majority of people undertaking nature-based and outdoor recreation are aged between 25 and 44 years. This age cohort mostly visited World Heritage Areas, National and State Parks ((2000/2001 figure).
- 27% of nature based visitors to Qld are from Brisbane, 29% from the remainder of Qld and 13% are from Sydney.
- 14% of all domestic visitors to Australia at year ended December 2006 participated in naturebased activities during their trip. 2.5 million Australians participated in overnight wildlife activities, increasing by 4.4% annually. Queensland has seen greater increases with 7.6% increase per year on average over the period 2002 to 2006.
- Growth in nature-based tourism has been on the rise since 2002, despite a minimal decline in overall visitor number between 2002 and 2006. Average annual growth was:
 - o Bushwalking: 0.2%
 - Visiting National/State Park: 8.6%
 - Water Activities: 13.7%
 - Wildlife Watching: 5%
 - All Nature-Based Activities: 2.9%
- Over the last four years, the number of domestic tourists visiting national or state parks across Australia has increased by 8.6% annually on average.

FUTURE TRENDS

It is likely that the growth in outdoor recreation will continue, along with the rising importance of areas offering opportunities for nature-based recreation increasingly seen a key quality of life component for an increasing urban population. Because of their proximity to metropolitan and urban centres, peri-urban areas will come under increasing pressures as venues for outdoor recreation pursuits for urbanites and visitors.

Key Regional Perspective: Melbourne Region

- Changes in population demographics, current interest in health and wellbeing and a focus on health promotion should create an increased demand for recreation
- The metropolitan Trail Network links Melbourne's open space areas with local trails and recreation precincts. This network comprises existing and proposed trails totalling over 1200 kilometres.
- Walking in national parks attracted 2.5 millions overnight domestic visitors in Victoria. Walking was the most popular pursuit for 15% of all visitors and ranked 6th highest of all pursuits.
- Victoria's national, state and regional parks and metropolitan locations had 66.4 million visit days during 2002 and 2003. Protected area parks had the greatest percentage of visits (38%).
- Walking and sightseeing are the most popular activities undertaken by visitors in parks, followed by socialising and picnicking.
- Short walks for up to an hour are the major primary activity for visitors to metropolitan and regional parks.

TRENDS

- Increasing demands for outdoor recreation is likely to create pressures on existing open space areas and national and conservation and recreation parks within the Greater Melbourne region.
- Increased and unplanned visitor use and tourism growth can cause impacts to the natural environment, negatively affecting the amenity of natural areas and spoiling the very reason why people enjoy visiting these areas.
- Existing open space and recreational parks will experience increasing encroachment by urban population expansion and associated development.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References: Australian Bureau of Statistics (2007) Year Book 2007. Australian Bureau of Statistics (2005) Year Book 2005. Hamilton, C (2002) Overconsumption in Australia: The rise of the middle-class battler. Discussion Paper Number 49. The Australia Institute. Parks Victoria (2007) State of the Parks Report 2007. Victorian Government. Townsend, M (2006) Why not go for a picnic in the park? Change and stress in modern society, and the role of nature-based leisure as an antidote. Vhetta Journal 45 (1) pp. 6-10. Victorian Trails Co-ordinating Committee (2004) Victorian Trails Strategy 2005-2010. The State of Victoria, Parks Victoria.



Change and Continuity in Peri-Urban Australia Fact Sheet: Work Arrangements

Key National Perspective

CURRENT SITUATION

GREATER DIVERSITY OF WORK ARRANGEMENTS

Changes have occurred in work arrangements in Australia such as increasing part-time employment and flexible workplace conduct.

- For the period since 1985/86, part-time employment increased at a faster rate when compared to full-time employment. 29% of people were working part-time in 2005/06 rising from 18% in 1985/86.
- Full-time employment grew at a faster rate than part-time employment between 2002/03 and 2003/04. In 2005/06 however part-time employment showed a faster growth rate of 2.9% compared with full-time employment which grew by 2.0% over the same period.
- Industry composition has changed since 1990/91 altering the labour market. Manufacturing has historically been the largest employment industry however statistics in 2005/06 showed that manufacturing had declined to third largest employment industry behind Retail trade and Property and Business Services.
- The ability of people to work from home has increased with available technology making home-based work a viable alternative.
- In November 2005, women represented more than half (55%) of all people that worked from home. Flexible working times available through working from home may aid in life/work balance and assist with family responsibilities.

FARMERS

- The number of teenage males entering farming has been declining. There has also been a steady decline of young women aged between 20 and 34 years.
- Since 1991, the rate of exit from the farming industry has been slowly declining as retirement is being delayed.
- As a consequence, the farming population is ageing.

More Flexible Leisure Time

- Changes to industries of employment and work arrangements has potentially influenced the leisure time available to workers.
- Where people once worked in physical labour jobs, this is being reversed suggesting that people are more inclined to want to enjoy the outdoors since they are now more accustomed to working inside during their work time.

FUTURE TRENDS

It is likely that the workforce will continue to become casualised, with more people working flexible hours. Part-time work and job-sharing will also become more common, especially with people who want to better manage their work-life balance. Farming will see a sustained decline in recruitment as the median age continues to increase.

Key Regional Perspective: South East Queensland

National trends in the changing nature of work arrangements are occurring at the regional level also.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Australian Bureau of Statistics (2007) Social Atlas 2006. Commonwealth Government.

Barr, N., Karunaratne, K. and Wilkinson, R. (2005) *Australia's Farmers: past, present and future*. Land and Water Australia, Australian Government.



Change and Continuity in Peri-Urban Australia



Fact Sheet: Work Arrangements

Key National Perspective

CURRENT SITUATION

GREATER DIVERSITY OF WORK ARRANGEMENTS

Changes have occurred in work arrangements in Australia such as increasing part-time employment and flexible workplace conduct.

- For the period since 1985/86, part-time employment increased at a faster rate when compared to full-time employment. 29% of people were working part-time in 2005/06 rising from 18% in 1985/86.
- Full-time employment grew at a faster rate than part-time employment between 2002/03 and 2003/04. In 2005/06 however part-time employment showed a faster growth rate of 2.9% compared with full-time employment which grew by 2.0% over the same period.
- Industry composition has changed since 1990/91 altering the labour market. Manufacturing has historically been the largest employment industry however statistics in 2005/06 showed that manufacturing had declined to third largest employment industry behind Retail trade and Property and Business Services.
- The ability of people to work from home has increased with available technology making home-based work a viable alternative.
- In November 2005, women represented more than half (55%) of all people that worked from home. Flexible working times available through working from home may aid in life/work balance and assist with family responsibilities.

FARMERS

- The number of teenage males entering farming has been declining. There has also been a steady decline of young women aged between 20 and 34 years.
- Since 1991, the rate of exit from the farming industry has been slowly declining as retirement is being delayed.
- As a consequence, the farming population is ageing.

MORE FLEXIBLE LEISURE TIME

- Changes to industries of employment and work arrangements has potentially influenced the leisure time available to workers.
- Where people once worked in physical labour jobs, this is being reversed suggesting that people are more inclined to want to enjoy the outdoors since they are now more accustomed to working inside during their work time.

FUTURE TRENDS

It is likely that the workforce will continue to become casualised, with more people working flexible hours. Part-time work and job-sharing will also become more common, especially with people who want to better manage their work-life balance. Farming will see a sustained decline in recruitment as the median age continues to increase.

Key Regional Perspective:

Melbourne Region

National trends in the changing nature of work arrangements are occurring at the regional level also.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Australian Bureau of Statistics (2007) Social Atlas 2006. Commonwealth Government. Barr, N., Karunaratne, K. and Wilkinson, R. (2005) Australia's Farmers: past, present and future. Land and Water Australia, Australian Government.





Fact Sheet: Support for Peri-Urban Farmers – A National Driver

CURRENT SITUATION: SUPPORT FOR PERI-URBAN FARMERS

There is a long history of government support to the farming sector involving a variety of initiatives that essentially intervene in markets and farming practices. These initiatives act as a way of supporting primary production within Australia. Incentives are often provided by way of tax assistance, subsidies on inputs, monetary grants and initiatives that help new entrants into the industry.

TAX AND FINANCIAL ASSISTANCE

The Australian Government provides assistance to rural landholders who may be able to claim tax deductions for work carried out under Landcare as part of the tax legislation. Tax deductions can be claimed on work that in involved with:

- Eradicating animal and plant pest species;
- Preventing and combating land degradation;
- Constructing levees and drainage works; and
- Erecting fences.

In the United Kingdom, government policies include tax incentives and mandatory targets for biodiesel production. In addition, tax incentives are available to plantations that encourage new native timber plantations and farming enterprises that diversify their production interests.

Farm Management Deposits

Uncertainties surrounding climate such as prolonged drought have the potential to influence income of farmers, through reduced yields and greater competition from other sources. Farm Management Deposits (FMD) can aid in managing farm finance over extended periods. FMD can help farmers reduce their taxable income in years when finances are good, by setting aside funds that can be drawn on later in less successful years. This process assists in smoothing income flows and reducing the burden of tax in lean times.

LANDCARE INITIATIVES

The National Landcare Program (NLP) developed a Sustainable Industry Initiative (SII) that recognises that farming practices within Australia encompass NRM on a daily basis. As such, the Government wants to ensure that landholders can access information, technology, skills and support required to manage the natural resource base sustainably and conduct profitable enterprises. The SII works in partnership with the natural resource industry at the national level to encourage sustainable NRM and promote approaches that are consistent throughout the country.

OTHER INITIATIVES

Fresh Start Initiative, UK

The Department of Environment, Food and Rural Affairs in the UK have also developed a program that aims to support the continuance of farming practices throughout the country by encouraging growth in involvement with rural industries. Titled the 'Fresh Start Initiative', this program seeks to encourage new entrants into farming. This is particularly useful for a business where the principal farmer may wish to reduce their involvement in the farm because of age for instance, but had no family succession. The initiative may include welcoming a new entrant as a share farmer, contracted partner or through the development of a joint venture relationship.

Diversification

In recent years, particularly with the advent of climate change and carbon-offsetting, farmers who have been reliant on traditional crops are now becoming involved in the planting of forestry plantations for greenhouse gas abatement in addition to removing pressure on the harvesting of native forests.

REGIONAL CONSIDERATIONS FOR PERI-URBAN FARMERS

Peri-urban farmers are likely to face increased competition in terms of land use conflicts and the ability to maintain viable levels of production. Given the importance of peri-urban areas in the production of food, it will be necessary to ensure the continued success of these areas in terms of production.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Department of Agriculture, Fisheries and Forestry (2007) Landcare. Commonwealth Government URL:

http://www.daff.gov.au/natural-resources/landcare . Department of Agriculture, Fisheries and Forestry (2007) Sustainable Industries. URL: http://www.daff.gov.au/natural-

resources/landcare/national-landcare-programme/sustainable Department of Environment, Food and Rural Affairs (UK) (2007) Fresh Start Initiative. URL:

 $\underline{http://www.defra.gov.uk/farm/working/new-entrants/freshstart/index.htm}$

Rural Finance.com.au (2007) About Us. URL: <u>http://www.ruralfinance.com.au/</u>





Fact Sheet: Oil Vulnerability – A Global Driver

WHAT IS OIL VULNERABILITY?

Oil is at the heart of all things we produce and consume. This finite, non-renewable resource is a cheap and versatile form of energy and that has helped build economies. It has seeped into modern life; into plastics, clothes, food, and medicine. Our reliance on oil and petrochemicals for so many products poses the problem of implications from lack of supply and an ever-increasing demand.

PEAK OIL: THE CURRENT SITUATION

Strong demand and global economic growth (particularly from China) coupled with reduced supply coming in from the Gulf of Mexico have impacted on production. The global price of crude oil has increased from around \$30 per barrel in 2004, to over \$60 by the end of that year. Petroleum prices have continued to rise as a result with a 10 percent increase to June 2005 and a further 7.5% increase during the June quarter in 2005 (Dodson and Sipe 2005).

The decline of domestic production has been occurring since 2000 and in 2005, only 55 percent of the national demand for oil was met locally, with this figure expected to decrease to 27 percent in 2019 (Taygfeld 2006). This decline has been related to an annual increase in demand of 2.4 percent; a decline in oil production from existing fields; and the slow discovery of new reserves.

Several analyses suggest that global oil production will peak within the next 20 years. Peak oil is where approximately half of the world's supplies of oil have been consumed (Dodson and Sipe 2005). This peak is inevitably followed by a natural decline in reserves and where increasing demand is severely limited by decreasing supply. A situation of peak oil has far reaching implications for economies that are increasingly reliant on cheap oil to fuel economic growth.

OIL VULNERABILITY

Much of SEQ's vital economic activities (for example tourism and agriculture) are heavily dependent on oil. Our cities are highly reliant on cars to function making us oil dependent. For example, 80% of Brisbane's trips are taken by car. The widely dispersed settlement patterns, limited provision of public transport coupled with rapid population growth are all contributing to our oil vulnerability.

Transport systems play a significant role in shaping the socio-economic prospects of households in Australian cities. People with reduced access and a greater reliance on public transport are more likely to be vulnerable to fluctuations in the price of oil. These people are more likely to live in outersuburban suburbs on the fringe of cities.

Potential vulnerability to oil price pressures of Australia's largest cities has been shown to be highly uneven in distribution. Dodson and Sipe (2005) conclude:

Brisbane: Areas of highest vulnerability generally relate to the localities that appear to be associated with low socio-economic conditions such as Logan, Beenleigh and the Ipswich Corridor.

Sydney: High vulnerability concentrates in the west particularly surrounding the south-west of Parramatta. The geography of oil vulnerability also mirrors existing socio-spatial divisions i.e. most vulnerable are the western suburbs while the least vulnerable are the northern and eastern suburbs – a well known divide.

Melbourne: Also displays comparable strong geographic differentiation. Most vulnerable areas are located on the urban fringe and within the ageing industrial areas.

Overall, a substantial proportion of the population of all three cities, particularly those people situated in outer-suburban areas, are at a moderate to high risk of socio-economic impacts resulting from escalating oil prices.

The price of oil is likely to remain at current levels, with no indication of a significant decline in the short term. Rising fuel costs are likely to impact on people who are currently experiencing low socioeconomic conditions. Being in this position makes people more vulnerable to fluctuations in price. These communities are already vulnerable to socio-economic changes, and the implications of rising interest rates. In addition, the car dependence of our cities is compounded by the lack of provision of a

suitable alternative transport option for most of these disadvantaged people and the dispersed nature of services and employment that necessitates transport by private car.

POTENTIAL OUTCOMES OF A FUTURE OF OIL VULNERABILITY

There are still strong ongoing debates regarding the scale, timing and implications of peal oil, however the need to address the resulting issues in policy is necessary.

It is suggested that market forces will place limitations on the price of impacts of peak oil by creating focus and correct conditions within the market place for the development of techniques to facilitate extraction and efficiency in oil consumption.

Other commentators have noted that perhaps the decline of oil reserves and the increasing cost associated with declining supply will influence alternative energy development making it more easily available and cost effective and becoming increasingly economically viable.

The Australian economy is already experiencing the impacts of a growing reliance on imported oil and the Australian Bureau of Agricultural and Rural Economics (ABARE) (cited in Taygfeld 2006) predicts that the following could occur under reduced oil availability:

- Higher unemployment;
- An increase in inflammatory pressures and upward pressures on interest rates;
- Increase in the value of imports whilst export values decline; and
- Downward pressure on exchange rates.

FUTURE TRENDS

The situation of peak oil may be helpful in reducing economic vulnerability of certain communities to oil depletion; reduce car dependency and associated greenhouse gas emissions; as well as creating opportunities for alternative energies as discussed above.

Oil Vulnerability will be particularly exacerbated in peri-urban areas due to the greater reliance of these areas on private motor vehicles as a means of transport. The lack of public transport in these areas results in the need for people to utilise cars for transport thus increasing their reliance on oil to fuel them.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Planner 43(4) pp.14-21

Australian Broadcasting Corporation (ABC) Crude: the incredible journey of oil. ABC Television 2007. Dodson, J. and Sipe, N. (2005) Oil Vulnerability in the Australian City. Urban Research Program, Research Paper 6, December 2005. Queensland Transport (2005) Smart Travel Choices for South East Queensland: A Transport Green Paper. Discussion Paper. Taygfeld, P. (2006) Exploring the stance of state and local government departments in SEQ towards peak oil. Australian



Change and Continuity in Peri-Urban Australia



Fact Sheet: Carbon Trading and BioBanking – A Global Driver

CURRENT SITUATION: CARBON TRADING

The process of carbon trading involves the issuing of carbon credits for reforestation activities. Under such schemes an environmental regulator determines the total acceptable level of emissions and then divides this total into tradeable units referred to as credits or permits. These credits and permits are then allocated to participants in the scheme

Under the United Nations Framework Convention on Climate Change (UNFCCC) countries are permitted to use a trading system to help meet their emissions targets. This process works by allocating individual companies a specific amount of greenhouse gas emissions. If the permits are issued to a level equal to or lower than the assigned amount then the company should meet its Kyoto targets. If this situation does not occur and a country is unable to meet its targets then it can buy permits from countries that have used fewer emissions and are therefore below their targets.

Any carbon trading scheme needs to be robust in terms of its environmental effectiveness, economic efficiency and credibility. It must also be equitable in its distribution throughout the market.

A key to functionality of a carbon trading scheme is participation. The level of international engagement determines environmental effectiveness which subsequently has a large impact on its efficiency economically. For a scheme to be workable, it is necessary to recognise that different countries have different capacities for action, as well as different vulnerabilities and opportunities and capacities to act. Recognising this and responding with flexibility will be a key issue in the consideration of implementing a national emissions cap.

Carbon credits have the potential to enable countries to meet their emissions targets. It also has the potential to remove the focus on the need to reduce global emissions, and allowing countries to either continue producing the same levels of emissions, or produce more if they have the money to buy credits from other countries. This situation will ultimately help those countries that can afford to pay for their emissions.

The use of carbon credits has been played down by some commentators. One academic proposes the use of energy credits instead of carbon credits as these can measure and guide activities that do not emit carbon dioxide directly yet still contribute to global warming.

REGIONAL CONSIDERATIONS FOR PERI-URBAN AREAS

Whilst carbon trading has mostly been discussed in relation to the broader scales of the economy, it also has potential application at the regional level, specifically in terms regional and local economies. Impacts of carbon trading on regional areas and specifically peri-urban areas will potentially be limited due to the coarse nature and functionality of such schemes. Smaller regional areas more reliant on coal technologies to fuel their economy will likely have a greater stake in carbon trading schemes and therefore be more vulnerable to prices of emissions.

However, peri-urban areas could potentially benefit for the introduction of national and regional carbon trading schemes through their use as the offset areas for tree planting. For example, peri-urban farmers may be advantaged through involvement in initiatives such as Landcare's CarbonSMART program. This program, allows farmers to make money simply by planting trees and maintaining vegetation for biodiversity. Individuals and businesses can then purchase carbon credits from landholders to help offset their carbon usage. Initiatives like this may aid in providing benefit to peri-urban landholders directly through the process of carbon trading. This will be particularly the case if the voluntary participation of nearby urban residents and industries relies on their desire to see exactly where their purchase has been implemented.

CURRENT SITUATION: BIOBANKING

BioBanking refers to the trading of biodiversity values and occurs through the use of offsets to assist in addressing the cumulative effects of development and where appropriate helps to maintain or improve biodiversity.

BioBanking can be used in instances where development has unavoidable impacts on biodiversity. In cases where this occurs, the development will only be able to proceed if offsets can be used to achieve a positive outcome for the affected biodiversity through net maintenance or improvement.

Such BioBanking schemes only address biodiversity values such as threatened species, communities and habitats. It can not be used as an alternative for Indigenous heritage sites or sites where environmental pollution or similar is an issue.

Biodiversity offsets may include:

- enhancing habitat on private land to improve its biodiversity value;
- reconstructing habitat to link areas of high conservation value including the increase of buffer zones; and
- acquiring land that contains very high conservation values through the open land market.

Critics suggest that BioBanking does not address fundamental problems associated with land clearing and biodiversity loss resulting from other developments. In addition, the following criticisms of BioBanking were also identified:

- the habitat of threatened species cannot have a monetary value place upon it;
- credits are granted immediately for the biodiversity gains of restoration activities that are yet to be completed;
- financial incentives to protect and manage biodiversity will only exist if landowners know they will receive more money for conservation than if they develop the site;
- permanent protection for biodiverse sites cannot be guaranteed. The opportunity currently exists for these areas to be developed at a later date for major projects and there are no restrictions of the types of activities that can take place on adjacent land; and
- the scheme is voluntary allowing the most damaging projects to be exempt.

The Nature Conservation Council of New South Wales suggests problems with BioBanking as it stands and improvement such as the following should be made:

- ares of high conservation value be excluded and the scheme must only apply to degraded landscapes and habitats;
- BioBanking agreements must provide protection in perpetuity and explicitly prohibit development; and
- targets must be established to measure the success of the scheme in maintaining and improving biodiversity at the regional level.

REGIONAL CONSIDERATIONS FOR PERI-URBAN AREAS

Peri-urban areas are potentially suitable areas for BioBanking to take place. Their close proximity to metropolitan and rural areas provides suitable locations for improvement biodiversity.

If unplanned and if BioBanking is not integrated into a holistic landscape management approach, it has the potential to add to the already existing conflicts of land use in these peri-urban areas. With continued pressure for subdivision and development, any biodiversity offsets achieved may become degraded in the long-term.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Australian Broadcasting Corporation (2007) The World Today Transcript 4 June 2007. Research plays down economic concerns of carbon trading.

Department of Environment and Conservation NSW (2006) BioBanking – A Biodiversity Offsets and Banking Scheme: Conserving and restoring biodiversity in NSW. Working Paper.

Hu, E. (n.d.) The Core of the Global Warming Problem. Journal of Global Energy Issues.

Nature Conservation Council of New South Wales (2007) Biodiversity Banking Fact Sheet.

Landcare Australia (2007) Landcare CarbonSMART. URL: <u>http://www.carbonsmart.com.au</u>

Prime Ministerial Task Group on Emissions Trading (2007) Report to the Task Force on Emissions Trading. Commonwealth Government.





Fact Sheet: Climate Change – A Global Driver

CURRENT CONDITION: WHAT IS CLIMATE CHANGE?

Griffith

Urban Research Program

Climate change is a global issue that has the potential to impact severely on communities, resulting in ecological, economic and social impacts.

Over the past century global temperatures have climbed approximately 0.6 degrees with the greatest increases occurring over the last 50 years. These increases are contributed to by greenhouse gas emissions fuelled by anthropocentric practices. Aside from increasing temperatures, global warming can also manifest in rising sea levels, resulting from melting of polar ice caps and glaciers, and changes in extreme weather events.

Australia's average temperatures have increased by 0.8 degrees since 1910 particularly in northern and western Australia. In addition, average rainfall has declined in eastern and south-western Australia and mean sea level around the country has risen between 0.12 and 0.16 metres since 1990. Surface temperatures have also been projected to increase by between 0.4 and 2 degrees by 2030 and up to between 1.0 and 6.0 degrees by 2070. In SEQ, predictions suggest a temperature increase of between 0.2 and 1.6 degrees will result in more summer days over 35 degrees, whilst rainfall events will become more intense, resulting in more frequent flooding as a result.

IMPLICATIONS AND THE FUTURE UNDER A CHANGING CLIMATE REGIME

There are predicted to be wide-ranging impacts from climate change affecting both people and the environment including heat; vector-borne diseases; water and food borne diseases; floods; cyclones; storms; drought and fire.

Heat

Australia has become hotter since 1910, with increases in both mean annual maximum and minimum surface temperatures. This temperature rise has been accompanied by higher frequency extreme heat events made more pronounced by increasing humidity and urban heat island effects. Average surface temperatures are expected to increase by between 0.4 and 2 degrees by 2030. If unmitigated, climate change will double heat related deaths for people aged over 65 years by 2100.

Vector-Borne Diseases

These diseases are caused by viruses spread by insects such as mosquitoes. Climate change may alter the geographic distribution of such species, resulting in increases in frequency of diseases such as Ross River virus, Dengue Fever, Barmah Forest virus and Murray Valley encephalitis.

Numerous vector-borne pathogens are sensitive to changes in climate (i.e. temperature and rainfall) and it is assumed that increased rates of infection may occur as a result.

Water and Food-Borne Diseases

These diseases include bacterial, viral and parasitic infections and can be easily transmitted throughout populations. Evidence suggests that these diseases may become more prevalent in a warmer climate.

Food-Borne Diseases

Food-borne diseases such as salmonella are most widespread during the warmer months of spring and summer. High temperature aid in faster bacterial growth, which can escalate medical cases of diarrhoea and gastroenteritis. A warming climate will see increasing incidence of such diseases as the active time of the bacteria will be extended.

Drought

At present Australia is experiencing unprecedented drought conditions around the country. Droughts are the most economically costly natural phenomena and are predicted to increase under a changing climate. Increases in temperature will increase evaporation rates leading to greater incidence of drought, whilst declines in water quality during these periods can concentrate bacterial population in water bodies such as dams and reservoirs.

Flood

Floods can be caused by excessive rainfall, cyclone or intense storm events. Heavy rain including extreme rainfall events are expected to be more likely under a changing climate, thus increasing by 2020. These events can transport contaminants into water supplies and numerous studies have demonstrated a link between rainfall and water-borne disease outbreaks. This is particularly relevant in SEQ as intense rain events are predicted to become more common.

Cyclones

Cyclones cause destruction in the form of winds, rain, high seas and storm surges. In addition, cyclones can also impact of agriculture and farm production resulting in economic impacts on communities. Cyclone activity has declined since the 1960s; however the number of intense cyclones is predicted to increase. Flow-on impacts from cyclones can also include flooding and wind damage.

Storms

Thunderstorms, tornadoes and hail storms cause the majority of damage from natural disasters in Australia. Similar to cyclones, the severity of storms is expected to increase brought about by a warmer moister atmosphere more conducive to storm development.

Fire

Droughts can result in higher prevalence of bushfire and wildfires, with low humidity and high maximum temperatures influencing the likelihood of fires. The incidence of fire is expected to increase with global warming. Droughts will become more severe and the number of 'hot-days' will increase contributing to increases in bushfire intensity and frequency.

IMPLICATIONS FOR PERI-URBAN AREAS

Peri-urban areas are likely to be affected by climate change particularly in terms of drought, fire and heat. Given the typologies associated with peri-urbanism and the location of such areas where environmental factors such as temperature and bushfires are generally more extreme (that is, colder in winter and warmer in summer), climate change could potentially have a large impact on both the people that inhabit these areas and the environment itself.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Lowe, K., Horton, S., Baum, S. and Gleeson, B. (2007) Climate Change, Health Impacts and Urban Adaptability: a Case Study of the Gold Coast Region. Gold Coast Climate Change – Workshop Outcomes 2007. Unpublished.

Planning Institute of Australia – Queensland Division (2004) Sustainable regional and Urban Communities Adapting to Climate Change. Issues Paper June 2004.



Change and Continuity in Peri-Urban Australia



Fact Sheet: Globalisation – A Global Driver

CURRENT SITUATION: WHAT IS GLOBALISATION?

Globalisation is not a new phenomenon. The idea of trading between nations has been in existence for centuries, when ships would sail from port to port trading goods.

There is no widely accepted definition of globalisation. However, the most common meaning is economic globalisation referring to the most recent economic activity increasingly taking place between countries across the world. It encapsulates all those processes by which the people of the world are incorporated into a single world society - a global society.

Although globalisation can be seen as a primarily economic occurrence engaging interactions between national economic systems, it also involved the growth of international trade, investment and flows of capital. Globalisation results in a growing share of spending on goods and services sourced from imports, with an increasing focus on production being sold as exports to foreign countries. For business, globalisation can produce cheap offshore labour, reduced transport costs, virtual communication and global marketing, while the globalisation of work may result in the movement of jobs from manufacturing to services.

CRITICISMS OF GLOBALISATION

There are varying perspectives on whether globalisation is a good or bad thing. Critics believe it is fostering a world where globalised economic systems operate and are dominated by corporate and banking trade. This process is further criticised for being undemocratic and supporting the ability of large companies to remain unaccountable to governments or the public. Stemmed in a capitalist philosophy, globalisation is also a facilitator of rapid increases in cross-border and cross-country social, cultural and technological exchanges. Extreme opponents also hold globalisation responsible for further impoverishing the world's poor, increasing the wealth of already rich people and countries as well as devastating the environment.

SUPPORTERS OF GLOBALISATION

Supporters of globalisation believe it to be a high-speed elevator to worldwide prosperity and wealth. It is also viewed as having the potential to internationalise relations and in turn forge changes in attitudes and administrative deficiencies. It can give rise to global governance systems and create a global civil society. The benefits of globalisation can open up people to a new range of opportunities including new ideas, technologies, and information; most importantly for developing companies, new markets of supply and production. This process can lead to more employment opportunities, greater investment and stronger more sustainable economic growth.

THE FUTURE OF GLOBALISATION

If the process of globalisation continues as it has done over the last few decades, the global society as it is known will becoming increasingly smaller and there will be a global distribution of activity. Technologies will continue towards faster interaction between once isolated communities; trade will continue to flourish between nations through greater interconnectivity; and new markets and bigger organisations will emerge. On the flipside, continual economic growth may produce greater fragmentation and a situation whereby too much competition exists from new market players causing a spatial shift where production and supply originate.

Indirectly, globalisation may potentially facilitate increasing opportunities for diseases to extend their original distribution (for example, avian influenza, SARS) producing outbreaks of diseases not known in some countries. In addition, the 'global village' may also provide possibilities for further terrorist activity by way of opening up borders and inter-national communications.

One other potential future in an increasingly globalised world is the homogenisation, or creation of similarities, under a single world power. This situation would have implications for all aspects of the global community including economies, labour, and the environment and would result in the reduced ability of national governments to make decisions about their own economies and national aims.

IMPACTS OF GLOBALISATION IN PERI-URBAN AREAS

Peri-urban areas are likely to be impacted by globalisation. Because of the centralisation of markets, periurban areas may experience constraints on services. Smaller businesses may find it difficult to compete against larger ones that utilise cheaper labour and products.

The concentration of economic activity and services into smaller well-linked national and international markets particularly in and around major metropolitan areas, coupled with the expansion and continued growth of these areas, has resulted in increasing pressures on peri-urban areas for suburban and residential development. These pressures further impact on land uses within peri-urban areas.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Aslin, H., Kelson, S., Smith, J. and Lesslie, R. (2004) Peri-urban landholders and bio-security issues – a scoping study. Bureau of Rural Sciences, Commonwealth Government. Davies, K. (2002) Globalisation. Australian Focus on Issues. Educational Concepts.

Healey, J. (2001) Issues in Society: Globalisation. Vol. 151. The Spinney Press.

Globalisation Guide (2002) What is Globalisation Presentation <u>www.globalisationguide.org/globalizationvic.ppt</u> Accessed: 28/06/2007.





Fact Sheet: The Seekers

BACKGROUND

Peri-urban areas provide a suitable location for a diversity of landholders. It encompasses people who are seeking change or an alternative lifestyle; wanting acreage to run a hobby farm; and religious communities - all diverse groups utilising the peri-urban area in their own way. The Seekers are associated with a process that has been occurring since the 1970's through to the present.

CURRENT SITUATION

The Blockies and Alternative Lifestyle Seekers

The peri urban area is a magnet for individuals seeking more idyllic and relaxed lifestyle opportunities. The incentive behind the migration of individuals and families to lifestyle blocks in the peri urban area varies, but essentially is a product of the following:

- An appealing and scenic environment;
- Proximity to the natural environment;
- Increased opportunities for leisure;
- A healthier environment away from the pressures and pollution of urban areas;
- The close proximity of the services and infrastructure provided by metropolitan/urban centres;
- Opportunity to grow own food for consumption;
- The availability of more affordable land; and
- Larger block sizes with space for outdoor recreation pursuits (horse,/trail bike riding etc).

All of these reflect a desire to invest in a lifestyle that will provide improved quality of life. It also represents a society where quality of life and lifestyle choice is a commodity that can be bought and sold. This has created a development market where housing is sold with status symbols and marketed with images of the 'green' environment or recreational pursuits. Specifically, it is evident that a lifestyle where leisure is paramount is a major focus of growth in peri urban areas. A risk associated with this continued growth in the peri urban area, is that as it becomes more populated and developed, the lifestyle opportunities that attracted individuals in the first place may become lost.

Tree/Sea Change Lifestyle Properties

Whilst traditionally the 'tree change' was largely fuelled by the alternative lifestyle seekers (hippies) in the seventies, the more recent migration has seen the baby boomers and the younger generations moving to the peri urban area in search of a more balanced lifestyle. Landcare Australia (2007) identify that a number of these new migrants 'are highly motivated in terms of wanting to care for the natural resources' however have 'little understanding or practical capacity to manage challenging property and catchment issues'.

Religious Communities

In recent years, the peri urban area has become a popular location for religious groups or cult movements to establish their ideological base. This phenomenon has been particularly observed around some areas of the United States of America, such as Orange County, California, where there are a large number of 'alternative' religions such as the Saddleback Church and the Vineyard Christian Fellowship and Children of God movements. There is some evidence which supports similar trends occurring in the peri urban areas around Australian cities. Specifically, in the South East Queensland case study area, the recent Magnificat Meal Movement, an offshoot of the Roman Catholic Church, had significant land holdings including a church, in the town of Helidon.

There a number of reasons for which the alternative religious movements may choose to establish their community in the peri urban area. Specifically, the peri urban area represents a more 'idyllic' lifestyle, away from the corruption and bad influences of cities. Concordantly the peri urban area provides opportunities and benefits similar to those described by Schmelzkopf (2002) in regards to the

established religious community at Ocean Grove, New Jersey. These are 'perfectionism, autonomy, exclusion and homogeneity' (Schmelzkopf 2002: 589). Specifically, alternative religious groups may choose to form communities in the peri urban zone as the geographical isolation may advance their activities and objectives, and it allows members to have a sense of territory which cannot be catered for in dense urban landscapes. This territory allows members to exercise a degree of control and continued influence over the members of the religious group.

As a united group of individuals often with significant land holdings, alternative religious organisations have considerable potential to become involved in natural resource management projects. The level of land and resource management skills that these groups possess will vary.

TRENDS

The Seekers represent a diverse group of people wanting the live in a sustainable manner, and can include retirees and people wanting to escape suburbia. If the trends continue the way they have done in the past, it is likely that the supply of appropriate land for The Seekers will be under increasing demand, inflating property prices in peri-urban areas. This trend is also likely to continue given the increasing movement towards downshifting and retirement by the baby boomer generation.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Landcare Australia 2007, Landcare Farming – Peri Urban Farms, viewed 11 July 2007, http://www.landcareonline.com/page_print.asp?plD=122>.

Schmelzkopf, K. 2002, 'Landscape, Ideology, and Religion: A Geography of Ocean Grove, New Jersey', in *Journal of Historical Geography*, vol 28 (no.4), pp 589-608.

Sommerland, E. A. (1985) Rural Land Sharing Communities; An alternative economic model. Monograph Series 7. Bureau of Labour Market Research. Australian Government Publishing Service, Canberra.





BACKGROUND

Groups showing initiative and skills to improve their situation given the circumstances of a changing peri-urban landscape have been characterised as the survivors. These people include those building their own homes, utilising the land for personal interests such as horses and the parking of trucks and equipment and those farmers who adapt to these changing circumstances.

CURRENT SITUATION

DIY Home Builders

Significant urban housing supply constraints are having a detrimental impact on the affordability of home ownership. When comparing housing repayments to median household incomes, the evidence suggests that real estate in Australia is some of the least attainable in the world. Specifically, despite relatively stable interest rates, housing prices have increased reflecting a shortage in housing availability. Concordantly monthly home loan repayments have continued to increase and Australia's Housing Affordability Index is at an all time low.

This reality is partly driving the demand for cheap land in the peri urban areas around urban centres. Specifically, many individuals are buying rural residential allotments and living in improvised accommodation on site until they can afford to have a house built either by a professional or themselves. This can include live in sheds, cabins, caravans and tents. There are a couple of issues associated with this practice. Firstly, the infrastructure dealing with water supply and effluent disposal may not be developed and management practices may be insufficient which may lead to environmental harm. Secondly, established residents may not approve of having individuals living in improvised accommodation in their area due to its visual impacts. However, with the current economic climate not favouring first home buyers, the opportunity to build your own home is often necessary.

The Horse Community

Owing to its proximity to urban centres, the peri urban area is often characterised by activities associated with the recreational use of horses. This may include horse paddocks and stables, pony club facilities, and horse riding trails. In addition, individuals with an interest in horses often move to rural residential properties in the peri urban area where they can house their own horse on their property. This is made possible due to individuals having greater disposable incomes to spend on recreational pursuits such as horse riding and the availability of more affordable land in the peri-urban area. Alternatively, many rural residential properties are used for the agistment of horses owned by urban residents.

In Australia a steady upward trend in membership of horse riding associations including the Equestrian Federation of Australia and Australian Trail Horse Riders Association has increased in recent times. This could be a strong indication that there is a greater public interest in these activities and there is nothing to suggest that this trend will slow down. Accordingly it can be assumed that the prevalence of lifestyle properties and industries focused around horses in peri-urban areas will not diminish.

Horse based activities have a number of potential environmental and natural resource impacts. Specifically, impacts may include contamination of water bodies from waste, destruction of natural environments from animal hoofs, and the spread of weed and other pest species.

Truckies

Individuals who own trucks and other machinery are often drawn to rural residential allotments in the peri urban area, for the storage and maintenance of their vehicles/ machinery. Truck/ machinery parking is not suited to urban areas for reasons including traffic, small block sizes and amenity impacts. In fact, most statutory town plans explicitly prohibit the parking and maintaining of trucks in residential areas of urban centres. It is for this reason that lower density residential or rural residential properties on the outskirts of cities are attractive locations for individuals to store, park and maintain their

vehicles/ machinery. Whether this is a permitted practice under individual town planning schemes, is local government specific.

The road freight industry in Australia has witnessed significant growth in the past due to the progressive transfer of freight movement from rail and sea to road. This has been particularly the case for interstate freight movement. The rise in inter-regional sourcing of perishable commodities such as fruit and vegetables has further promoted this practice. Coupled with national logistics chains providing an integrated freight environment, road freight is expected to continued to grow.

Adaptive Farmers

Owing to increased pressures from closer settlement, the downsizing of existing rural properties and changing consumer demands, farmers are required to adapt their farming practices and diversify their business interests. Many farmers now have off-farm income sources to supplement farm revenue.

Specifically, the increased cost of farming inputs and transportation of goods to markets means that in order to compete economically, farmers have to intensify crop production and/or diversify their interests. In particular some farmers are switching their main production crop to crops that are more suited to intensive growing conditions such as lettuce and mushrooms.

In order to further supplement agricultural incomes, some individuals are establishing activities such as farm stays/ retreats on their properties.

TRENDS

Current trends in the changing nature of the peri-urban landscape will most likely continue resulting in increasing number of Survivors. More people are likely to be drawn to these areas when building their homes due to the increasingly scarce availability of affordable housing surrounding major metropolitan regions. In addition, with an increasing population, it is also likely that people in the horse community will increase placing pressure on the need to find suitable ajistments and similar facilities.

With pressures on existing peri-urban farmers increasing, farmers will need to become more adaptive in their practices to continue to conduct a viable farm enterprise, while increases in peri-urbanisation of the rural landscape in these areas is likely to force truckies further towards to periphery of these periurban areas.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.





BACKGROUND

Peri-urban areas have long been the location of large amounts of available land, much of which had become economically nonviable in its current use and in some case had also become degraded. These circumstances provide opportunities for developers and people seeking to 'cash in' and utilise the land for commercial and profit purposes – this group of stakeholders are the Speculators.

CURRENT CONDITION

Developers and Real Estate Agents

The most significant and probably successful speculators in the peri urban areas up to present times have been developers. As the urban-rural frontier is constantly evolving, and major infrastructure commitments such as highways continue to be provided, this is resulting in a constantly evolving real estate market with variable development opportunities. In recent years, the formulation of statutory regional plans and planning schemes addressing the peri urban areas has largely taken the edge off land speculation and provided developers with greater certainty as to future development opportunities and constraints. However, these planning instruments can also have the effect of driving up land prices where land has been designated for uses such as industrial, residential and rural residential.

Tourism - Recreational Providers and Farm Stays and Retreats

Tourism in peri urban areas is increasingly driven in Australia by a 'lifestyle led and leisure oriented society'. In particular, Walmsley (2003: 66) identifies a number of leisure oriented lifestyle groups in Australia as driving tourism in rural areas, particularly those within a 160km radius from major urban centres. These lifestyle groups include yuppies, dinks, empty nesters and the baby boomers. Walmsley (2003:69) recognises the 160km radius as a guide to the limit individuals are willing to drive for a day trip, however concedes that this distance can be affected by variables such as road quality and traffic. Therefore it can be generally concluded that the viability and success of tourism/ recreational opportunities is significantly augmented by distance from major centres and therefore capacity to attract day trippers. Concordantly the potential for recreation and tourism enterprises within the peri urban area is significant.

The establishment of such activities in the peri urban area is undertaken by long standing residents who seek to diversify existing business interests, but also more commonly newer residents who have recognised and seek to capitalise on the identified opportunities provided by these peri-urban environments. Specific tourism and recreation opportunities common to the peri urban area include farm stays and nature/ health retreats, bed and breakfasts, wineries, trail/ horse riding, and motorcycle and airborne sports.

Boutique Farmers

Boutique farming encompasses production of specialist commodities for niche markets and can include goods such as coffee, herbs, olives, wine, lavender, figs and essential oils.

The Australian and New Zealand Wine Industry Directory reveals that from 1991-2002 there has been a large increase in the number wineries (Tottenham *et al.* in Buxton *et al.* 2006:149). The emergence of enterprises in the peri-urban areas such as wineries has been emphasised by recent in-migration. These speculators seek to capitalise on their proximity to the large number of urban consumers of 'lifestyle goods'. In the case of wineries, often the wine is not grown or even produced on site, however it is retailed in the peri-urban area which is accessible to day trippers and tourist groups. Enterprises sometimes include cafes/ restaurants and conference centres to supplement the income gained from the sale of the primary product. Other prominent 'lifestyle goods' include flower/ lavender farms, and dairy's.

In relation to the development of these peri-urban industries Buxton and others (2006: 149) identify that there has been a growth in water supply infrastructure such as dams within peri urban areas to allow for 'diversification into grape or orchard production'.





Landscape Suppliers

Lifestyle horticulture including turf farms and nurseries are a significant and growing industry in peri urban areas. This growth is largely driven in peri urban areas of rapidly developing regions by their proximity to the growing urban areas where there is a greater demand for these products. There is evidence to suggest that whilst these industries are growing in value, they are becoming increasingly characterised by growing areas under cultivation but with an overall decline in the number of establishments.

Equine Industry

The equine industry has both a strong influence and presence within peri urban areas, largely owing to its proximity to urban centres. In Australia membership of horse riding associations including the Equestrian Federation of Australia and Australian Trail Horse Riders Association has been on the increase. Equine activities may be for economic gain or a recreational pursuit and include the following: breeding; stabling/ training grounds for racing horses; spelling; pony clubs; and horse trail riding. Many entrepreneurs are seeking to capitalise on the increasing interest in the equine industry and are continuing to establish businesses with this focus in the peri urban area.

Pet Industry

Prevalent in peri urban areas are establishments for the care of domestic animals such as catteries, kennels and veterinary clinics. These establishments are suited to the peri urban area because of their locational advantage close to the areas of demand (urban/metropolitan centres). They are not an appropriate urban land use (or rural residential area), as there can be many negative externalities associated with these activities including noise, waste and traffic. Concordantly the peri urban area is a popular choice for entrepreneurs seeking to capitalise on catering for the booming domestic pet market.

TRENDS

With continuing population growth and reduced supply of housing (particularly that classed as affordable), peri-urban areas will continue to experience continued strong demand. Accompanying the population growth is the increasing demand for contemporary urban-oriented commodities and services such as landscaping and gardening supplies, cheaper land and boutique farm products which can satisify the growing demands of the nearby urban/metropolitan population. Increasing constraints as discussed above will continue to place pressure on the rapid growth in peri-urban areas.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.



Change and Continuity in Peri-Urban Australia Fact Sheet: The Strugglers



BACKGROUND

Peri-urban areas in the main were formerly rural areas. Interspersed amongst a wide range of recently arrived land use activities are pockets of commercial and sub-commercial farms, remnants of the former rural landscape. These areas and nearby towns are home to long term residents many of whom have been associated with the former rural landscape for many years, sometimes generations. This group often have to deal with changing land uses, new residents and the challenges of continuing their livelihood amongst continual change and increasing urban encroachment. These people are The Strugglers.

CURRENT CONDITION

Holding On Farmers

The wave of new activities into the peri urban area, by their nature, is putting increasing pressure on existing rural activities, particularly those associated with the agricultural and farming industries. Farmers of broader scale agriculture are coming under increasing pressure as the cost of inputs increases and the value of the product falls, and pressure from developers for their land increases. As these pressures have increased, the ability of these farming uses to expand to allow for continued economic viability, has been constrained by creeping closer settlement.

The continuation of agriculture/ farming is often not compatible with new forms of uses such as rural residential, due to the negative externalities which can result, including noise from equipment, odour and spray drift. Conversely, farmers are confronted with challenges posed by troublesome domestic animals (pets) and straying livestock escaping through damaged fences and open farm gates attributed to the new rural residents. Unwise past development approvals that have allowed rural residential developments to locate close or even adjacent to existing agricultural activities without adequate separation and buffers, has led to conflict between the traditional farming community and the exurban 'new chums'. This is particularly true of animal intensive industries such as feedlots, piggeries and more commonly, poultry farms.

These farmers are generally individuals or families which have existed on the land for generations and have well established land management skills. The loss of these farms to development can often result in poor natural resource management and a number of negative environmental externalities, as the new owners have poor or limited land management skills.

TRENDS

This group is likely to continue to experience a changing landscape accompanied by population growth and the accompanying changes and challenges, such as competing and conflicting land uses. This group may begin to dwindle as individual farm owners succumb to the attraction of lucrative offers for their properties from land developers. Those that remain will be faced with issues of remaining viable as a business (and will probably require assistance) amongst the continuation of the challenging forces of increasing property prices, demands for land and conflicting land uses.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.



Urban Research Program

Fact Sheet: Landscape Management Challenges

Introduction

This fact sheet relates to findings from the investigation into a case study area (CSA) westwards from the City of Ipswich towards the City of Toowoomba. It includes peri-urban districts in the local government areas of Ipswich City and the Shires of Esk, Laidley and Gatton. In a generic sense, these landscape challenges can be expected to confront the management of other peri-urban areas in the SEQ region.

Weed Infestation

There is a high incidence of alien flora in the CSA. The distribution of prevalent species is remaining relatively constant, however the extent of weed infestation is becoming more prevalent within each locality. Weeds becoming extremely common and problematic include mother of millions, groundsel bush and Parthenium (a weed of national significance).

Loss of Biodiversity

There has been a significant loss of habitat within the case study area especially for Endangered, Vulnerable and Rare taxa. Clearing of woody vegetation has occurred in an inconsistent and fragmented manner since 1988 to 2003 mainly for the creation of pastures (to the north-east of Gatton Shire and the north-west of Laidley Shire) and to facilitate settlement and infrastructure. The subdivision and resulting fragmentation of land has resulted in loss of wildlife corridors throughout the CSA. Remnant areas of biodiversity correlate with the remaining wildlife corridors further enhancing the importance of maintaining and protecting such areas. A regionally significant wildlife corridor exists to the east of Laidley township to the north and the southern side of the Warrego Highway in addition to an area to the north of Helidon. A larger corridor rated as being state significant is located to the range to the east of Toowoomba.

Pests Animals

A large number of pests within the case study area are becoming more widespread compared to localised in distribution. Pest animals becoming more widespread include the feral cat, fox and wild dog. Continued peri-urbanisation and the accompanying increase in rural residents, will increase the likelihood of growing numbers of domestic animals escaping to the wild.

Loss of Scenic Amenity

Scenic amenity in the CSA was the highest in more vegetated areas, particularly along ridge lines in the lower Laidley and Gatton Shires and to some extent around Vinegar Hill. Conversely, scenic amenity was the lowest in sections adjacent to the Warrego Highway. The areas of highest scenic amenity correlate with areas of highest biodiversity suggesting even greater protection and management should be sought for these areas. This is particularly pertinent given the ever-increasing loss of biodiversity in the CSA.

Scenic amenity has the potential to be reduced by increasing fragmentation of the landscape through increasing subdivision and urban related development.

Water Quality Decline

The water quality in the CSA and its related catchments has deteriorated over the period 2001 to 2006. Despite some improvement being recorded in stream quality, overall the principal drainage systems in the CSA, the Lockyer and Bremer catchments performed poorly across all indicators such as wellbeing and health of aquatic macro invertebrates, fish species, ecosystem health, nutrients and physical/chemical processes. The Mid Brisbane catchment downstream of the Lockyer Creek catchment performed fairly across all indicators.

The implications for water quality resulting from increasing rural residential developments that rely on on-site sewage disposal have yet to be ascertained.

Changes to Hydrological Regime

The Lockyer Valley has been recognised as a stressed groundwater system where extraction of water has exceeded a sustainable rate. Low to medium flows within waterways has occurred in upstream areas and the stream flow in the middle and lowers sections of the valley have been altered causing ponding in some areas. Permanent loss of stream flow and lowering of the alluvial watertable has been accompanied by losses in aquatic and riparian vegetation.

Impacts to Groundwater Resources

Over extraction of groundwater has resulted in salinity and long term impacts such as failing water table, especially after rain events. Increasing housing densities will reduce infiltration of precipitation into the water table particularly where these developments have been inappropriately sited over groundwater recharge areas. Currently groundwater extraction is largely unregulated.

Bushfire Prevalence

The nature of the CSA, particularly where settlement has extended into densely vegetated areas, makes bushfire risk an issue. The bushfire hazard in the CSA is predominantly low to medium, with a small area classed as high risk on the northern side of the range. The vegetated range is predominantly classed as medium bushfire risk, whilst the lowland valley is largely a low bushfire risk area.

Landscape Management Capacity

The ability of landscape managers (existing and new) in the peri-urban areas to manage the landscape is governed by five indicators including previous experience, skills/experience, resources available, time and willingness. An assessment using these indicators showed that urban newcomers may have capacity in terms of available time to devote to their property given their employment status; however it also suggests that they may not have the knowledge, skills, educational background or surplus resources available to devote to landscape management.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.



Change and Continuity in Peri-Urban Australia

Fact Sheet: Social and Economic Challenges

Introduction

This fact sheet relates to findings from the investigation into a case study area (CSA) westwards from the City of Ipswich towards the City of Toowoomba. It includes peri-urban districts in the local government areas of Ipswich City and the Shires of Esk, Laidley and Gatton. In a generic sense, these social and economic challenges can be expected to confront the management of other peri-urban areas in the SEQ region.

Social Conflicts

Examining the extent of social conflicts between new and long-term residents in the CSA was beyond the scope of this study. However, anecdotal evidence suggests that conflicts do exist (see Fact Sheet: Actors – The Strugglers). The changing nature of land use in the peri-urban CSA from predominantly rural to increasingly urban has the potential to further exacerbate these conflicts.

Social Disadvantage

Levels of social disadvantage in the CSA have declined since 1996. Marked improvements were observed in terms of income and the number of people with vehicles. The following trends were noted:

- improvement in the percentage of early school leavers, meaning people are staying on at school for longer periods;
- the percentage of people with low income has declined especially around Gatton township; and
- minimal public housing is available in the CSA and is generally confined to the town of Laidley and to the south of Gatton.

Some disadvantage remains however, with increases in poorly serviced areas, particularly the more rural areas of the CSA and within SEQ generally.

Increasing Social Divide

The movement of investors and wealthy urbanites into the peri-urban CSA has the potential to displace current residents, especially the low income or disadvantaged. This process could increase the social divide between people who are well-off and those that are not, potentially causing further conflict. This could impact on the availability of services and social infrastructure as well as affordable housing and rental properties.

Loss of 'Sense of Community'

The sense of community demonstrated through long-time residents can be disturbed when changing land uses and new residents move into an area – especially if that process occurs in a rapid and fragmented manner. The transformation of the CSA into an increasingly urban-oriented area has the potential to disrupt the existing community values and workings through the introduction of residents with differing values and beliefs. These changes can disrupt and even alter the existing sense of community inherent in these established communities which ironically may be the very attraction that is drawing many of the former urbanites to these locations.

The high degree of population mobility characterised in many peri-urban communities, (both in and out migration), further complicates the ability to re-establish a sense of community in these emergent periurban settlements.

Skewed Population

The age structure of the population, particularly the characteristics associated with structural ageing, illustrates a population which is ageing in addition to loosing young people. A decline in people aged between (24 and 35 years) has been occurring in the CSA over the period 1981 to 2001. In addition, the percentage of people aged over 55 accounts for a large proportion of the population, while there is also greater numbers of people aged less than 14 years. These figures indicate a skewed population, where there is a greater proportion of youth and older people within the population accompanied by a decrease in the youth population.

Increasing Economic Divide

An increasing divide in terms of economic wellbeing within peri-urban areas may be influenced by the changing nature of land use and traditional enterprises within the area. Alteration of existing conditions in workforce, employment and community services may increase the divide between new and long-time residents.

Emergence of New Local and Regional Economies

The changing nature of the peri-urban CSA has seen the emergence of new land uses, industrial networks and new economies significant for both the local and regional economy. The location of the CSA within a relatively rural area, yet still close to a major metropolitan centre, enables the utilisation of the landscape for boutique farming catering for affluent urbanites. For instance, the transformation of traditional agriculture has seen the rapid appearance of vineyards and wineries in many peri-urban areas. The CSA is becoming utilised for intensive animal husbandry (i.e. kennels and catteries), horse agistment and turf farms and nurseries servicing the local and regional areas.

Intensification of Agriculture

Agriculture in the CSA has intensified from 1991 to 2001, with production increasing despite declining numbers of establishments. Over this time, the area of holding (in hectares) has declined as a proportion of SEQ from 39.8% to 26.4%. The majority of agricultural growth in the CSA occurred from 1991 to 1996 and trends indicate the significance of the CSA to the overall agricultural production of SEQ.

While growth in total area of land holding was experience during the mid 1990's the steady decline is consistent with the intensification of agricultural production in the CSA. Commodities such as lettuce and mushrooms are suited to intensive growing conditions. In the case of lettuce, the number of establishments has declined, yet production showed marked increases. The same trend is seen for commodities such as nurseries and poultry.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

Change and Continuity in Peri-Urban Australia

Fact Sheet: Peri Urbanisation & the South East Queensland Regional Plan

BACKGROUND

Urban Research Program

The South East Queensland Regional Plan 2005-2026, was released in July 2005. It was prepared by the (then) newly formed Office of Urban Management (OUM). As the State's first statutory regional plan, it represented an important milestone for planning in Queensland. The Plan's overall vision is 'a future for SEQ which is sustainable, affordable, prosperous and liveable' (OUM 2005:9). The Plan advocates a regional form characterised by a network of urban communities (activity centres) which are inter-connected by an 'extensive and efficient public transport system' (OUM 2005:9). A major emphasis is placed on reinforcing the subtropical identity of the region and providing for equality and prosperity between urban and rural areas. Also highlighted as part of the vision, is the need for the protection of ecological and culturally significant landscapes and the provision of 'open space and recreational opportunities' (OUM 2005:9).

Local Governments within SEQ have been required to update their planning schemes to reflect the provisions of the Plan, including the 'urban footprint' and 'rural living areas', as well as prepare Local Growth Management Strategies (LGMSs) which guide future growth according to population targets identified in the Regional Plan. This is an important progression from previous regional planning efforts for SEQ, which were often perceived as weak as they were merely advisory. This meant that regional outcomes where not always reflected in Local Government Planning Schemes or development decisions. Concordantly the Integrated Planning Act 1997 was amended to reflect these new statutory requirements.

KEY ELEMENTS OF THE PLAN

Urban Footprint (Regional Outcome 8)

One of the main strategies presented by the SEQ Regional Plan is an 'urban footprint' which confines urban development to particular areas, and protects the regional landscape and rural production areas beyond the urban growth boundary of the 'urban footprint'. The 'urban footprint' is designed to accommodate the existing and future population (additional 1 million to 2026) at a modest average density of 15 dwelling per hectare. The Plan also identifies 'rural living areas' where rural residential development is to be accommodated in the region. These areas are centred on existing concentrations of rural residential development.

Protection of Regional Landscape and Rural Production Values (Regional Outcome 3)

The regional landscape reflects many interests and values including agriculture, outdoor recreation, cultural heritage, scenic amenity, open space and environmental conservation. Identified in the Regional Plan are policies which aim to 'enhance the environmental, economic, cultural and lifestyle benefits' related to the Regional Landscape and Rural Production area (OUM 2005). Policies address issues such as the preservation of scenic amenity through options such as landscape corridors, greater recognition of indigenous heritage, the provision of places for outdoor recreation as well as open space networks.

In relation to rural production values, the Regional Plan also places an emphasis on the protection of, and sustainable use of, regional natural resource and rural production areas. The Plan's statutory provisions include a '100 ha minimum subdivision size' regulation that is applicable over the Regional Landscape and Rural Production area.

Rural Futures (Regional Outcome 5)

The Regional Plan acknowledges that emphasis needs to be given to the long term viability of rural communities, rather than focusing solely on urban growth. In particular it acknowledges the economic value the rural production areas have for Queensland and therefore the Plan seeks to maximise the well being of rural communities and address locational disadvantage by:

- providing improved services, facilities and infrastructure;
- ensuring the continual population growth of rural towns and villages;
- 'maintaining viable farm sizes'; and
- protecting good quality agricultural land from encroaching incompatible land uses. (OUM 2005: 47)

Western Corridor (Regional Outcome 8)

The regional plan makes a major commitment towards facilitating future urban growth along the corridor radiating west from Brisbane. This 'western' corridor was selected as it is considered to have 'significant areas of available land' and that growth in this area may reduce the demand on coastal areas for development (OUM 2005:12). This will have implications for the existing peri-urban areas associated with this corridor.

ASSOCIATED INITIATIVES

A significant regional planning initiative has been the introduction of an annual Infrastructure Plan for the region to accompanying the Regional Plan. The South East Queensland Infrastructure Plan and Program outlines the State Government's infrastructure priorities that are required to support the regional Plan (Queensland Government, 2005).

IMPLICATIONS FOR THE PERI URBANISATION PROCESS (LAND)

- 1. Future urban growth must be contained within the Urban Footprint.
- 2. Rural residential must be confined to the Plan's nominated Rural Living Areas.
- 3. Land located as part of Regional Landscape and Rural Production Areas will generally not be permitted to be subdivided below 100 hectares.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Office of Urban Management 2005, South East Queensland Regional Plan 2005-2026, Queensland Government.

Queensland Government 2005, South East Queensland Infrastructure Plan and Program 2005-2026, Office of Urban Management, Queensland Department of Local Government, Planning, Sports and Recreation, Brisbane.



Fact Sheet: Peri Urbanisation & Melbourne 2030

BACKGROUND

Griffith

Urban Research Program

Melbourne 2030 is a policy document which provides strategic direction for the development of the Melbourne metropolitan area and surrounding regions in a sustainable manner. Given the 30 year life of the plan, it seeks to be adaptable to changing circumstances. Its vision statement is as follows:

'In the next 30 years, Melbourne will grow by up to one million people and will consolidate its reputation as one of the most liveable, attractive and prosperous areas in the world for residents, business and visitors.' (Department of Infrastructure 2002)

The large majority of strategies supporting this vision deal primarily with urban growth within the urban footprint. However, the plan also places a large emphasis on improving physical, social and economic linkages with regional cities and furthermore the preservation of the green linkages between urban areas (the peri-urban area).

KEY ELEMENTS OF THE PLAN

Urban Growth Boundary and Compact Urban Development

The Melbourne 2030 plan stipulates an urban growth boundary which places limits on further growth beyond the metropolitan fringe.

Development is to be achieved by:

- Attempting to confine outer urban development to urban corridors delineated by a boundary; and
- Shifting the proportion of residential growth from the outer corridors to mixed use activity centres in the established metropolitan area linked by public transport. The proportion of outer urban growth in projected to be reduced from the current 38% to 31% and in activity centres from the current 28% to 41%.

Green Wedges

The Melbourne 2030 Plan identifies a series of 12 green wedges radiating from the urban growth boundary of metropolitan Melbourne. These green wedges accommodate a variety of non residential functions such as agricultural and recreational uses, as well as major infrastructure assets including waste/ sanitation works, and airports. They also include a number of existing small communities.

A series of initiatives are provided to protect green wedges and prevent them from becoming subdivided for urban or rural living development. These include amending local government planning schemes to 'secure the protection of metropolitan green wedges'; ensuring urban development is consolidated in existing residential areas; and legislating for the protection of areas of 'high environmental and scenic value'. Specifically, further urban growth around the small communities that are present within the green wedges is to be restricted. If urban development is to occur, the Plan states that it should be achieved through intensification and not have any adverse effect on the core non-urban activities undertaken within the green wedges. In particular, it was identified that development should not be permitted along flight paths.

Land use activities which support urban uses such as agriculture and the extraction of mineral resources, are to be protected as the products of these activities have high economic and social values for the metropolitan region. This can be in terms of food supply as well as mineral resources for infrastructure and development.

Networks with Regional Cities

A core component of the Melbourne 2030 document is the idea of 'networked cities', where linkages are created between metropolitan Melbourne and surrounding regional cities to develop a strong regional economy and provide access to a greater range of places to live and work. A stronger and more interdependent economic region will provide greater leverage to compete on national and

international markets. This is to be achieved in part through enhanced transport linkages (particularly road and rail) and greater communication networks with regional cities. Regional areas the focus of this growth include towns along key transport corridors that connect with metropolitan Melbourne

including townships in the Latrobe Valley and Ballarat, Bendigo, and Geelong. To protect the inherent character of a number of small towns within the peri-urban area, further urban development or consolidation will not be encouraged.

Whilst urban growth is to be promoted in regional towns and centres through processes such as consolidation, growth is to be limited in non urban areas. The Plan states the following:

'Rural areas will be protected and safeguarded for a range of rural uses and developments, with preference in planning and development outside urban areas going to agriculture, conservation, natural resource-based uses, transport services and tourism, and with protection for important water catchments' (Department of Infrastructure 2002).

Specifically, rural living development is not a preferred land use and to limit its consumption of the rural landscape the plan identifies that more 'stringent development standards' are required. To support this, the Plan identifies that existing small lots should be amalgamated, and if rural living development is to occur, it should limit natural and environmental resource impacts, and not compromise agricultural or other resource based activities. As part of the State Governments responsibility to promote and cater for water reuse, land suitable for the storage of treated water is to be protected from encroaching urban land uses. Furthermore priority is to be given to the protection places of indigenous and non-indigenous heritage from incompatible development and areas of landscape significance.

Environmental Sustainability

Achieving reductions in resource use and waste generation is a key direction of Melbourne 2030. This is considered important for the creation of a more environmentally sustainable path, recognising the need for more measures to be taken to reduce human impact on local, regional and global ecosystems. Specific issues targeted include greenhouse emissions, loss of native flora and fauna, and deterioration of ecosystem health. These are to be addressed through improved environmental management.

IMPLICATIONS FOR THE PERI URBANISATION PROCESS (LAND)

- 1. Future urban growth is to be confined within the urban growth boundary.
- 2. Urban growth is to be achieved through consolidation and land use intensification, (including towns and villages within the green wedges).
- 3. Urban growth should only be permitted where it can be supported by high capacity public transport.

Note: This fact sheet has been prepared specifically for the purposes of scenario planning, a part of the 'Continuity and Change in Peri-Urban Australia' project.

References:

Department of Infrastructure (2002) Melbourne 2030 - Planning for Sustainable Growth, State of Victoria.

Appendix B

Scenario Planning Workshop Outline

No	Scenario Planning Workshop Tasks	Input
1	Reconfirm Focal Question & time frame for consideration	From PRG decision
2	Identify factors that brought about peri-urban changes in the region in the past	Monographs 2 or 3Fact Sheets
3	Identify factors that could bring about peri-urban change or influence existing peri-urban areas in the region in the future	 Fact Sheets Road maps Participants' imagination, experience and judgement
4	From 3, separate into: (i) pre determined (ii) what is relatively certain (iii) what is uncertain	
5	 Create two scenarios (plausible, coherent pictures/ descriptions of possible futures), namely: "Rapid Decline of Agriculture"; and "Revival of Agriculture" Explore range of ways in which uncertainties could be played out. For each scenario consider: Likely trends Uncertainties Possible shocks & surprises 	 Fact Sheets Futures 'spider-web' Participants' imagination, experience and judgement
6	Develop narratives from PRESENT to possible FUTURES Develop as "Roadmaps" and "sign posts" (indicators of possible futures being realised such as events, occurrences or observations that can be scanned from the real world) Create a "Decision Track" for each scenario (ie log deliberations and discussions during the scenario construction)	• Participants' imagination, experience and judgement
7	Use scenarios to test existing Regional Planning strategies and policies ('wind tunnel' or 'test bed' approach)	 SEQ Regional Plan 2005-2026 (Melbourne 2030 Plan) Regional NRM Plan/s
8	Identify what needs to be done now to prepare for the future and avoid or minimise unwelcome surprises and shocks later (consider in terms of revisions to existing policies and key messages to engage stakeholders and to initiate dialogue)	

The agenda for the workshop is shown at Annex 1.

Annex 1

Scenario Workshop Program

No	Timings	Activity	Comments
1	0830 - 0900	Welcome, Introductions and explanation of the workshop	Coffee/tea on arrival
2	0900 - 1030	Scenario 1 development (including outline narratives, roadmaps and signposts)	"Rapid decline of Agriculture"
3	1030 - 1100	Morning tea	
4	1100 - 1230	Scenario 2 development (including outline narratives, roadmaps and signposts)	"Revival of Agriculture"
5	1230 - 1315	Lunch	
6	1315 - 1345	Scenario discussion and refinement	
7	1345 – 1445	Test existing strategies plans and policies against Scenario 1	Use Regional Plans (supporting Plans) and NRM Plan/s
8	1445 - 1500	Afternoon tea	
9	1500 - 1600	Test existing strategies plans and policies against Scenario 2	Use Regional Plans (supporting Plans) and NRM Plan/s
10	1600 - 1630	Workshop wrap-up and concluding comments	Identification of implication of workshop revelations and outcomes.

Appendix C

Scenario Planning Workshop Participants – SEQ Region

Name	Position/Organisation
Ian Schimdt	Director, Landscape Planning & Executive Services, Office
	of Urban Management
Steve MacDonald	Director, Regional Landscape & Open Space, Office of
	Urban Management
Mick Capelin	Director, Rural Futures, Office of Urban Management
Simon Warner	CEO, SEQ Catchments
Steve Greenwood	Manager Planning & Environment, Local Government
	Association Queensland
Malcolm Petrie	NRM Coordinator, Local Government Association
	Queensland
John Cherry	CEO, Queensland Farmers Federation
Brendan Gleeson	Professor, Director Urban Research Program, Griffith
	University
Neil Sipe	Senior Lecturer, Urban Research Program, Griffith
	University
Jago Dodson	Senior Research Fellow, Urban Research Program, Griffith
	University
Cassara Sutherland	Senior Research Assistant, Urban Research Program,
	Griffith University
Darryl Low Choy	Associate Professor, Urban Research Program, Griffith
	University

Scenario Planning Workshop Participants – greater Melbourne region

Name	Position/Organisation
Andrew Cockerall	Senior Strategic Planner, City of Greater Bendigo
Aaron Gay	NRM Manager (Sustainable Landscapes), North Central
	Catchment Management Authority
Peter Parbery	Social Research Officer (Practice Change Research),
	Catchment and Agriculture Services, Department of Primary
	Industries
Jim Crosthwaite	Biodiversity and Ecosystem Services Division, Department
	of Sustainability and Environment
Mick Lumb	(former) Chair, Port Phillip and Westernport Catchment
	Management Authority
Danny O'Neill	Consultant, Chandris Pty. Ltd
Shane Scanlon	Local Government Programs Coordinator, Port Phillip and
	Westernport Catchment Management Authority

Trevor Budge	Senior Lecturer, Faculty of Humanities and Social Sciences,
	La Trobe University
Andrew Butt	Lecturer, Faculty of Humanities and Social Sciences, La
	Trobe University
Dave Mercer	Associate Professor, School of Global Studies, Social
	Science and Planning, RMIT University
George Tieman	Senior Researcher, School of Global Studies, Social Science
	and Planning, RMIT University
Michael Buxton	Associate Professor, School of Global Studies, Social
	Science and Planning, RMIT University
Cassara Sutherland	Senior Research Assistant, Urban Research Program,
	Griffith University
Darryl Low Choy	Associate Professor, Urban Research Program, Griffith
	University



Urban Research Program Griffith University Brisbane, QLD 4111 www.griffith.edu.au/urp