Demographic Change in Australia's Rural Landscapes

Implications for Society and the Environment

Edited by
Gary W. Luck, Digby Race
and Rosemary Black

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Volume 12

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Volume 12

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Editors

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Editors
Assoc. Prof. Gary W. Luck
Charles Sturt University
Inst. Land, Water & Society (ILWS)
Albury New South Wales 2640
Australia
galuck@csu.edu.au

Dr. Digby Race
Charles Sturt University
Inst. Land, Water & Society (ILWS)
Albury New South Wales
Australia

Dr. Rosemary Black
Charles Sturt University
Inst. Land, Water & Society (ILWS)
Albury New South Wales
Australia

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Cover image: The township of Mt Beauty at the foot of the Victorian Alps in north-east Victoria, Australia. Mt Beauty is noted as a 'tree-change' destination and is rich in natural amenities.

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Foreword by the Series Editors

With the Springer Landscape Series we want to provide a much-needed forum for dealing with the complexity of landscape types that occur, and are studied, globally. It is crucial that the series highlights the richness of global landscape diversity – both in the landscapes themselves and in the approaches used in their study. Moreover, while the multiplicity of relevant academic disciplines and approaches is characteristic of landscape research, we also aim to provide a place where the synthesis and integration of different knowledge cultures is common practice.

Understanding demographic change in rural landscapes is the key to sustainable rural management and biodiversity conservation. Frequently only observed as a side-effect, this volume of the Landscape Series, *Demographic Change in Australia's Rural Landscapes,* puts demographic change in the centre of rural development. The particular value lies in the fact that the contributing authors all make a link between demographic change and landscape change, thus providing valuable knowledge for landscape planners, conservationists, demographers, and ecologists as well as for policy makers. Volume editor Assoc. Prof. Gary Luck, has managed to bring together authors from a wide range of different fields and from multiple continents for a truly interdisciplinary overview on the subject. The many different perspectives make the book a valuable source for everybody interested in rural change. The volume covers aspects as broad as amenity-led migration, motivations of rural settlers, ecosystem-service values of rural properties, effects of planning on rural change, biodiversity conservation by farming families, attitudes of women to stay or leave rural areas, challenges for rural health care, and rural teaching. This book leaves no stone unturned regarding demographic change in rural areas.

Munich and Toulouse
January 2010

Bärbel Tress
Gunther Tress
Henri Décamps

Preface

The distribution and re-distribution of people across the landscape has significant implications for ecological, economic and social dynamics. Movement of people to urban centres (mostly from rural landscapes, especially in the developing world) is a major global phenomenon. This can result in the de-population of rural landscapes. Conversely, population growth and a changing demographic profile have been identified for particular rural landscapes with notable examples from North America, Europe and Australia. Yet we know little of the factors that drive demographic changes in rural landscapes and even less about the implications of these changes. This book examines broad and local-scale patterns of demographic change in rural landscapes, identifies some of the drivers of these changes using Australian case studies or comparisons between Australian and international contexts, and outlines the implications of changes for society and the environment.

This book makes a valuable contribution to the literature because it adopts an integrated and interdisciplinary approach by explicitly linking demographic change with environmental, land-use, social and economic factors. This integrated approach was achieved by encouraging interaction among authors writing on similar topics to ensure coherency and complementarity among chapters, and cross-pollination of ideas and perspectives. Chapters are presented as interactive and reflective discussions that address the findings of other contributors; yet, each chapter contains enough background to stand alone as a unique contribution. This allows readers to focus on those chapters of most interest or read the entire book without unnecessary repetition. While we believe that the book's findings will have greater relevance to issues in the developed world, many of the authors have placed their work in an international context to broaden the appeal and applicability of their contribution. Owing to the interdisciplinary nature of the book we believe it will be of particular interest to demographers, geographers, ecologists, landscape planners, rural policy analysts and policy makers, sociologists, and regional planners and managers, and will encourage further discussion, debate and research of this important topic.

Chapter 1 is an introductory chapter that sets the scene for the rest of the book by presenting an overview and analysis of demographic change across the world's rural landscapes and identifies the predominant trends and implications in different regions, focusing particularly on Australia. The broad-scale drivers of patterns are identified along with the main implications of demographic changes for the

management of rural landscapes. Chapters 2, 3 and 4 tackle the issue of amenity-led migration to rural landscapes in Australia. Chapter 2 critically investigates the relationships among rural amenity, in-migration and local demographic and socio-economic change across nearly 500 social catchments in four Australian states. After exploring the correlations between amenity and in-migration, the chapter examines the demographic and socio-economic profiles of communities in high and low-amenity regions, exploring whether or not they are being transformed by in-migration. Chapter 3 takes us to Far North Queensland to explore the potential long-term social, economic and environmental effects of the sea- and tree-change phenomena. It discusses how current policies and legislation aim to mitigate the potential long-term impacts of these phenomena, and concludes with some practical recommendations for policy-makers and planners on how to protect the character of highly valued landscapes. The findings of a qualitative study on tree changers is presented in Chapter 4, which identifies some of the reasons, motivations and attractions that entice metropolitan residents to rural and inland New South Wales. Understanding the perspectives and motivations of rural settlers will greatly improve the planning and management of rural landscapes.

Chapters 5, 6, 7, 8 and 9 approach the theme of demographic change from the perspective of rural land management and planning. Chapter 5 tackles some of the challenges and opportunities for biodiversity conservation in Australia's rural environments as a result of demographic change. It suggests that maximising biodiversity gains in Australia's 'new bush' requires greater emphasis on acknowledging the biodiversity and ecosystem-service values of rural properties, strengthening partnerships between rural and urban Australia, and setting clear and measurable objectives reflecting desirable conservation and production outcomes. The following chapter (6) presents an innovative case study of the management of farmland in Barcelona's rural-urban fringe that documents important management strategies for building rural-urban links while protecting rural values. The lessons from this case study are then applied to an emerging region on Perth's rural-urban fringe. Chapter 7 provides a synthesis of trends in property ownership turnover across Australia and the United States, explicitly comparing the results between these countries. It utilises relevant theoretical frameworks focusing in particular on the transformation to a multi-functional countryside. Research findings demonstrate that new landholders are significantly different from longer-term landholders, are often less reliant on agriculture, maintain strong conservation values, and have off-farm sources of income to invest on-property. This discussion is followed by Chapter 8 that examines the role of planning in managing the impacts of demographic change in rural areas. Drawing on the Australian and international literature and specific case studies, the chapter demonstrates that planning can encourage or restrict demographic change. The design and implementation of planning schemes and instruments are highlighted as mechanisms for achieving a balance of appropriate land uses. Chapter 9 explores changes in the social values underpinning agricultural land use, together with the impacts of these trends on economic wood supply zones for plantations in south eastern Australia. It highlights the key issues of community expectations of planted forests and what forestry needs to do to meet

changing community values. The findings are used to predict the impact of trends identified for the achievement of key government policies and programs, including the national strategy for the expansion of planted forests.

The final collection of chapters (10–15) assesses the implications of demographic change for the management and sustainability of rural communities. Chapter 10 investigates why farming families decide to maintain native biodiversity on their farms and the implications of demographic change for conservation policies. Decision-system theory (DST) is used to help clarify the processes farming families use in making strategic decisions with long term outcomes and its relevance to native biodiversity conservation. The chapter discusses how governments can use DST to develop new approaches for encouraging the maintenance of biodiversity in rural areas that harmonise with likely future demographic changes. Chapter 11 presents an interesting discussion on the relationship between immigrants and place in the context of rural and regional Australia. It links the built environment and immigration in rural Australia and explores the potential role of sites built by rural ethnic minorities in facilitating intra-group and inter-group social encounter, trust and networks. Chapter 12 explores the attitudes of two generations of women with a farming background towards the sustainability of family farms. Using a qualitative research approach, this chapter looks at the issues of farm sustainability from a sociological point of view and focuses on generational differences in attitudes of women regarding motives for staying or leaving the farm, their professional aspirations, and their expectations regarding the Australian family farm. Chapter 13 describes and analyses the implications of demographic change in inland regions of Australia on health care services for Aboriginal and non-Aboriginal communities. The different health care needs of these diverse groups create a complex set of challenges for health systems. The chapter gives both a national and state level analysis of these trends with detailed case studies and considers a number of policy responses to providing health services for small, rural communities. Chapter 14 focuses on the recruitment of experienced teachers as one of the major challenges facing rural schools. Using the case of teachers in New South Wales who are tree-changers, the chapter identifies the reasons why teachers choose to relocate to a rural place, the adjustment processes they used and the community integration strategies that assisted their inclusion. The chapter concludes with a discussion of systemic staffing policies and practices and makes some recommendations that capitalise on the real staffing potential of actively recruiting experienced teachers, wishing to make a tree-change, for rural and remote schools. Chapter 15 discusses the population changes that are occurring in regional and remote Western Australia focusing in particular on the impact of the mining boom and the opportunities and challenges this presents. The chapter reviews how communities, companies and government are managing the escalation in population in some mining or dormitory locations, and assesses the long term sustainability of strategies such as a fly-in-fly-out labour force, and the impacts these have on local rural communities located near mining operations.

The final chapter (16) synthesises the main findings from previous chapters to highlight the key issues related to demographic change in rural Australia. It focuses

on the two major patterns of population growth and population decline in rural landscapes, and also explores the complexities underlying these general patterns. The chapter concludes with a list of ten key areas where future attention should be placed to ensure we have the most crucial information needed to guide the development of healthy and vibrant communities in sustainable rural landscapes.

Albury, Australia

Gary W. Luck
Digby Race
Rosemary Black

Contents

Contributors

Neil Argent Division of Geography and Planning, University of New England, Armidale, NSW, Australia, nargent@une.edu.au

Rosemary Black Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, rblack@csu.edu.au

Iris C. Bohnet CSIRO Sustainable Ecosystems, Cairns, QLD, Australia, Iris.Bohnet@csiro.au

Colin Boylan Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, cboylan@csu.edu.au

Jock Collins School of Finance and Economics, University of Technology, Sydney, NSW, Australia, Jock.Collins@uts.edu.au

Allan Curtis Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, acurtis@csu.edu.au

Quentin Farmar-Bowers Faculty of Law and Management, Centre for Sustainable Regional Communities, La Trobe University, Bendigo, VIC, Australia, q.farmer-bowers@latrobe.edu.au

Hannah Gosnell Department of Geosciences, Oregon State University, Oregon, OR, USA, gosnellh@geo.oregonstate.edu

Fiona Haslam McKenzie Housing and Urban Research Institute of Western Australia, Curtin University of Technology, Perth, WA, Australia, f.mckenzie@curtin.edu.au

John Holmes Department of Geographical Sciences and Planning, University of Queensland, Brisbane, QLD, Australia, j.holmes@uq.edu.au

Roy Jones Curtin Sustainable Tourism Centre, Curtin University of Technology, Perth, WA, Australia, r.jones@curtin.edu.au

Kirrily Jordan School of Finance and Economics, University of Technology, Sydney, NSW, Australia, Kirrily.Jordan@student.uts.edu.au

Branka Krivokapic-Skoko Institute for Land, Water and Society, Charles Sturt University, Wagga Wagga, NSW, Australia, bkrivokapic@csu.edu.au

Ann Larson Combined Universities Centre for Rural Health, The University of Western Australia, Geraldton, WA, Australia, ann.larson@cucrh.uwa.edu.au

Gary W. Luck Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, galuck@csu.edu.au

Emily Mendham Science into Society Group, CSIRO, Kenmore, QLD, Australia; Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, emily.mendham@csiro.au

Joanne Millar Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, jmillar@csu.edu.au

Nicky Moore Centre for Tropical Urban and Regional Planning, James Cook University, Cairns, QLD, Australia, nicky.moore@jcu.edu.au

Ingrid Muenstermann School of Humanities and Social Sciences, Charles Sturt University, Wagga Wagga, NSW, Australia, imuenstermann@csu.edu.au

Valerià Paül Departamento de Xeografía, Universidade de Santiago de Compostela, Santiago de Compostela, Galicia, Spain, v.paul.carril@usc.es

Digby Race Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, drace@csu.edu.au

Angela T. Ragusa Institute for Land, Water and Society, Charles Sturt University, Wagga Wagga, NSW, Australia, aragusa@csu.edu.au

Hugh T.L. Stewart Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia, htlstewart@gmail.com

Matthew Tonts School of Earth and Geographical Sciences, University of Western Australia, Perth, WA, Australia, mtonts@cyllene.uwa.edu.au

About the Authors

Neil Argent is Associate Professor in Geography in the Division of Geography and Planning at the University of New England, Armidale, New South Wales, Australia. Prior to joining the Division in 1996, Neil worked as a self-employed grazier and shearer in South Australia. He has stayed somewhat true to these roots in his academic labour, researching and teaching in the fields of regional development and rural social, economic and demographic change. He is currently working on three closely related projects: the degree of economic and social interactions between farming units and their local towns and communities; the drivers of amenity-led in-migration into rural communities and its impacts on local socio-economic composition and planning systems; and the causes of rural youth out-migration and the potential for return migration amongst this cohort.

Rosemary Black is a Senior Lecturer in the Institute for Land, Water and Society at Charles Sturt University. Her research interests include environmental communication, ecotourism, sustainable behaviours and evaluation. She has published over 30 refereed journal articles and book chapters and edited two books. Rosemary has collaborated with industry partners on a number of applied research projects.

Iris Bohnet is a Research Scientist with CSIRO Sustainable Ecosystems and an Adjunct Lecturer in the School of Earth and Environmental Sciences at James Cook University. Her research interests include interactions between ecological and social processes in landscapes, participatory approaches to improve landscape planning and adaptive management, and integrated landscape assessments. She has worked on a number of transdisciplinary research projects in the Great Barrier Reef region with hydrologists, ecologists, agronomists, economists, sociologists and other regional stakeholders.

Colin Boylan is a Senior Lecturer in the Faculty of Education at Charles Sturt University where his major teaching and researching interests are in rural education, its provision by creative and alternate delivery systems, the recruitment and retention of teachers to rural schools, and the provision of accessible professional development. He is a Life Member of the national Australian organisation, The Society for the Provision of Education in Rural Australia.

Valerià Paül Carril is a Post-doctoral Fellow at the University of Santiago de Compostela, Galicia (Spain), where he teaches in geography and tourism. He has researched in urban and regional planning, natural parks, peri-urban agriculture, tourism, and rural and cultural landscapes. He has over 40 publications, both nationally and internationally, including refereed articles, book chapters, conference proceedings, and general articles. He has undertaken work for local and regional councils, and contributed to official research projects funded by the Spanish, the Galician or the Catalan governments, mainly on rural issues.

Jock Collins is a Professor of Economics and Co-Director of the Cosmopolitan Civil Societies Research Centre at the University of Technology, Sydney. He is the author or co-author of nine books, over 60 articles in international and national academic journals and numerous book chapters. His work has been translated into French, German, Japanese, Arabic, Dutch, Chinese, Swedish, Turkish, Italian and Portuguese.

Allan Curtis holds a strategic research chair as the Professor of Integrated Environmental Management at Charles Sturt University. His research examines the social dimensions of regional natural resource management. He has specific expertise in the role of local organisations in rural development, understanding rural landholder adoption of conservation practices, the policy and institutional arrangements supporting watershed management and in the evaluation of natural resource management programs.

Quentin Farmar-Bowers is a Post-doctoral Research Fellow at the Centre for Sustainable Regional Communities, La Trobe University, Bendigo. He has a background in environmental issues associated with agriculture, public land use, fisheries, water resource management and road transportation. Most of his work experience has been in the public and parliamentary services in Victoria, Australia but he spent 10 years as an environmental consultant. His research interests concern sustainable development ideas and environmental issues. In the last few years he has been interested in how people make strategic decisions and its relevance to policy in natural resource management and sustainable development.

Hannah Gosnell is Assistant Professor of Geography in the Geosciences Department at Oregon State University, where she is affiliated with the Rural Studies Program and the Water Resources Graduate Program. Her research interests include agricultural landscape change, rural sustainability, and environmental governance in the American West; and the ways in which laws and institutions might evolve to better reflect changing geographies.

John Holmes is in active retirement, with an ongoing interest in monitoring the transition towards multifunctionality in the evaluation and use of rural landscapes, with an emphasis on the emergence of consumption and protection values, contesting the former hegemony of production values. He is interested in observing divergent regional trajectories, associated with the transition.

Roy Jones is Professor of Geography, Dean, Research and Graduate Studies in the Faculty of Humanities and Co-Director of the Sustainable Tourism Centre at Curtin University of Technology, where he has worked since 1970. He is an historical geographer with research interests in sustainability and heritage issues. He has been Human Geography Editor of 'Geographical Research: Journal of the Institute of Australian Geographers' since 2000.

Kirrily Jordan recently completed a PhD at the University of Technology, Sydney that examined ethnic diversity and cultural heritage in Australia's cities and rural areas. She is currently a Post-doctoral Fellow at the Centre for Aboriginal Economic Policy Research at the Australian National University.

Branka Krivokapic-Skoko is a Senior Lecturer in Management in the Institute for Land, Water and Society at Charles Sturt University. She did a PhD at Lincoln University, New Zealand based on her research on ethnic entrepreneurship in New Zealand agriculture. During the last few years her research has focused on ethnic diversity in rural and regional Australia.

Ann Larson was the inaugural director of the Combined Universities Centre for Rural Health in Western Australia. She is a demographer specialising in public health, and her research interests include the causes and consequences of health inequalities and the effectiveness of health systems. She has worked in many Asian and Pacific Island countries as well as with rural and Indigenous Australia.

Gary Luck is an Associate Professor in Ecology and Environmental Management in the Institute for Land, Water and Society at Charles Sturt University and currently holds an Australian Research Council Future Fellowship. His research interests include biodiversity conservation in human-dominated landscapes, the relationships between human behaviour and conservation, and ecosystem services. He has worked on a number of interdisciplinary projects with economists, psychologists and sociologists.

Fiona Haslam Mckenzie is a Professorial Research Fellow at Curtin University, Western Australia. She has extensive experience in population and socio-economic change, regional economic development and analysis of regional and urban social indicators. She has published widely and undertaken work for the corporate and small business sectors both nationally and in Western Australia, as well as conducting work for all three tiers of government. Fiona is the Director of the Housing and Urban Research Institute of Western Australia and the Director of Research at the John Curtin Institute of Public Policy at Curtin University.

Emily Mendham is a Post-Doctoral Fellow in social science with the Science into Society Group at CSIRO, Queensland, and associate member of the Institute of Land, Water and Society at Charles Sturt University. Her research interests include the environmental and social implications of changing rural landscapes, behaviour change, and the ability of primary industries, rural areas and individuals to adapt to the impacts of climate change.

Joanne Millar is a social scientist with expertise in action research for natural resource management, agriculture, rural development and conservation management. Her research focuses on understanding landholders, farming families and community engagement processes in order to improve rural livelihoods and environmental management.

Nicky Moore is a Lecturer in the Centre for Tropical Urban and Regional Planning at James Cook University. An ecologist by training, she has worked extensively in local government addressing urban interface issues in Victoria, NSW and Queensland. Her research interests include the impacts of urbanisation and changing land use on rural and protected estate areas.

Ingrid Muenstermann is a Lecturer in Sociology at Charles Sturt University, Wagga Wagga. Her research interests are broad and include the Australian family farm, cross-boundary farming, Australian multiculturalism, migrant settlement, the sociology of health and health care, and mental illness. Previously, Ingrid has worked on projects with a historian and a social worker, and she is currently trying to establish links with academics from the health sciences in order to research aspects of the Smith-Magenis-Syndrome.

Digby Race is a Senior Research Fellow in the Institute for Land, Water and Society, Charles Sturt University, and is involved in several large research projects exploring the socio-economic challenges and opportunities of change in the agricultural and forestry sectors, and change amongst rural communities more generally. Digby has worked with a number of research partners over the past two decades to explore the socio-economic and policy implications of different approaches to environmental management for regional communities, both in Australia and in Asia-Pacific countries.

Angela Ragusa lectures in sociology and is a member of the Institute for Land, Water and Society at Charles Sturt University, Australia. She obtained a PhD and MS in Sociology and MS in Science and Technology Studies from Virginia Tech and a BA (Hons) in Psychology from St. Francis College in Brooklyn, NY. Angela is Editor-in-Chief of the journal *Rural Society*, and an Editorial Board member for *Information Resources and Management Journal*, *Open Sociology Journal* and *Open Communication Journal*. With over 25 refereed publications on media and communication technologies, socio-demographic change, environmental issues and social inequality, Angela is currently researching tree changers, domestic violence and drinking water in rural Australia.

Hugh Stewart is a researcher in the Institute for Land, Water and Society at Charles Sturt University. His research interests are the socio-economic dimensions of planted forests in the changing landscapes of south east Australia, which he has investigated as a doctoral candidate during 2005–2009. Prior to this research, he worked in the public and private forestry sector in Australia and internationally.

Matthew Tonts is Professorial Fellow in the School of Earth and Environment at the University of Western Australia. His main research interests are in the field of rural geography, where he has worked on topics related to economic and social restructuring, demographic change, service provision, and policy and planning.

Chapter 1
Patterns, Drivers and Implications of Demographic Change in Rural Landscapes

Digby Race, Gary W. Luck, and Rosemary Black

Digby Race

D. Race (✉)
Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia
e-mail: drace@csu.edu.au

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Abstract The movement of people to reside in new locations – a key aspect of demographic change – is a phenomenon Australia shares with the rest of the world. While most of Australia's population lives in an urban environment, the dimensions of demographic change are more complex than a steady leakage of rural people to the cities. There is a simultaneous migration of rural people to other rural and regional areas, and urban people to new coastal, rural and regional areas to fulfil the apparent opportunities of a better life. In many respects, the appeal and limitation of rural areas is temporally, socially and spatially specific. This chapter provides an overview of the principal patterns, drivers and implications of demographic change for rural communities and landscapes. While drawing on international experiences, this chapter is framed by the Australian context and outlines the more substantive discussion that follows in subsequent chapters.

Keywords Population growth · Population decline · Rural populations · Population dynamics · Landscape change · Rural landscapes

Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
CSIRO	Commonwealth Scientific and Industrial Research Organisation
LGA	Local Government Area
NRM	Natural Resource Management
NIPF	Non-industrial Private Forests

1.1 Introduction

Demography is the study of human population characteristics, such as population size, composition and change. Change in populations can result from various factors including varying birth and mortality rates, and immigration and emigration. The emphasis of this chapter, and book, is on demographic change associated with the movement of people to a new place of residence. In particular, we focus on movements to and from rural landscapes and the implications of these movements for rural land management.

The movement of people across landscapes has occurred throughout millennia, variously with individuals, families and whole communities moving to more 'liveable' locations for better employment, farming and food supplies, and climate and safety. In the twentieth century, the dominant global trend was the movement of a substantial number of rural people toward larger settlements for better employment, education and social opportunities, contributing to the growth of regional towns and cities. Indeed, in 2008, for the first time in human history, the majority of the world's population lived in urban rather than rural environments, reflecting a profound shift away from humanity's rural roots (United Nations 2008).

Movement to urban areas is driven in part by the appeal of greater opportunities, but also by the hardships faced by many living in a rural setting – often analysed according to 'pull' and 'push' factors. Market volatility and decline, landscape threats (e.g., wildfire or declining soil fertility), long-term droughts and associated water restrictions, increased mechanisation and the corresponding decline in demand for farm labour, and loss of community services have combined to cause a substantial negative impact on the capacity and desire of farmers and others to sustain a viable living from traditional agriculture. This has led to the decline of many rural communities, a phenomenon that Australia shares with much of the world. While recognising the value of reviewing international experiences of demographic change, caution also needs to be applied as not all experiences and interpretations translate directly to the Australian phenomenon.

Also, demographic change is more diverse and complex than simply rural people leaving for the 'bright lights' of major cities (McManus and Pritchard 2000). While increasing urbanisation is the dominant trend in most nations (particularly developing countries), in certain economically developed, already heavily urbanised regions (e.g., Australia, western Europe and North America), people are also moving away from urbanised settlements to rural landscapes, a trend often described as 'counterurbanisation' (Mitchell 2004). This movement appears to be driven by a search for better or different lifestyle opportunities that are apparent outside urban areas. These opportunities are often linked to a slowing in the 'pace of life', which is encapsulated in descriptors like 'sea change', 'tree change', 'down-shifting', 'hobby farming' and 'lifestyle farming'. Moreover, the lure of 'natural amenities' (e.g., forests, lakes and mountains) is increasingly recognised as a factor influencing the settling of people in rural areas (McGranahan 1999, Barr 2009, further discussion in Chapters 2 and 5, this volume).

Demographic change creates impacts throughout the rural-urban continuum, yet our primary interest in this book is the impacts of this phenomenon in rural landscapes. In simple terms, a rural landscape can be defined as the area beyond the urban fringe; however demographic change has led to a blurring of the physical and social boundaries between rural and urban. Clearer distinction of different landscape zones allows a greater analysis of issues and, hopefully, better informed responses to demographic change. Framed in a European context, Antrop (2002) presents four key landscape zones, identified as the following:

- 'urban centre' zone representing the administrative, business, cultural and services, and population hub;
- 'urban fringe' zone where the urban centre and rural areas are easily accessible, and where emerging and large industries are often located;
- 'rural commuting' zone being the space immediately beyond the urban fringe, the space that heralds a rural lifestyle (if not occupation); and the
- 'deep countryside' zone where conventional broadacre agriculture has historically been practiced, and has largely not been replaced as a land-use.

In this book, our discussion is focused on people living in the Australian equivalent of the 'rural commuting' and 'deep countryside' zones – that is, people

living in rural landscapes. Yet, Hugo (2002) warned about making blanket statements about population change in rural areas without clear definitions of 'rural' and 'urban' and highlighted the need to differentiate between rurality and accessibility. For example, some towns may be classified as rural based on population size, density or location, but still have ready access to many facilities owing to their proximity to major population centres. Other rural towns may be quite remote from major centres – and it's the level of accessibility/remoteness that may be a key factor in population trends rather than rurality per se. Thresholds in population size are often applied by demographers to classify an area as rural or urban, but it can be more informative to consider the various characteristics of regions (e.g., population density, remoteness and major land use) that can be used to understand them in a multi-dimensional context relative to other regions (Smailes et al. 2002). Also, sociologists have cautioned against the assumption that simply because a person lives in a rural location, they are necessarily immersed in rurality (i.e., the recognised culture and identity of rural communities) (Lockie 2000).

The sustained decline in viability of commodity farming for small/medium-sized businesses has led to depopulation in large swathes of the rural landscape, while the increasing wealth of urbanites who can afford and value a rural lifestyle has led to re-population in attractive, 'liveable' parts of the countryside. These broad changes have brought critical challenges to the way we manage rural landscapes. This chapter provides an overview of these principal trends of demographic change in the economically developed world, describes some of the key drivers of these trends, and discusses the implications and challenges of demographic change for Australia's rural landscapes. The following chapters in this book capture some of the substantial variability that occurs within these general trends and explores, in detail, the socio-economic and environmental implications of population change in rural Australia.

1.2 Patterns of Demographic Change in Rural Landscapes

The two broad patterns of demographic change in rural landscapes that dominate the literature can be categorised simply as the following:

- population decline as a result of restricted opportunities; and
- population growth resulting from counterurbanisation.

These categories are simplistic, but provide useful starting points for analysing the dynamics of demographic change in rural Australia.

1.2.1 Population Decline

The current trend of population loss in some rural districts is widely discussed by contemporary researchers (e.g., McGranahan and Beale 2002, Newman 2005, Barr 2009). However, this trend is not new. For example, Longstaff (1893) described

at length the decline of rural populations in various districts across a number of countries (primarily in Europe) in the nineteenth century. This was true even for the young colony of Victoria (now a state) in Australia, where six of 16 counties lost a cumulative total of 45,174 inhabitants (17%) from 1871 to 1881 (while the fledgling city of Melbourne grew by 73% during the same period). Interestingly, Longstaff points to increased employment opportunities in large cities and the effects of international trade of primary produce as factors contributing to the decline of some districts, issues that are consistently raised in contemporary discussions.

Discourse on rural population decline has persisted throughout the twentieth century in countries such as Canada (Watson 1947, Millward 2005), United States (Beale 1964), Russia/USSR (Field 1963, Pallot 1990) and Australia (Heathcote and Williams 1977). In these discussions, it is important to differentiate between actual population loss (fewer people in an area at one point in time compared to a previous time) and slower growth in rural compared to urban areas; two different trends that are often subsumed into generalisations about rural 'depopulation'. These differing trends have different implications for rural communities. The former suggests that a given community may suffer, among other things, a substantial loss of facilities or services (e.g., hospitals) as these become less viable when a population is small and diminishing, while the latter may lead to a smaller proportion of the total population living in rural areas, even while rural populations grow. The withdrawal of important services can accelerate the process of depopulation as an area is seen to become less 'liveable' (Sorensen 1993, Tonts 1996). However, the argument that towns with a diminishing 'economy of scale' are unprofitable may simply be used by organisations seeking to exit rural areas to concentrate their business in the most profitable locations (Argent and Rolley 2000). A smaller proportion of the total population living in rural locations may not always result in a reduction in services, although rural issues might become less important in the broader economic and political context as more people reside in urban areas.

In his assessment of population trends in non-metropolitan Australia (parts of the country outside of centres with > 100,000 inhabitants) up to 1996, Hugo (2002) demonstrated that around 38% of all Australians lived in non-metropolitan areas in 1996 and population growth here generally outpaced that occurring in metropolitan areas from 1966 to 1996. Also, during the same period, rural populations in Australia increased by 26%. Hence, generalisations about population decline across the entire non-metropolitan area can be misleading. Nevertheless, some regions are losing people. Hugo (2002) noted that these primarily occurred in dry farming and pastoral areas, and some mining and industrial towns.

The common link among declining areas is that, for the most part, they are remote from service centres and occur in the arid and semi-arid regions of Australia with declining primary industries. Hugo (2002) showed that areas classified as remote or very remote (locations with very restricted access to goods, services and opportunities for social interaction) had lower rates of population growth from 1991 to 1996 than those with moderate to high levels of accessibility to services. Indeed, population growth rate was strongly positively correlated ($r = 0.85$, $N = 5$) to level of accessibility. However, even this trend masks important spatial variation

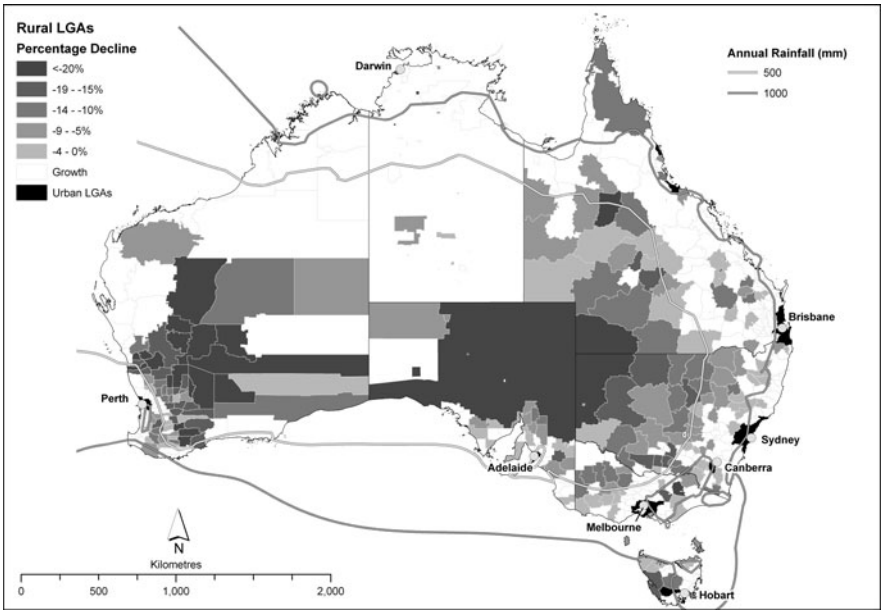

Fig. 1.1 Percentage population decline in rural local government areas (LGAs), 1996–2006. Source: Based on data from ABS (2006) and Bureau of Meteorology (2003)

in population change, as some remote areas (e.g., some mining towns) experienced growth during this period.

Drawing on population census data, Fig. 1.1 illustrates a strong spatial congruence between arid and remote Local Government Areas (LGAs) with population decline in Australia's non-metropolitan areas during 1996–2006 (ABS 2006). Declining opportunities in many rural LGAs, particularly arid and remote LGAs, has led to widespread population decline as people are attracted to the employment, education and lifestyle opportunities found in coastal, regional and urban centres. A recent assessment indicates that less than 3% of the population resides in remote Australia (ABS 2006).

While fertility and mortality rates in Australia vary across metropolitan and non-metropolitan regions, and with level of accessibility to services, migration is the key factor contributing to change in population size in rural areas (Hugo 2002). This appears to be true in other areas and at other times. For example, Beale (1964) showed that rural depopulation in the US in the 1940s and 1950s was largely a result of young people (mostly < 20 years old) leaving rural locations for the city. Once young people leave an area, this can also lead to a decline in the total number of births, as there are fewer residents of child-bearing age.

The exodus of young people from rural areas in Australia continues today (e.g., Holmes et al. 2005), as they take advantage of greater employment and education opportunities available in major population centres. It is also characteristic of rural areas across different cultures (e.g., eastern Europe and Russia; Pallot 1990). This

highlights the fact that the influence of migration on rural locations extends beyond just numbers gained or lost because those leaving (or arriving) are not a random cross-section of society. Emigration from rural areas is heavily skewed towards young people and increasingly biased towards females (Hugo 2002, Alston 2004, Holmes et al. 2005). This skew has substantial implications for the viability of rural locations beyond the effects of simply losing people.

1.2.2 Population Growth

Despite the strong trend of rural people moving to urban centres, the movement is not always one-way, especially in the economically developed world. Considerable numbers of people are moving away from cities to reside in rural districts. The reasons for this vary (see below), but include a desire to experience the lifestyle that comes with living in rural landscapes and being part of a socially-connected rural community, as well as access to more affordable housing. The arrival of new residents in rural landscapes is often welcomed by the existing community, as it counters the threat of depopulation and its varied consequences.

Counterurbanisaton was first recognised in the United States more than 30 years ago (e.g., Beale 1976, Berry 1976). During the late 1960s and early 1970s it was found that population growth rates in non-metropolitan America where higher than in metropolitan areas – an opposing trend to that found in previous decades. Subsequently, a number of authors identified similar trends in Europe (e.g., Champion 1981, Dean 1986, Perry et al. 1986, Fielding 1989), Canada (e.g., Stabler 1985) and Australia (e.g., Smailes and Hugo 1985, Hugo 1986). The strength of this trend has fluctuated, and even reversed, since the late 1970s, but the issue of counterurbanisation has become extremely topical, particularly in Australia, over the last 10 years.

Mitchell (2004) argued that the term ‘counterurbanisation’ has been inconsistently used in the literature to describe patterns and processes associated with population change in rural areas. She offers the following three alternatives to improve clarity.

(i) Counterurban – this refers to a deconcentrated pattern of population distribution over a given area and is the end result of the process of counterurbanising. That is, the majority of the populace are dispersed among a number of small settlements rather than being concentrated in a few large settlements. Such a pattern was generally characteristic of developed countries prior to the industrial revolution (Mitchell 2004), but most of these countries now have a concentrated pattern of settlement and it is hard to imagine that this will revert to a deconcentrated pattern in the foreseeable future.

(ii) Counterurbanising – this is the process that transforms a settlement pattern from a concentrated to a deconcentrated state. It can be measured by comparing the percentage of a population living in rural vs. urban areas over time, or by calculating indices of population concentration (e.g., the Gini coefficient or

the Hoover index, Mitchell 2004). As discussed above, reasons for this change reflect variations in births, deaths or migration.

(iii) Counterurbanisation – refers to the movement (migration) of people from urban areas to rural areas (or larger settlements to smaller settlements).

In this chapter, we are primarily interested in counterurbanisation as defined above. Migration, particularly internal migration (movements occurring within a country), is the key contributor to this trend, as it is for rural depopulation (Hugo 2002). This is a vital distinction when we begin to explore the reasons for counterurbanisation and its implications for rural communities. It should be acknowledged that counterurbanisation is a somewhat problematic term in that people moving from urban to rural areas may be responding more to the appeal of rurality (rural 'pull' factors, such as perceptions of community connectedness and healthy environment, and rural culture), rather than rejecting urban attributes (urban 'push' factors, such as traffic congestion and pollution; although see Chapter 4, this volume). Also, counterurbanisation can convey a rejection of urban lifestyles and values by those moving to rural areas, but their movement may be precipitated by economic factors (e.g., new employment opportunities or cheaper housing) rather than rejecting (countering) an urban ideology per se. However, given that counterurbanisation is well entrenched in the demographic discourse, it is a term worth exploring and referring to throughout this book.

While contemporary researchers continue to highlight counterurbanisation (e.g., Stockdale et al. 2000, Löffler and Steinicke 2006, Smith and Doherty 2006, Costello 2007) the trend appears to have slowed in the last few decades compared to the 1970s, and the 1980s, specifically in Australia (Hugo 2002). Nevertheless, broad-scale trends mask important, site-specific patterns that raise crucial management issues for rural communities, governments and industries. For example, the age-selective nature of retiring farmers moving off their rural properties to reside in nearby regional centres, thereby increasing demand for aged care services. In Australia, non-metropolitan population growth occurs primarily in districts close to major cities, along the coast (particularly the east and south-west coast) and in some regional centres (particularly those located on major transport routes). Growth in coastal regions has received particular attention and the trend is encapsulated in the descriptor 'sea change' (Burnley and Murphy 2004), with Bernard Salt most notable for popularising the concept of the sea-change culture in Australia (Salt 2003).

Growth in coastal regions is largely driven by immigration, but Smith and Doherty (2006) identified two aspects of this movement. One is the movement of people from large cities to coastal environs (clearly counterurbanisation), while the other is the movement of people from inland regional centres, which could reflect counterurbanisation if they are moving from larger to smaller settlements or simply 'lateral' movements from one rural district to another. The distinction is important because the latter suggests that some migrants have already experienced a rural lifestyle and wish to continue this experience, but only in certain locations. It also suggests that the depopulation of inland rural districts is not just a factor of people

moving to the city for better opportunities, but is partly driven by the greater attractiveness of some coastal and rural areas compared to, primarily, more remote and arid inland areas.

Drawing on population census data, Fig. 1.2 illustrates a strong spatial congruence between coastal LGAs and population growth in Australia's non-metropolitan areas during 1996–2006 (ABS 2006). The population growth in some coastal and regional LGAs, particularly areas near large regional centres or capital cities, is consistent with the view that the population is dynamic as people search for improved employment, education and lifestyle opportunities. Some caution needs to be applied when interpreting data at the LGA scale, as some rural LGAs cover large areas and have small populations, masking the exact location of where there is considerable change in the local population.

Although the sea-change phenomenon has dominated discourse on counterurbanisation trends in Australia over the last decade, attention has turned more recently to the, albeit, less prevalent trend of 'tree change'. Tree change describes the movement of people from urban to non-coastal rural locations (Costello 2007) and is more closely related to the patterns of counterurbanisation identified in Europe and North America (e.g., Rasker and Hansen 2000, Stockdale et al. 2000, Löffler and Steinicke 2006). Like rural depopulation, the movement is not uniform and is characterised by relatively substantial immigration to a few select locations.

The overall pattern of Australian settlement has remained largely unchanged for at least the past 50 years. Most people live in the handful of major population

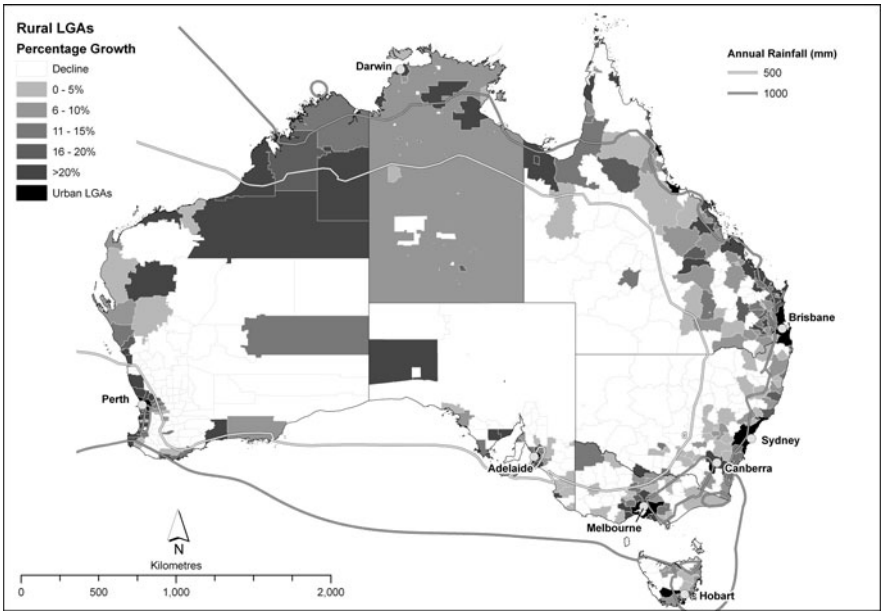

Fig. 1.2 Percentage population growth in rural local government areas (LGAs), 1996–2006. Source: Based on data from ABS (2006, 2008) and Bureau of Meteorology (2003)

centres, and will continue to do so for the foreseeable future. Yet rural Australia is being restructured as a result of depopulation, mostly in inland and remote areas, and counterurbanisation and lateral movements primarily to the coast and a few 'attractive' inland areas. Population shifts are likely to result in an even stronger dichotomy in the distribution of Australia's rural population with people concentrated along the coast and a handful of major inland centres, while population density continues to decline in the remainder of inland Australia. These shifts have positive and negative implications; many of which are discussed in this book.

1.3 The Drivers of Demographic Change

1.3.1 Population Decline

The drivers of population decline in rural areas, although varied, generally reflect a lack of opportunities. This is true across time. For example, Watson (1947) pointed to technological changes leading to improved agricultural productivity as a driver of decline in rural numbers in Canada because fewer people are required to produce the same output (a situation echoed by others; e.g., Beale 1964). A gradual shrinking of rural populations can eventually lead to a potentially irreversible spiral of decline as various facilities and businesses become unviable as the population becomes smaller. In essence, this reflects the lack of employment opportunities in rural areas compared to urban centres – and employment is consistently identified as a key driver of population change in rural landscapes over the decades (e.g., Longstaff 1893, Beale 1964, McGranahan and Beale 2002). For example, in the 1950s more than 20% of Europe's population were working farmers – now less than 7% of the population actively farm (Europa 2005). The decline in the importance of agriculture as a major employer in developed countries has been ongoing for over 100 years.

More recently, lack of educational opportunities has resulted in young people leaving rural areas to pursue, primarily, tertiary education in the universities of major cities (Alston 2004, Holmes et al. 2005). It is highly unlikely that such opportunities can be accommodated in small rural towns, although Australia is host to a number of universities based in major regional centres with much closer social and geographical ties to rural communities. Moreover, a greater emphasis on distance education in some institutions, where students are able to complete courses from their place of residence without having to attend extensive on-campus tuition, offers new opportunities for rural residents to complete tertiary education.

McGranahan and Beale (2002) noted that rural counties in the US that experienced population loss in the 1990s were characterised as regions with a lack of access to services (i.e., remoteness), a small labour market, low population density, few natural amenities (e.g., lakes and mountains), and few options outside of agriculture for employment. Indeed, population decline was characteristic of counties where agriculture was the main industry, whereas the injection of new industries

(e.g., meatpacking or feedlots) and the creation of new employers were able to reverse this decline in some regions. These results point to the need for rural communities to diversify their employment options to maintain and attract inhabitants (McGranahan 1998, Barr 2009). As Australia's economy has evolved, the major jobs growth has been in the tertiary (services – retail trade, entertainment) and quaternary (cultural – information technology) sectors, which invariably favours the nation's capital cities.

In Europe and North America, population loss in rural locations is not generally a result of the abandonment of marginal agricultural land, whereby agricultural enterprises are no longer productive. It is more a socio-economic process reflecting the interactions between push and pull factors of reduced opportunities in rural areas and increased options in major cities, and the increasing desirability of city living (at least for some sections of society) resulting from relatively unrestricted access to various facilities and services. While these socio-economic factors are also at play in Australia, climate variability and the impacts of long-term climate change appear to be having an effect on the viability of rural communities. The arid and semi-arid areas of southern Australia have always offered marginal agricultural land, especially for producing 'traditional' commodities (e.g., wheat and wool). Unprecedented drought over the last few decades in southern Australia, possibly driven by longer-term climate change, has further limited the future viability of marginal areas and increased the area of land classified as 'marginal' (Kingwell 2006). Moreover, increasing restrictions on water use resulting from more demand and less rainfall threatens the viability of irrigated agriculture in south-eastern Australia.

Much of southern Australia is predicted to become hotter and drier as the climate changes, and this will be felt particularly in inland regions (CSIRO and Bureau of Meteorology 2007). The negative impacts this is likely to have on the viability of agriculture and the comfort of residents (e.g., more days of extreme heat, less water and greater bushfire risk) is a possible reason for the lateral movement of some people from inland rural communities to coastal rural communities (Smith and Doherty 2006). This movement suggests that inhabitants are not dissatisfied with rurality per se, but possibly with the 'deterioration' of the local environment in inland districts.

While there are some exceptions, such as areas with intensive high-value agriculture (e.g., irrigated horticulture) or new rural industries (e.g., large-scale mines), most rural landscapes that have a high dependence on conventional agriculture (e.g., dryland livestock production and rainfed cropping) – economically and culturally – are likely to face ongoing depopulation. Moreover, the contribution of agriculture to Australia's gross domestic product, and its capacity to be a major employer, continues to decline. The terms of trade for many of Australia's farmers have been diminishing since the mid-1950s, albeit with brief periods of more prosperous seasons and markets (ABARE 2009). For most residents, living in remote locations means they are too distant to have daily access to the apparent opportunities in urban centres, presenting them with a dilemma – stay and miss out, or leave the countryside.

1.3.2 Population Growth

The drivers leading to population growth in rural areas, sometimes referred to as counterurbanisation (as discussed above), are more varied and complex than those of rural depopulation. We only touch on the main issues here, as some of these are dealt with in depth in subsequent chapters (e.g., Chapters 2 and 4, this volume). Understanding the drivers of this trend requires recognition of its internal heterogeneity. Mitchell (2004) encapsulated this succinctly in her description of the terms 'ex-urbanisation', 'displaced-urbanisation' and 'anti-urbanisation'. Ex-urbanisation refers to the situation whereby urbanites move to areas peripheral to the metropolitan zone, yet retain strong ties to the urban centre through, among other things, daily commuting to work. They live in what has been described as the 'rural commuting' zone, 'urban shadow' or 'rural hinterland', which allows a blending to some degree of rural and urban – a physical and social fusion termed 'ruban' (Antrop 2000). Contemporary derivations of 'commuting to work' now also include telecommuting (e.g., contributing to the workplace via the internet) and 'fly-in fly-out' modes of employment (e.g., workers temporarily residing at remote mine locations for 1–2 weeks while undertaking their employment, before returning to their permanent residence in an urban setting; discussed in more detail in Chapter 15, this volume).

Ex-urbanites aim for the best of both worlds – the apparent relaxation of rural lifestyles with the convenience of ready access to the diversity of metropolitan facilities and services. This trend contributes to urban sprawl as peripheral areas are eventually subsumed into the metropolitan or urban zone, arguably reflecting the ongoing expansion of urban areas rather than counterurbanisation per se.

Displaced-urbanisation refers to the situation where people move to rural areas because of better employment opportunities or a more affordable lifestyle – in particular cheaper housing (Hugo and Bell 1998). In essence, these people are leaving urban areas because of restricted opportunities, related primarily to personal financial circumstance.

Anti-urbanisation has received the greatest attention in the literature and refers to the situation where people move to rural areas because of the perceived attractiveness of the country lifestyle and a growing dissatisfaction with city living. These people are seeking an improved quality of life, which they believe will be found by residing and working in rural areas. However, sometimes, there is a mis-match between expectations and reality (Walmsley et al. 1995, discussed in more detail in Chapter 4, this volume), such as when people arrive in country areas with the expectations of the suite and reliability of services as that found in urban areas (e.g., there is a shortage of medical specialists in rural Australia; Bruening and Maddern 1998).

The influence of the attractiveness of rural locations on immigration has been explored through the literature on natural amenities, particularly in North America (e.g., Cromartie 1998, McGranahan 1999, Rasker and Hansen 2000). McGranahan (1999) developed a natural amenity index for rural counties in the US based on climate, topography and water area. He found that, during 1970–1996, average

population growth in low amenity counties was around 1%, whereas it equalled 120% for counties with a high natural amenity index. A high amenity county was characterised by a mild climate (e.g., warm winter and temperate summer), varied topography (e.g., mountains) and/or ready access to surface water (e.g., lakes or shoreline). In general, counties high on the natural amenity index were popular destinations for retirement or recreation (further discussion in Chapters 2 and 5, this volume).

Similar work has been completed for Victoria, where Barr (2008) mapped the rural landscapes according to an area's level of dependence on the agricultural industry. Of interest, Barr (2008) popularised the notion that much of rural Victoria was losing its strong dependence on agriculture, with some areas becoming 'rural amenity' landscapes – attracting people due to the appeal of rurality and the landscape's amenity.

In summary, people move to an area because they believe it will meet their lifestyle expectations, offer better employment or education opportunities, or is more financially viable. Although some people find rural or forested landscapes attractive and desire to live within or near to them, or see a move to the countryside as an opportunity to slow the pace of life and reduce stress, most are unwillingly to forgo reliable and relatively easy access to key facilities (e.g., hospitals, schools and recreation centres). Hence, remote landscapes are likely to remain sparsely populated even if they have high amenity value, while amenity landscapes with strong transport links or within easy access of major metropolitan centres are likely to continue to grow.

1.4 The Implications of Demographic Change in Rural Landscapes

For the sake of simplicity and clarity, we have focussed on two of the major patterns of demographic change that have characterised rural landscapes over the past decades. It is clear, however, that the complexity of the changes occurring in rural areas is not adequately captured by these two trends alone. Indeed, a given location may be experiencing both the loss of residents, as young people leave for the city to gain employment or undertake study, and an influx of new 'sea/tree changers'. In this section, we attempt to weave some of these complex threads together in a broader discussion about the implications of demographic change for rural communities.

A declining population provides challenges for a community, such as how to maintain the social fabric when there are fewer people to volunteer for key tasks (e.g., fire-fighting), and how to ensure the viability of clubs and networks (i.e., many clubs have a 'social tipping point', with a minimum threshold number of people required for their viability) (Tonts and Atherley 2005). However, a declining population can also provide benefits, such as reducing the demand for additional infrastructure and services (e.g., supply of water), and lessening the pressure on

natural resources (e.g., less development of residential infrastructure). Significant growth in an area's population also presents challenges and opportunities. For example, an increasing population can result in the renewal of social capital in a rural community by bolstering club membership and the number of volunteers, inject new ideas and energy, introduce new skills, increase demand and use of education services and local businesses (e.g., contract, retail and professional services), and increase revenue for local authorities. An influx of new residents has great potential to add to the overall vitality of an area, such as by contributing to the arts and festivals (McHenry 2009). Yet, an increasing population can often bring challenges, such as the additional burden on natural resources when new houses are built, transport infrastructure is increased, and from the ongoing maintenance of new dwellings and facilities (e.g., waste disposal and road maintenance).

Also, if new immigrants are from urban centres, they can often have unrealistic expectations about the availability and capability of rural facilities and services – placing greater demand on local agencies and organisations. The disparity in household income between those living in capital cities and those living in rural areas (Lloyd et al. 2000), means that many more people can afford to 'purchase' their preferred lifestyle in 'liveable' rural locations. An area is perceived as highly liveable if it has strong employment prospects, adequate education services, affordable housing and other living costs, and an appealing amenity and climate (factors that commonly reflect its underlying capacity to encourage population growth). Hence, counter-urbanites (particularly anti-urbanites) are purchasing a particular lifestyle and, like all consumers, attach expectations to this purchase that they believe the commodity (i.e., rurality) should provide if they are to receive value for money. The real estate industry feeds these expectations by promoting the lifestyle benefits of rural locations (Chapter 4, this volume). Moreover, the increasing commodification of rural landscapes can undermine the values that attracted people there in the first place, increasing the mis-match between expectations and reality (Tonts and Greive 2002).

Antrop's (2002) analysis of different landscape zones in Europe is instructive for understanding the characteristics of each zone, the interactions between zones, and issues for landscape management (Table 1.1). The dynamism within and between different zones of a landscape can shape it profoundly – with changing lifestyles creating new landscapes (Antrop 2006).

As people move to new landscapes, they take with them their most valuable possessions, their skills and experiences, their culture and values, and their aspirations for the future – human and social capital. Immigrants to a new landscape often carry with them a sense of hope and optimism, and usually get to work immediately to create the lifestyle of their dreams – representing a wonderful opportunity for the surrounding community if they can harness that enthusiasm to enhance a shared goal. However, when people move from cities to rural landscapes and communities, they often bring aspects of urbanisation that do not always transfer easily or well into a rural context (Antrop 2000). They can bring with them higher disposable incomes, new approaches to land management, different values and expectations, and alternate ways of engaging with the local community – disrupting and even

Table 1.1 Features of demographic change in European rural landscapes. Source: Adapted from Antrop (2002, p. 66)

Zone	Structure	Function	Challenges	Opportunities
Deep countryside	Traditional village centres transform (expand, differentiate), de-intensification of agriculture, abandoned farmland and additional forests	Minimal services and selected upgrading and intensification of infrastructure and services	Diminishing community activity and cohesion, tension between newcomers and long-time residents	Large open spaces with few competing land-uses, high natural and ecological potential
Rural commuting	Highly fragmented and heterogeneous open space, emergence of 'ruban' activities (ponies for children, small orchards), dense network of infrastructure	Intensification and diversification of land-use, increasingly multi-functional landscapes	Growing dependency on urbane infrastructure and services, loss of an area's historical identity – social and physical, dynamic and fragmented community	New forms of 'ruban' agriculture, 'green' corridors into production areas and 'new nature', renewal of social networks and community groups

threatening the pre-existing social fabric, fomenting a tension between the old and new ways of seeing, valuing and managing rural landscapes. Therein lies the core opportunities and challenges of demographic change for rural landscapes.

The implications of demographic change in rural landscapes are often far more than simply a decline, or increase, in an area's population. In fact, there can be profound demographic change even when an area's total population does not alter, such as when the number of people leaving equals the number of people arriving, yet the new immigrants to an area may have very different employment capabilities, needs for education and social services, and recreational interests. Profound demographic change can be particularly challenging for government (e.g., provision of adequate infrastructure and social services), industry sectors (e.g., attracting suitable employees), and a community's social capital (e.g., maintaining sporting clubs and volunteer groups).

Demographic change can also present challenges for natural resource managers, such as when new owners of a property with significant biodiversity values have conflicting plans to that of the managers, or population changes place increasing pressure on natural areas for residential or industrial development (Sheridan 2004). Converting agricultural land to other uses does not always have predictable consequences for native biodiversity. For example, research from the United States

found that some native bird species were able to thrive in 'exurban' environments, while other species were more abundant in a farm environment (Maestas et al. 2003, further discussion in Chapter 5, this volume).

When the qualities of the rural landscape valued by one segment of the community are threatened by the activities of another segment, the implications of demographic change can no longer be ignored. Furthermore, when there is increasing competition over highly-valued or limited landscape assets (e.g., productive farmland, areas of the natural environment, riparian areas and waterways, and scenic views), government agencies and arbitration authorities are often called upon to resolve disputes. Rather than merely react to emerging clashes in values and activities, a range of organisations seek to better understand the nature and implications of demographic change, and put in place processes that assist, predict and manage such change (e.g., local government; refer to Chapter 8, this volume). More positively, many agencies and organisations seek to develop strategies to harness and optimise the benefits presented by demographic change, while minimising any negative impacts.

There has been increasing effort to understand the complexity of demographic change in rural areas of western Europe and North America over recent decades, and more recently in Australia. Some suggest that the pursuit of a sustainable (stable) landscape is problematic and somewhat of a 'utopian goal', as landscapes and their communities are continuously undergoing change (Antrop 2004, 2005). However, a greater understanding of demographic change is needed to create effective strategies that take account of both the challenges and opportunities that emerge.

1.5 Signs of a Contested Landscape

An implication of demographic change can be that both long-time residents and new residents become dissatisfied with a rural area, even the same rural area, if their expectations are not met and they feel powerless to influence the direction of the perceived change. For example, a shift away from an area's focus on agriculture towards tourism is likely to lead to a change in the businesses and services offered in the area, making the provision of agricultural products and services more unreliable and expensive – a negative implication for an area's commercial farmers. Also, the same area may be unable to cost-effectively provide infrastructure (e.g., tele-communications) and services (e.g., education and medical) of comparable standard to city centres, restricting the opportunities expected by new residents from urban centres. The 'churning' of the local population – where people arrive or leave an area after a short period of time – is another aspect of demographic change that warrants attention (see Chapter 15, this volume).

During the past 150 years, the rural landscapes in south-east and south-west Australia have largely been defined by primary production, namely a mix of cereal cropping, livestock and dairy farming, and commercial forestry in native and plantation forests. Until the late-1980s, most of the small towns and regional

cities remained highly dependent on these primary production industries for their prosperity. Some emerging research indicates that in recent years, many of these same towns and regional cities are uncoupling from their dependence on primary production and instead becoming post-production or multi-functional landscapes (Barr 2008, Race et al. 2007). Furthermore, there are signs that the rural landscape is increasingly valued for its aesthetic and environmental qualities, with land prices well in excess of its agronomic potential. Indicators of the demographic change that is occurring in some regions include the following:

- urban and rural population is increasing;
- number of rural landholders is increasing;
- number of farmers is decreasing;
- number of small rural properties (i.e., 5–40 ha) is increasing; and
- value of rural land is increasing beyond agronomic potential.

There is some evidence that part of the aesthetic appeal of the rural landscape is the presence of a viable agricultural industry, yet there is also a growing demand for small 'lifestyle' properties and to improve the environmental qualities of the region for residents and tourism – a demand for landscapes to be multi-functional (Boody et al. 2005, Bekessy et al. 2006, Barr 2009). However, some doubt remains about the concept of a multi-functional landscape (Argent et al. 2007, Holmes 2008), covered by the questions below.

- Does a multi-functional landscape meet the aspirations of the region's community, or merely trade off one set of values against another set?
- Can a multi-functional landscape support viable primary production (e.g., agriculture and forestry) at economies of scale?
- Does a multi-functional landscape reach a point of stability (equilibrium) that allows consolidation of community identity and cohesion?
- Can a 'preferred' multi-functional landscape be designed and built?

Multi-functional landscapes do not necessarily indicate the decline and eventual loss of productive agriculture or other forms of primary production. Indeed, intensive high-value agriculture in the 'rural commuting' zone can offer some commercial advantages, such as being in affordable proximity to large urban markets (Bekessy et al. 2006, also see Chapter 6, this volume). Nevertheless, observations of multi-functional landscapes in Europe indicate that even when agriculture remains an important feature of an area, it must still negotiate a shared space with other interests, usually leading to a change in farm management if not enterprise.

The nature of multi-functional landscapes indicates a multiplicity of land-uses, with diverse residents and other users who have variable needs and aspirations, and differing demand and expectation of infrastructure, services and local culture. There is not always an easy co-existence in a multi-functional landscape, with tension sometimes escalating into conflict – conflict between peoples' activities and values. A cautionary note is that often the poorer people have less 'voice' and engagement

in processes that determine policies and priorities, and have fewer resources to adapt to changes (e.g., increasing property values lead to higher land tax). As such, the values of poorer people tend to become subordinate to the values of wealthier people when new landscapes are being created. Creating the institutions, policies and programs to support a multi-functional landscape that meets community expectations is challenging (Antrop 2002, 2005, Boody et al. 2005).

In Europe, the initial focus in the 1950s and 1960s on protecting the livelihoods of farmers has become much more complex in debate and implications than simply resolving a tension between urban-rural values. Boundaries that once defined the socio-cultural, economic and geographical dimensions of urban and rural people have become less distinct (Antrop 2002). Indeed, the fuzziness of multi-functional landscapes presents enormous challenges for governments and organisations responsible for planning land-use, residential development, infrastructure, health and welfare services, community and business development, and natural resource management (NRM).

1.6 Natural Resource Management in Multi-Functional Landscapes

Associated with many rural landscapes that have an increasing population, is that the socio-economic composition and property ownership patterns in the community are becoming more diverse (Antrop 2004, Boody et al. 2005, Bekessy et al. 2006, Curtis et al. 2006, further discussion in Chapter 7, this volume). While social diversity is likely to lead to land-use diversity, and landscape heterogeneity tends to be more beneficial for native biodiversity in rural landscapes – not all aspects of demographic change lead to positive outcomes for NRM. For example, some research has also shown that land-use diversity is accompanied by the tendency for there to be an increasing suite of predatory pests (Maestas et al. 2003). Also, understanding the capacity and willingness of a homogeneous population of landholders could be considered to be relatively straightforward, and so allow a strong match with relevant programs offered by NRM agencies. By contrast, engaging a highly heterogeneous population of landholders is expected to be far more challenging, requiring a mix of policy instruments.

There has been considerable research on the characteristics, intentions and values of the large population of landholders with non-industrial private forests (NIPF) in the United States, who were reported to own and manage 93 million ha of largely native forest (Erickson et al. 2002). Although there were about 10 million NIPF owners across the United States, the pattern of ownership is changing – with the trend for new, non-farming NIPF owners with smaller properties. Part of this trend is the apparent need for '. . . collaboration amongst landholders to offset the effects of landscape fragmentation' (Erickson et al. 2002, p. 103). Of interest is that greater fragmentation of ownership has seen an increasing consolidation and connectivity of NIPF forests, rather than increased forest fragmentation.

Simplistic assumptions about how to engage new landholders in NRM also need to be avoided, as illustrated by research that found the aesthetic quality of their forests was the strongest motivator for NIPF owners to protect their forests – both among farmers and non-farming landholders (Erickson et al. 2002). While farmers reported economic reasons for forest protection more often than non-farmers, these reasons were still reported to be less important than aesthetic or environmental issues. Indeed, receiving a financial payment was rated as the least influential factor motivating NIPF owners (Erickson et al. 2002). Also, research has shown that while some Australian NRM agencies rated dryland salinity as a critical issue, among rural landholders living in areas with dryland salinity the issue was viewed as a low priority – revealing a stark mis-match between an agency's priorities for NRM and that of the local community (Curtis and Robertson 2003, Race et al. 2007).

1.7 Conclusion

In an effort to better manage demographic change and design multi-functional landscapes that meet the social, economic and environmental expectations of society, governments and institutions in Europe have made a large investment over several decades in developing the necessary data collection and analytical capacity, decision support tools (e.g., landscape models) and policy instruments and engagement processes. In addition, collaboration among several organisations has led to the formation of research centres with a focus on a suite of issues associated with multi-functional landscapes, both in Europe (refer to www.landscape-tomorrow.net and www.landscape-europe.net) and North America (refer to www.landstewardshipproject.org). More recently, the Australian National University launched the National Institute for Rural and Regional Australia (http://nirra.anu.edu.au/) in an attempt to foster interdisciplinary and inter-institutional research on rural issues in Australia.

Demographic change in Australia, as elsewhere in the world, is a complex and multi-dimensional phenomenon – with people moving away from and into rural landscapes. In many respects, the appeal and limitation of rural areas is temporally, socially and spatially specific. That is, people will experience the dynamic push and pull factors in different ways. The following 14 chapters explore in more detail particular aspects of demographic change in rural Australia, and the mix of outcomes and responses. The final chapter provides a synthesis of these findings and identifies the key challenges to be addressed if Australia is to fully harness the opportunities and avoid the pitfalls of demographic change in rural landscapes.

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Chapter 2
Amenity-Led Migration in Rural Australia: A New Driver of Local Demographic and Environmental Change?

Neil Argent, Matthew Tonts, Roy Jones, and John Holmes

Neil Argent

N. Argent (✉)
Division of Geography and Planning, University of New England, Armidale, NSW, Australia
e-mail: nargent@une.edu.au

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Abstract There is growing acceptance that the fortunes of the non-metropolitan Australian ecumene are increasingly dependent on the interchanges of population, capital and ideas between cities and rural towns and regions. Yet we know relatively little about the push and pull forces drawing city residents into rural areas, or the medium- to long-term consequences of ex-urban in-migration for local land uses and the demographic and socio-economic composition of towns and regions. In this chapter, we critically investigate the relationships among rural amenity (as defined by a multivariate model which comprises the 'amenity index') and in-migration trends across the rural ecumene of Western Australia, South Australia, Victoria and New South Wales for the 1991–1996 and 2001–2006 intercensal periods. Rural amenity is indeed an important influence on the location decision-making of ex-metropolitan migrants, but it is important to realise that counterurbanisation flows (i.e., people moving from cities to rural areas) comprise only a relatively small share of rural in-migration gains. In the high amenity communities in which these migrants are making their new homes, local demographic, socio-economic and land use structures are undergoing dramatic change, but not always along easily predicted lines. This situation poses clear policy challenges for those entrusted with the governance of high-amenity rural areas as they attempt to deal with, on the one hand, the grounded issues of settlement, land use and environmental management and, on the other, the different visions and aspirations of an increasingly diversified local population.

Keywords Amenity migration · Rural Australia · Rural land use change · Rural amenity · Environmental management

Abbreviations

NSW	New South Wales
RLPB	Rural Lands Protection Board
SA	South Australia
SES	Socio-economic Status
SLA	Statistical Local Area
WA	Western Australia

2.1 Introduction

Over recent decades, there has been increasing recognition that migration into rural regions and communities across some parts of the developed world is driving complex and far-reaching processes of demographic, economic, social, cultural and land-use change. According to the Anglo-American literature, the key empirical markers of these changes can be seen in, for example, the conversion of once productive farmland into rural residential allotments; the effective abandonment of marginally productive country for conservation purposes; the growth of

alternative, particularly boutique, farm industries; and the gradual displacement of long-established community and village families by highly mobile and frequently more affluent ex-urban migrants (Phillips 1993, 1999, 2002, Cloke et al. 1995, Ilbery and Bowler 1998, Loeffler and Steinicke 2007). It is now almost taken for granted that ex-urban in-migrants – especially those of higher socio-economic status – are attracted to particular environmental niches. Coastal, montane, lacustrine and riparian landscapes are usually regarded as the most popular settings for this group (McGranahan 1999, Deller et al. 2001, Burnley and Murphy 2004, Hunter et al. 2004, Loeffler and Steinicke 2007). By moving in, though, members of this class are also seen to mould the social, economic, demographic and biophysical landscapes of their new home areas in accordance with their own tastes, producing long-standing and often dramatic impacts on their destination communities and environments.

In the Australian context, many aspects of this scenario ring true, particularly if we adopt a narrow focus on the most highly accessible, high-amenity zones within the national ecumene. Yet considerable evidence also exists to temper at least some of the grander claims of widespread counterurbanisation-led rural gentrification. For example, Hugo and Bell's (1998) analysis of Australian counterurbanisation flows during the 1980s and 1990s highlighted the major role of social-security dependent ex-suburban residents in this migration stream. High housing establishment costs in cities and the portability of Australian welfare benefits were seen as key factors facilitating this group's migration into cheaper, but higher amenity, locations, typically in coastal regions.

Nevertheless, there is wide agreement that the socio-economic and demographic trajectories of the rural communities and regions within the Australian ecumene are diverging (Hugo 2005, Smailes et al. 2005, Holmes 2006). It is the argument of this chapter that *amenity* is playing an increasingly powerful role in this process of diversification, with local socio-economic and land-use agendas being set by the modes of expression and comparative strengths of amenity values, relative to those of primary production.

This chapter has four major aims. First, it seeks to provide a conceptually robust and practical (i.e., empirically measurable) definition of rural amenity in the Australian context. Second, it explores in-migration trends for the non-metropolitan Statistical Local Areas of Western Australia, South Australia, Victoria and New South Wales for two recent intercensal periods (1991–1996; 2001–2006). Here, we are concerned not only with the nature of the destination regions, but also with the origin of the migrants, thereby seeking to establish whether or not amenity migration to Australian rural communities and regions is the preserve of former capital city residents (at both ends of the socio-economic status (SES) spectrum, as postulated by the 'rural gentrification' and 'welfare-led counterurbanisation' hypotheses, respectively). Third, the chapter investigates the demographic and socio-economic impacts of these migration volumes upon the host communities and, finally, it reviews the ecological implications of such in-migration into high amenity regions (see further discussion of this issue in Chapter 5, this volume).

2.2 Amenity-Led Migration into Rural Areas: A Review

As a component of internal migration (i.e., permanent population movement within national boundaries), amenity-related migration is clearly regarded as a key subset of counterurbanisation. In Australia, the lifestyle-related aspects of counterurbanisation have been popularised by media friendly labels such as 'sea change', 'tree change' and 'hill change' (see Burnley and Murphy 2004, Hugo 2005). One of the key concerns in the literature describing and discussing these particular migration streams, is the cumulative impact of the in-migration of relatively wealthy, well-educated, middle- to upper-class people into hitherto predominantly working class, primary production-oriented rural communities, economies and labour markets. In short, counterurbanisation is assumed to lead to the gentrification of rural communities.

Rural gentrification has formed a major and growing theme in British rural studies over the past three decades (Cloke and Thrift 1987, 1990, Cloke and Goodwin 1992, Phillips 1993, 1999, 2002, 2004, Cloke et al. 1995, Lewis 1998). Arguing for a more carefully nuanced and interpretative approach to the study of gentrification, Phillips – by reference to Lefebvre's spatial triad – has explored the material processes by which gentrified rural spaces are created (e.g., the displacement of working-class rural residents by service-class, ex-urban residents over time and rural land value increases); the various forms and appearances that these gentrified rural spaces take (e.g., atavistic 'heritage' housing styles and land use zoning changes); the key agents involved in the gentrification process (including real estate agents and local government officers as well as the in-migrants themselves); and the (often contradictory) motives and ideals of in-migrants regarding their 'landscape of desire', as well as the ideological and cultural lenses through which such people interpret its ongoing evolution.

According to Phillips, gentrification can be observed and examined as the following: (1) a series of material processes (e.g., flows of capital and migrants and the physical transformation of rural housing and land uses); (2) the various (and often competing) representations of these processes (e.g., changes in average income levels, and real estate advertising, the iconography of heritage housing styles and council zoning maps); and (3) the actual lived experiences of the key 'change agents' involved in this process (i.e., in-migrants' perceptions of their migration motives and their interpretations of their new host communities, and real estate agents' and local council planners' perspectives of the impacts of in-migration). In Australia, a number of case studies of amenity-led in-migration to select rural niches have touched on, or alluded to, the possible gentrification of rural communities and their hinterlands (Selwood et al. 1996, Tonts and Greive 2002).

Despite some recent valuable contributions to the literature concerning the motivations of counterurbanisation migrants (Flood 2001, Walmsley et al. 1998, Smailes 2002, Burnley and Murphy 2004), there has been little concerted effort to specify the ensemble of environmental attributes which comprise rural amenity, and the ways in which these affect the desire of ex-urban migrants to move to (certain) rural areas. Some recent light has been shed on this issue in a number of

papers concerned with rural population growth and regional economic development (McGranahan 1999, Deller et al. 2001) and rural gentrification in North America (Hunter et al. 2004). Following McGranahan's (1999, p. 1) declaration that amenity is the new 'rural comparative advantage', these papers adopt a synoptic view to the measurement of amenity and the testing of its association(s) with rural population growth.

Not surprisingly, rural amenity is argued by these authors to intersect significantly with the set of environmental attributes that make areas attractive for natural resource extraction, including farming. Consequently, as 'new' interests interpret and 'value' these attributes in different (albeit, at times, in highly conservative) ways, resource conflict ensues as land prices are bid up, leading to pressure for displacement, characteristically of production by consumption.

McGranahan's (1999) amenity index – the independent variable – incorporated three seasonal climatic variables ('warm winter', 'winter sun' and 'summer humidity'), a single topographic variable and a surface water indicator, together with a proxy accessibility/remoteness variable ('urban influence code'). Detailed analysis of the index revealed that the individual climate attributes achieved the highest correlation coefficients, suggesting that the index was better able to predict winter migration than other types of population movement.

Deller et al. (2001) adopted a very similar approach to that of McGranahan, using a composite range of climatic variables, a surface water resource indicator, a land resource indicator (per cent of land in wilderness, forest, farms and state parks), a composite 'winter recreation' variable and a 'recreational facilities' indicator as input into a principal components analysis so as to identify high- and low-amenity rural regions, and the relationships between amenity, population growth and income. Hunter et al. (2004) similarly developed a composite amenity scale, incorporating measures of climate, topography and water area, in their quest to establish whether or not high amenity zones tended to experience higher levels of immigration and/or gentrification.

In Australia, the increasingly critical role of amenity values in shaping rural futures has been noted by leading researchers. Hugo and Bell (1998, p. 111) emphasised the '. . .growing dichotomy' in '. . .population growth patterns and the economic trends which underlie them' between the more attractive rural areas experiencing counterurbanisation impulses and the '. . .heartland farming and pastoral areas' where '. . .population decline is common and there is consequent diminution in their social and economic potential'.

In strategically-located regions, rural land is progressively valued not for its productive capacities (i.e., what it can grow and return to the farmer or forester), but for its perceived aesthetic and status characteristics (i.e., as a positional good to be consumed). Hence, rugged coastal ranges are sought after for home sites overlooking the ocean and nearby ranges, while small towns and old dairy farms are desired for their heritage and 'working countryside' ambience along with their close proximity and access to large regional centres. In other words, settlement and land use in such locations are driven more by 'consumption' values than by production ones.

Smailes et al. (2005) also found rural amenity to be a powerful influence over the growing heterogeneity of rural communities, especially those in the mixed agricultural and coastal zones. In particular, high rural amenity was strongly and positively correlated with recent in-migration, total population growth, industrial diversity and ageing populations, and strongly negatively correlated with younger age structures and agriculture's proportional share of the local workforce (Smailes et al. 2005). Following up on this research, Argent et al.'s (2007) multivariate rural amenity index explained (in a statistical sense) a substantial proportion of the variance in in-migration rates during the two intercensal periods of 1976–1981 and 1996–2001.

The most comprehensive appraisals of the regionally differentiated impacts of amenity values have been undertaken by Barr in his enquiry into regional structural differences in Australian agriculture for the National Land and Water Audit (Barr 2002; Box 2.1) and, in greater detail, in his study of rural Victoria's 'social landscapes' (Barr 2005).

Box 2.1 Rural Amenity and Agricultural Restructuring

> Currently, demand for landscape amenity is a major influence upon the pattern of structural change in Australian agriculture. The influence is manifest in the high price of land in the more amenable and accessible parts of the rural landscape. These higher land prices restrict the capacity of agriculture to adjust to maintain competitiveness and inexorably drive the path of adjustment to a non-commercial agricultural future. (Barr 2002, p. 107)

Of particular value is his depiction of the 'rural amenity landscape', which is directed mainly towards an examination of the pivotal role of what he terms the amenity premium in entrenching the presence and retention of undersized farms, facilitating and even enforcing pluriactivity (i.e., the creation of new on-farm or off-farm income streams) and part-time farming. In his Australia-wide study, Barr (2004) notes that farm incomes are generally lower in amenity landscapes than in production ones, but that farm family incomes are higher, since, in such areas, they are tied to a higher component of (earned or unearned) off-farm income. Furthermore, the rate of decline of farmer numbers is lower than that in the 'agricultural heartland'. In contrasting these two landscapes, Barr (2005, p. 68) comments that, '. . .a consolidation of the division of rural Australia into high amenity and low amenity locations' seems to be occurring.

Local and regional land markets are key 'agents of change' in this regionalisation process, pricing different commercial and socio-economic activities into and out of land ownership. Barr's (2005) notion of the 'amenity premium' is approximated by calculating the ratio of land value to gross value of production per hectare. In Victoria, this ratio varies from under two in the low amenity, remote Mallee District of north-west Victoria to above eight in accessible, high amenity areas, not

only near Melbourne, but also in the central highlands, the Hume Highway corridor through to Albury, and the upper Murray. In such conditions, conventional broadacre farming enterprises cannot compete for land with the relatively price-inelastic tastes and desires of ex-urban people on drought-proof and international commodity market-proof incomes (Barr 2005). Compared with the UK and New Zealand, Australia's spaciousness and the 'tyranny of distance' ensure a wide spectrum of locationally-induced, von Thünen-style land values, initially tied to production and marketing costs, although these are progressively being modified and frequently magnified by an amenity premium. Hence, this critical indicator of amenity can be seen as both an *independent* (indicating changes in the relative economic viability of farming, perhaps induced by changes in commodity prices or sectoral regulation) and a *dependent* variable (referring to the realisation of non-agricultural interests in agricultural land in select areas).

For some influential writers, therefore, rural Australia is bifurcating. Increasingly it is becoming polarised between dry, inland broadacre farming regions characterised by increasing economies of scale and higher levels of farm productivity, but ongoing demographic and economic decline with little hope of branching into new, lucrative income streams based on activities such as tourism (see Chapter 1, this volume), and well-watered, coastal and peri-urban fringe regions where above national average population growth occurs (based upon net migration gains) and agriculture forms a small, and declining, plank in regional employment and turnover (Hugo 2005). In summary, an understanding of the geography of the expression of these forces is central to appreciating how rural Australia is being changed, what these changes mean for the future economic, social and environmental development of regions and communities, and what the policy implications of these changes might be. These are the specific questions that this chapter seeks to address.

2.3 In-Migration to Rural Australia

An analysis of recent internal migration trends and processes within rural regions highlights the geographical expression of a number of these processes. While in-migration data in themselves do not explain the drivers of change, they do provide clues to the relative attractiveness, broadly defined, of different rural places. In-migration data for the intercensal periods 1991–1996 and 2001–2006 suggest a complex set of processes at work, with local attributes clearly playing a role in shaping demographic change (Figs. 2.1 and 2.2; also see Chapter 1, this volume).

One of the most evident trends is the high rate of in-migration to coastal areas. This is one of the migration streams that is playing a major role in the redistribution of regional populations. For example, virtually all of the coastal Statistical Local Areas (SLAs) in New South Wales, Victoria and South Australia recorded in-migration rates of at least 20% during the study periods. Some of the strongest growth was recorded in well-known coastal tourism and lifestyle destinations,

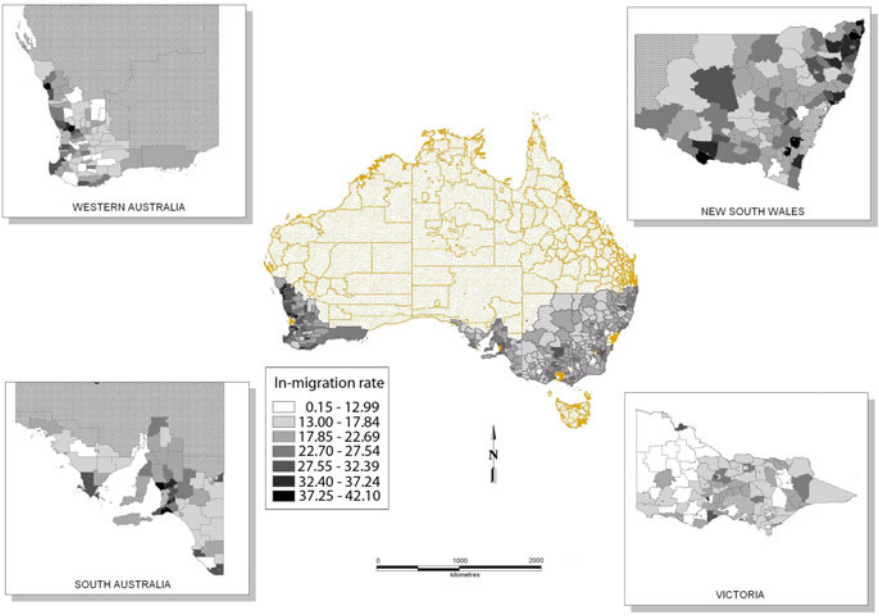

Fig. 2.1 In-migration rates (%) for non-metropolitan SLAs 1991–1996. Source: ABS (2008)

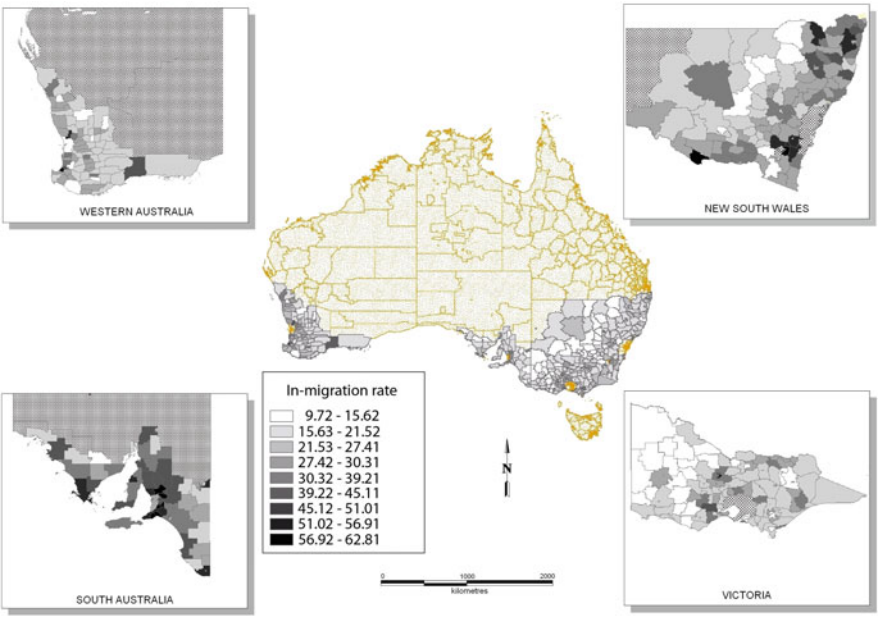

Fig. 2.2 In-migration rates (%) for non-metropolitan SLAs 2001–2006. Source: ABS (2008)

including: Tweed, Byron, Ballina and Port Stephens in New South Wales; Surf Coast in Victoria; and Victor Harbor in South Australia. Similar patterns were also evident in Western Australia, with high rates of in-migration concentrated in traditionally popular areas such as Denmark, Augusta-Margaret River, and Busselton.

Coastal in-migration has long been a feature of non-metropolitan Australia. Indeed, Murphy (1977) argues that the onset of coastal in-migration was linked to the evolution of holiday homes into more permanent forms of residence during the late 1960s and early 1970s (see also Selwood and May 2000). Central to this was the in-migration of those looking to capitalise on amenity and lifestyle attributes, and on comparatively low land and housing values in many coastal areas (Murphy 1981).

The pattern of in-migration to coastal areas during the period between 1991 and 2006 appears, in part, to be an extension of these processes. There are, however, a number of apparent differences. First, relatively high rates of in-migration are now being experienced in relatively remote areas, well beyond the urban field. Indeed, studies in southern Western Australia (Selwood and Tonts 2006), Victoria (Frost 2004), and New South Wales (Walmsley et al. 1998) suggest that ever more remote and 'exotic' locations now represent the outer ripples of this coastal development. Moreover, it is clear that processes of in-migration to such places involve more than a simple relocation of retirees from the cities to the coast. A number of studies suggest that the high rates of in-migration are being driven by a combination of retirees (Gurran and Blakely 2007), welfare migrants (Burnley 1996, Hugo and Bell 1998), professionals and younger families (Burnley and Murphy 2004), and those seeking alternative lifestyles (Curry et al. 2001). Of course, the common variable here is access to the coast.

Another longstanding trend evident in Figs. 2.1 and 2.2 is the relatively high rates of migration into peri-metropolitan areas. In the period between 1991 and 2006, all of penumbral zones surrounding Australia's southern capitals experienced strong in-migration flows. While some of these peri-metropolitan areas are also located on the coast, a considerable number are situated inland. Places such as the Avon and Chittering Valleys in Western Australia (see Chapter 6, this volume), the Barossa in South Australia and the Yarra Ranges outside Melbourne all recorded in-migration rates in excess of 20% between 1991 and 2006. It is also apparent that the expansion of the urban field has seen this type of migration spread to localities further afield, such as the Hunter Valley in New South Wales (see Holmes et al. 2002), the Wandering, Brookton and Pingelly areas some 120 km south-east of Perth (Tonts et al. 2008), and the Macedon ranges north of Melbourne. This outward growth has resonances with Blumenfeld's (1954) 'tidal wave of metropolitan expansion', in which large parts of the countryside are, in effect, urbanised (see also Bryant et al. 1984, Smailes 2002). However, it is also clear that it is not a spatially uniform process, and that the contours of in-migration vary considerably. It is here that factors such as natural amenity, accessibility, and land costs appear to be shaping processes of rural growth.

In contrast to this expansion of the urban field, is a process of in-migration focused on more remote areas. As emphasised in the early literature on the rural

population turnaround (Roberts and Randolph 1983, Bolton and Chalkley 1990, Sant and Simons 1993), these more remote examples of population growth represent a distinct shift of focus from the expanding metropolitan hinterlands. In the periods 1991–1996 and 2001–2006, the influx of people to such locations gathered pace. For example, in New South Wales between 1991 and 1996, the Armidale area recorded in-migration rates in excess of 28%, while a number of areas in the Riverina had rates over 20%. In Victoria, larger inland centres such as Shepparton and Mildura were important foci for in-migrants, along with Bendigo and Ballarat. What these places all have in common is their regional administrative and service centre functions. Similar trends were recorded between 2001 and 2006, with SLAs such as Wodonga (Victoria), Inverell and Walcha (New South Wales) experiencing in-migration rates of over 20%.

In South Australia and Western Australia, in-migration rates to inland SLAs were more modest between 1991 and 1996, although a number did record rates of more than 20%, including the Flinders Ranges (SA), the Gilbert and Clare Valleys (SA), Dardanup (WA), Donnybrook-Balingup (WA), and Wagin (WA). The period between 2001 and 2006 saw in-migration intensify for a number of inland SLAs in both states. In South Australia, those noted above, together with Renmark-Paringa in the Riverland and Goyder to the north of Adelaide had among the highest in-migration rates in the state. In Western Australia, the inland regional service centre of Narrogin, together with smaller SLAs in areas to the south-west and south-east of Perth (e.g., Bridgetown, Dardanup and Cuballing) recorded relatively high rates of in-migration. There were also a number of surprising results, with some very remote agricultural SLAs to the north-east and east of Perth recording high in-migration rates. These included Three Springs, Morawa and Trayning. However, it is likely that these results are largely the outcome of high rates of population turnover, especially among public servants (see also Jones and Tonts 2003). Thus, high rates of in-migration were coupled with similarly high rates of out-migration, producing low to sometimes negative net migration balances.

One of the complicating factors in understanding in-migration in regional Australia over the past decade has been the so-called ‘resources boom’. Strong global demand and high prices for commodities over the past decade has fuelled a rapid expansion of the minerals and petroleum industries in a number of SLAs across rural Australia. Nowhere was this more apparent than in Western Australia, where new and existing resource projects contributed to substantial in-migration (see Chapter 15, this volume). For example, SLAs such as Ravensthorpe, Esperance, Boddington, Waroona and Harvey all recorded rates of in-migration greater than 25% between 2001 and 2006. What tends to complicate matters is that these might also be regarded as ‘high amenity’ with landscape attributes (e.g., access to the coast, natural vegetation and sloping topography) which are also known to attract new migrants (McGranahan 1999, Argent et al. 2007). Thus, disentangling ‘natural’ amenity from other pull factors in the migration process is not a straightforward task.

The high rates of in-migration recorded across many parts of southern rural Australia over the past decade or so contrast sharply with the experience of those places experiencing very low rates of in-migration. In these areas, out-migration

often occurs at a much higher rate than in-migration, contributing to substantial population decline (also see Chapter 1, this volume). In both the 1991–1996 and 2001–2006 intercensal periods, it was those inland areas that were heavily dependent on broadacre agricultural industries that experienced some of the lowest rates of in-migration in southern Australia. This included much of central and western New South Wales, the Mallee of Victoria, the non-coastal parts of the Eyre Peninsula in South Australia, and most of the Western Australian Wheatbelt. In contrast to the in-migration hotspots, rates of in-migration in many of the SLAs in such regions were below 15%, and in some cases under 10%. Here, the combination of agricultural restructuring, service withdrawal, limited employment and economic opportunities, an ageing housing stock, and modest levels of environmental amenity limit the likelihood of migration-led growth.

2.4 Ex-metropolitan Migration

In understanding patterns of in-migration to rural Australia, a primary concern must be: where are the migrants from? As has already been noted, implicit in much of the Anglo-American and Australian case study research on rural social and demographic change is the conviction that the overwhelming majority of such in-migrants originate from metropolitan areas. Yet, despite these claims, surprisingly little empirical analysis has been conducted on the source of in-migrants to rural Australia (see Chapter 4, this volume for further discussion). Table 2.1 shows those Statistical Local Areas in New South Wales and Western Australia with the highest rates of in-migration. In addition, it indicates the proportions of migrants to these areas who originate from four of Australia's capital cities: Adelaide, Perth, Melbourne and Sydney.

In the case of New South Wales, Table 2.1 shows that none of the SLAs with high in-migration rates had more than 40% of their new arrivals originating from the four capitals. Indeed, for most this proportion was between 20 and 30%. The highest proportions of in-migrants from the capitals were concentrated in Bathurst, Snowy River, and the coastal SLAs of Hastings, Coffs Harbour and Great Lakes. In these areas, the proportion of migrants from the capitals ranged from 29.0 to 36.5%. In a number of the top 25 SLAs for in-migration in NSW, the proportion of ex-metropolitan residents was very low. For example, in Yass Valley, Inverell, Richmond Valley and Urana, less than 15% of new arrivals came from the four capitals. Of course, the situation in New South Wales is complicated somewhat by its more complex urban hierarchy. Larger centres such as Newcastle, Wollongong and Canberra are not recorded in Table 2.1 as contributing to metropolitan in-migration, even though these are likely to contribute a substantial proportion of in-migrants. Brisbane is also excluded from the analysis, which might help to explain relatively low numbers of metropolitan in-migrants on some of the northern coast SLAs. Nevertheless, the overall pattern is undoubtedly one in which metropolitan areas are but modest contributors to rural in-migration.

Table 2.1 Migration rates and percentage of ex-metropolitan residents in non-metropolitan Statistical Local Areas in NSW and WA, 2001–2006 (top 25, ranked by migration rate). Source: ABS (2008)

New South Wales			Western Australia		
Statistical local area	In-migration rate (%)	% Ex-metro	Statistical local area	In-migration rate (%)	% Ex-metro
Murray	30.8	21.9	Capel	62.8	25.3
Palerang	30.1	23.7	Chittering	48.7	72.1
Armidale/Dumaresq	26.5	16.1	Ravensthorpe	44.8	40.6
Yass valley	24.6	13.8	Dardanup	40.5	22.8
Lismore	23.9	20.6	Toodyay	36.5	68.2
Inverell	23.8	11.1	Murray	35.6	42.4
Hastings	23.7	32.5	Greenough	35.5	19.8
Queanbeyan	23.3	16.2	Chapman valley	34.3	15.7
Richmond valley	23.2	13.1	Broomehill	34.0	43.6
Tweed	23.1	22.5	Cuballing	33.0	40.7
Uralla	23.1	16.2	Harvey	31.6	33.9
Snowy river	22.6	29.0	Mandurah	30.7	55.7
Coffs harbour	22.5	29.0	Donnybrook-Balingup	30.1	40.5
Great lakes	22.3	32.5	Gingin	29.8	68.7
Cobar	22.3	3.6	York	29.6	56.9
Urana	22.3	14.6	Morawa	29.5	23.8
Greater hume	22.0	15.0	Boddington	29.0	41.0
Cabonne	21.9	18.8	Irwin	28.8	33.0
Bathurst	21.8	36.5	Three springs	28.3	27.0
Ballina	21.8	22.2	Northam	28.0	63.8
Eurobodalla	21.7	25.3	Denmark	28.0	56.2
Blayney	21.6	22.7	Busselton	27.6	49.7
Berrigan	21.5	21.2	Bridgetown-Greenbushes	27.5	55.2
Corowa shire	21.3	22.8	Waroona	26.6	33.9
Port stephens	21.1	26.2	Nannup	26.3	50.8

This situation is replicated in Western Australia, although here the dominance of Perth has an important bearing on migration patterns. In WA, peri-urban SLAs generally have a high proportion of in-migrants originating from the capitals. Thus, places such as Chittering, Toodyay, Mandurah, Northam, Gingin and York, all of which are within 100 km of the Perth CBD, had a high proportion of in-migrants from the capitals. In more remote areas, however, the proportion of new residents from the capitals is generally less than half. The only exceptions are Denmark, Bridgetown-Greenbushes and Nannup, all of which are well known centres of 'lifestyle migration' (Curry et al. 2001, Tonts and Greive 2002).

The experience of New South Wales and Western Australia is similar to those of Victoria and South Australia in that ex-metropolitan residents are not necessarily the main source of in-migrants for most rural SLAs. Only peri-urban and highly

accessible SLAs tend to have high rates of in-migration from the capital cities. A broader analysis of all SLAs in southern rural Australia also raises questions about the extent to which high rates of in-migration are driven by people leaving the cities. A simple bivariate (Pearson's *r*) correlation between the rate of in-migration (2001–2006) and the proportion of metropolitan in-migrants for rural SLAs in New South Wales, Victoria, South Australia and Western Australia yields a mildly positive result of 0.30 ($p < 0.01$). This suggests that those areas with high in-migration rates tend to have the highest proportion of ex-metropolitan residents. However, when the analysis is conducted on a state-by-state basis, it appears that the national result is unduly influenced by South Australia. In South Australia, the correlation is 0.42 ($p < 0.01$), indicating that, in this state, a stronger association exists between the rate of migration and the proportion of in-migrants. However, in the other three states the relationships are very weak (NSW $r = 0.09$; Victoria $r = 0.12$; WA $r = 0.08$).

2.5 The Role of Rural Amenity

While it is clear that high rates of rural in-migration are not simply the outcome of processes of counterurbanisation and gentrification, it does appear that many new arrivals, regardless of origin, favour certain parts of the countryside over others. Some of the major drivers are undoubtedly the employment and other economic opportunities offered by larger regional centres and the resources industries. However, the strength of migration to areas other than these centres suggests that landscape amenity may also play a key role. Even a superficial analysis of the spatial patterns evident in Figs. 2.1 and 2.2 suggests that areas with certain environmental and/or other geographical qualities are strongly associated with high rates of in-migration. To examine this further, we draw on the index of amenity developed by Argent et al. (2007) for south eastern Australia. This index draws together the following environmental and socio-economic variables: annual rainfall; terrain and altitude; remoteness; duration of settlement; irrigation water resources; distance from the beach; and, employment in recreation and related services.

Following McGranahan (1999), an amenity index was created using z-scores of only those independent variables that are significant predictors of in-migration rates (Fig. 2.3). Therefore, settlement duration was excluded from the index. In addition, in order to combine the respective variables to a single index, the two negatively correlated indicators were transformed (inverted) to ensure that all were *positively* related to in-migration rates. Median altitude and median slope were reduced in weighting to provide a single combined indicator of terrain. A thorough discussion of the amenity index, as well as the rationale for the inclusion of these particular variables is provided in Argent et al. (2007). It should also be noted that, to date, the index has not been extended to include Western Australia and, as such, much of the discussion here focuses on south-eastern Australia.

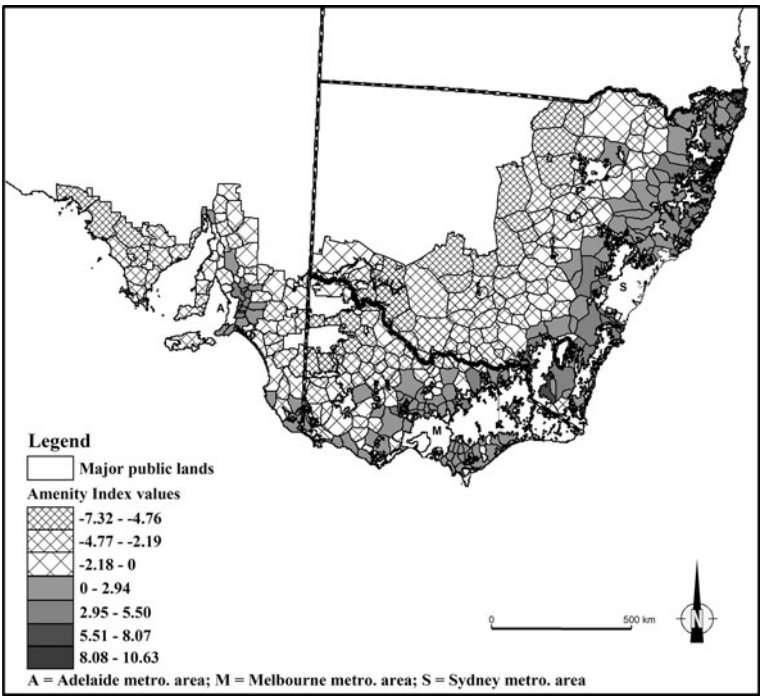

Fig. 2.3 The amenity index applied to south-eastern Australia. Source: Argent et al. (2007)

The work of Argent et al. (2007) showed a relatively strong statistical association between amenity and in-migration for the periods 1976–1981 and 1996–2001 achieving a multiple r of 0.73 and r^2 of 0.53 when applied to their study area of south-eastern Australia. Thus, it is perhaps not surprising to find that this continued to be the case for the 2001–2006 intercensal period. Table 2.2 shows the results of a correlation analysis for SLAs in south-eastern Australia. In each state, and for the study area as a whole, rates of in-migration were strongly correlated with the amenity scores.

It is also notable that, although the broad analysis of the origins of in-migrants indicated that ex-metropolitan residents made up a relatively small proportion of new arrivals, the results presented in Table 2.2 suggest that high amenity areas are

Table 2.2 Correlation analysis (Pearson) between amenity index and selected migration variables for non-metropolitan south-eastern Australia 2001–2006

	In migration rate	% Ex-urban
New South Wales	0.413*	0.577*
Victoria	0.579*	0.464*
South Australia	0.261**	0.393**
All SLAs	0.370*	0.293*

*$p < 0.01$; **$p < 0.05$

important to this group. In each state, the proportion of ex-metropolitan residents is highly correlated with amenity. In other words, those areas with a large proportion of ex-urban migrants also tend to be those with the highest levels of amenity. So, while ex-metropolitan residents may not dominate the in-migrant pool in such areas, it would seem they have a clear preference for these environments over lower amenity places.

These linkages between rural amenity and in-migration raise important issues for those communities experiencing an influx of new residents. As a number of researchers have pointed out, in-migration to high amenity environments has the potential to destroy the very attributes that have attracted many newcomers in the first place. The combination of, inter alia, growing populations, land subdivision, new housing, and the expansion of commercial activity, present significant dilemmas for rural planners and policy makers. Moreover, the concomitant pressures on natural resources mean that amenity migration is a process that requires careful management if the broader goals of local and regional environmental sustainability, on the one hand, and harmonious residential and community development and land use, on the other, are to be met.

2.6 Ecological Consequences of Amenity-Led Migration

In many respects, rural amenity migration represents a deep structural shift for those communities affected by the process. In trying to understand this shift, social scientists have tended to focus their attention on issues associated with demographic change, economic restructuring, socio-cultural dynamics and political conflict. Yet, clearly, some of the most significant transformations associated with rural amenity migration will impact on the local environment. There is, for example, considerable evidence to suggest that amenity migration has direct impacts on vegetation, wildlife, streams and rivers, and coastal landforms (Jones et al. 2003, Gosnell et al. 2006, Klepeis et al. 2009, Mendham and Curtis 2010), although these impacts can be complex and both positive and negative (see Chapter 5, this volume). However, 'environment' needs to be interpreted broadly to incorporate not only 'natural' ecosystems, but also the cultural landscape. As a number of scholars have pointed out, the landscape values associated with traditional 'rural pursuits', such as agriculture, fishing and forestry, can be crucial components of amenity, and represent important elements of the heritage and attractiveness of high growth areas (Rudzitis 1996, Barr 2005, Loeffler and Steinicke 2007).

One major driver of environmental change in amenity areas is land subdivision. This typically involves the subdivision of farms and other rural landholdings into smaller hobby farms and lifestyle properties. Alongside this is the expansion of existing settlements, to accommodate population growth and economic development (Bryant and Johnson 1992). From an ecological perspective, the central consequence of this process is landscape fragmentation (Knight et al. 1995). Those areas dominated by small holdings also tend to be characterised by considerable

diversity in land use, incorporating activities such as hobby farming and experimental agriculture, ecological restoration projects, fallow land, natural vegetation, and activities that even resemble light industry. The proliferation of small lots is often accompanied by a range of other developments, including new housing, sheds, access roads, power lines and fencing. All of this can serve to radically alter and fragment rural landscapes (see Chapter 5, this volume).

Just as there can be inconsistencies between the land uses and management practices of smaller land holders, similar problems can arise between more established industries and enterprises and new arrivals. The potential mismatch between these land uses and landscape sensibilities can lead to local social and political conflict (Hollier and Reid 2007). In the south-west of Western Australia, Schirmer (2007) noted considerable conflict between newcomers and other landowners over pesticide use. Much of this conflict was centred on the potential for agricultural and other pesticides to 'contaminate' neighbouring properties, despite the application of chemicals being a longstanding practice in these areas. Schirmer (2007) also noted concerns and conflicts regarding noise and heavy vehicle use of roads by farmers and timber companies.

The sometimes divergent views and motivations of established commercial landholders and new in-migrants can also be viewed in the declining viability of long-established rural institutions, such as farmers' associations, agricultural bureaux, and the like. In New South Wales, the Rural Lands Protection Board (RLPB) system provides an extensive regional network of 47 boards across rural NSW funded by local landowner's rates in order to safeguard livestock production against animal diseases and pest plants. In early 2009, the RLPB organisation underwent an extensive restructuring of its operations and management in response to a complex of factors, one of which was the rising number of landholders in select regions who object to the compulsory RLPB levies and/or the organisation's approach to land and animal management (Integrated Marketing Communications 2008).

From a broader environmental and aesthetic perspective, the fragmentation of landscape amenity also has the potential to erode the cultural attributes of places (Tonts and Greive 2002). In many rural areas, it is the broadacre agricultural and pastoral landscapes that form an intrinsic component of local heritage and landscape aesthetics (Woods 2005). Indeed, it is often these attributes that provide the stimulus for in-migration to rural areas. The breakup of farmland, the construction of housing and infrastructure and the introduction of new land uses can undermine the amenity of components of the landscape. Already in parts of the south-west of Western Australia, for example, have there been claims that some areas have become overdeveloped and now resemble parts of outer metropolitan Perth (Jones and Tonts 2003). In effect, the uniqueness of place has been eroded by suburban style development. Similar trends have also been reported in other parts of Australia (Gurran and Blakely 2007). From a conceptual point of view, there are similarities here to Butler's (1980) model of tourist area development. In rural amenity areas, such a perspective holds that, following initial 'discovery' and in-migration, ongoing development eventually leads to significant challenges for local planners amid claims of overdevelopment. On the one hand, planners are faced with the need to protect landscape amenity, and on the other, to continue to promote development.

A closely related set of challenges reflect the absolute loss of agricultural land. The process of land subdivision and conversion from agriculture to other uses necessarily results in a decrease in farm production. While it is individual farmers who generally make the choice to subdivide their properties in order to capitalise on the accumulated value of land, collectively there is often a concern that valuable agricultural land is being lost to the industry. The demand for land by newcomers, together with a cultural view among farmers, developers and planners that farming in particular areas has become less viable and will ultimately be supplanted has been described as the 'impermanence syndrome' in agriculture (Gallent et al. 2008). In response, some local authorities have initiated planning measures to protect agricultural land (Gibson et al. 2005). Of course, the problem with such measures is that they are sometimes seen as an infringement on private property rights, akin to the disputes about heritage listing in high-amenity urban areas (Rosario 2007). Moreover, critics suggest that farmland preservation policies distort land prices by interfering with the market mechanism in the land economy, and can simply result in a transfer of demand and development to alternative locations.

While much of the literature has tended to focus on the negative impacts of amenity migration on rural environments, it is important to stress that the reality is far more complex. In research conducted in the United States, Jones et al. (2003) suggest that the influx of new residents to amenity areas can contribute to 'greening' of local environmental values. They argue that, in contrast to the more utilitarian 'extractive-commodity' views of traditional rural residents, many newcomers are more focused on environmental protection and rehabilitation. Again, these differences have the potential to act as a source of social and political conflict within rural areas, and can present considerable challenges to planners and environmental managers.

The notion that newcomers might precipitate a shift in local environmental values has also been reported in Australia. In reflecting on research conducted in the Corangamite area of Victoria, Mendham and Curtis (2010) argued that new residents may not be bound to traditional land management practices. They claim such residents may have a stronger commitment to environmental stewardship than the traditional farming community, and that they can inject not only considerable enthusiasm, but also innovation and leadership. Not dissimilar findings were reported by Green (2003) in Perth's peri-urban arc. She found a high level of involvement by newcomers in local environmental groups, and argued that in many cases such residents had a stronger commitment to ecological restoration than did longstanding residents.

2.7 Conclusion

The findings presented here raise important questions regarding the population turnarounds being experienced in some rural areas. While it is apparent that out-migration from metropolitan areas is part of the explanation for rural growth, it is part of a more complex story. Across much of rural Australia in-migration from metropolitan areas accounts for a relatively modest proportion of the new

arrivals. Thus, the most significant source of in-migrants appears to be other rural/regional areas. This suggests that there is a need to understand high rates of in-migration in certain rural areas with reference to the exodus of people from other non-metropolitan places. In other words, contemporary migration patterns in rural Australia appear to be linked as much to population redistribution as counterurbanisation.

There are also important ramifications here for debates regarding rural gentrification. Most significant is the widely held view that it is an ex-urban population from higher socio-economic backgrounds that are redefining many rural spaces, as discussed above. While there is evidence to suggest that this might indeed be the case in selected locations, for the majority of places experiencing high rates of in-migration it would appear that change is being driven by quite different demographic groups. One of the apparent shortcomings of Australian research on this theme is that case studies have often been undertaken in localities where ex-urban residents do indeed represent the majority of new arrivals (Curry et al. 2001, Tonts and Greive 2002, Holmes et al. 2002, Costello 2007). Yet, the reality is that these places are quite atypical. This reinforces the view that caution is needed in applying the rural gentrification thesis in a broad and uncritical way, particularly in an Australian context.

The shortcomings of the urban-led rural gentrification thesis also apply to the welfare-led hypothesis. While it is likely that some lower income and/or welfare dependent ex-urban people comprise some of the new arrivals in rural areas, the extent to which such groups have contributed to broader patterns of in-migration, over the past intercensal period at least, is doubtful. The modest flows of people from the metropolitan areas to most of the more remote, high in-migration SLAs suggest that it might explain only a small component of the influx.

The perception of some rural areas as being desirable has always been an axiomatic driver of in-migration and the resulting in-migration has, equally axiomatically, led to local demographic and environmental change. That amenity-led migration in rural Australia should be having these effects is therefore unsurprising. What is perhaps more surprising is the inherent complexity and diversity of this current process. Australia's initial agricultural settlers may well have been influenced by the traditional cachet that land ownership bestowed in European society, but their primary motivations were economic and they were therefore focused on the productive potential of the land they settled. Even when they competed for land (as did the squatters and the selectors) (Williams 1975, Powell 1988) their motivations were both similar and mutually comprehensible.

Many contemporary, amenity-led migrants may also be seeking a living, or at least some form of financial gain, but nowadays the motivations for their moves are far more likely to also encompass lifestyles and aesthetics. In spatial terms, this causes such migrants to focus only on those subsections of rural Australia with the requisite accessibility and/or landscape attributes. This produces a dichotomy at the sub-regional scale between those growing localities that possess and those stable or declining localities that lack these desirable characteristics.

What this means for the areas experiencing amenity-led in migration is that their populations are becoming increasingly diversified. Characteristically, a (shrinking) traditional rural population remains. This demographic cohort is likely to be aging, predominantly Anglo-Celtic and to have ongoing socioeconomic links to the local productive/extractive industries. As this chapter indicates, the in-migrants are less likely to be a homogenous group. They are not necessarily from the capital cities nor are they all seriously rich – or seriously poor. If they share any characteristic, it is, almost by definition, that they are attracted to a perceived environment and lifestyle that they valorise (see Chapter 4, this volume for further discussion and complications).

The inherent paradox in this situation is an all too common characteristic of amenity-led migration flows. The migrants are attracted to an environment as it is. But, not only do they change these environments by moving into them, they also fail to perceive that such environments are constantly changing and that their perceptions may therefore be idealised and even nostalgic. In other words, many in-migrants wish to preserve the bucolic surface of the areas that they colonise (Jones 2002) even as they change its (productive) agricultural substance. This situation poses clear policy challenges for those entrusted with the governance of high amenity rural areas as they attempt to deal with, on the one hand, the grounded issues of settlement, land use and environmental management and, on the other, the different visions and aspirations of an increasingly diversified local population.

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Chapter 3
Sea- and Tree-Change Phenomena in Far North Queensland, Australia: Impacts of Land Use Change and Mitigation Potential

Iris C. Bohnet and Nicky Moore

Iris Bohnet

I.C. Bohnet (✉)
CSIRO Sustainable Ecosystems, Cairns, QLD, Australia
e-mail: Iris.Bohnet@csiro.au

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Abstract The landscapes of Far North Queensland, in particular in the Wet Tropics bioregion, are increasingly attractive places for people seeking a sea- or tree-change. However, as more people move to the region, settlement density increases in sea-change locations as well as demand for acreage blocks in tree-change settings. These changes along with infrastructure and service requirements impact upon the landscape values, which may have attracted sea- and tree-changers to move to these locations in the first place. Based on qualitative interviews and community workshops with local residents in selected coastal and hinterland areas, this chapter explores the sea- and tree-change phenomena in the Wet Tropics bioregion and the potential long-term environmental, social, cultural and economic effects. Based on this analysis the authors discuss emerging strategies, such as urban development footprints, minimum lot size, transferable development rights, master planning and conservation partnerships and incentives, to protect sea- and tree-change landscapes. The chapter concludes with some practical recommendations for policy-makers and planners on how to better protect the character features of these highly desirable landscapes to ensure that they will remain attractive places well into the future. To achieve these recommendations will require major policy changes and greater collaboration between local, state and federal government agencies with responsibilities in land use planning and natural resource and asset management.

Keywords Landscape change · High value landscapes · Regional planning · Accumulative effects · Population growth · Wet Tropics

Abbreviations

ABC	Australian Broadcasting Commission
ABS	Australian Bureau of Statistics
DEWHA	Department of Environment, Water, Heritage and the Arts
DLGPSR	Department of Local Government, Sport and Recreation
EPBC	Environment Protection and Biodiversity Conservation Act 1999
FNQ	Far North Queensland
GIS	Geographic Information System
GQAL	Good Quality Agricultural Land
IPA	Integrated Planning Act
MCC	Manningham City Council
NSCT	National Sea Change Taskforce
SPP	State Planning Policy
TDR	Transferable Development Right
WHA	World Heritage Area

3.1 Introduction

The terms ‘sea- and tree-change’ are popular Australian expressions and descriptors for what has been termed ‘amenity migration’ in the United States, Canada and Europe (e.g., Esparza and Carruthers 2000, Marcouiller et al. 2002, Burnley and

Murphy 2004, also see Chapters 1, 2 and 4, this volume). As the terms imply, sea- and tree-change involves a move to the coast or a forested picturesque area, often in the coastal hinterland, thereby contributing to population growth in, and urbanisation of, coastal and hinterland areas that in the past have been low-key holiday destinations (Smith and Doherty 2006). Sea- and tree-changers migrate primarily for 'lifestyle' reasons rather than to improve their financial situation (e.g., Burnley 2005). This runs contrary to traditional migration theories, which claim that economic considerations, mainly better jobs, underpin migration decisions (Isaac 1947, Greenwood 1975, although see Chapters 4, this volume, for further discussion).

Despite the well documented movements from capital cities to the 'sunbelt' areas of New South Wales and Queensland (Sant and Simons 1993, Stimson and Minnery 1998, Walmsley et al. 1998, Burnley and Murphy 2004) the significance and extent of the sea- and tree-change phenomena has been vigorously debated in the literature (e.g., O'Conner 2001, Salt 2001, 2003). A review of the literature and interpretations of the sea-change phenomenon in Australia, as well as a typology of coastal growth settings, was recently carried out by Gurran and Blakely (2007). This typology (Gurran et al. 2005), prepared for the National Sea Change Taskforce (NSCT), distinguishes five idealised coastal settings based on population and distance to a capital city, and provides the basis for more detailed analyses of each type (Gurran et al. 2007).

The NSCT, a consortium currently representing more than 68 councils from around the coast of Australia, was formed in early 2004 in recognition that councils under pressure of rapid development would be more effective in addressing the effects of the sea-change phenomenon as a collective rather than as individual councils (National Sea Change Taskforce 2008). The Taskforce is a national body representing the interests of coastal councils and communities experiencing the effects of rapid population and tourism growth.

While some commentators include nearby hinterland areas when discussing the sea-change phenomenon (e.g., Burnley and Murphy 2004), the tree-change phenomenon (Salt 2006) has been less studied by academics (see Chapters 2 and 4, this volume). However, in 2007, a conference dedicated to the tree-change phenomenon was held in Beechworth, Victoria where Trevor Budge (La Trobe University) pointed out that land prices were rising in response to tree-change migration (Box 3.1).

Box 3.1 Increasing Property Prices Result from Tree-Change Migration

> As more people take their superannuation, and cash in their metropolitan properties, those places with the greatest level of amenity are realising that they are going to be swamped. Property values in the most sought-after towns had skyrocketed. In some of these places, the locals can't buy a house or the person who wants to work at the local tourist office can't afford to live there. The median house price in 2001 in country Victoria was $121,000. By 2006, it was $220,375. (The Age 2007)

Following the 2009 Victorian bushfires, the tree-change phenomenon is going to receive far greater attention (e.g., O'Brien 2009), particularly when planning decisions are required for the development of new towns in the tree-change zone. Set against this background, this chapter examines the sea- and tree-change phenomena in Far North Queensland, with particular reference to the Wet Tropics bioregion. It also explores the potential long-term environmental, social, cultural and economic effects of the phenomena. This analysis is followed by a discussion on how current policies and legislation might mitigate the potential long-term impacts. The chapter concludes with some recommendations for policy-makers and planners on how to protect the character features of highly desirable landscapes to ensure that they will remain attractive places well into the future.

3.1.1 Sea- and Tree-Change Phenomena in Far North Queensland

Far North Queensland has some of the most rapidly growing population centres in the State of Queensland outside the densely packed south-east corner of the State. Population growth rates in this region may not seem significant, in terms of total numbers, when compared to the capital cities. For example, the Far North Queensland population increased from 208,290 to 211,427 people in the year to June 2004, representing an annual growth rate of 1.5% compared with Queensland's growth rate of 2.1% (DLGPSR 2004). However, the percentage growth rates experienced by some coastal and hinterland communities are significant when compared with their respective state and national averages. For example, the long-term average growth rate in the former Douglas Shire (prior to council amalgamations in Queensland in March 2008) doubled to nearly 8% over the last 20 years from an estimated resident population of 3,030 in June 1996 to 11,275 people in June 2004 (Herron Todd White 2006). Population projections by the Australian Bureau of Statistics (ABS 2001) for the next 20 years suggest continued high growth rates in this area with an overall population increase of 65% to 17,365 residents.

It can be speculated that this growth in population and the associated urbanisation of coastal and hinterland areas in the Wet Tropics bioregion has much in common with the well documented sea-change phenomenon in other coastal regions of Australia. Similarly, the tree-change phenomenon seems worth investigating in this region, not only because land along the coastal strip becomes scarcer and less affordable and the forested hill slopes in the nearby hinterland areas may provide alternative locations to the coast, but also because the forested hills may attract a different kind of changer – a tree-changer.

3.2 Methods

3.2.1 The Wet Tropics Case Study Region

The Wet Tropics bioregion is a place with exceptional environmental values (McDonald and Weston 2004). It stretches over 500 km along the north Queensland

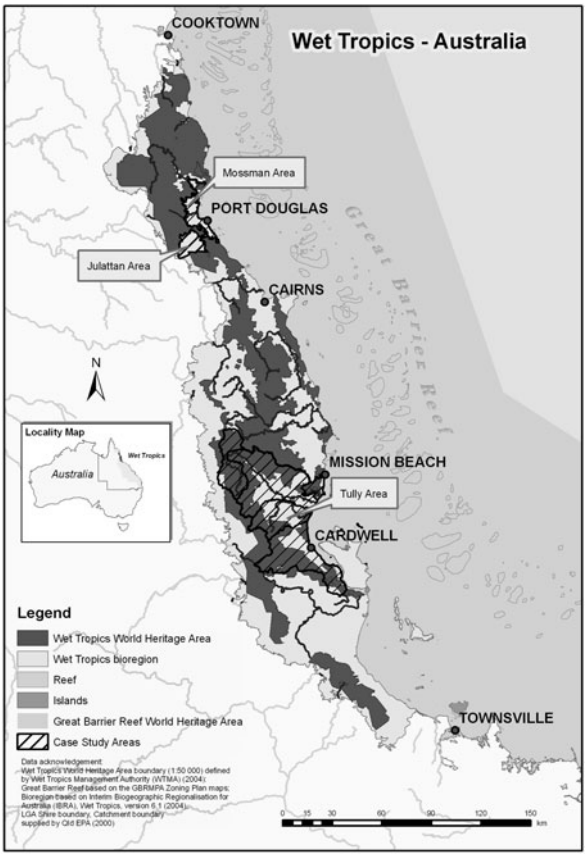

Fig. 3.1 Location of sea- and tree-change case study areas within the Wet Tropics bioregion and relative to the Great Barrier Reef and Wet Tropics World Heritage Areas

coast between Townsville and Cooktown and forms a belt approximately 50 km wide (Fig. 3.1). As a region it contains the highest biological diversity in Australia and is recognised as one of the megadiverse regions of the world (Williams et al. 2001). In 1988 some 900,000 ha (48%) of rainforest in the region was granted World Heritage status. The Great Barrier Reef, also inscribed on the World Heritage List, borders the Wet Tropics bioregion to form a unique setting where two World Heritage Areas (WHAs) meet (McDonald and Lane 2000). These environmental attributes seem to provide the ideal setting sea- and tree-changers may be looking for when deciding to move.

The Mossman, Julatten and Tully landscapes served as case study areas for our research within the Wet Tropics region (Fig. 3.1). The Mossman and Julatten case study areas are located in the northern part of the Wet Tropics bioregion. Mossman's coastal agricultural landscape is surrounded by the mountainous Wet Tropics rainforest to the west and the Coral Sea to the east. The neighbouring Julatten case study area is an upland agricultural landscape also surrounded by World Heritage rainforest but opens up towards the west, where dry sclerophyll woodlands replace rainforest (Goosem et al. 1999). The Tully case study

area is located south of the Mossman and Julatten areas and comprises the Tully and Murray River basins. Cultivated land and remnant patches of rainforest dominate the Tully-Murray floodplain and coastal area, whereas World Heritage listed rainforest occupies approximately 64% of the basins in the higher elevations.

3.2.2 A Mixed Methods Approach

The empirical data which formed the basis of this chapter came from a number of related projects in the Wet Tropics bioregion, namely from research in the Mossman, Julatten and Tully areas (Fig. 3.1). The focus of these projects was sustainable land use planning (Bohnet and Smith 2007, Bohnet 2008a) and reef water quality improvement (Bohnet et al. 2007, 2008, Bohnet and Kinjun 2009). While these studies did not specifically address sea- and tree-change issues, the data gathered in these projects provided a wealth of information related to sea- and tree-change phenomena. Information on amenity and other values and threats to these landscapes provided an ideal basis for further exploration.

A total of 91 qualitative semi-structured interviews (Silverman 2000) were conducted with local residents representing a wide range of landscape interests, including farming, forestry, cultural and spiritual heritage, tourism/recreation, conservation and development. The interviews were analysed for emergent themes using the qualitative software package ATLAS.ti (Muhr 1997) to explore the sea- and tree-change phenomena, that is, why sea- and tree changers choose to migrate to the Wet Tropics.

As location was considered an important factor, a document analysis was carried out to determine the types of sea- and tree-change areas in the Wet Tropics based on Gurran et al.'s (2005) typology of coastal growth settings. In addition, map overlays were prepared in a Geographic Information System (GIS) for the case study areas using a number of data layers including topography, land use/land cover, protected and conservation areas, stream networks, roads and zoning information from the local government planning schemes to determine the locations where sea- and tree-changers live in the landscape. This was considered important baseline information to examine the potential long-term impacts that sea- and tree-changers might have on the biophysical environment in which they live. Since some of the properties, particularly those occupied by tree-changers, are large in comparison to traditional urban lots, the interviews were also analysed to answer the following questions: what do sea- and tree-changers do to support themselves? and, how do they manage their properties?

In addition to the semi-structured interviews, the summaries and transcripts of ten community workshops with a total of 68 participants were included in the qualitative analysis (Muhr 1997) to explore the potential long-term environmental, social, cultural and economic effects of the sea- and tree-change phenomena. Based on the results of the research, a review of planning frameworks and their effectiveness was carried out. This review served as a starting point for policy and planning

recommendations that might help to mitigate the potential impacts of the sea- and tree-change phenomena on landscapes that are attractive to a wide range of people.

3.3 Results

3.3.1 Why Do Sea- and Tree-Changers Choose to Move to the Wet Tropics?

Most of the interviewees mentioned some of the attributes (push and pull factors) associated with the sea- or tree-change phenomenon when asked about the reasons for their move to the study areas (Stimson and Minnery 1998, ABS 2004). Interestingly, some of the interviewees identified themselves as sea- or tree-changers or in one case as both, moving between living at the beach and in the nearby coastal hinterland on a weekly basis.

One of the South Mission Beach interviewees described himself as what one may consider a classic sea-changer (someone who wants to leave the city), in line with the storyline of the well known Australian Broadcasting Commission's (ABC) sitcom series 'Sea change' which was broadcast in the late 1990s. The same interviewee also highlighted another attribute of the phenomenon related to downshifting and foregoing income for lifestyle values (Box 3.2).

Box 3.2 Classic Sea-Change Push and Pull Factors

> It was a sea-change out of the big city, a chance to do something a bit different. The kids were old enough and off our hands so that's what we did . . . I guess the opportunity to experience a different lifestyle away from the pressures of the city.
>
> Sea change [is], in effect the same thing, just rethinking values. Because after all, the money I was making in Sydney was much more than the money I make in Tully.

Other sea-changers living at Wongaling Beach referred to the beauty and attraction of the beach as a major factor in their move from the city (Box 3.3).

Box 3.3 The Beach as a Pull Factor for Sea-Changers

> The attraction was to the beach and to get away, seems incredible to talk about this 50 years ago, to get away from the rat race in Townsville.
>
> We just liked the place and the beach and we got to know people and started to make friends. . . . The beach is my home type thing.

Another interviewee who moved to the Whyanbeel valley in the Mossman hinterland in the late 1980s described the lure of the landscape (Box 3.4).

Box 3.4 The Landscape as a Pull Factor for Tree-Changers

> We didn't approach it at all in a business-like fashion, we came out here because we liked the landscape, we liked the land. I didn't look at the soil, nice view – here is our farm [laughs] so we bought it, then I looked at the soil. We decided we wanted to live up here, good place to bring up the kids and that was the decision made. Secondly, can we perhaps make a living off this farm, that was the second decision, so all that is a sort of bonus in a way, we would have moved up here anyway. We both come from Melbourne, I worked there as teacher, lecturing at the Institute.

A Julatten interviewee who bought her property in the early 1980s described it as a lifestyle choice (Box 3.5). Another Julatten interviewee pointed out one of the advantages of living in the elevated hinterland behind Port Douglas was the better climate (Box 3.6)

Box 3.5 Tree-Change as a Life Style Choice

> Well I suppose really people would say it was a hobby farm but to me it's a lifestyle because I do sell my fruit and I do grow vegetables for self sufficiency and eventually I will have timber trees for sale as well or I can do with them what I want to do.

Box 3.6 Tree-Change to Escape the Coastal Heat

> This is a beautiful spot; this is classed by the World National Geographic Magazine as probably the fifth best climate in the world, Julatten and Mt Molloy, so people who live in Port Douglas in the hot summer, they come up here and say this is good. We live 25 min from Port Douglas and still have it and have the nice climate.

Confirming previous research findings (e.g., Walmsley et al. 1998), many migrants are motivated by non-economic considerations as indicated by an interviewee who settled with her family in Shannonvale (Mossman hinterland) in the early 1990s (Box 3.7).

Box 3.7 Complexity of Factors Leading to Sea- and Tree-Change Migration

> We travelled around Australia and this is the prettiest part of Australia, the most beautiful part of Australia. . . . Peter was working out from Alice Springs so we are only an hour from the airport [Cairns International Airport], we had all the mountains, we had the sea and we had 3 kids going to high school and as I said, isn't it beautiful. All the clouds around the hills reminded us of Bali . . . we had taken the kids to Bali, they said we like it, so we said well, for the kids future, there was all the hills here if they wanted to go mountain climbing, abseiling, interested in forestry, timber, birds, trees, the whole lot. If they are interested in water sports, they could be marine biologists, they could be divers, they could own their own boat and get their licence or whatever they wanted and Peter would still be able to work out of Alice Spring. So that was our choice.

Data gathered from the interviews suggest that it is not labour market considerations that drive migration in these areas. Instead it is a combination of lifestyle factors, such as recreational opportunities, attractive landscapes and views, a pleasant climate and a good place to bring up children. This corroborates the findings of other Australian studies (Walmsley et al. 1998, Curry et al. 2001, Salt 2003, Burnley 2005). The interviewees also highlight the importance of closeness to other places (Sant and Simons 1993, Gurran et al. 2005). Examples include the proximity of Julatten, in the elevated picturesque and climatically advantaged hinterland of Mossman, to Port Douglas, the world famous (coastal) tourist Mecca. Perhaps even more important to note is the proximity of all case study areas to Cairns International Airport, which was mentioned frequently in the interviews. This makes the context in which the sea- and tree-change phenomena occur even more complicated, as it appears that the typology developed of coastal growth settings (Gurran et al. 2005), focusing on distance to a capital city, may also be applicable to distance to regional service centres and transport networks/hubs.

3.3.2 Types of Sea- and Tree-Change Areas in the Wet Tropics

According to Gurran et al.'s (2005) typology of coastal growth settings, the case study areas in the Wet Tropics region fall into the category of 'coastal hamlets': these include the towns of Port Douglas and a few less known, small coastal villages in the Mossman case study area (former Douglas Shire) as well as South Mission Beach and Cardwell in the Tully case study area (former Cardwell Shire). Coastal hamlets are classified as remote local government areas (more than 3 h

drive from a capital city) with populations of less than 15,000 people (Gurran et al. 2005). A further characteristic of coastal hamlets is that many are surrounded by conservation areas which act as an urban growth boundary. This certainly holds true for the Wet Tropics bioregion as a whole where agriculture, tourism, urbanisation and recreation are increasingly competing land uses (Bohnet and Smith 2007, DIP 2009a). While Gurran et al. (2005) concluded that the isolation of coastal hamlets has meant that they have escaped major development pressures to date, this does not seem to apply to the coastal hamlets of this study. This is particularly true if growth rates are not only measured by population increase, but by rate of conversion of agricultural land to more intensive land uses such as residential/rural residential and tourism developments. According to Salt's (2006) description of tree-change, the hinterland locations in the Mossman and Tully case study areas as well as the Julatten case study area, which is located in the hinterland of Mossman (Fig. 3.1), fit the list of attributes of locations attractive to tree-changers.

3.3.3 Where Do Sea- and Tree-Changers Live in the Wet Tropics?

Linking the identified sea- and tree-changers to the spatially explicit locations of their properties revealed the following:

- The sea-changers interviewed lived either on the beachfront, across the road from the beach or within walking distance to the beach. They regularly use the beach for a diverse range of recreational activities.
- The properties occupied by the sea-changers interviewed are within the traditional residential land use zone in the local planning schemes.
- The tree-changers lived either adjacent to or in close proximity to the Wet Tropics World Heritage Area (WHA), which is not surprising considering the extent of the rainforest and the length of the WHA boundary (Fig. 3.1).
- The properties of tree-changers benefit from one or several of the following features:
  - a rainforest backdrop
  - access to water: a permanent creek, a waterfall or dam
  - views: either elevated location with mountain and/or rainforest views or rural views
  - no close neighbours
  - no main road traffic noise.
- The tree-change properties are either within the rural residential or rural land use zones under the local planning scheme, meaning that these properties are substantially larger in lot size compared to the sea-change properties.

3.3.4 What Do Sea- and Tree-Changers Do and How Do They Manage Their Properties?

The land management activities carried out, particularly by the tree-changers on their larger size properties, were examined in more detail, as their activities may have significant biophysical, social, cultural and economic impacts. Many of the sea-changers identified in this research are semi-retired and follow their passions, for example, crafts or voluntary conservation work. Others are working locally in the private or public sectors. In contrast, the activities carried out by tree-changers are somewhat more diverse, perhaps because they have greater opportunities for self-determination on their larger sized properties.

In this study, there were two main types of tree-changers as defined by their range of activities. 'Lifestyle farmers' (Bohnet 2008a) often have given up their well paid professional jobs in the city and are trying to make a living from farming tropical fruit, flowers and/or trees on their properties. Some have started to add value to their products, for example by making tropical fruit juice, tropical fruit wine or ice cream. Some sell their produce directly from their properties; others sell nationally and via the internet. 'Hobby farmers' (Bohnet 2008a), in contrast, retain their professional jobs, for example in the mining industry, often in fly-in/fly-out positions (see Chapters 15, this volume). Others are self-employed professionals who work from home. In their spare time, these tree-changers also carry out farming and/or land management activities on their properties. Many have planted trees or agroforestry blocks, run cattle or agist horses. Some have spent money earned elsewhere to manage their properties.

These findings challenge the simplistic understanding that all rural-residential developments are synonymous with suburban sprawl in the rural landscape. At the same time, these findings raise the question as to how landscapes attractive to sea- and tree-changers should be used and managed to remain attractive places well into the future and who should do it (Byron Shire Council 2009).

3.3.5 Environmental Effects of the Sea- and Tree-Change Phenomena

Interviewees and workshop participants identified a wide range of environmental effects of the sea- and tree-change phenomena on landscapes and communities, which are summarised in Table 3.1. Environmental effects included location specific issues such as the loss of mangroves and aquatic biodiversity due to resort and marina development at Port Hinchinbrook near Cardwell and the loss of coastal habitats and agricultural land due to residential, rural residential and infrastructure development. However, most of the identified follow-on effects and environmental threats have regional and national implications, although the solutions may be found at the local level. Examples include threats to endangered species such as the Southern Cassowary (*Casuarius casuarius*) and to World Heritage values due to

Table 3.1 Environmental effects of the sea- and tree-change phenomena on landscapes and communities as identified by the interviewees and workshop participants

	Land use issues	Follow on effects	Threats
Environmental effects	• Clearing of native vegetation in coastal areas for housing and infrastructure development (South Mission Beach) • Filling in of coastal swamps and wetlands for housing and infrastructure development (South Mission Beach) • Resort and marina development at Port Hinchinbrook (Cardwell) • 'Absolute beachfront' development (Wongaling Beach, South Mission Beach) • Conversion of agricultural land to residential, rural residential and infrastructure development • Changes in agricultural land use (e.g. from grazing to horticulture)	• Habitat fragmentation • Habitat loss • Loss of aquatic and terrestrial biodiversity • Loss of iconic species such as the Southern Cassowary (*Casuarius casuarius*) • Coastal erosion • Change in the visual appearance of the landscape • Loss of agricultural land	• Increased traffic provides threat to Southern Cassowary (*Casuarius casuarius*) and other native wildlife • Domestic animals (e.g. cats, dogs) provide threat to Southern Cassowary (*Casuarius casuarius*) and other native wildlife • Exotic weeds (e.g. from ornamental plants) provide threats to native biodiversity • Threats to the water supply from increases in demand from a growing population and change in agricultural land use (e.g. from grazing to horticulture) • Threats to water quality related to sediment and nutrient run-off from properties • Air and noise pollution through increased traffic • Threats to the integrity and character of the landscape, e.g. hill slope developments

to habitat loss, fragmentation and the impacts of human occupation in areas of environmental significance.

3.3.6 Social, Cultural and Economic Effects of the Sea- and Tree-Change Phenomena

In addition to the environmental effects interviewees and workshop participants also identified a wide range of linked social, cultural and economic effects (summarised in Table 3.2). Similar to the environmental effects, the linked social, cultural and economic effects are based on changes in land cover, for example, clearing of rainforest, and changes in land use (e.g., from agricultural to residential use). From these changes, many different effects follow such as destruction of sites of cultural, spiritual or historical significance, loss of sugarcane land and affordable housing. While all environmental effects identified provide significant threats to species, habitats, landscapes and the natural resource base in the Wet Tropics, some of the identified social, cultural and economic effects may encourage more sustainable development at local and regional levels. For example, some of the 'lifestyle farmers' identified contribute to diversification of and value adding to tropical agricultural products from the region. They provide local employment and attract tourists to their farms thereby contributing to a more diverse economic base and cultural identity in the region. However, these positive effects have to be carefully balanced against the possible negative environmental effects.

Many of the effects of the sea- and tree-change phenomena identified above and in Tables 3.1 and 3.2 are not unique to the case study areas. They corroborate Australian (e.g., Kelly and McKenzie 2005, Gurran et al. 2007, Coggan et al. 2008) and international findings (e.g., Casado-Diaz 1999, Lorah and Southwick 2003) related to amenity-driven migration and peri-urban developments. This implies that current planning and policy frameworks in Australia and elsewhere struggle to mitigate the effects of the sea- and tree-change phenomena and that new or amended policies and planning frameworks may be required to effectively manage coastal and hinterland developments.

3.4 Governance of Sea- and Tree-Change Landscapes

Queensland local governments are responsible for preparing and implementing local planning schemes under the Integrated Planning Act 1997 (IPA). Each planning scheme must be in accord with state and regional interests as documented in State Planning Policies (SPPs) and statutory regional plans. Most land-use planning and development within each case study area is controlled by the relevant local government planning scheme. However, for large economically significant developments, state government can step in to coordinate the development approval process under the State Development and Public Works Organisation Act 1971.

Table 3.2 Social, cultural and economic effects of the sea- and tree-change phenomena on landscapes and communities as identified by the interviewees and workshop participants (continued overleaf)

	Land use issues	Follow on effects	Threats and opportunities
Social, cultural and economic effects	• Changes in land tenure (e.g. from crown land to freehold) • Changes in agricultural land use • Conversion of agricultural land to residential, rural residential and infrastructure development • Changing land values on the coast and nearby hinterland areas • Changing perceptions about environmental values • Coastal erosion	• Loss of community access to sites of cultural, spiritual and historical significance • Destruction of sites of cultural, spiritual and historical significance • Increase in some segments of the population, e.g. young families, alternative people • Loss of sugarcane and grazing land • Increase in labour intensive crops • Loss of affordable housing and land due to increasing prices and government rates caused by newcomers who can afford to pay • Increased conservation efforts by local groups • Loss or damage to properties affected by coastal erosion	Threats • Loss of indigenous relationships to country • Loss of cultural, spiritual and historical landscape values • Threats to the viability of the sugar mills due to reduced area under sugarcane • Threats to traditional agricultural industries due to the loss of sugarcane land to other uses • Traditional farming culture is challenged by newcomers • Conflicts between different segments of the community due to differences in their cultures and values • Threat to the Julatten area becoming a suburb of Port Douglas due to cheaper land and close proximity to the coast • Threat to the social fabric of the community due to the potential divide between cashed up newcomers, alternative people and long-term residents • Threat to the established social ambience of the Mossman area due to the scale of population influx

Table 3.2 (continued)

Land use issues	Follow on effects	Threats and opportunities
		Opportunities • New people with different ideas moving to an area may contribute to a more diverse and tolerant community and landscape, for example through diversification of land uses • Improvement in physical infrastructure such as roads • Improvement in health services and other community facilities • Provision of local employment due to introduction of labour intensive crops • Diversification of the economic base, for example through crop diversification, nature based tourism • New products, for example tropical fruit wine and ice cream contribute to new cottage industries and potentially to cultural identity • Prominence of conservation groups and nature based tourism ventures may be able to contribute to a conservation culture in the Wet Tropics

While there is no constitutional recognition of local government by the Commonwealth or any direct power to act in environmental protection matters, the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) through the Environment Protection and Biodiversity Conservation Act 1999 (EPBC) can declare a proposed development to be a controlled action if it is determined that 'it is likely to have or will have a significant impact on a matter of national environmental significance' (Elliott and Thomas 2009). Matters include endangered species, World Heritage properties and internationally listed wetlands, all of which are relevant to Far North Queensland. It is the responsibility of the developer to notify DEWHA if they suspect that their development may be a 'controlled action'. If a development is declared a controlled action, environmental assessment, which could include the requirement for an environmental impact study, can result. Thus all three levels of government have potential to be involved in sensitive areas undergoing sea-change and tree-change growth in the case study areas.

While the Integrated Planning Act (IPA) has undergone almost constant review since it was first passed into law in December 1997, there continues to be widespread criticism that the Act is process driven rather than outcome driven (England 2004). A major justification for introducing the Act was that it would streamline the development process by integrating over 60 different pieces of development-related legislation into one Act (England 2004). However, the complexity of the Integrated Development Assessment System process is such, that so much time is spent by planners getting the process right, that often the outcomes receive much less focus (DLGPSR 2007). Concern remains that the process gets in the way of good planning outcomes.

The IPA is performance based rather than depending on prescriptive zones, meaning that a development will be approved based on its merits providing it meets the desired environmental outcomes outlined in the planning scheme. The resulting lack of prohibited uses makes the planning schemes very cumbersome and user unfriendly (Wypych et al. 2005). Development proposals may not necessarily follow the acceptable solutions outlined in a planning scheme, as the Act aims for innovation rather than prescription. While there has been a recent amendment to introduce a very few prohibited uses, these do not have any real impact on the case study areas.

The three local planning schemes which cover the case study areas (Mareeba Shire Council 2004, Douglas Shire Council 2006, Cardwell Shire Council 2007) have been prepared under IPA which itself has the goal of achieving ecological sustainability. While the planning schemes aim to balance ecological, social, cultural and economic sustainability, local councils are often inadequately resourced to achieve this aim. Under IPA each planning scheme must reflect all relevant State Planning Policies (SPPs) which prescribe matters of state interest. Examples of relevant SPPs include: SPP 1/92: Development and conservation of agricultural land and SPP1/03: Mitigating the adverse impacts of flood, bushfire and landslide. In this context, the State Coastal Management Act 2002 has the status of a SPP providing direction for coastal development. However, most rural and regional councils are constrained by lack of financial resources and appropriately trained staff to

undertake the technical analyses required to meet these requirements. The necessary detailed planning and management therefore cannot be integrated into plans to ensure development does not, for example, adversely affect or will be affected by coastal processes, storm surge or landslip. All three local planning schemes reviewed for this research demonstrate these shortcomings. Until adequate resources are provided to councils, along with access to environmental data held by state and federal agencies, this situation is likely to continue, exacerbating the land-use planning and development issues resulting from high growth pressures on the coast and hinterland.

3.4.1 Planning Strategies to Protect Sea- and Tree-Change Growth Areas

In their report, the Sea Change Taskforce (Gurran et al. 2006) listed a number of best practice examples from Australia and overseas to address the growth pressures due to lifestyle migration, some of which are examined below in the Queensland context.

3.4.1.1 Urban Growth Boundary

The Far North Queensland Regional Plan 2009–2031, known locally as FNQ 2031, is a statutory planning instrument which categorises land into the Regional Landuse and Rural Production Area (i.e., rural land), Urban Footprint (for urban purposes such as residential, industrial, commercial) and Rural Living Area (low density rural residential) (DIP 2009a). This categorisation has been developed based on designating urban development footprints, outside which no further urban expansion is permitted. The largest land category is the Regional Landuse and Rural Production Area, which covers over 90% of the region and encompasses existing rural land and areas of high environmental value. In this area only agricultural uses and limited other non-residential development such as conservation and small scale tourism ventures are permitted. This is a land-use planning tool recommended as best practice by Gurran et al. (2006). However, in the Far North Queensland context, unless the use and management of farms (i.e., farmland) is addressed in a more targeted way, the buy up of productive farming properties for non-farming (e.g., lifestyle) purposes will increase. This is discussed further below.

3.4.1.2 Rural Fragmentation

To protect valuable agricultural land from fragmentation, local government planning schemes manage subdivisions through requirements for a minimum lot size. The recently gazetted Far North Queensland Regional Plan 2009–2031 requires local governments in the case study areas to stipulate that all lots formed through

subdivision of rural land are at least 60 ha in area, regardless of soil capability or suitability (DIP 2009a, b).

In Queensland the Good Quality Agricultural Land (GQAL) designation under State Planning Policy 1/92 targets soils which have a maximum suitability and capability for agriculture (Malcolm 1999). Based on maps of these valuable soils, local governments zone the land as rural to comply with SPP 1/92. Prior to FNQ 2031 rural land outside the GQAL areas was able to be subdivided into smaller areas and often became lifestyle and hobby farms. For example, the Atherton Shire Council planning scheme allowed 20-ha lots in rural areas outside the GQAL designation (Atherton Shire Council 1998). If areas constrained by slope and poorer soil type were still recognised, such areas could be targeted to lifestyle migrants with the aid of incentives and an appropriate policy framework. However, this opportunity to attract tree-changers to smaller rural lots appears to have been lost with the gazettal of FNQ 2031, which requires a blanket 60 ha minimum lot size across all rural areas regardless of land suitability (DIP 2009a, b).

While the intent of SPP 1/92 is to prevent the carving up of broadacre GQAL into smaller lots, there is no recognition that farms producing high value crops such as vanilla, tropical flowers or small crops require a lot less land for a viable enterprise than would traditional broad acre crops such as maize or sugar cane. This point was noted in the regional plan (DIP 2009a, p. 57), however, it has not been reflected in the accompanying regulatory provisions (DIP 2009b). With elements of the farming sector moving from broadacre monoculture to increasingly diverse types of specialty production, it appears that the uncritical application of a 60 ha minimum lot size is too blunt a policy instrument, and is unlikely to meet the needs of either current or future landholders.

The blanket minimum lot size further exacerbates the impacts of the tree-change phenomena on local farming communities. Issues which have developed in the desirable hinterland areas relate to the lack of rural residential or smaller rural lots coming onto the market. To buy into the area of their choice, tree-changers are buying up large farms (60–100 ha) in times of low commodity prices (for example in the 10 years following dairy deregulation in 1999) for the house entitlement that comes with the land. The demand is such that higher prices exclude neighbouring farmers from adding to their existing farms which feeds the cycle of farm failure as they become too small to remain viable. As many of these new rural landholders have bought their farms for lifestyle purposes they are often criticised by the farming community for poor land management practices such as the lack of weed and feral animal control (Bohnet 2008b).

Many of the farmers interviewed in this research had already sold individual parcels of land, and thus reduced their aggregate farm holding to finance their retirement, for family transfer or to reduce debt. During consultation for the FNQ 2031 regional plan, the 60 ha minimum lot size was widely questioned by broadacre farmers who contended that 60 ha farms are not viable, necessitating owning multiple lots. If the economic situation is such that farmers are reducing their land holdings, the viability of these smaller farms under traditional crops is being jeopardised, and fragmentation via the break up of larger land holdings is still occurring despite

the regional plan provisions. Based on these findings, State Planning Policy 1/92 Development and conservation of agricultural land is not effective in mitigating the potential impacts of the sea- and tree-change phenomena nor is the minimum lot size requirement preventing individual land parcels being sold off. Therefore, it may be necessary in the future to develop more effective measures to mitigate the urbanisation of the countryside. While discussion of structural adjustment for the rural sector is beyond the scope of this chapter, it is recognised that the underlying causes of rural fragmentation are complex and unlikely to be solved by physical land use planning alone. However, there is a role for land-use planning as part of the suite of tools available to government. Some of the measures outlined by Gurran et al. (2006) are examined below.

3.4.1.3 Transferable Development Rights

The current as-of-right residential house entitlement which traditionally runs with rural land title in Queensland is fuelling the drive to further subdivide rural land. As farmers become more economically stressed, the sale of separate land titles to non-farmers willing to pay an inflated price is often seen as a way to improve their economic situation. This unfortunately can reduce the viability of their farm if they have no choice but to sell highly productive parcels.

While wholesale removal of dwelling entitlements from rural lots would reduce land values and exacerbate the sector's economic distress (Environment and Behaviour Consultants 1999), the introduction of Transferable Development Rights (TDRs) is a market-based mechanism that can have a win-win outcome. When a landowner sells property, generally all their rights to build on it, lease it, or use it as security to borrow money against, are sold with it to the buyer. With a TDR scheme, the right to build a house on the land is separated from other property rights and can be sold while retaining all other rights. This mechanism allows landowners to transfer their development rights, either perceived (the expectation of a development approval) and/or actual (existing but un-utilised development approval), from one parcel of land (the sending parcel) to another (the receiving parcel). In this example, it would be farmers selling their right to build a house on their rural lots to a land owner in a nearby town. This mechanism is often accompanied by enticements such as allowing the TDR owner on the receiving parcel to build at a higher density than ordinarily permitted. The sending parcel is then protected by a permanent covenant that restricts further development.

Such schemes, while technically complex, have been set up in the United States (e.g., California and New Jersey) to protect rural land from non-rural development (American Farmland Trust 1997). Transferable Development Rights programs have also been used to protect environmentally sensitive land and may be used to reduce the pressure on the most environmentally sensitive coastal growth centres (loc. cit). In Queensland, as the IPA is a performance based planning framework, TDR schemes are not easily introduced and would require substantial legislative amendments to accommodate (Ryan 2001).

3.4.1.4 Master Planning

Under recent changes to the IPA, there is now provision for master planning of greenfield and part-developed areas under multiple ownership. The master planning process examines the development potential, infrastructure needs, and environmental and other landscape attributes of large areas within a broader strategic context. Further, it provides a process for resolving issues at an early stage, rather than at the time individual development applications are made. This allows strategic planning to be done, rather than the ad hoc decision making that comes from assessing each individual development application. Master planning is appropriate for high growth/high value areas like Mission Beach, and would provide a framework to direct sea-change growth to the least environmentally or visually sensitive areas.

Similarly, a land use planning tool applicable to environmentally sensitive hinterland and coastal areas is 'strategic assessment'. Provided for under s146 of the EPBC Act, it is relevant to areas where there are matters of national environmental significance which would trigger the Act for many separate developments, or where there are multiple landowners or complex issues (DEWHA 2008). This is the most appropriate form of assessment for areas of high growth such as sea-change locations. The approach comprises an environmental assessment of a large area of land comprising many land parcels in different ownership. This would allow development within a strategic framework that was already informed of the site sensitivities and constraints. This effectively apportions the cost of environmental management (such as environmental offsets) across all developers, not just those who come in later in the development cycle when the accumulated problems are large and obvious. At the time of writing, this tool is not yet approved for use in Queensland, but is being used by a number of other Australian states. If available as a planning measure in areas where the EPBC Act is triggered, it would help counter the incremental degradation of sensitive coastal areas by individual developments which by themselves may not have a significant impact, but cumulatively destroy the original environmental values.

3.4.1.5 Conservation Partnerships and Incentives

Many of the land management issues arising from tree-change growth (e.g., feral animal and weed control) relate to poor land management practices arising from ignorance. Land management issues cannot be easily addressed by land use planning, but rather need incentive schemes, education and local support. A successful model was used by Manningham City Council, an outer eastern council in Melbourne, which introduced an innovative scheme to foster better land management by rural residential land holders within the Mullum Mullum catchment of the Yarra River. Using rabbits as the initial issue to get people involved, they facilitated residents developing their own property management plans, addressing not only rabbit control, but also weed control, revegetation of degraded areas, and fencing stock and domestic pets out of sensitive remnant and riparian vegetation (MCC 1998). The conservation outcomes were gained by providing people with

the knowledge and support using dedicated council officers trained to do this work. Each neighbourhood was organised into a network of residents facilitated by one of their own, but overseen and assisted by council officers. The latter is important as it provides continuity if local facilitators move or step down. These groups had the added social benefit of connecting residents who otherwise would not get to know their neighbours.

To undertake this type of local conservation partnership requires councils having the resources to dedicate staff and time to the process. However, Manningham City Council's experience, and that of the larger Landcare program active across Australia, demonstrates that developing local conservation partnerships is a valuable process which can be tailored to the land management issues most relevant to the area. Manningham's programme was supported by state government agencies tasked with improving land management, including Melbourne Water (Melbourne's water management authority) which provided incentive funding for residents undertaking riparian improvement as part of their property management plans. This wider resourcing base helps break down the silo effect that is so common between government agencies across Australia, and should be encouraged.

3.5 Recommendations

It is our contention that spatial planning needs to better integrate environmental, social, cultural and economic issues by addressing the causes that drive change in rural areas and by engaging local communities (Greed 2000, Bohnet and Smith 2007). The need for better integration is especially evident in the decline of the agricultural base in rural areas, which is fuelling the fragmentation of traditional agricultural landscapes, both through urbanisation and through break up of larger land holdings. Until very recently the IPA did not have a strong commitment to strategic planning. This resulted in an incremental approach to land use planning and development assessment which is reflected in many planning schemes prepared under the IPA framework. The recent amendments to the IPA enabling statutory regional planning is a major step to addressing this problem and is essential to better manage tree- and sea-change growth in Queensland.

The following land use planning and policy recommendations are proposed:

1. The introduction of a market based TDR scheme to limit the entitlement *of a house on each rural lot, where the rural land is the donor*, and residential zoned land in nearby towns is the receiver area. Such a scheme would require major amendments to the IPA, however might be effective in addressing urbanisation of the rural landscape.
2. Fine scaled Good Quality Agricultural Land mapping used as an indicator of minimum lot size with categories of rural land that more accurately reflect the types of agricultural land uses that the land is most suitable to support. In turn this should be reflected in planning schemes in more tailored minimum lot size

requirements making allowances for some higher intensity, boutique rural uses and hobby farms where the land is of lower agricultural suitability. These may provide social, cultural and economic opportunities for tree-change migrants.
3. The use of holistic planning processes such as master-planning (provided for by the IPA) and/or strategic assessment processes (provided for by the EPBC Act) in sensitive coastal and hinterland areas experiencing rapid lifestyle related growth, which in turn informs regional and local government land use plans. These processes may be able to contribute to addressing environmental threats caused by the sea- and tree-change phenomena.
4. Adequate training and resourcing for local government planners along with better access to environmental data, mapping and technical assistance from state and Federal agencies. This would allow better planning and policy development at the local government level for sensitive environments experiencing growth pressures.
5. Conservation partnership programs between local councils and community groups and residents in high growth areas experiencing land management issues. This should be supported by state and federal grants or other funding sources as part of an integrated partnership approach to more sustainable land-use in sensitive areas.

To achieve these recommendations changes to current policies and greater collaboration between local, state and federal government agencies with responsibilities in land use planning and natural resource and asset management will be required. Queensland has a number of opportunities to address the issue of sea- and tree-change growth pressures in the far north, however significant legislative and policy changes will be needed to build on recent amendments to the *Integrated Planning Act* which now provides for statutory regional planning and master planning of high growth areas.

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Chapter 4
Seeking Trees or Escaping Traffic? Socio-Cultural Factors and 'Tree-Change' Migration in Australia

Angela T. Ragusa

Angela Ragusa

A.T. Ragusa (✉)
Institute for Land, Water and Society, Charles Sturt University, Wagga Wagga, NSW, Australia
e-mail: aragusa@csu.edu.au

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Abstract Tree-changers, those who move from the city to inland country areas principally for 'lifestyle reasons', are a newly identified social group in contemporary and popular Australian culture whom are affecting demographic change in Australia's country towns. This chapter presents images of tree-changers found in Australian news media and findings from 28 qualitative, in-depth interviews conducted in 2007–2008 with tree-changers who moved to rural New South Wales and northern Victoria to addresses a knowledge gap about *why* individuals are leaving Australia's cities for the country. Prior migration research has been largely geographic and produced location-specific, aggregate data on Australia's inter- and intra-metropolitan population migration trends explained by life-cycle. In contrast, this sociological study examines the inherently socially-derived factors, beyond age, which contribute to urban-rural migration. Findings reveal urban stresses (traffic, commuting and high population density) are key 'push' factors and stereotypical expectations that country life is less stressful, more spacious, and less expensive are key attractants. Data failed to support perceptions that tree-changers expect city-quality amenities, found most did not relocate for cheaper real estate and the majority moved to suburban homes in country towns, not 'the Bush'. Unanticipated realities of country life (i.e., more commuting and higher living expenses) show discrepancy exists between urban-rural migrants' expectations and experiences.

Keywords Demographic change · Tree change · Migration · Lifestyle · Media · Culture · Rural

Abbreviations

ABC	Australian Broadcasting Corporation
ABS	Australian Bureau of Statistics
GAPDL	Gladstone Area Promotional and Development Board
NSW	New South Wales
QLD	Queensland
RRDB	Riverina Regional Development Board
WA	Western Australia

4.1 Introduction

The contemporary Australian phenomenon popularly termed 'tree-change' by Australian news media and real estate businesses eager to capitalise on the dreams of disenchanted, seemingly 'cashed up' (Ragusa 2007) urbanites seeking refuge in an idealised rurality is examined in this chapter from a sociological perspective. According to the media, tree-changers are those who swap the city for life in 'the bush' (Salt in Larsen 2007), otherwise known as rural Australia (Dowling 2004). Tree-change exists in contrast with 'sea change', which commonly refers to migration from various locations in Australia to costal areas, frequently for reasons associated with retirement (Burnley and Murphy 2004; see Chapters 1, 2 and 3,

this volume). In 2007, there were claimed to be 2.4 million tree-changers who demographer Bernard Salt described as occupying the space between the outer suburbs to 200 km from city centres (Salt 2007). In the disciplines of geography and demography, the tree-change phenomenon can be categorised by the academic term 'counterurbanisation' (Vartiainen 1989, Spencer 1995, Hugo 2001), or 'population turnaround' which refers to relocation from metropolitan cities to non-metropolitan areas, known as the country (Burnley and Murphy 2004). Internationally, population turnaround falls under the category of internal migration, which was first classified as 'in-migration' (Fuguitt and Beale 1978).

Recent research on counterurbanisation, and tree-change in particular, has identified the tendency of demographers, geographers and planners to focus on quantification, particularly redistribution, of individuals from urban to rural locations (Costello 2007). Studies of Australian residential mobility have typically been conducted by geographers, with few sociologists interested in the topic, and focused on Census data analysis which produces aggregate data about population distribution, composition and the use of resources in specific urban locations (Hassan et al. 1996). Seminal migration research in the 1980s exploring internal migration in Australia urged future researchers to not only document trends, but to examine how migrants' lifestyles affected communities, those migrated to and those left (Burnley et al. 1980). There remains a dearth of research examining the effect of urban-rural migration, its implications, corresponding tensions between new and existing community members, and the complexity about *why* individuals choose to move to rural locations (Costello 2007). Lack of information about what motivates individuals to move, and the corresponding decision-making process, has been noted for over a decade when sociologists also identified the lack of national and multi-city studies (Hassan et al. 1996).

Costello's (2007) geographic research drawing on in-depth interviews with long and short-term residents in the case study area Castlemaine, 120 km northwest of Melbourne, begins the project of identifying sources of conflict between new and long-term residents (particularly perceptions of 'us' versus 'them'), and land-use conflicts stemming from disparate views of subdivisions and the desired aesthetics of rurality, yet remains focussed on a single community. Sociological research in Australia is required to identify and analyse the socio-cultural factors (Vartiainen 1989) that contribute to counter-urbanisation, which can further similar sociological research conducted in the United States (see Jobes 2000). Building and expanding Costello's (2007) research approach to exploring the impact of urban-rural migration on tree-change receiving areas, this chapter transcends a community-based focus by sampling tree-changers dispersed over a disparate range of geographic ruralities to operationalise tree-changers as a unique social group which transcends specific localities. Thus, its seeks not to identify the allure of any single destination, or predict the next 'hot spot', but rather aims to deeply examine what motivates self-defined tree-changers to move to the country (see further discussion in Chapters 3 and Chapters 14, this volume). This is achieved by presenting findings from both qualitative content analysis and in-depth interviews with tree-changers who moved from one of five capital cities to multiple destinations in rural Victoria and New

South Wales (NSW). In so doing, the chapter compares perceptions and experiences of urban-rural migration presented by tree-changers with stereotypes purported by Australian news media.

4.1.1 Perceptions and Realities of the Australian Lifestyle: An Historical View

Contemporary tree-changers can be classified as a unique social group based upon their pursuit of migration to achieve a self-identified better 'lifestyle'. The term 'lifestyle' is originally derived from the work of early twentieth century sociologist Max Weber who used the concept to distinguish social groups by their status, collective conscious and identity (Weber 1922). Today, 'lifestyle' is frequently and commonly used in Australian popular culture, particularly the media, to describe amorphous notions and goals associated with the pursuit of life satisfaction, which is frequently achieved by the cultural activity of consumerism.

Australians have been described as more attached to their lifestyle than to anything else, excluding their family, which is more readily realised in cities than in the country (Carroll 1992). Nevertheless, the country, which Australians fondly term 'the Bush', has provided inspiration for art, music, cultural icons and dreams of migrants since colonialism. Ongoing romanticism with rurality, while the majority live a thoroughly suburban existence, has led to acerbic sociological critique, 'a lot of romantic fantasy has been projected onto the Bush while the reality is a few native shrubs planted in the heavily domestic backyard' (Carroll 1992a, p. 234). Sociologist John Carroll summarised quintessential Australian cultural values in the latter half of the twentieth century by noting the majority of Australian lives reflect pursuit and achievement of normative suburban dreams. Australia's cultural values are largely materialistic, with much of life spent focusing on ownership of a free-standing house with a private garden, cars, the latest technological gadgets and bountiful access to food, especially meat (Carroll 1992a). For much of Australia's history, expectations of affordable home ownership, and the desire for at least a quarter acre of land, contributed to massive suburban sprawl and the expansion of cities (Sharp 2001). Thus, consumerism has been described as the third largest cultural influence on Australian's pursuit of British middle-class suburban values and materialistic tendencies, along with the prevalence of working-class attitudes, namely male mateship and hostility to authority (Carroll 1992b).

Australia's penchant for suburbia has historically been realised in cities, not in rural Australia. Nationally, Australia has been characterised by large levels of urbanisation and highly populated capital cities which exist in contrast to sparsely populated, small country towns formed to serve the outlying, predominantly commercial, large landholding farming economy (Collits 2001). In the 1990s, Australia's country towns were described as geographically isolated, economically stagnating and full of jobs that provided little personal satisfaction or growth (Dempsey 1992).

Small-town decline in Australia has been theorised to exist for a number of reasons (see further discussion in Chapters 1, 12 and 13, this volume). Post-1971, Australia's inland country towns experienced population decline and out-migration due largely to declining wool and beef prices. Population statistics and census data show that this led to regional rural centre growth, yet in-migration varied by location; areas such as Bathurst and Orange gained migrants from Sydney in contrast with Tamworth and Wagga Wagga which absorbed relocated rural locals, especially farmers whose sentimental attachment to local areas discouraged migration afar (Burnley 1980). The initial 'population turnaround' larger country towns experienced was forecasted as due to economic recession and predicted to be of short duration (Burnley 1980). Yet, since 1981, regional centres in NSW, specifically Albury, Dubbo and Wagga Wagga, have continued to experience population stability or growth into the twenty-first century due to improved economic diversification and development as key service centres (Collits 2001).

Nationally, however, small town decline has been a common experience since colonialism in Australia. Key reasons include farm mechanisation, declining agricultural profits, inland dryness and the cultural preference for coastal retirement (Sorensen and Epps 1993). For the majority of country towns, the export wealth experienced between 1940 and 1970 from primary industry, particularly agricultural and mining, slowed down in the 1980s with the disappearance of local manufacturing, and all but vanished in the 1990s as financial deregulation gained momentum and caused unprecedented unemployment rates since the Great Depression (Carroll 1992a).

These historical events work to explain why Australia has been heavily urbanised since the late nineteenth century. 'Australia's settlement pattern and geography – the dry climate, poor soils in marginal areas, small population, large land mass, the existence of the Great Dividing Range, and the absence of navigable inland rivers – have shaped the current position of smaller regional communities' (Collits 2001, p. 43). Among developed nations, Australia has the highest percentage of urban residents who live in its eight largest cities (Digby 2005). Australian Bureau of Statistics (ABS) (2000) data reveal 62.7% of Australians live in major urban areas. Australia's demographic composition is historically based (Forth 2001). Part of city dwellers' reluctance to move to the country has been a hesitation to give up urban lifestyle amenities. The total percentage of Australia's population living in urban areas has declined since 1971, when it reached 86% (Burnley et al. 1980). According to the 2008 and 2006 ABS population distribution and census data, this trend continues with the six state capital cities, along with Canberra and Darwin, accounting for approximately 60% of Australia's population while movement to regional centres has noticeably increased, leading to slower growth in the nation's capital cities (Jamrozik 2009).

In the 1920s, rural sociologists started the ongoing project of creating explanatory frameworks and concepts to define the key term 'rural'. Initially, such operations were pragmatically focused to provide guidance regarding the distribution of government funding (Keller 2001). Although there remains a lack of

conceptual and applied clarity of the terms 'regional', 'rural' and 'remote', geographers have used the term 'non-metropolitan Australia' to refer to locations outside of areas containing >100,000 inhabitants. Non-metropolitan Australia has been documented by Burnley et al. (1980) to have experienced population change since 1966.

Over the past few decades, rural Australia has been demographically shaped by a complex range of social issues relating to the combined result of economics, government policy, social issues and physical well-being. For example, strong correlations have been found between rural Australians' higher fertility/birth rates and higher mortality rates, due in part to higher proportions of Aboriginal Australians, women and youth, and levels of remoteness, or accessibility (Hugo 2001). These instances of socioeconomic inequality also influence urban Australia. In particular, rural unemployment, attributed in part to higher fertility rates, has been a key factor encouraging rural-urban migration and metropolitan growth (Keller 2001). Lack of sufficient technology and basic infrastructural resources, key predictors of out-migration from rural areas, as well as remoteness, affect job skills, training, community identity and long-term commitment and well-being (Keller 2001). Rural Australia has been consistently characterised as more homogeneous, yielding lower incomes and possessing an overall lower socioeconomic status (with country towns having 25.8% of Australia's population yet 39% of all such areas being in poverty) in contrast to urban Australia (Hugo 2001). Concurrently, between 1971 and 1996, there has also been a consistent decrease in the proportion of Australians living in the five largest capital cities (Sydney, Melbourne, Brisbane, Perth and Adelaide), from 57.9% in 1971 to 53.1% in 1996 (Hugo 2001, pp. 58–59). To help explain some of these changes, particularly Australians' preference about where to live and work, in other words demographic change, I will further examine past research regarding migration in Australia.

4.1.2 Migration in Australia: Historical and Contemporary Experiences

Migration can broadly be described as the movement of populations. Within Australia, migration has profoundly affected both urban and rural communities and, as an inherently social process, has led to social change. During the 1970s, population movement research viewed migration as symptomatic of basic social change in Australia (Burnley et al. 1980). In this chapter, I focus on internal migration, which encompasses both 'in-migration' and 'out-migration' in Australia and pertains to residents who move both between and within states/territories. Internal migration exists in contrast with migration from overseas, or 'international migration'. When internal and overseas migration rates are compared for Australia, internal migration exhibits the greatest influence on overall migration rates (Bell and Hugo 2000).

Australian country towns and provincial cities have long experienced higher population turnover rates in contrast with both metropolitan centres and very rural areas

(Hugo 2001). Between 1966 and 1971 Australians continued their post-war trend of moving to non-metropolitan centres in search of affordable housing (Burnley et al. 1980). For several decades, internal migration was largely comprised of young adults who moved to capital cities for employment and education. However, by the 1960s, there was a notable trend of rural-urban migrants who moved back to non-metropolitan areas, particularly women, young families with dependent children and those transferred due to employment (Hugo 2001).

Population analysis of net migration in Australia from 1991 to 1996 has revealed significant changes in residence for Australians living in all states, with the exception of Tasmania (Bell and Hugo 2000). In Australia, counter-urbanisation gained notable momentum in the 1980s, yet slowed down by the early 1990s (Hugo 2001). In regional Australia, population growth has been most strongly concentrated in areas which surround metropolitan cities or regional centres, are on the east or southwest coast, are on the Hume Highway linking Melbourne and Sydney, are in remote locations characterised by high-growth industries such as mining or tourism, or are in high amenity resort/retirement areas (Hugo 2001). In other words, population growth has been strongest, exceeding national averages, for primarily highly accessible areas that tend to be near major cities. According to Hugo (2001), the counter-urbanisation movement was highest in NSW and Victoria amongst retired, married couples. In contrast, the age group between 20 and 34 years old was notably underrepresented in non-metropolitan areas, as were women 40 and over due to the propensity of widows for relocating to the city (Hugo 2001). Globally, some report a noticeable lack of evidence for rural rejuvenation, stating counter-urbanisation 'is sketchy at best and relies mainly on individual case studies rather than aggregate data' (Keller 2001, p. 26).

In the 1960s and 1970s, social theorists (see Richmond 1969) tried to explain migration trends by examining some of the social-structural changes influencing broad transformation of societies from industrial to post-industrial. American sociologist Daniel Bell is one of the most well-known social theorists who articulated the broad-scale economic shift in global production from a manufacturing and goods-based economy to a knowledge and service-based socioeconomic structure. Bell's (1973) theories set the foundation for more recent sociological theory outlining the characteristics of post-industrial society and the impact of globalisation by Manual Castells, Anthony Giddens and several other sociologists. Theories of globalisation and post-industrialism are of central importance to understanding contemporary migration trends and demographic change in rural Australia more broadly, and tree-change specifically. For instance, as Richmond (1969) theorised in the 1960s, Australian migration trends can be understood better if viewed less as an expression of push/pull factors and more as the normative behaviour of specific social groups which exhibit identifiable age ranges, or life-cycle stages, and occupations (Burnley et al. 1980). Sociological theory underscoring the importance of life-cycle to population mobility originated in the mid-1950s, with Rossi's articulation of how urban migration is influenced by age (Hassan et al. 1996). Quantitative analysis of Melbourne and Sydney households which tested Rossi's 1955 theory found, irrespective of economic indicators such as income, younger urban Australians

(below 30) moved more frequently than older (above 51) counterparts while single and childless couples were the least mobile households (Hassan et al. 1996).

The tendency to focus on urban migration remains apparent in the research literature. Focus on urban migration continues to disadvantage rural Australia because rural communities have been impacted more greatly by globalisation than metropolitan Australia due to their lack of a 'critical mass' (Collits 2001, p. 41). Further, rural Australia has suffered much loss of primary industry and manufacturing, both which historically underpinned rural economies. Collits' (2001, pp. 44–45) 1998 analysis of ABS data found a 20% or higher decrease in small-town populations since 1976 in towns where mineral resources were depleted, advances in manufacturing led to workforce reductions, farms were aggregated, local manufacturing was no longer required, residents could drive to work or education in provincial cities, the towns were physically isolated from highways, mining operations changed to 'fly-in fly-out' (see Chapters 15, this volume) and/or aging populations led to changes in land use. In contrast, national and international research confirms increased development of the radius 65–120 km outside of metropolitan areas, often termed 'peri-urban' areas, due to residents' desire for shorter work commutes, cheaper housing, lifestyle changes, educational opportunities for children and amenities (Keller 2001; see Chapters 6, this volume). Additionally, some researchers (Forth 2001) have argued the low cost rental housing available in rural areas attracts welfare dependent families and those economically disadvantaged.

Internal migration to metropolitan and coastal regions has been twice as great as migration to inland and remote regions (Garnaut et al. 2001). According to the Australian Institute of Health and Welfare, in 1998 just 25% of Australians lived in rural or remote areas. Rural populations have been classified as ranging from 25,000 to 99,000 for large rural centres, 10,000–24,999 for small rural areas 5,000–9,999 for rural towns and less than 5,000 individuals for remote areas (Garnaut et al. 2001). Recently however, a number of factors have converged to make rural Australia a more enticing place to live. Economic changes, such as various forms of industry deregulation, declining on-farm incomes, changes in career options, increased hobby farming, tourism, population growth and property prices around the turn of the millennium all affected and changed the use and attractiveness of many rural Australian landscapes (Gibson 2002). One structural variable which has greatly impacted rural population growth is personal mobility.

Huge increases in personal mobility, due to structural developments in transportation and communication systems, and individual discretion regarding place of residence have facilitated movement out of Australia's major cities and into rural areas at the city fringe without necessitating the location of new employment (Hugo 2001). For some, the contemporary growth and influence of telecommuting has offered a real alternative to relocating to the urban fringe. Telecommuting provides a concrete example of how the shift from a manufacturing, industrial-based society to the information age, characterised by global networks and information communication technologies can impact demographic change and choice/place of residence.

The existing and potential impact telecommuting holds for urban-rural migration in Australia has garnered speculation, yet lacks sufficient research. Theories that there is a growing 'convergence' developing between metropolitan and non-metropolitan characteristics in Australia (Hugo 2001, p. 66) from what others described to be suburban sprawl are contentious and unsubstantiated. In the early 1990s, telecommuting was theorised to be a potential contributor to suburbanisation and urban sprawl, with commentators noting the environmental costs of urban sprawl might well outweigh any benefit gained from reduced commuting (Keller 2001). Critics have further noted digital technologies' inability to address or reform the massive resource imbalance which exists between urban and rural Australia, although global communications may enhance rural competitiveness (Keller 2001). To date, no national quantitative analysis has been conducted on the influence of telecommuting on Australian migratory trends. Hugo (2001) cautions against relying on ABS data to reveal employment change because such data are collected based upon the location of employee residence not place of employment. Thus, 'an important question remains as to the proportion of workers living in rural or other urban localities but commuting to jobs located within major urban areas' (Hugo 2001, p. 65). In 2010 we live in a society highly dependent on various forms of high-tech transportation. Thus, the concept that Australians are increasingly mobile is hardly novel. Yet historically speaking, mobility is a recent phenomenon. For instance, it was only in 1980 that the proclamation, 'never before in Australia . . . has the population been more mobile, and never before has the nature of society been so affected by the migratory inclinations of its citizens' (Burnley et al. 1980, p. 15) was put forth.

Since the 1980s, population mobility has been consistently characterised as a hallmark of modern Australian society and research on migration trends has focused on analysing in- and out-migration locations. Although research conducted three decades ago took a more collectivist approach by focusing on communities as the unit of analysis (Burnley 1980, Brealey and Newton 1980, Montague 1980, Pryor 1980), in contrast with contemporary research which has begun to focus less on aggregate data of populations, as recommended by Spencer (1995), to more deeply examine migrants' reasons for relocating (Costello 2007), contemporary research remains location-dependent. Rather than focus on migrants as a social group, researchers continue to prioritise focusing on *places*, areas both left and pursued, restricting findings to their connection with locations, rather than the socio-cultural factors (beyond the demographic characteristics of life-cycle/age and employment) that influence migration. Heightened individualisation and reflexive practice require researchers shift their focus from the *collective*, which characterise traditional, especially rural communities, to the *individualistic* drivers prompting individual consumption of space/place. For example, top motivators of out-migration from a rural country town, Barcaldine, Queensland (QLD), between 1969 and 1973 were (in order of greatest importance) economic, employment, educational, personal, retirement, health and quality of life (Montague 1980). As this chapter will show, these reasons remain largely unchanged in 2010, albeit 'lifestyle' assumes far greater importance (see Chapters 3, this volume).

4.2 Research Methodology

Twenty eight in-depth, face-to-face and telephone interviews were conducted in 2007 and 2008 with tree-changers who migrated to rural New South Wales (NSW) and north-eastern Victoria from one of Australia's major metropolitan cities (Adelaide, Brisbane, Canberra, Melbourne, Perth or Sydney) after having lived and worked there for a substantial time (minimum 7 years). Tree-changers were located using a purposive research sampling frame (Sarantakos 2005), local advertising and professional contacts. Interviews ranged from 20 to 60 min in length and were recorded for subsequent transcription. This chapter presents primary collected data analysed via qualitative, critical thematic analysis of interviewee responses. This research methodology was utilised to answer the key research question, '*Why* do contemporary tree-changers relocate from cities to country towns in Australia?' because personal meanings and feelings about what individuals do are insufficiently captured with quantitative measurement; critical subjective meanings and feelings, which are essential elements of understanding human behaviour, are better captured using broad-ranging interviews (Monette et al. 2008). However, in contrast with ethnographic interviews, which are typically informal, unstructured and follow a conversational style (Patton 2002), the present research used non-schedule-standardised interviews which asked all participants the same set of specific questions on the narrow topic of tree-change. However, in contrast with quantitative interviews, the questions remain open-ended so as not to stifle freedom of individual response and the interviewer used probing as appropriate to encourage elaboration (Sarantakos 2005). The open-ended questions were designed to elicit detailed information about *why* tree-changers moved to their new destination, to identify pre- and post-perceptions of urban residents about country life, as well as individual tree-changers' experiences and future plans. Additionally, the first half of the interview contained closed-ended questions so a demographic profile of the sample could be generated. Demographic variables included ethnicity, gender, occupation, place of birth and migration details. These demographic variables were coded and entered into SPSS, a quantitative software program, to generate descriptive statistics for the sample. Still, as a qualitative research study, it must be stressed that representation, particularly extrapolation of findings to make generalised statements about the larger population, is neither an aim nor desirable outcome of this study which should rather serve as foundational descriptive data that identifies themes, commonalities and social patterns manifested within a contextualised analysis (Monette et al. 2008).

In addition to interview data, this chapter relies on secondary data collected from a qualitative content analysis of Australian news media's depiction of tree-changers from when the term was first applied on February 8, 2003 in *The West Australian* up to October 31, 2008. Using the keywords 'tree-change', to search all Australian news articles listed in the electronic database, Factiva, yielded a collection of more than 2,000 articles, including real estate advertisements. Each news article was coded, categorised and thematically searched to see how the media presented the key themes identified by the tree-changers interviewed. These media representations

are presented alongside interview data to compare and contrast stereotypes, perceptions and experiences about contemporary counter-urbanisation, and tree-change, in Australia today.

4.3 Research Findings

Qualitative content analysis of Australian news media's representation of tree-change between February, 2003 and October, 2008 found the predominance of two widespread claims. The first claim related to which social groups are making a tree-change. According to the media, the tree-change movement is being led by cashed up baby boomers, the generation born between 1946 and 1964 (see Ragusa 2007) and poor young families in search of cheaper housing. The second broad claim relates to tree-changers' expectations and experiences of country life, and in particular tree-changers' demands that country Australia offer similar amenities as available in its cities. Media stereotypes regarding who is moving, if tree-changers relocated because of cheaper rural real estate and what type of amenities tree-changers' expected is next presented in this chapter, followed by the juxtaposition of responses given by 28 tree-changers interviewed about these issues.

4.3.1 Tree-Change: Media-Driven Stereotypes and the Creation of a Property Market

Australian country towns and their residents have been ignored by policymakers and homogenised by the media for years (Rogers and Collins 2001). As a key agent of socialisation, the media is a social institution responsible for producing the majority of popular knowledge about social groups and issues. Australian news media have typically depicted country towns as areas bereft of hope and plagued by numerous social problems, most notably violence, drugs and filled with residents of low socioeconomic status (Rogers and Collins 2001). National news coverage of rural Australia bifurcates between 'dying' and 'doing well' (Collits 2001, p. 32). My research lends support for Costello's (2007) assertion that news media perpetuate stereotypes and myths about tree-changers and dichotomize experiences into 'good' or 'bad' rather than examining the complexity of issues facing urban-rural migration. The propensity of news media to sensationalise and dichotomise rural existence can be demonstrated by headlines of news articles published in relation to the research which formed the basis of this chapter: 'When the tree-change dream turns to dust' by the *Sunday Age* (Munro 2009), 'Rustic reality bites' by the Newcastle Herald (Corbett 2009) and 'Rural life not so sweet' by the *Sun Herald* (Brooks and Munro 2009). Australian news media depiction of rural life is largely based on demographic indicators, particularly rural Australia's loss of young residents to the cities and its aging population (Forth 2001). Thus, it is unfortunate

that Hugo's message, 'it is unhelpful to stereotype and generalise about the people who live in non-Metropolitan areas and the conditions they experience' (Hugo 2001, p. 70) remains relevant today.

In the 5 years from 2003 to 2008, Australian news media have fuelled migration of disenchanted urbanites to the bush and sea while property developers and local councils adopted and bantered the terms tree and sea change to describe a wide variety of locations and 'lifestyle' opportunities. Which locations qualified as tree-change destinations was often disputed and new lists regularly appeared. According to Salt tree-change 'is quite regionally driven in Australia. There is no tree-change culture in WA [Western Australia]. It is underdeveloped in Queensland' (in Larsen 2007, p. 4). Yet, in the same year the *Sunday Times Perth* reported 'Home hunters are abandoning the big smoke and heading into regional WA for cheaper houses and a perceived safer family environment. And their enthusiasm for a tree-change is driving property prices to new highs' (Lingane 2007, p. 12) as rural houses experienced up to a 50% price increase since 2006.

In 2007, Terry Ryder (in Larsen 2007, p. 4), property commentator and creator of hotspotting.com.au asserted, 'People want their amenities. They want their café culture. They don't want to live in a small country town. They want to live in a hilly area with some country charm to it. Your average small country town just won't cut it'. In addition, tree-change locations required close proximity, defined as within a 3 h commute, to a capital city, along with aesthetically pleasing vistas (The Australian 2008 September 19). In September 2008, the many requirements of tree-change locations were published in a special advertising report by *The Australian*. The report claimed, 'It should be a cute picturesque town with some sort of historical gravitas-if you can add in a local celebrity nearby, i.e., "Mel Gibson has a farm here", it adds to the cachet. . .you tend to also find the odd five-star restaurant and guesthouse spa there, a bit of inner city uber chic culture transported to the countryside' (Salt 2008 September 19, p. 3). Geography, expressed as proximity to metropolitan cities, was said to explain why tree-change was more prevalent in some states and was used in a competitive fashion among Australia's states: 'Victoria is probably the greatest tree-change state, largely because Melbourne is so centrally located within the state' (Salt 2008 September 19, p. 3).

The degree to which tree-change regions contribute to the national economy has not been determined, although increased property values have been reported. For many communities 'on the brink of destruction', the attraction of tree-changers is the money they bring for regional growth (*The Noosa Journal* 2008 March 27). 'In Victoria, rural property values have increased by 100% in the past decade in most areas. This return on investment is as good as most residential housing' (Curtis in *The Noosa Journal* 2008 March 20, p. 13). According to John Keating of Keatings Real Estate, Victoria, and reported by *The Herald Sun,* tree-changers were drawn to areas such as the Macedon Ranges not only because of the natural attractions and lifestyle changes such locations offered compared to Melbourne, but property buyers further perceived the property offered far better value for money than city properties (Rindfleisch 2008). In June 2008, Greater Bendigo's Mayor informed *The Age* that Melbourne workers who made a tree-change

created sufficient demand for the increased business investments made in Bendigo Shire since 2006 (Pallisco 2008).

Beyond retirees and families were still other purchasers, namely those seeking economic benefit through country properties. Some city investors, especially those from Melbourne, Sydney and Adelaide who first encountered current tree-change locations while holidaying, saw value in rural investments (Kennedy 2008). However, the impact of investment properties on rural communities, or their percentage of total rural property ownership, remains largely unknown. According to Salt, in a special advertising report that promoted careers in rural and remote Australia, 'sponge cities', which are larger regional towns, have grown over the last 5 years due to people downshifting and tree changing out of metropolitan Australia to buy cheaper property and invest what they saved by purchasing a rural, instead of city, property (The Australian 2008 March).

Such phenomenon widely reported by news media has been largely facilitated by un-evidenced claims made by Bernard Salt in Australia's national newspaper *The Australian*. Within less than 5 years (an historically very short timeframe for social change) *The Australian* reported not one, but three demographic shifts: 'First we had the sea changers, rising coastal property prices spawned the tree-changers, and now, a new demographic category, known as the "downshifters" has emerged' (Cencigh-Albulario 2008). The extent to which these media-labelled social groups exist, let alone impact national and local economies, communities and environments, remains unsubstantiated. Nevertheless, in 2004, tree-change was claimed to be, 'The newest trend to be tracked, the latest lifestyle change to be labelled. No longer do city slickers head straight for the coast when they want to live a quiet life – some are opting for a tree-change instead' (Metcalfe 2004, p. 9)

The media's effort to frame tree-change as a new and unique population movement is furthered by the efforts of some local councils which re-branded the images of inland country towns to drive the expansion of rural Australian communities and economies to lure stressed city dwellers to the country. Thus, for some regional areas, the tree-change movement has presented a perfect marketing opportunity. Gladstone, in Queensland, provides one of many examples which gained media coverage. The Gladstone Area Promotional and Development Board's (GAPDL) chief executive officer (CEO), Glenn Churchill told news media of the many stories he had heard about city dwellers wanting to move. 'We heard the cries of the stressful life and lengthy travel time in peak hour traffic to arrive at their destination' (*The Gladstone Observer* 2008, p. 39). Such claims have provided hope for rural areas, several which have capitalised on the current market downturn coupled with heightened popularity of 'country life' to attract new residents (see Chapters 3, this volume). In 2008, GAPDL aimed 'to attract much needed workers and their families to the Gladstone region' after 'the successful attraction of a number of workers and their families to Gladstone and the surrounds following last year's Country Week Expo' (*The Gladstone Observer* 2008, p. 39).

Unfortunately, such campaigns also perpetuate urban stereotypes. For instance, in the country town of Casino, Queensland, council noted, 'It is our consensus that in the city versus country contest it is easily seen that people want to leave the

busy, hectic, sky-scraping rat race of the city to enjoy quality living such as the lifestyle Casino has to offer' (*The Northern Star* 2008, p. 19). Even Wagga Wagga, NSW's largest inland rural city, has been reclassified as a tree-change destination and established the Riverina Regional Development Board (RRDB) dedicated to advertising and marketing to attract wealthy city-dwellers. Its webpage continues to stereotype country life (Box 4.1).

Box 4.1 Marketing Campaign: Riverina Regional Development Board

> Why not make a C Change, a Country Change by making the move to the Riverina-Murray region of NSW. Kids on bikes, neighbours who know who you are and households that still leave their backdoors unlocked when they go out. No commuting, no traffic jams, more time for yourself and those that you care about. You can live the dream the Riverina-Murray (http://www.rrdb.com.au/Default.asp?catID=16)

Such imagery fails to reveal Wagga Wagga's high rates of domestic violence, regular news stories in *The Daily Advertiser* of late-night physical violence in the centre of town and instances of rape and property damage, all documented in local police records, government reports and the media, and often surprises tree-changers expecting crime not to exist in country Australia. When the RRDB promoted the Riverina-Murray with, 'households that still leave their backdoors unlocked when they go out', perhaps they were excluding Wagga Wagga, where the town's welcome sign on Australia Day 2009 warned visitors to lock their car doors to prevent crime (Fig. 4.1) and *The Daily Advertiser* (2009, p. 3) reported 'occupants of nearby properties . . . refused to help police' attend 'three separate street battles involving up to 20 people armed with various weapons, including baseball bats, cricket bats and a machete' at 6:20 pm Saturday.

Marketing documents such as *North East Victoria: A place to call home* which is a joint initiative of several councils (Alpine, Indigo, Towong, Wangaratta and Wodonga), the region's premier daily newspaper, *The Border Mail* and the state paper, *The Age*, proclaims why living and working in North East Victoria is so desirable (Box 4.2).

Box 4.2 Marketing Campaign: North East Victoria

> The region's varied lifestyle attractions. . .are first-rate. They provide Melburians and other city dwellers tired of the rat race a chance to effect a tree-change with a perfectly reasonable expectation of success. Encouraging migration from the nation's stressed capitals will introduce new labour into regional towns, cities and villages, thus stimulating the growth of businesses, schools, amenities and capital investment. (The Border Mail 2008)

Fig. 4.1 The welcome sign at Wagga Wagga, rural NSW, urging visitors to lock their vehicles to reduce crime (Angela Ragusa)

These campaigns continue the mythology of 'country Australia' and continue to highlight perceived differences between city and country life. Thus, Hugo's (2001) suggestion that in-migration is promoting a sense of convergence between metropolitan and non-metropolitan characteristics, is not being realised in the urban-rural divide, at least for those areas beyond the 200 km perimeter of Sydney and Melbourne.

As a contemporary counter-urbanisation movement, tree-change demonstrates noticeable socio-cultural differences from historical migratory trends. Two broad categories of imagery put forth by Australian news media reveal two widespread stereotypes have been created about tree-changers. First, tree-changers are depicted as residents with the financial means, ambition and technological capacity, to say, 'enough is enough', pack their bags and leave after having endured enough of the stress associated with modern city life, which has reached unprecedented levels of vulgarity. The social group most associated with this stereotype are baby boomers (see Ragusa 2007). The second stereotype is that tree-changers are poor young families in search of affordable housing, thus contributing to the conservative stereotype that rural Australia is filled with low-income dwellers. Each of these stereotypes is discussed in detail below.

4.3.1.1 Stereotype 1: Tree-Changers Are Cashed up Baby Boomers

Precisely which demographic group is tree changing continues to be disputed. According to PRDnationwide, tree-changers are often baby boomer empty-nesters prepared to commute from their rural location as they move towards retirement (Wellings 2007, January 26). Baby boomers are often described in the media as

fuelling the tree-change movement, especially those who are 'cashed up' and desire a tree-change as an alternative to retiring to the coast (Thompson 2007). As a local from Wheelers Hill proclaimed, 'all those baby boomers have either died off or decided on a sea or tree-change' (Wilson in Cowen 2008, p. 9). By 2005, Bernard Salt proclaimed 2 million baby boomers, many whom are cashed up, were yet to seek a sea, tree or tee (golf) lifestyle change (Media Launch 2005). In 2007, the Housing Industry Association (Larsen 2007) declared 55–65 year olds were the strongest demographic of tree-changers since younger families had greater networks and work opportunities in the cities. Finally, in 2008 Salt described tree changing as a baby boomer euphemism for retirement, since the term 'retirement' was stigmatised and associated with 'obsolete' (Grayson 2008).

'Cashed up' images of this generation continued to be promulgated in the media throughout 2008 (Brann 2008; Murphy 2008; Rindfleisch 2008; The Australian 2008), often accompanied by vague promises of a 'lifestyle', 'Lifestyle properties were becoming increasingly popular but equally difficult to find and were in demand by cashed-up baby boomers looking for a more relaxed life' (Rindfleisch 2008, p. 91). Inconsistent trends proved common (Box 4.3).

Box 4.3 Example of Media Inconsistency: *The Australian*

> The surge in coastal real estate prices in 2003 rendered the sea change inaccessible to the not-so-cashed-up baby boomers, and sent many heading for the trees. But, according to demographer Bernard Salt, TC destinations must meet a set of stringent criteria before boomers will be inspired to pull up stumps and head for the hills. "They're after hilly undulating green areas – wheatbelt towns don't have tree-change appeal,'' he says. "There should be eucalypts, places where you'd expect to see a swagman coming up the gully". (The Australian 2008 September 19, p. 3)

On the same day *The Australian* also informed the public:

> According to Dr Birrell, once people get to retirement age, their inclination to move actually declines: "The older you get, the more likely you are to sit in your existing residence. People don't like moving away from family, friends, their bowling club". (The Australian 2008 September 19, p. 3)

Contradictory descriptions, such as age being a deterrent to relocation while aging baby boomers were found 'heading for the trees', to particular types of tree-lined vistas, because they could no longer afford coastal properties, simply add to the confusion about who is relocating and why. In comparison, in the US, 89% of baby boomers remained in their long-term home (Vladeck 2005) and since 1990 migration trends shifted to states with a lower cost-of-living (Mellor and Rehr 2005), which are not necessarily those with better amenities. Indeed, Australian academics have noted the frivolity of popular demographic debates (Box 4.4).

Box 4.4 Academic Response to Popular Sea-Change and Tree-Change Imagery

> Our pop demographic debates have led us to possess a very partial view of the future: one fixed on aging baby boomer legions flocking to sea-change regions. . .[but] Australians overwhelmingly continue to prefer living in the subregions of our main cities. . .our future will not be decided by the fortunes of new sea change or tree-change regions. (Gleeson 2004, p. 17).

The second representation of tree-changers in Australian news media highlighted the increased living expenses associated with city living, especially the lack of affordable housing, which prompted the urban poor, particularly young, child-laden families, to seek solace in cheap rural properties.

4.3.1.2 Stereotype 2: Tree-Changers Are Poor Young Families in Search of Affordable Housing

Developers, rural councils and media all emphasised the country areas' affordability. Over the past 3 years, news media (Granath 2006, 2007, Derkley 2007, Larsen 2007, Ketchell 2008) emphasized the affordability of rural living, citing rising city housing prices and interest rates as key push/pull factors luring urbanites to country dwellings and creating demographic change. Peter Bailey, CEO of Country Week, promoted affordable housing as 'a big drawcard. . .to encourage people to make the move' to country and regional Queensland while Ketchell (2008, p. 38) of *The Courier Mail* proclaimed, 'City dwellers despairing at high housing and rental costs are being urged to make a tree-change and possibly halve their mortgage. . .[because] communities in more far flung places. . .can be a much cheaper and hassle-free way of life'. Government researchers also forecasted continued rural population growth. 'If Department of Primary Industries social researcher Neil Barr is correct, there will be plenty more young families like the Caldicotts migrating to Beeac in coming years'. Simultaneously, academic rural landholder research found rural property turnover rates had doubled in the last decade (Curtis in *The Noosa Journal* 2008 March 20).

Recent academic research found younger generations, frequently those seeking employment or education, and not baby boomers, were driving contemporary internal Australian migration (Ragusa 2007, Cencigh-Albulario 2008). However, as my interview data in the next section shows, most young tree-changes were not poor families. Australian news media largely stopped promoting baby boomers as key drivers of tree-change by the end of 2007. Moreover, news media began to curtail the momentum of the tree-change movement itself. Bernard Salt described tree-change as 'very much the little brother to the main movement, which is sea

change' (in Larsen 2007, p. 18). Tim Lawless, PRDnationwide's national research director concurred. 'The whole tree-change [phenomenon] was in some way a by-product of the affordability gap between coastal property and rural property' (in Larsen 2007, p. 18).

As the Australian economy began to decline in 2008, along with falling global markets, media representation of tree-change changed from being an option pursued by 'cashed up' boomers to an attractive sea change alternative for poor young families. 'A tree-change can still offer a similar lifestyle to a sea change, often for a fraction of the cost: The principle of a sea or tree-change is still the same: to slow down your life, and enjoy the environmental amenity' (Salt 2008 September 19, p. 3). Young families and couples were labelled a 'demographic' that were keen to pursue their dream homes, which required space and freedom. Rural locations, such as Cooroy, Queensland were described in terms of their subdivision potential. Cooroy was 'increasingly seen as blank canvas to tree-changers' (*The Noosa Journal* 2008 March 27, p. 13).

Media promotion of rural areas to urban families in their mid-1930s who sought an affordable tree-change to areas with room to raise a family (Khoo 2008) continued throughout 2008, relentlessly promoted by rural real-estate agents (*Sunday Times Perth* 2008, Brasier 2008, Cowen 2008). Heart-warming personal accounts, such as *The Geelong Advertiser's* (2008, p. 6) quote, 'The daily sight of her little girl taking delight in the surrounding countryside is a constant reminder to Cindy Caldicott that her family's tree-change was a positive move' confirmed the existence and adoption of this new social group, and new social identity, seemingly purchased with one's rural property.

This ever-expanding range of tree-changers led some journalists to conclude 'A host of people is fleeing to the bush: retirees leaving the city, families looking for a clean, green country upbringing for the kids, and singles seeking new jobs or personal transformation' (Kennedy 2008, p. 4). Sydney alone was reported to be losing 22,000 citizens annually due to out-migration causing a first-ever deficit in all key social groups, 'from students and young singles to families and retirees' (The Australian 2008 March 8, p. 1). According to real estate agents, the sheer range of Sydney purchasers, who bought 80% of the small acreage, lifestyle properties in Sydney's Blue Mountains, were retirees and young families, eager to have an alternative residential space to the city, and tradespeople who often sought an investment property (Farrelly 2008).

4.3.2 Regional Growth, Rural Suburbanisation

As a component of total population growth, the contribution tree-change makes remains limited to specific locations. Further, the price rural properties command varies widely. For instance, property sales executives quoted in *The Age* note 10–15% of sales averaging $500 K in Ballarat were from city-based buyers (Pallisco 2008). For the aging rural landholders selling up, this brings good news. As Professor Alan Curtis told news media, the 'rapidly growing market for rural

properties, particularly subdivided properties within 200 km of major capital cities or 1 h drive from the larger regional centres'; in other words the tree-change movement is driving 'strong demand for rural property' which 'mean[s] that older farmers can expect to exit farming with good prospects for a prosperous retirement' (*The Noosa Journal* 2008 March 20).

Research shows that subdivisions bring more than economic prosperity to landholders. Undisputed consequences of development, particularly of previously less populated landscapes, are urban sprawl and the suburbanisation of rural areas. These consequences are well documented in the media for popular sea-change destinations, notably coastal meccas such as Byron Bay, NSW and Noosa, QLD, both which experienced considerable landscape and community change due to in-migration over the past two decades. For example, despite doubling in population size, ABS statistics also reveal Byron Bay lost nearly 1,000 full-time residents as a result of resident disdain of its popularity with retirees and other in-migrants (Murphy 2008 June 28). These and other demographic changes exemplify some of the challenges migration and development pose to post-agricultural landscapes reconfigured to accompany lifestyle demands of relocating populations. To better understand the complexity of urban-rural migration, specifically from the perspective of the migrant, I shall now examine key findings from interviews with the 28 tree-changers who moved from Australia's capital cities to rural towns in inland Australia. All references to interviewees are represented by the code 'TC' which is followed by an alphabetical ordering (from A to Z) to preserve participant anonymity. Therefore, direct quotes are identified by each tree-changer's code (i.e., 'TC-A') and the year the interview took place.

4.3.2.1 Tree-Changers: An Insider's Perspective

Who Is Leaving Australian Cities for the Country and Where Are They Going?

In contrast with Burnley et al.'s (1980) findings that in-migration is strongly associated with life-cycle, or migrant age, today's urban-rural migrants failed to conform to a distinctive category of age. Tree-changer age ranged from 27 to 70, with the average age of 43. This finding also contrasts from media stereotypes discussed elsewhere in the chapter which promote the tree-change movement as largely comprised of either retiring baby boomers or struggling young families. In my study, eight of the nine baby boomers interviewed were employed full or part time and only one was retired. Indeed, 93% of the entire sample ($N = 28$) had at least one household member employed full time. Overall, just 32% ($N = 9$) of the tree-changers were baby boomers. The largest birth cohort (64%, $N = 18$) represented was 'generation X', born 1965–1979. Just one 'traditionalist', from a generation born in 1922–1945, which is sometimes termed 'the veterans' or 'the silent generation' (ValueOptions no date), was interviewed. This research lends support to studies which have shown in-migration is led by families, albeit most adults were middle aged. Only 14% of the tree-changers interviewed were single; 86% were either married or in a de-facto relationship and 64% had children.

Fifty-eight percent of tree-changers interviewed moved from Sydney, 19% from Melbourne, 1% Canberra, 1% Brisbane, 2% Adelaide and 1% Perth. Eighteen percent migrated from major international cities in the United Kingdom, United States and Canada, although all international migrants had lived in Australian cities for many years. Figure 4.2 shows in-migrants' destinations and geographic proximity of tree-change locations to the nearest capital city. On average, tree-changers resided in their new location for 5 years. Twenty-eight percent expected to move to a new town in 5 years or less, but only one interviewee wanted to move to the coast. Finally, just one household anticipated purchasing land so they could leave their in-town rental property for a 70–100 acre lifestyle block. Multiple and complex considerations go into tree-changers' decision about where to live. Contrary to popular belief, neither amenities nor the price of real estate were found to be crucial motivating factors for the majority of those interviewed, affecting neither selection of country destination nor decisions to stay.

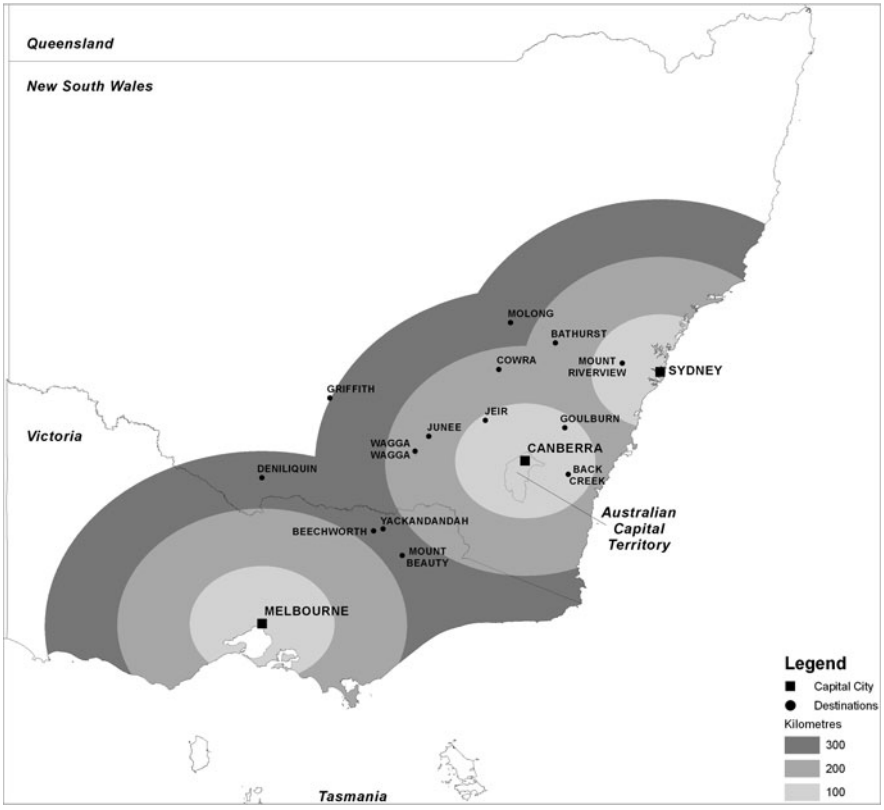

Fig. 4.2 Tree-change destinations and geographic location

Tree-Changers: Are Urbanites Fleeing Australian Cities to Snap up Cheaper Rural Properties?

When specifically asked 'Was the lower price of real estate a factor in your decision to move?' 61% of those interviewed said 'no', economics did not motivate their tree-change. Among those for whom the lower cost of real estate was a factor, 38% were generation X, 33% baby boomers and 29% traditionalists. Thus, for those economically motivated, age was an insignificant predictor of in-migration. Further, for the entire sample, economics was not a key lifestyle factor prompting migration. However, what does appear to drive tree-changes made for real-estate purposes is the city being departed.

The majority (54%) of tree-changers who moved to the country for cheaper real estate came from Sydney. Box 4.5 highlights key reasons offered from a Sydneysider for making a tree-change.

Box 4.5 Reasons for Tree-Changing from Sydney

> Mainly financial. . .after that, the secondary bonus was the cleaner air, larger blocks close to bush walking. . .[but] the main thing was just economic advantage. We both like bush walking, so that was a big thing. To move toward the mountain where there are a lot of bush walking tracks and environmental areas where we can go that are convenient to get to, but mainly economic and work. (TC-X 2008)

As one retired Sydney police officer said, he 'certainly didn't leave to improve my lifestyle', but later reflected, 'while it was a very big decision to sell up in Sydney and move here. . .we could buy a little cheaper here. It has improved our lifestyle because of economics. Living in the country I think is cheaper' (TC-C 2007). And, after perusing real state windows while in Cowra for a long weekend, a project manager, 'realised that there was a fantastic house that was sort of half the price of what we were looking at in Sydney and we bought it as an investment initially' (TC-I 2008). Another Sydneysider found, 'being a single person paying off a mortgage, I needed to look for something that was obviously affordable and there wasn't anything in Sydney I could afford. . .when I came to Bathurst. . .[it was] much cheaper' (TC-L 2008) and others said they, 'worked out we could either buy a one bedroom unit [in Sydney or]. . . a three bedroom plus garage on 1,000 m^2 in Mount Riverview where I am living now' (TC-X 2008). A fifth commented, 'there is no way in the world I could afford to buy property in Sydney. . .I earn more or less the same amount of money, but it's a hell of a lot cheaper living. . .probably [in] Wagga you could live for half to two thirds of the cost of Sydney. That makes a huge difference' (TC-K 2008) and a sixth found Goulburn 'was a lot cheaper, so it was mainly money. We both wanted to get into the rural atmosphere and it was

cheaper and you could get more land for the money than you were able to spend' (TC-S 2008). Although cost was not a concern, the owner of a 25 acre lifestyle block in Bathurst observed 'in Sydney, it would be worth a lot more money' (TC-R 2008).

Homeownership was common among the tree-changers. Seventy-nine percent of the sample owned their residence. For some, particularly Sydneysiders this would have been impossible in the city. 'One of the top factors was the affordability, the ability to be able to own our own home in the near future…now that 100 Sydney suburbs have a median house value over $1 million, that is more than many Sydneysiders will ever earn. Their grandchildren will be paying off their mortgage' (TC-O 2008). According to an economist, 'we probably would all like to be sea changers, but we can't afford it so we become tree-changers' (TC-K 2008). Although such a sentiment was not widespread, it does lend some support to the media speculation that most Australians considering relocating would really prefer to make a sea change, yet due to the high cost of coastal properties, some move to the country instead.

The high price of rural real estate was a surprising disappointment for nearly half the tree-changers interviewed. 'Prices are disappointing. I might have been interested in purchasing if they had been more reasonably set. The impact on my family has been a negative for me. They have not embraced or enjoyed the experience as much as I have' (TC-D 2007). After moving to Molong, one tree-changer found real estate, 'has not been lower' and 'there are no houses available of quality because they are all owned or there is high home ownership and whenever one does have a rental house, they are rented quick smart and no one gets a look. It is very tight' (TC-T 2008). Two tree-changers relocated to Griffith found, 'It is actually quite expensive here…it is more expensive than I think is reasonable. It is an inflated market' (TC-D 2007). 'Prices in Griffith are not lower. If you're moving from Sydney it would be okay' (TC-A 2007). This precise sentiment was exhibited by a tree-changer who had moved from Sydney to Griffith. Although she did not move because of real estate prices, she stated, 'Here in Griffith where you can buy a four bedroom family home for less than $300,000 you don't need to live with that stress in your life…sure you might not get paid as much as you would in Sydney…but the difference in real estate prices is much different' (TC-E 2007).

Many tree-changers also found the cost of living in the country to be generally more expensive than stereotypes foretold. 'We do find these days the cost of petrol has been a bit prohibitive' (TC-R 2008). For some of the 21% of renters, lack of cheap rental housing proved frustrating. 'We rented when we first moved to Wagga and were paying more than what we did in Brisbane. That was frustrating' (TC-J 2008). Living expenses were not much better. 'I did think it would be cheaper to live than what it is. It is certainly no cheaper and I have found things to be more expensive…Anytime you want to do a big shop for groceries you have to travel to Orange half-an-hour [away] otherwise you will pay through the nose. The cost of living is quite high for having the convenience' (TC-T 2008).

4.3.2.2 Tree-Changers – What Do They Want?

The final common stereotype which is held by local government and news media that this chapter will examine relates to the perception that tree-changers expect country areas to offer similar types and levels of amenities as city counterparts. This is a myth. For example, the general manager of the Snowy River Shire council expressed to the Australian Broadcasting Corporation (ABC) that tree-changers' expectations of country amenities differed from what councils could provide, 'When people do move, especially from a city like Sydney, they move to a country council and expect the same level of services and the same quality of service as they are receiving in the city' (Vescio in ABC 2008). Academic research failed to support this assertion. None of the tree-changers interviewed expected, nor frequently desired, rural Australia to offer the same services and amenities offered in cities. Urban amenities taken for granted in the cities were downgraded by some interviewees as 'merely convenient'. As one said, 'The inconvenience of not being able to get milk or anything else 24 h a day are all minor in the scheme of things, but it took us a little while to adapt to having to think to buy things before shops closed and no delivery pizza, not that we used it much, but it is a change' (TC-H 2008). Responding to shops being open different hours another remarked, 'Yes, it is different, but you get used to it pretty quickly. The fact that the town is pretty much shut on Sunday is pretty disappointing but you get used to it' (TC-D 2007).

Sixty-eight percent of the tree-changers interviewed moved to country towns or suburbs, not to an isolated rural property on acreage. None desired to ever live in the Bush and most did not even want acreage. 'I live close to town because I can afford to live close to town' (TC-L 2008). Only 32% purchased a lifestyle block or hobby farm on 100 acres or less and none bought large acreage. The desire for rurality co-existed with a desire to live in country suburbia within close proximity to goods and services. 'We wanted to experience more of a country setting . . . The position of our house means we can walk to everything in town' (TC-O 2008). Nevertheless, suburban housing did not prevent one (TC-O 2008) from describing the 'third best thing about tree-change is the adventure of it and seeing life as an adventure and being able to live that out by moving to the bush'.

Tree-changers commonly cited a list of preconceptions, indeed expectations, of rural living yet most retained strong social and employment connections to city life, existing as a city-country hybrid while most commute longer and further distances to maintain past networks, sometimes the equivalent of two extra working days in order to live in 'the country' (Ragusa 2008). Overall, the principal factor, aside from seeking less stressful employment, which tree-changers' sought was less stressful commuting. According to 28 tree-changers in 14 locations, if tree-change destinations wish to attract and retain these new community members, effort must be put into researching and addressing transportation concerns, which are overwhelmingly articulated and can be captured by the sentiment that country life equals 'driving all the time' (TC-B 2007). Although a minority of those interviewed expressed concerns about environmental sustainability, and the environmental impact of their excessive driving, one interviewee said travel was the least desirable aspect of their

tree-change. They were ‘always looking at ways to reduce our car travel and it is pretty much unavoidable’ (TC-U 2008).

Tree-Changers – Urban Refugees, Not Environmentalists

For many tree-changers, proximity to and quality of the natural environment were key attractants for selecting their location. Yet beyond the desire for improved environmental amenities, such as aesthetically pleasing landscapes and mountains, water and a favourable climate, ability to live ‘in an unpolluted rural environment’ (TC-F 2008) was a key attractant for just 14% of the sample. For many tree-changers, the ‘natural’ characteristics sought were less of a concern than those aspects of city life being escaped, particularly traffic and neighbours. Although two tree-changers were active members of community environmental organisations, such as Landcare, the vast majority did not seek a tree-change to live a greener, more sustainable lifestyle. Environment was equated with space, as in ‘silence, not hearing neighbours, a view . . . big sky and seeing further than four fences’ (TC-H 2008). ‘We really wanted to move somewhere where there were a lot of trees, where there was a lot of space. . .rather then a very impersonal and crowded city. . .but we wanted to live somewhere where there was actually a reasonably well-developed community. We didn’t want to live in the middle of nowhere’ (TC-F 2008).

Air pollution was the most common environmental concern interviewees sought to escape. Two asthmatics from Sydney moved to Bathurst because they believed ‘there is no pollution’ (TC-L 2008) and ‘the air was clean’ (TC-R 2008). However, the desire for clean air did not translate into less driving. Dating a Sydneysider, one drove ‘back every second or third week’ (TC-L 2008) to Sydney and complained about the road works and condition. The other tried to ‘get back every 6–8 weeks’ to visit her daughter and grandchild and was also disgusted with ‘the road conditions which were a [negative] factor’ (TC-R 2008). A third Sydneysider noted moving to Jeir enabled her family to ‘become more aware of the environmental side of things’ and live ‘in a way that we think is responsible’ (TC-U 2008), yet remained willing to commute up to 2 h one-way.

Melbournians’ perceptions and behaviours were similar. Despite a preference for clean air, one former Melbournian (TC-Z1 2008) still made a weekly commute back to the city. Box 4.6 reveals air pollution was a key motivator for this tree changers leaving Melbourne (Box 4.6).

Box 4.6 Air Pollution: One Reason for Tree-Changing from Melbourne

> The big thing is the air. Whenever I came up to the country and drove back to Melbourne, as soon as I got to the hill about 25 miles out of Melbourne I felt enormously sick because I could see the air around metro Melbourne. [The pollution?]

> Yes, you see this grey thing and I used to feel sick. Not about the air, but that I lived in it and I didn't live in it because I had to. I lived in it by choice. That used to make me sad. I felt enormously sick that I would do that by choice. (TC-Z1 2008)

Tree-changers' experiences were found to largely be a continuation of the Australian suburban dream. Relocating from Adelaide to Griffith it was (TC-D 2007) clarified that, 'when you say rural, I am thinking on the land. I never thought that this is going to be like living on the land. In many respects, we have moved from one suburb to another … we've changed the city experience to a regional town experience'. Only 11% of urban-rural migrants considered the environmental impact of their tree-change, or mentioned environmental sustainability during the interview. This reality contradicts widespread marketing efforts to capitalise on and sell the environment amenities of tree-change locations and continues the stereotype of tree-changers being urbanites with a heightened environment consciousness. As one part-time real estate manager summarised, tree-change 'sounds more green and green environmental. . .I have just moved to the country' (TC-B 2007).

4.4 Conclusion

Although 'lifestyle' migration was documented in the 1970s, the involvement of supra-individual forces has facilitated the transition of an urban workforce to rural locals. Most notable forces are the financial interest and capacity of property marketers and developers, the sizable role of news media in promoting tree-change (which is motivated by a desire to sell advertisements and real estate properties) and unprecedented innovations in digital communications and technologies that permit interpersonal and business relationships to thrive in once isolated geographies. For all these reasons, tree-change indeed qualifies as a new socio-geographical movement in Australia.

Political campaigns targeting potential tree-changers would have little chance of success if a deep, fundamental cultural shift were not simultaneously occurring over the image of rural Australia. Indeed, the very essence of 'rurality', the meaning of what rural Australia represents, has been slowly changing from agricultural to consumer-driven as communities are revitalised via rural gentrification (Curry et al. 2001, Tonts and Grieve 2002). Indeed, many soon-to-be retiring career farmers are finding little interest among younger generations to continue family farming (Gibson et al. 2005). Thus, a range of competitive consumerist amenities and luxury dwellings, often built on subdivided farming land, are being developed to accommodate an increasing number of hobby farmers and tree-changers. According to the Department of Primary Industries in Melbourne, 'amenity premiums' are increasingly more useful for determining land value than measurements of 'production value' (Barr 2005). However, much development has commenced

by industry and government, without first researching what amenities and lifestyles tree-changers actually desire.

The deeply rooted social norm of owning a free-standing home with a private garden remains a key Australian cultural value (Carroll 1992a, Hassan et al. 1996). Pursuit of this norm by the vast majority of Australians continues to drive the sub-urbanisation of rural landscapes to the detriment of communities already plagued by drought and over-reliance on automobiles. In general, the media and real-estate driven stereotypes that tree-change is motivated by a desire for cheaper housing were found to be sensationalised products of institutions which stand to make a profit from such promotion. The majority (61%) of interviewees articulated the potential to 'snap up' cheaper rural real estate was not a key motivating factor in their decision to make a tree-change. For many, cheaper real estate was not a consideration at all – with the exception of Sydneysiders.

Broad structural influences, such as economic trends, caused some Sydneysiders to be out-priced from the Sydney housing market. Economics prompted 54% of tree-changers interviewed from Sydney to relocate further inland to realise the Australian dream of homeownership. Although statistically non-generalisable, this research offers alternative views to the behavioural, life-cycle research that has argued migration is primarily age-dependent (see Hassan et al. 1996). The majority of Sydney residents who decided to make a tree-change to the country did so irrespective of life-cycle norms, with the oldest being single and 70 and the average being 40-something. These findings contrast with intra-urban migration studies of Sydney and Melbourne whereby housing relocation was most common among those under 30 (Hassan et al. 1996). For the entire sample, neither baby boomers nor poor young families constituted the majority of tree-changers. These findings suggest different factors may be at play in the decision-making process about when, where and why urbanites choose to leave the city than those used to make decisions about changing urban residences. Further research is needed in this area, particularly the collection of a national quantitative sample to test if these findings are atypical or are indicative of broader trends characteristic of this social group.

Inland Australian country towns' interest in urban residents' tree-change, as proclaimed by the media, warrants caution. Interest in attracting tree-changers is understandable, given country towns' historical population decline due to rural youth migration to cities for work and education and the increasing age of rural residents, yet the research presented in this chapter shows country towns should proceed with caution. Interview data suggests country towns might be better served by first investing in research and long-term planning before making large-scale changes to rural landscape development, infrastructure and amenities in the hope of attracting tree-changers to specific locations. In contrast with historical research, this chapter revealed the contemporary tree-change movement is first and foremost driven by lifestyle-seekers: urbanites who are seeking less stressful employment, shorter commutes and neighbours that they do not hear. They are not seeking city-quality amenities, lifestyle blocks or even environmental aesthetics.

Finally, research is required on the long-term impact of investment properties, residential developments and increased country-city commuting on rural

communities and environments. Despite media promotion of tree-change as a prominent migratory event, academic research remains limited. For instance, the percentage of tree-changers' total rural property ownership, both residential and absentee owners, remains largely unknown (see Chapters 7, this volume, for further discussion). This research has also failed to reveal any convergence between metropolitan and non-metropolitan residents and preliminary findings demonstrate differences in rural/urban values, preferences and community 'fit'. Additional research is required that examines the sociological and social-psychological impact of urban-rural migrants at both individual and community levels. Academic attention to the contemporary rural demographic change occurring in Australia may provide evidence that not only challenges media stereotypes, such as those documented in this chapter, but perhaps more importantly better equips councils, policymakers, communities and individuals with knowledge for improved planning, management, sustainability and wellbeing for all involved.

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Chapter 5
Demographic Change and Rural Nature

Gary W. Luck

Digby Race

G.W. Luck (✉)
Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia
e-mail: galuck@csu.edu.au

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Abstract Future demographic change in Australia's rural environments will yield substantial challenges and opportunities for biodiversity conservation. Humans preferentially settle in the most biodiverse regions resulting in considerable spatial conflict between human settlement and species conservation. The natural amenities of rural landscapes (e.g., mountains and forests) are recognised increasingly as factors important in influencing rural population growth. A combination of natural and built amenities (e.g., transport networks) results in solid growth rates in some rural districts with an influx of new residents often with strong conservation ethics, but little experience in rural land management. The energy and ideals of new migrants may help to promote conservation in rural landscapes, but there are substantial challenges in translating goodwill into on-ground action. This is especially true in landscapes characterised by small properties and a diverse range of landholders, whereby obtaining significant conservation outcomes requires extensive coordination across many landowners. In rural landscapes characterised by population decline and land abandonment, biodiversity conservation is threatened by a reduction in the workforce available to control invasive species (particularly those traditionally considered as agricultural pests), while significant opportunities exist for landscape rehabilitation. Maximising biodiversity gains in Australia's 'new bush' requires greater emphasis on acknowledging the biodiversity and ecosystem service values of rural properties, strengthening partnerships between rural and urban Australia, and setting clear and measurable objectives reflecting desirable conservation and production outcomes.

Keywords Biodiversity · Environmental management · Land abandonment · Landscape ecology · Natural amenities · Natural resource management

Abbreviations

CMA	Catchment Management Authority
EU	European Union

5.1 Introduction

Demographic change can have substantial and sometimes unexpected impacts on rural environments. Changing the human demography of rural communities inevitably changes land management practices with subsequent positive and negative implications for local ecosystems. This reflects complex interrelationships between humans and nature, which differ across time and space. In this chapter, I review human-nature relationships focusing specifically on the implications of demographic change in rural areas for the conservation and management of local ecosystems. The scope of the review is international, although Australian case studies are emphasised.

Australian ecosystems have been extensively modified since European settlement. This is especially true in the agricultural regions of southern Australia (and

becoming more so in northern Australia). In the late nineteenth century and early to mid twenteith century, woodland and forest ecosystems were replaced by, primarily, cereal crops and open pasture. Remaining native vegetation was confined to small, isolated and often heavily modified remnants. Such a dramatic change had a huge impact on the indigenous flora and fauna – leading to species extinction and the loss of countless populations of plants, animals and other organisms (Beeton et al. 2006).

Not only did the introduction of agriculture cause species loss, it also dramatically changed other environmental processes such as nutrient cycling, carbon storage, hydrology, fire regimes, and soil and water chemistry to name a few. The impacts of agriculture are global and ongoing (Lavergne et al. 2005, Butler et al. 2007). Yet, agricultural systems are in constant flux owing to environmental (e.g., climate), socio-economic and cultural change. While cereal crops and pasture still dominate in some regions of Australia, other districts show marked diversification in land use driven by market forces, changing values (e.g., the expansion of organic produce) and the need to maintain or increase productivity. Some districts are becoming an increasingly heterogeneous mix of cereal crops, pasture, horticultural crops (e.g., vineyards, olive groves and orchards), remnant native vegetation, revegetation and low density housing.

Production from the land is inextricably linked to the character of rural communities in a mutually reinforcing way. For example, declining production (e.g., as a result of ongoing drought or water restrictions) can lead to the depopulation of rural towns, while an influx of new migrants to rural districts, with diverse socio-economic backgrounds and values, can drive land-use change through, for example, the introduction of 'niche markets' in organic or biodynamic produce, diverse stock (e.g., alpacas), native produce (e.g., wildflowers or native foods) or placing a much greater emphasis on landscape rehabilitation.

While Australia's land-use history is still the dominant force shaping rural ecosystems, recent and sometimes dramatic changes in agricultural land use will increasingly dictate future ecosystem dynamics. Because humans are the driving force of environmental change, the dynamics of rural ecosystems are directly linked to the demographic characteristics and behaviour of local communities and indirectly to the socio-economic and cultural trends of broader society. Understanding these links is crucially important for developing ecologically sustainable land management that ensures the persistence of rural ecosystems and the health and well-being of the human communities that rely on them.

5.2 Spatial Patterns of People and Nature Across Broad Scales

To understand the implications of human demographic patterns and processes for biodiversity conservation and ecosystem management, it is important to recognise the complex and multi-scale links between people and nature. Our impacts on ecological systems vary across time and space, often as a result of spatio-temporal variability in human activities. For example, the distribution of human settlements

is strongly related to underlying abiotic and biotic factors that also influence the location of other species (e.g., temperature and productivity), leading to considerable congruence between human population density and biologically diverse regions, and substantial implications for conservation (Luck 2007a).

Where people live and why is undoubtedly complex. It is influenced by a range of factors including the suitability of land for agriculture (Kirch et al. 2004, Vitousek et al. 2004), cultural norms and economic change (Liu et al. 1999, Homewood et al. 2001), land cover, elevation and net primary productivity (Yue et al. 2003), disease control (Lamprey and Reid 2004), presence of and access to natural amenities (Rasker and Hansen 2000, Hansen et al. 2002, Schnaiberg et al. 2002, Gustafson et al. 2005, Radeloff et al. 2005), transport networks (Huston 2005) and established patterns of settlement (e.g., expansion of existing urban centres – Hammer et al. 2004, Radeloff et al. 2005) to name a few. Yet, across broad scales (e.g., continents) it is possible to identify a few key factors that are strongly correlated with human settlement location. For example, in Australia, human population density is strongly positively correlated with rainfall and net primary productivity and both density and productivity follow, primarily, a west-east gradient (Luck et al. 2010). That is, population density is highest along the coast – particularly the east coast – and in regions of moderate to high rainfall and productivity. Across smaller spatial extents (i.e., south-eastern Australia) rural population density also shows strong correlations with select environmental variables such as rainfall and farm productivity (Argent et al. 2005).

Documenting and understanding these broad patterns is crucial to placing local-level demographic change in its correct context. Despite the complex array of factors that influence an individual's decision about where to live (e.g., employment, family and health); at higher levels of organisation, human settlement follows distinct and readily identifiable patterns that have specific implications for ecosystem management. In Australia, the strong links between humans and rainfall, productivity and proximity to the coast are especially noteworthy given predicted future climate change. Inland Australia is likely to become hotter and drier as the climate changes, making inland regions less attractive to settlers and placing greater stress on fragile coastal environments through an influx of migrants.

From a conservation perspective, what is particularly interesting about the spatial pattern of human settlement is that it tracks very closely to patterns in species richness for a number of taxonomic groups. That is, most people live in regions that contain, on average, the most species. This is true across many different countries under many different circumstances (e.g., Balmford et al. 2001, Araújo 2003, Gaston and Evans 2004, Luck et al. 2004, Vázquez and Gaston 2006, Fjeldså and Burgess 2008), but, generally, only when considering patterns at large scales (i.e., across regions that encompass both human settlements and less disturbed environments). Moreover, the key underlying factors that positively correlate with human population density also correlate with species richness in some cases (Luck 2007b, Luck et al. 2010). It appears that humans and other species often respond to the same drivers (e.g., rainfall, temperature and productivity) when 'selecting' a place to live.

The spatial congruence between people and species richness raises enormous challenges for protecting biodiversity in light of human development, considering that much of this development will preferentially occur in biodiverse regions. Moreover, as human settlements expand, less land is set aside for conservation, more non-native species are introduced into a region and there is a greater chance of local extinction for species vulnerable to environmental change (Luck 2007a).

The key issue for rural landscapes and those on the urban fringe is that the clash between development and conservation will be most strongly manifested here. This is because heavily urbanised areas (e.g., major cities) have already lost most of their biodiversity and are impoverished relative to fringe areas and rural landscapes (McKinney 2006, 2008). Rural landscapes in coastal regions or those with substantial and apparently attractive natural amenities are likely to face particular conservation challenges as a result of rapid development (see below). Conversely, the depopulation of rural districts in the more remote and mostly inland regions of Australia also presents novel and possibly unexpected conversation challenges and opportunities.

In the remainder of this chapter, I explore the implications of demographic change in rural locations for the conservation and management of local ecosystems, focusing particularly on the relationships between amenity landscapes and population growth and development, the decline of historically dominant farming approaches and the depopulation of rural communities, and the conservation challenges and opportunities wrought by changing land use.

5.3 The Lure of Natural Amenities

The counter-urbanisation trend (discussed in Chapters 1–4, this volume) reflects a desire for people to move from heavily urbanised to less urbanised (often rural or coastal) regions. This is in addition to the 'lateral' movement of people from one regional or rural location to another, or simply the desire to remain in certain rural districts. This desire is driven in some part by employment opportunities, changing lifestyles (e.g., slowing the pace of life), retirement, educational opportunities or other socio-economic factors. However, increasing recognition is being given to the influence of 'natural amenities' on settlement decisions in rural areas (see Chapter 2, this volume). Natural amenities are not clearly defined, but can include factors such as climate, topography, access to water (for direct consumption and recreation), natural areas, and aesthetically pleasing landscape components such as forests, lakes, coastlines and mountains (Nord and Cromartie 1997, McGranahan 1999, Isserman 2001, Marcouiller et al. 2002, 2004, Löffler and Steinicke 2006). Tied to this are diverse options for outdoor recreation and economic development (Deller et al. 2001). The presence of natural amenities in rural landscapes appears to be strongly linked to the economic status of rural communities through the development of more diverse, and sometimes quite profitable, income streams (e.g., nature-based or

adventure tourism). This attracts new, financially wealthy residents whose income is not tied to agricultural production, and increases land prices (which can also be a disadvantage to current residents wishing to purchase land; Marcouiller et al. 2004). Hence, natural amenities can influence both human population growth and economic growth in rural districts.

For example, Rasker and Hansen (2000) showed that natural amenity factors such as the percent area in forest cover, percent area in nature reserves and rainfall had strong positive correlations with population growth in rural counties in the Greater Yellowstone region of the United States. However, multivariate models from the same study suggested that factors like distance to an airport and college education also influenced the likelihood of settlement. Hence, rural community dynamics were dictated by a complex mix of natural and built amenities and socio-economic status. This reflects the desirability of a location and the capacity to act on that desire.

Barr (2005) categorised Statistical Local Areas of Victoria, Australia as production, irrigation, amenity or transitional landscapes (i.e., changing agricultural land use or on the path from production to amenity; see Chapter 2, this volume). Some of the amenity districts occur in north-east Victoria, a region with substantial forest cover, varied topography, increasingly diverse land use and rural communities, and strong transport networks linking regional centres with major cities (Fig. 5.1). Amenity districts in north-east Victoria generally record solid population growth rates yielding substantial challenges for managing conservation and development. For example, the local government areas of Hume and Indigo recorded population growth of 2.5 and 1.3%, respectively, from 2007 to 2008 (www.abs.gov.au/ausstats).

The role of natural amenities in influencing the dynamics of rural communities clearly indicates the importance of local ecosystems for rural society and underscores the strong links between humans and nature. Tests of landscape preference can show strong relationships with landscape characteristics independent of demographic factors, whereby certain landscapes are perceived as more attractive

Fig. 5.1 A view across the Kiewa Valley in north-east Victoria, a region rich in natural amenities (Gary Luck)

(e.g., Ode et al. 2009). The lure of certain rural districts is not entirely tied to natural amenities, as many 'amenity-rich' landscapes remain sparsely populated. It is the combination of natural and built amenities (or the opportunity to develop built amenities) that attracts people. Also, different amenities can have different effects on population distribution and economic development. Nevertheless, the presence of nearby natural areas appears to be an important driver of growth in some regions and can lead to improved economic performance, higher employment, and higher income for rural communities (Rudzitis 1993, Rasker and Hackman 1996).

5.4 Conservation Challenges and Opportunities in Developing Rural Landscapes

5.4.1 Challenges

The lure of natural amenities is a localised manifestation of the broad-scale correlates between human settlement and the underlying abiotic and biotic factors discussed in Section 5.2. While increasing interactions between people and nature can yield a greater empathy and support for conservation (Dunn et al. 2006), there is a danger that amenity landscapes could be 'loved to death'. The commodification of rurality can result in overdevelopment leading to the destruction of the natural assets that attracted people to the district (Curry et al. 2001, Tonts and Greive 2002).

Amenity landscapes support a rich biodiversity because of relatively extensive native vegetation cover, topographic variation and landscape heterogeneity. Therefore, development in these landscapes can have a major impact on a disproportionately high number of species. This impact is only beginning to be explored, and has been poorly studied in Australia. Arguably the most extensive studies of the impacts of development in amenity landscapes have occurred in the western United States. These studies have documented the following consequences of increasing rural residential development: the loss of hardwood forest; preferential development on highly productive land that contains a higher number of bird species than other areas; an increase in the conflicts between humans and large predators (e.g., bears); an increase in the density of avian nest predators and brood parasites near rural homes; and a decline in the nesting success of some bird species (Hansen and Rotella 2002, Hansen et al. 2002, 2005).

Maestas et al. (2003) found that residential development of ranchlands in Colorado increased the density of some bird species (e.g., human commensals or tree nesters) while leading to the decline of others (e.g., ground and shrub nesters). They also found that domestic dogs and cats (the latter being a major predator of wildlife in Australia) occurred almost exclusively in rural residential areas, while native coyotes were confined to the less developed ranches (i.e., the predominant land use prior to residential development). Ranches also had more native plant species and fewer exotic species than residential areas.

In Australia, many rural coastal regions have high amenity values that attract settlers from metropolitan and other non-metropolitan districts. This is encapsulated

in the 'sea-change' phenomenon described by Salt and others (e.g., Salt 2003, Burnley and Murphy 2004; also see Chapters 1–3, this volume). Yet, coastal environments are extremely fragile and require careful management. Environmental impacts associated with coastal development include, among other things, loss of native vegetation and associated species communities, degradation of sensitive dune ecosystems (which are easily disturbed by increased foot and vehicle traffic), disruption of shorebird breeding – particularly those that nest on beaches (e.g., the threatened hooded plover (*Thinornis rubricollis*)), residential development encroaching into coastal reserves, and degradation of wetlands (Gurran et al. 2007). Although much development in coastal regions occurs on old farmland, it is especially problematic because it has the potential to directly impact on terrestrial, freshwater and marine environments.

The influx into rural districts of new landholders with diverse socio-economic backgrounds raises other environmental management challenges. For example, a detailed case study by Klepeis et al. (2009) of the rural amenity landscape of Windellama in NSW explored how changing land use from predominantly grazing land to rural residential may impact on the control of the highly invasive, introduced plant species, serrated tussock (*Nassella trichotoma*). The authors suggested that higher human population densities in the district could mean more people to help control the weed, but weed management is impeded by the diverse perspectives of new migrants, and the fact that the majority are part-time residents (i.e., they do not occupy their properties on a full-time basis) and do not obtain their primary income from the land. While community diversity is undoubtedly a strength, it raises barriers to coordinating regional-level environmental management programs. Moreover, there may be little economic incentive to control pest species in rural districts when residents' income is not tied to landscape production. This is especially true for 'traditional' agricultural pests such as the European rabbit (*Oryctolagus cuniculus*) and red fox (*Vulpes vulpes*).

While new residents bring with them a diverse level of experience and ideas, they may also lack the necessary knowledge, skills and incentives to actively manage some of the key threatening processes typical of rural landscapes (e.g., pest plants and animals, fire, erosion, and inappropriate water management). Moreover, new landowners in developing rural landscapes are less likely to be members of groups such as Landcare that aim to foster appropriate land management strategies, or lack the incentive or time to invest in property management (see Chapter 7, this volume). Landscapes characterised by a diverse collection of recent and long-term residents requires new approaches to knowledge transfer and new incentives for land management (Section 5.6).

5.4.2 Opportunities

It is important to recognise that development of a region may not be disadvantageous to species diversity per se. There are various examples whereby development of rural areas has resulted in increasing landscape heterogeneity leading to an increase

in the richness of some taxonomic groups (e.g., Söderström et al. 2003, Fairbanks 2004). This seems to be related to particular land management approaches, whereby patches of native vegetation are retained in a matrix of varying agricultural land uses such that species confined to native vegetation are able to persist alongside those that can exploit developed areas leading to an overall increase in richness. Moreover, human population growth in rural areas may have unexpected conservation benefits. For example, in Puerto Rico, forest cover has increased despite rises in human population density, as agricultural land has been replaced by forest owing to changes in the economy and land management policy (Lugo 2002). The crucial issue is the approach taken to managing rural lands and the policies and strategies that are employed to ensure that both production and conservation outcomes are maximised.

Past land management will have a substantial influence on conservation gains that can be made in developing rural landscapes. For example, in south-eastern and south-western Australia, broad-acre agriculture has resulted in the clearance of large swathes of forest and woodland vegetation, particularly in lowland areas (resulting in most remaining vegetation occurring on the less productive hilltops). Changing land use from broad-acre agriculture to rural residential, incorporating landscape subdivision and production diversification, can increase vegetation cover (Fig. 5.2), but fauna diversity in these 'new' landscapes will likely be a subset of the species that survived the initial agricultural development. Nevertheless, low density residential development in previously cleared rural landscapes can increase overall species richness in some fauna groups.

For example, studies of rural–urban gradients often find that species diversity peaks at moderate levels of development (i.e., the rural/urban fringe) with reduced species richness in highly urbanised areas and entirely rural landscapes (e.g., Blair 1999, 2004, Smith and Wachob 2006). Many studies have observed this relationship for a variety of taxonomic groups including birds (Sewell and Catterall 1998, Blair

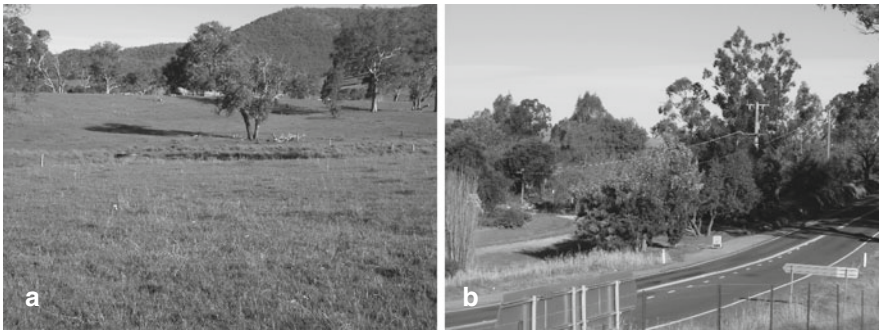

Fig. 5.2 Different sides of the road. These photographs were taken standing in exactly the same location, but looking in two different directions. **a** A landscape characteristic of broad acre agriculture used primarily for cattle grazing (foreground). **b** A previously grazed property that was subdivided for housing (mostly $\leq$ 0.5 acre blocks) in the mid 1980s. Notice the difference in tree and shrub cover (Gary Luck)

2004, Chace and Walsh 2006), bats (Gehrt and Chelsvig 2003, Duchamp et al. 2004) and lizards (Germaine and Wakeling 2001). Hence, low density, rural residential development that results in increasing landscape heterogeneity, vegetation cover and diversity of habitats has the potential to increase the number of species occurring in rural landscapes compared to regions that remain under broad-acre agriculture.

Importantly though, the species that dominate in developed rural landscapes will be those that can tolerate an increasing human presence (Sewell and Catterall 1998, Caula et al. 2008, Melles et al. 2003). As shown in numerous landscape studies, species that occur in any given region are those best adapted to cope with the principle land use. Residential development of rural landscapes driven by population growth will benefit some species at the expense of others, even those that have adapted to broad-acre agriculture. It is therefore vital that we set clear conservation objectives in developing landscapes to ensure that desirable species are protected, while undesirable (e.g., invasive) species are controlled.

The influx of human migrants into amenity and other rural landscapes represents an opportunity to exploit new energy, ideas and resources for the benefit of conservation. For example, migrants to amenity landscapes are often relatively wealthy, middle-class professionals, and people from such backgrounds have been shown to have greater empathy and support for natural areas and conservation reserves than those from more working-class backgrounds (e.g., Suckall et al. 2009). The challenge is to harness this wealth of diverse knowledge to ensure that any support for ecologically sustainable rural land management is translated into on-ground action. In rapidly developing landscapes where property turnover is high and new landholders have a much more diverse background than previous occupants, environmentally sensitive land management requires a completely new approach (Section 5.6).

5.5 The Vast Interior: Implications of Agricultural Land Abandonment

In contrast to rural coastal regions and districts with high amenity value, some remote inland regions of Australia (e.g., western NSW) are experiencing population decline (see Chapters 1, 12 and 13, this volume). Rural depopulation can lead to land abandonment in some districts with concomitant implications for the dynamics of rural environments. It may also result in the amalgamation of smaller land holdings as the remaining landowners purchase neighbouring properties from departing farmers (e.g., Heathcote and Williams 1977), or small, previously family-owned farms are purchased by large national or multi-national companies with the financial capacity to weather the productivity and income fluctuations that can be characteristic of marginal farming districts.

The abandonment of croplands increased substantially in the twenteith century. For example, less than 50 million ha of cropland had been abandoned globally in 1900, while the aggregate total of abandoned land exceeded 200 million ha by 1990 (Ramunkutty and Foley 1999). As for counter-urbanisation, land abandonment and

population decline offer challenges and opportunities for conservation in rural landscapes. While native vegetation cover inevitably declines with the expansion of agriculture, revegetation and rehabilitation may occur as land use changes and/or agricultural lands are abandoned (e.g., Hall et al. 2002, Petit and Lambin 2002, Taillefumier and Piégay 2003). Yet, the recovery of agricultural land to a state that approximates the dominant land cover prior to development may be extremely slow. For example, Rhemtulla et al. (2007) found that despite agricultural land abandonment in some districts in the upper Midwest of the United States occurring between 1935 and 1993, land cover in 1993 was no different to that in 1935 and significantly different to that in 1850 (prior to the major land cover changes/clearance that occurred between 1850 and 1935).

In the northern Mediterranean regions of Europe, with climate that approximates some districts of southern Australia, rural land abandonment can mean a successional change in plant communities from grasslands to shrublands and regenerating forest (Barbero et al. 1990, Debussche et al. 1999, Zarovali et al. 2007). Grasslands are maintained through grazing and other agricultural activities and the removal of this management means plant communities follow a successional trajectory towards pre-agricultural land cover (although an exact replication of historical cover is unlikely). Such changes can mean an overall reduction in biodiversity, a decline in grassland-dependent species, an increase in woodland species, increased risk of wildfire, increased pest activity and changed hydrology (Barbero et al. 1990, Debussche et al. 1999, Domènech et al. 2005, Zarovali et al. 2007). Interestingly, and in complete contrast to the above, forest ecosystems in the southern Mediterranean are under substantial pressure owing to increasing human populations and agricultural intensification, leading to many forest tree species being threatened with extinction (Barbero et al. 1990).

Work on abandoned old fields in Australia suggests that agricultural land may never recover to its previous state (Fig. 5.3). For example, Standish et al. (2006)

Fig. 5.3 An old field in the central wheatbelt of Western Australia. The land was originally woodland (represented in the background) and likely cleared and cropped only a few times after WWII, then abandoned during the early 1950s. It has been colonized by a mix of native perennial grasses, native herbs and invasive annual grasses and herbs. (Viki Cramer)

found that soil properties in two out of three old fields were substantially different to soils in remnant vegetation, showing signs of a legacy of cultivation. This was true even though one old field had only spent one year under cultivation and had been abandoned for 45 years. Yet, in the same study, soil in another old field under 4 years of cultivation and 43 years of abandonment did not show the same legacy suggesting agricultural impacts will vary across time and space likely related to underlying variation in soil properties, land management, landscape position and ecological processes.

Even after land abandonment, the legacy of agricultural land use may last for hundreds of years having a substantial impact on present day ecological processes (Foster et al. 2003). This legacy is influenced by the type of agricultural activity and the suitability of a region for agriculture. Regions less suitable for agriculture and requiring substantial inputs of, for example, fertilizer and water (e.g., irrigation) are likely to experience a more dramatic cultivation legacy (Cramer et al. 2008). Cramer et al. (2008) provided a conceptual framework outlining how interactions between agricultural activity, biotic and abiotic thresholds, vegetation traits and the local species pool interact to determine the trajectory of recovery in a location after land abandonment. In short, in marginal farming areas where agricultural production places substantial stress on the local environment, recovery of abandoned croplands to the previous vegetated state is unlikely. For example, some abandoned farmlands in south-west Western Australia are dominated by invasive and exotic species able to adapt to a legacy of human land use (Cramer et al. 2008).

While succession after abandonment of farmlands in regions of Europe and North America may lead to plant communities that approximate pre-agriculture land cover, the story in at least some regions of Australia may be very different (e.g., Dorrough and Moxham 2005). This is likely to be especially true in districts where agriculture represents a major change in land cover and ecological processes, but less so where agricultural practices, in some way, mimic historical processes (e.g., low density grazing of native grasslands). The upshot of this is that we can not expect abandoned agricultural land to simply return to its historical state without substantial land management. Moreover, this may not be the most appropriate objective. I argue that it is more useful to focus on developing land management strategies to cope with likely future environmental variation while still achieving conservation and production goals.

Rural land abandonment also has implications for fauna communities. Grassland birds in northern Mediterranean Europe are declining (and forest species are increasing) as afforestation proceeds in previously managed grasslands (Preiss et al. 1997, Pons et al. 2003). Indeed, land abandonment is one of the main threats to the conservation of grassland avifauna (Tucker and Heath 1994, Prodon 2000). Rural depopulation and the abandonment of traditional, low-intensity stock-raising practices is a threat to the persistence of the Eurasian black vulture (*Aegypius monachus*), which relies, in some part, on stock carcasses for food (Vasilakis et al. 2008). A study by Moreira and Russo (2007) modelled the impact of rural land abandonment in Mediterranean Europe on 554 species of terrestrial vertebrates. They found that open habitat and farmland generally sustained higher species richness than

scrubland, and that the increasing frequency of wildfires in the region promoted the spread of scrubland vegetation to the detriment of forest cover. Vegetation type, fauna species and fire intensity interacted in complex ways, but Moreira and Russo (2007) suggested that small-scale fires may promote biodiversity in some districts.

Although poorly explored, the impacts of rural depopulation on Australian native fauna are likely to vary. Lack of pest management could see increased densities of invasive species such as the red fox, European rabbit and feral cat (*Felis catus*). This would have devastating consequences for those native fauna that remain in agricultural regions. Conversely, regeneration of woodland or forest vegetation with a structure that approximates historical land cover would favour woodland-dependent fauna – the group that has suffered the most with agricultural expansion. However, the lessons from research on old fields suggest woodland recovery will not proceed without significant management intervention.

In some cases, rural land abandonment offers substantial opportunities for conservation. For example, conservation groups such as Birds Australia and the Australian Wildlife Conservancy, among others, have been able to purchase (and currently manage) large areas of land previously used for agriculture (particularly stock grazing). Such opportunities are becoming more common as the production value of land declines and the economics of agriculture becomes less attractive. This has seen the growth of conservation groups who engage in land purchase and management, and the placement of conservation covenants on private land for extensive periods, even perpetuity (e.g., Trust for Nature and The Nature Conservancy).

Just as it is for developing rural landscapes, abandoned regions will require careful management to ensure that desired conservation, biodiversity and landscape values are maintained. It is naïve to think that rural land abandonment and the cessation of agriculture will automatically yield positive outcomes for conservation without further management intervention.

5.6 Managing Rural Environments for Conservation and Production

5.6.1 Business-as-Usual Is Not an Option

Across the globe, the spread and intensification of agriculture has had dramatic and devastating consequences for biodiversity conservation. This includes the simplification of plant and animal communities, the spread of common and invasive species, and extensive alterations to ecological processes such as nutrient cycling, waste decomposition and water regulation, to name a few (Stoate et al. 2001, Butler et al. 2007). Australia's ecosystems have suffered substantially with the spread of agriculture since European settlement. This has resulted in many species and ecological communities being threatened with extinction (Beeton et al. 2006). The changes wrought by agriculture are increasingly intertwined with the substantial demographic changes occurring in Australia's rural landscapes. As described above,

these changes have the potential to result in both positive and negative outcomes for biodiversity. This rests largely in how we choose to manage the rural landscapes of the future.

Designing future rural landscapes requires setting clear goals now and monitoring outcomes in light of these goals. While specific objectives and actions will vary from landscape to landscape, an overall goal should be to maximise conservation and production outcomes in rural lands. This is especially true considering the importance of ecological systems for human well-being, and the reliance of agricultural production on a range of ecosystem services (e.g., pollination, pest control and waste decomposition; see further discussion below). Yet, marrying conservation and production is a substantial challenge and undoubtedly there will be conflicts in the future. This is further complicated by the demographic changes occurring in rural landscapes. Ultimately, we need to identify situations where both conservation and production objectives can be met, or where one must be traded off against the other, and manage for rural landscapes that have the capacity to cope with future environmental changes without compromising either conservation or production outcomes.

In this section, I describe some of the challenges of managing rural lands under demographic change and briefly outline some of the current schemes that have been designed to promote conservation on private property, and which may help to achieve conservation objectives in production landscapes. Later, I explore how we might modify current approaches to land management to consider the demographic and land-use realities of Australia's 'new bush' and offer hope for balancing the sometimes competing demands of lifestyle, production and conservation.

5.6.2 The Challenges of Managing Australia's New Bush

As Theobald et al. (2005) noted, one of the major challenges of managing rural landscapes for conservation is matching the scales of ecological processes with the scales of land management. Ecological processes do not end at property boundaries. Rivers flow for many kilometres, large mammals have home ranges that can extend over tens to hundreds of hectares, and birds disperse great distances to find mates and establish new territories. Managing these processes almost always requires coordinated action among landholders. This challenge is not new; however, it is likely to become more problematic in developing rural landscapes characterised by subdivision of large properties and an influx of a diverse range of new landholders.

The substantial conservation challenges now faced in amenity landscapes are, put simply, twofold: first, how do we encourage an increasingly diverse array of new landholders, who are often absentee owners (i.e., they do not spend a majority of their time on the property) and do not obtain their primary income from the land, to employ management strategies to improve conservation outcomes on their property; and second, how do we encourage and facilitate coordinated action among new and established landholders, when property size and land use are becoming increasingly diverse? Current strategies for promoting conservation on traditional

agriculture lands offer some direction, but these will need to be modified to suit changing conditions.

Attempts to encourage farmers to implement environmentally sensitive land management strategies are wide-ranging and have been employed for many years. For example, the European Union (EU) introduced regulations to facilitate the implementation of agri-environmental schemes in member states in 1992. These schemes allow farmers to be paid for actions that, supposedly, improve environmental outcomes on their property. Farmers sign a contract and are paid by the EU and member states to cover the cost of implementing the environmental actions and for any loss of income that the actions entail (European Commission 2005). However, the success of these schemes in improving biodiversity outcomes has been mixed, although rigorous experimental and monitoring approaches that would allow clearer identification of cause and effect have not been employed generally (Kleijn and Sutherland 2003, Berendse et al. 2004). Roth et al. (2008) reported that a scheme focusing on whole-farm management in Switzerland, rather than confined to small and scattered patches of land, appeared to increase the species richness of at least some taxonomic groups (vascular plants and snails)

Australia has employed similar payment schemes to promote conservation on private land (e.g., the bush tender scheme; Stoneham et al. 2000, Burmeister et al. 2006). Some of these schemes operate under the principles of market-based instruments (tools that use market-based approaches to influence human behaviour) with funding provided through state government departments and regional catchment management authorities (CMAs). This is in addition to a range of other schemes including competitive grant funding that provides money for on-ground action to benefit biodiversity through landscape management (e.g., Environmental Trust in NSW and the Federal Government's 'Caring for our Country' program), ongoing support of environmental actions on farms through groups such as Landcare, and schemes that tap into a growing social conscious about biodiversity conservation, which may not necessarily offer much, if any, financial support (e.g., Land for Wildlife). It is too early to judge the success of many of these schemes and appropriate and comprehensive assessment will require that scientifically rigorous, long-term monitoring is included as a key component of the scheme.

One promising payment-for-action scheme that emphasises financial compensation for the generation of ecosystem services on private property is the Land Stewardship project (Dobbs and Pretty 2004, Phillips and Lowe 2005). Ecosystem services are the benefits humans derive from ecosystems and include such things as pest control, pollination of food crops, nutrient cycling, regulation of water quantity and quality, waste decomposition and climate regulation to name a few (Daily 1997, Millennium Ecosystem Assessment 2003). Central to the Land Stewardship project is the recognition that many ecosystem services are generated on private property in rural landscapes and most benefit the broader community. However, social gain is often achieved through landholder 'pain' (e.g., reduction in financial profit) if production has to be curbed or landholders need to engage in additional management over and above normal activities to ensure the continued flow of services. Given

this, it seems appropriate for landholders to be paid for the services generated on their property.

How a payment-for-ecosystem-services scheme might be effectively employed is a complicated issue involving questions such as how services are generated, who benefits, how services are valued, who should pay (and how) for particular services, and how management actions might impact on service delivery (see for example, Parker 2005). It is beyond the scope of this chapter to deal with these issues in depth. However, similar schemes already operate in various locations around the world. For example, landholders in China are paid to keep forest on their properties to ensure appropriate water regulation that benefits hydroelectricity production (Guo et al. 2007). Hence, while implementing a payment-for-services scheme is difficult, it's not intractable.

Cocklin et al. (2006) examined the utility of the Land Stewardship approach through workshops with rural landholders. In sum, these workshops identified the difficulty landholders face in maintaining production while protecting the rural environment, a scepticism of the likely success of an ecosystem-services-based approach (and adequate compensation for services generated), a desire for acknowledgement of good land management (not necessarily financial compensation) and support for voluntary and education-based strategies. Cocklin et al. (2006) also noted that the Victorian State Government appears to have waived in its support of the Land Stewardship approach, although similar schemes are being trialed by regionally based CMAs. Irrespective of rural land-use type or the background and aspirations of landholders, payment-for-action schemes still appear to be the best option for promoting biodiversity conservation and ecologically sustainable management of rural landscapes.

5.6.3 A Way Forward

Above, I distil the complex problem of environmental management of rural lands into the following two main issues: (i) incentives to encourage ecologically sustainable land management; and (ii) coordinated action among landholders. The first issue can be split further into [financial] compensation (e.g., tax incentives or payments) or acknowledgement of appropriate stewardship, and facilitating action. The latter is increasingly important in Australia's new bush as absentee owners without financial ties to the land are becoming more common in amenity landscapes, and land abandonment is a real and increasing problem in Australia's vast interior.

Payment-for-action schemes must consider the full value of landholdings including their capacity to produce goods and ecosystem services, and support biodiversity. Markets that handle rural produce have existed for centuries. Establishing markets for ecosystem services is much more problematic, but substantial advances in this area have been made over the last decade (www.ecosystemmarketplace.com/). Paying landholders for actions that supposedly support biodiversity (e.g., tree planting) is relatively straightforward, although becomes more problematic when tied to specific outcomes. This is because

environmental outcomes may reflect a whole range of factors outside the landholder's control (e.g., short or long-term climate variation).

Despite these caveats, modified versions of current payment-for-action schemes that focus on service generation and biodiversity conservation on rural lands are applicable across a range of land-use types. On a broader level, environmentally sensitive behaviours (e.g., installing solar hot water and rainwater tanks) currently attract substantial government rebates across all household types, indicating that incentive schemes need not be restricted to particular land uses or landholders. The key point here is to acknowledge and reward the array of positive outcomes that can occur from landholder behaviour and to undertake a comprehensive assessment of the range of values of rural land.

Even owners of small landholdings can contribute to broader environmental objectives. For example, my partner and I have planted over 500 endemic plants on our one acre property, including around 30 eucalypt trees that will eventually contribute to carbon storage and climate regulation (not to mention generating shade to reduce home cooling costs and creating wildlife habitat). There was no financial incentive to implement this 'service' (not that we desired one). Conversely, we received substantial government rebates to install our solar hot water system and rainwater tanks. The point is all landholders have a role to play in the future of Australia's environment. Some will do this willingly, while others may need some encouragement or financial assistance.

A given rural property may have a range of values encompassing food and fibre production, ecosystem services like carbon storage, water filtration or nutrient cycling, biodiversity conservation, or simply contributing to the character of rural landscapes. All of these should be considered when assessing the actions of landholders, allowing incentives to be diverted to a range of areas that account for the increasing diversity of owners. Indeed, I do not see the provision of diversified incentives or the mechanisms through which these incentives could be delivered as major barriers to the implementation of environmental actions on rural lands, apart from the substantial book-keeping this is likely to entail (which is a small price to pay for the future of Australia's environment). More problematic is translating incentive into action.

For traditional farmers, modified versions of current payment-for-action schemes may be sufficient to encourage the implementation of ecologically sustainable management, notwithstanding the increasing production demands being placed on these landholders (Cocklin et al. 2006). In amenity landscapes, translating incentive into action is more problematic owing to absentee ownership and off-property income streams. Further, the increasing number of small land holdings and diversity of owners makes coordinated action difficult. In declining rural landscapes, the problem may be one of simply a lack of human resources to implement actions.

Incentive programs for environmental actions in amenity landscapes need to be targeted at the neighbourhood or district level, rather than to individual landholders, to promote coordination among owners. To be attractive, such schemes must offer substantial incentives for coordinated action and only accept applications from

groups of landholders with clear objectives for cross-property action within a clearly defined region (Theobald et al. 2005).

Newman (2005) promotes the idea of partnership programs between major cities and small towns to arrest the decline of rural communities in the Western Australian wheatbelt. Such schemes could be extended to facilitate action in both developing and declining rural landscapes. For example, some city dwellers may find the rural lifestyle desirable, but not be in a position to make a permanent shift. Schemes that promote short-term stays in rural lands at minimal cost in exchange for assistance with land management may tap into this desire for lifestyle change, and also offer city dwellers an opportunity to experience rural life and decide if it really is for them. Moreover, these schemes could exploit the conservation philosophy of some city dwellers (i.e., provide an avenue for translating philosophy into action) and tap into the in principle willingness of urban dwellers to support rural populations (Bennett et al. 2004).

Partnership programs may also be coordinated through government or non-government run volunteer programs (e.g., Australian Conservation Volunteers). Moreover, conservation non-government organisations should recognise the broader importance of appropriate rural land management in addition to focusing on the purchase of land with the highest conservation value. These lands will come under increasing threat from both the development of rural landscapes and population decline that result in the abandonment of active management. Hence, active engagement and assistance for the broader rural community is likely to yield more substantial conservation outcomes.

Regardless of the scheme that is implemented, appropriate and comprehensive monitoring of outcomes needs to be undertaken. This can be facilitated through the identification of key indicators (e.g., water quality or habitat structure), acknowledging that complete assessment of environmental status is not feasible. Yet, it's the funding and implementation of monitoring that is the main challenge, not the identification of appropriate indicators. Novel approaches are required to facilitate on-going monitoring that tap into the vast pool of community resources. For example, Birds Australia has instigated arguably the largest monitoring scheme in Australia, the Bird Atlas, with data collection relying almost solely on volunteer labour (www.birdsaustralia.com.au/our-projects/atlas-birdata.html). Similar schemes like Birds in Backyards (www.birdsinbackyards.net/) encourage landowners to monitor birds on their own property. These approaches rarely require financial incentive, but rely heavily on participants having the time, motivation and capacity to complete the monitoring.

5.7 Conclusion

More than ever, rural districts are characterised by multifunctional landscapes with a myriad of production and consumption values, and potentially important contributions to biodiversity conservation (Holmes 2006). Research on amenity landscapes

highlights the critical importance of maintaining the natural features of the local environment to support a healthy social and economic fabric. Loss of this natural capital will not only result in further decline in biodiversity, but undermines the very character of rural landscapes that attracts human settlers, and will have substantial negative consequences for rural economies. Protecting rural nature will require novel and diverse land management policies that reward desirable actions and provide adequate compensation for the variety of goods and services generated by rural property owners. These policies should favour coordinated action among neighbouring landholders and aim to strengthen the ties between urban and rural Australia.

In declining rural landscapes, opportunities exist for government and non-government conservation organisations to work with rural landholders in ensuring ongoing active management that maximises biodiversity conservation outcomes. Land abandonment could result in the spread of invasive species, particularly traditional agricultural pests, threatening the conservation value of established reserves. Both land purchase and broader land management must be emphasised equally by management agencies.

Land-use policy, financial markets, cultural trends and demographic change will all interact in complex ways to shape future rural landscapes. Yet, it is apparent that many of these landscapes will become increasingly heterogeneous driven by social, cultural and land-use diversification. Landscape heterogeneity is a key factor in promoting biodiversity and, if managed appropriately, offers substantial opportunities for conservation.

The decreasing capacity for local government to engage in natural resource management (Pini et al. 2007), and the limited extent of established conservation reserves, means that the future of rural nature increasingly rests in the hands of private landowners. The future of biodiversity conservation relies on understanding and engaging these landholders, and working with them to ensure that rural environments are able to support all of their inhabitants for many generations to come.

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Chapter 6
Agricultural Areas Under Metropolitan Threats: Lessons for Perth from Barcelona

Valerià Paül and Fiona Haslam McKenzie

Valerià Paül

V. Paül (✉)
Departamento de Xeografía, Universidade de Santiago de Compostela, Santiago de Compostela, Galicia, Spain
e-mail: v.paul.carril@usc.es

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Abstract A common reason for rural demographic change is peri-urban or peri-metropolitan in-migration. This pattern inevitably causes the loss of farmland on the edge of the city. Agricultural land reduction in this spatial context has received attention from a large body of international literature. The focus of this chapter is the strategic value, in productive terms, that fringe farmland represents as a food-bowl for the metropolis. The central aim of this work is to review recent arguments being claimed for the necessity to manage agricultural areas located in or near to metropolitan areas, applying some of the ideas developed in a European setting to an Australian case study. Innovative schemes are presented, considering productive possibilities in peri-urban contexts and recent planning and management tools to ensure their longevity. A peri-urban agricultural-based case study located in the metropolitan area of Barcelona (Catalonia, Spain) is analysed. This case, Baix Llobregat Agrarian Park (BLAP), is an internationally recognised example of peri-urban agricultural space planning and management dedicated to the preservation and conservation of agricultural land. The lessons from BLAP could be applied elsewhere and in this chapter we consider the possibilities for the strategic preservation of a highly productive locality on the fringes of Perth, Western Australia's capital city.

Keywords Peri-urban agriculture · Urban fringe governance · Metropolitan foodbowl · Food miles · Short supply chains · Farmland preservation

Abbreviations

ABS	Australian Bureau of Statistics
BLAP	Baix Llobregat Agrarian Park
CAP	Common Agrarian Policy (European Union)
EESC	European Economic and Social Committee
ESDP	European Spatial Development Perspective
EC	European Communities
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GIS	Geographic Information System
OECD	Organisation for Economic Co-operation and Development
PDO	Protected Designation of Origin
PGI	Protected Geographical Indication
PURPLE	The Peri-urban Regions Platform of Europe
SOFI	*The State of Food Insecurity in the World* annual report (FAO)
SSC	Short supply chains
WAPC	Western Australian Planning Commission

6.1 Introduction

As cities expand, inevitably there are population pressures and it is tempting for planners and developers to convert agricultural areas located on their edge to urban areas to absorb the growth pressures. Consequently, an oft-repeated spatial pattern in rapidly growing peri-urban or peri-metropolitan contexts is the loss of fields and the mitigation of the rural character and scenic amenity outside urban zones. In-migration to rural areas adjacent to cities causes considerable impacts on agricultural spaces, ranging from minor effects to total and irreversible loss: from small infrastructure provision linked to new developments (such as new roads that erode farmland) to a complete new urban settlement that occupies a considerable amount of previously productive, agricultural land (Gallent and Andersson 2007). Thus, peri-urban agricultural spaces are a critical arena for examining the impact of rural demographic change. This chapter will consider why peri-urban farmlands are important and, in doing so, will assess planning and management strategies that have been applied in different contexts to address agriculture contraction at the urban fringe.

There is a considerable body of literature dedicated to agricultural areas adjacent to cities (e.g., Gómez Benito and Fourneau 1988, Donadieu 1998, Daniels 1999, Fleury and Moustier 1999, Houston 2005, Dewaelheyns and Gulinck 2008), including an academic handbook devoted to the subject by Bryant and Johnston (1992). For decades in the English-speaking world, this type of farming was referred to as *agriculture in the city's countryside* or *agriculture in the rural-urban fringe* (Audirac 1999). In the French-speaking tradition, the first contributors to the topic (e.g., Philipponneau 1956) denoted this agricultural type as *agriculture en banlieue* (*suburban agriculture*), which has now become established as *agriculture péri-urbaine* (*peri-urban agriculture*), a term that has been adopted by the Food and Agriculture Organization of the United Nations (FAO) (Drescher 2001). Throughout this chapter, the terms *peri-urban* and *fringe* farmlands will be used interchangeably. Peri-urban agriculture is now one of the FAO's leading policy and planning programs, with its own guidelines, handbooks and best practice compendiums. Indeed, in the case of Latin America, *peri-urban agriculture* is a FAO priority particularly where there has been or are phenomenal growth pressures in metropolitan areas. The FAO has instigated in Spanish-speaking America important initiatives to preserve areas and develop projects for urban food supply.[1]

This chapter discusses population growth pressures that have occurred on the fringes of two cities: Perth in Western Australia and Barcelona in Spain. In particular, it will consider fringe farmland as a strategic space in metropolitan terms, not necessarily as a convenient space for building new homes and urban infrastructure for growing cities but as a valuable space for agricultural productive reasons.

[1] See Latin American and Caribbean FAO Regional Office webpage at: http://www.rlc.fao.org/es/agricultura/aup/. Accessed 25 July 2009. Complete information on urban and peri-urban agriculture is available (only in Spanish and Portuguese versions).

Food security is a growing concern for developing countries (see SOFI annual reports from FAO 1999–2008) and increasingly for developed economies (European Economic Social Committe 2004) as the proportion of the world's population living in urban environments increases. A sustainable, affordable supply of fresh food is being constantly challenged by rising commodity prices, peak oil, climate change and ongoing urbanisation replacing valuable agricultural land (Low Choy et al. 2008). While food has been flown between countries in a global open economy for decades, it is becoming clear that these practises are not always sustainable (Jones 2002, Paül et al. 2009). The predictable environmental costs caused by transport CO_2 emissions will pose new uncertainties for food provision systems in the future (Weber and Matthews 2008). We argue that a vibrant peri-urban agriculture curbs environmental emissions and, by doing so, contributes to the reduction of a metropolitan area's ecological footprint.

Peri-urban areas are interesting areas for examining the interface between urban populations and, often intense, agricultural pursuits (Bryant et al. 1982, Furuseth and Lapping 1999). Recent research argues that peri-urban areas have a substantial contribution to metropolitan economies and societies (Hoggart 2005). In the European Union (EU) the 1999 European Spatial Development Perspective (ESDP) framework for spatial planning policies stated that an integrative vision between cities and their rural surroundings was important (European Commission 1999) and that integration favoured regional competitiveness (López 2001, Tarroja 2001, Bertrand 2006). Beyond the contribution of rural peripheries to urban cores and the links between the two, peri-urban areas potentially play an important role as future urban food-bowls. While they are the areas around cities which are being eyed by planners and developers for future development to absorb growing city populations, we show in this chapter that continuous encroachment of city populations undermines their purpose and viability as important agricultural production areas.

In this chapter, strategies adopted in Barcelona (Catalonia, Spain) to preserve peri-urban agricultural areas for food production are examined and the lessons learnt applied to Perth (Western Australia), where peri-urban encroachment on productive agricultural land is a constant threat. Barcelona is considered one of the few EU metropolises where peri-urban areas have been preserved as vibrant agricultural lands which are promoted as 'good practice' case studies for the protection and management of rural areas near cities (Dewaelheyns and Gulinck 2008). It is all the more commendable because this has been achieved in one of the most attractive, expanding and dynamic metropolitan areas in Europe. Australian audiences (and others), particularly planners and policy makers, could gain valuable insights from the expertise and experience in the Barcelona example. Within Australia, Perth is a particularly relevant case study for a number of reasons. Barcelona and Perth have comparable populations and share a similar Mediterranean climate. Both cities are surrounded by fertile agricultural areas with accessible water supplies. The availability of fertile lands for horticultural production in relatively close proximity to the capital city is scarce and Perth is growing rapidly with a rapacious appetite for land suitable for single, detached residential housing estates. Currently, the closest agricultural areas that provide food to Perth are more than forty kilometres from the city centre and urban expansion is continually threatening these areas. Further, food

Table 6.1 A comparison of Metropolitan Barcelona, Metropolitan Perth, Baix Llobregat Agrarian Park (BLAP) and the Shire of Chittering areas

	Metropolitan area of Barcelona[a]	BLAP municipalities area[b]	Metropolitan area of Perth[a]	Shire of Chittering
Population[c] (inhabitants)	4,928,852	799,593	1,322,700	3,520
Area (km^2)	3,242	204	7,846	1,221
Density[c] (inhabs./km^2)	1,521	3,918	169	3
10-year population difference[c]	16%	10%	15%	55%
Farmland (km^2)[d]	512	19	105	114

[a]Metropolitan Barcelona and Metropolitan Perth (statistical areas) based on national census data.
[b]Includes those 14 municipalities that are members of the BLAP consortium.
[c]Population and density data for Barcelona are based on 2008 population data and for Perth, based on the 2006 Census. The population change is calculated between 1998 and 2008 in the case of Barcelona, and between 1996 and 2006 in the case of Perth.
[d]In the Catalan case, data from the 1999 Agrarian Census. In the Australian case, data from the 2005–2006 Agricultural Census.
Sources: Catalonia Statistics Institute (http://www.idescat.cat/) and Australian Bureau of Statistics (http://abs.gov.au/ Agricultural Commodities: Small Area Data 2005–2006).

is no longer cheap in Australia for a variety of reasons including expensive land, increasing transportation costs and adverse climatic conditions. If Perth is to limit resources spent on food transport and preserve its strategic and productive foodbowl areas, the Barcelona experience is a suitable reference. Unlike Barcelona, Perth is a very sprawling city with low housing densities and a large environmental footprint, which it can be argued is not sustainable (Table 6.1).

This chapter draws on comparative work undertaken by us in our respective cities regarding spatial dynamics, land-use planning and fringe governance. Data were generated from qualitative interviews with stakeholders (farmers, politicians and public officers) from the respective metropolitan areas regarding their perspectives about agricultural land preservation in land-use planning and productive terms.

First of all, this chapter examines the growth pressures in the two cities in order to frame how demographic pressures are affecting farmland in both cases. Following this, there is a review of the international literature on the issues and the characteristics of fringe farmlands and their functions in productive terms are explained. The planning and management issues regarding the preservation of fringe farmlands will also be examined from a theoretical point of view. We then turn to the case study of Barcelona, with particular attention paid to the Baix Llobregat Agrarian Park (BLAP) (see Fig. 6.1). The following section considers a productive fringe farm area near Perth, the Chittering Valley (Fig. 6.1), which is coming under scrutiny for future housing development. The chapter concludes by arguing that some management and planning strategies adopted in the Catalan area could be successfully applied in the Perth peri-urban area.

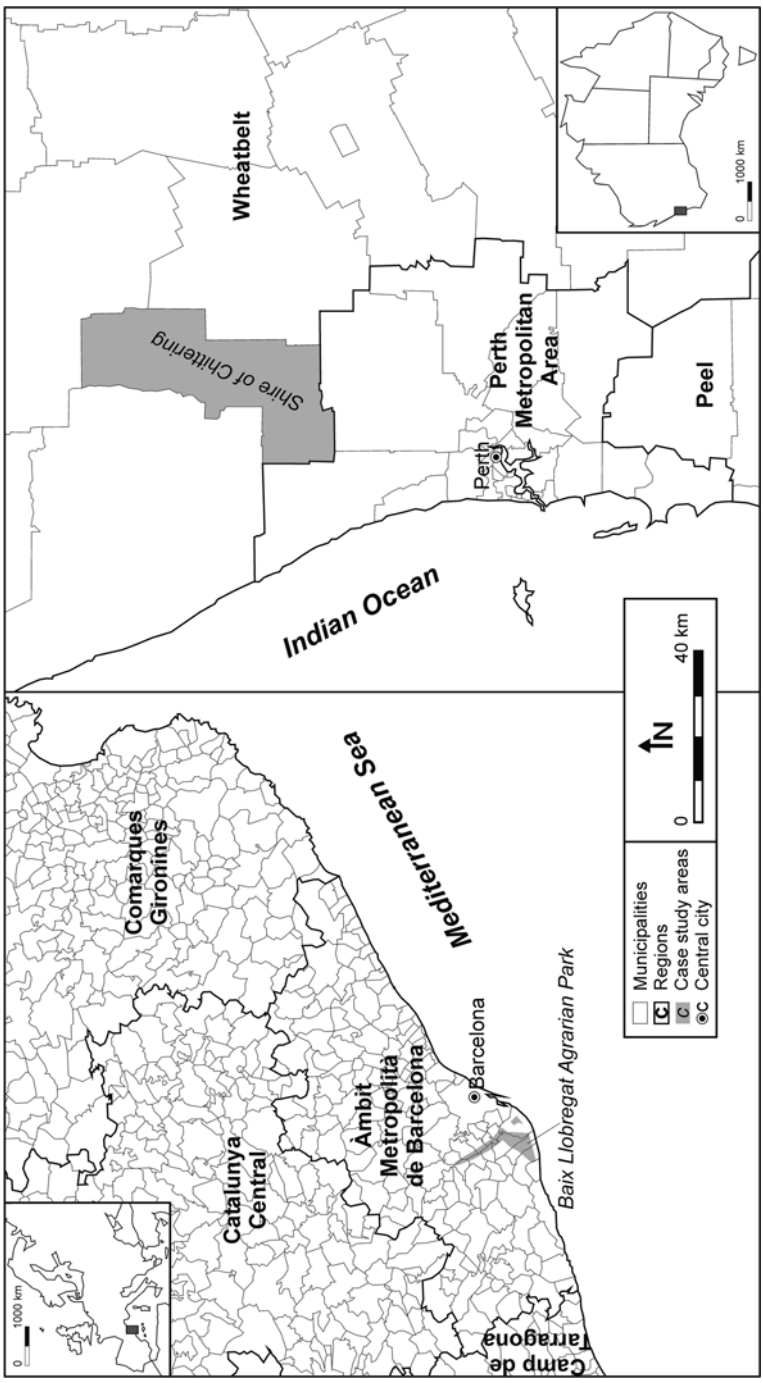

Fig. 6.1 Location map of Metropolitan Barcelona (Catalonia, Spain) and Metropolitan Perth (WA, Australia), at the same scale. Baix Llobregat Agrarian Park and the Shire of Chittering are also represented. Map prepared by Valerià Paül

6.2 Population Pressures at the Urban Fringes: Barcelona and Perth

6.2.1 Population Growth Pressures in Barcelona

In the first decade of the twenty-first century metropolitan Barcelona has experienced an unexpected population growth. Ten years ago the population was stable (4.24 million inhabitants in 1981 compared with 4.39 million inhabitants in 2001) while, ironically, the urban sprawl expanded (Nel·lo 2001) due to a surge in demand for urban land and infrastructure. In 1987 the city occupied 42,508 urban hectares, but by 2002 the urban footprint reached 68,032 ha; a growth of 60% in 15 years (Table 6.2). This means that even with a scenario of zero population growth, pressure for the takeover of agricultural lands for urban uses was considerable. As observed in Table 6.2, in those 15 years there was a reduction of 18% in farmlands (Paül and Tonts 2005, Paül et al. 2009). There are numerous reasons for the disappearance of agricultural land and the commensurate increase in urbanisation including increase in incomes enabling families to buy their own detached homes outside central Barcelona, following the 'American ideal way of life' of low-density developments with single-family residences (Muñoz 2005). Industrial and commercial relocations from the central city to the cheaper urban periphery and the construction of new highways with lax urban planning have added to the urban expansion.

Between 2001 and 2008 the population growth has been astonishing. Since 2001 the population has reached almost 5 million; an annual average growth of 1.75 percent (12% in 7 years), with rates of more than 2% and even 3% population variation in some years. This growth trend is mainly due to immigration, mostly from Latin America and Maghreb. It is not clear what the spatial impacts of growth will

Table 6.2 Main land-use evolution in Metropolitan Barcelona (1987–2002)

	1987		2002		
Land uses	Hectares	%	Hectares	%	1987–2002 Evolution
Rocky, sandy and idle lands	10,303.14	3.18	14,730.74	4.54	42.97
Forestry lands	186,581.01	57.55	171,908.78	53.03	–7.86
Farmland (*)	84,791.05	26.16	69,511.46	21.44	–18.02
Urban lands and infrastructures	42,508.08	13.11	68,032.30	20.99	60.05

(*) Farmland figure in 2002 is over-estimated. Real farmland area is now around 50,000 ha (see Table 6.1). Although an in-depth analysis of this over-estimation is beyond the intention of this chapter, it must be mentioned that remote sensing can confuse herbaceous farmland and idle land.

Source: Adaptation of GIS calculations prepared by Cristina Perea and David Rosell for the *Barcelona Metropolitan Region Landscape Catalogue* (in progress).

be but there is evidence that as immigrants flock to the centre, most of the previous inhabitants of Barcelona pursue their 'American ideal' and now live in low-density suburbs. Of the 164 municipalities in Metropolitan Barcelona, the 21 municipalities with the greatest growth (upwards of 50%) are those in the low-density periphery in, and adjacent to, rural areas, thus conflicting with agricultural production.

6.2.2 Population Growth Pressures in Perth

Since the turn of the new millennium Western Australia has undergone a period of significant economic and population growth, spurred by major resource investment in the State. For the year to December 2008, Western Australia and Perth in particular, experienced the highest population growth in the nation; 2.8% which equates to 58,200 people in a 1 year period compared to a national growth rate of 1.6%. This was the State's largest population growth in a 1 year period since records commenced (Australian Bureau of Statistics 2009b).

While the mining industry has been at the forefront of the resources boom with commensurate job creations, most of the new positions have been Perth-based as administrative and fly-in fly-out (FIFO) positions have increased (see Chapter 15, this volume). Over the decade 1996–2006 direct employment in the mining industry grew 105% in Perth, but only 29% in regional Western Australia (Australian Bureau of Statistics 2008a, b). As a consequence of industry and jobs growth, housing and urban land demand have exceeded supply and housing unaffordability has become a critical issue. Land on the urban fringes tends not to be as well serviced with urban infrastructure and is therefore likely to be cheaper; hence the urban land pressures. The local government area with the fastest population increase in the 1 year period (2007–2008) was a Perth peri-urban location, Serpentine-Jarrahdale, which until now has been dominated by agricultural production. In addition, four of the five local government areas in Western Australia with the highest population growth in the period were all in urban fringe areas and together accounted for over half of the growth in the metropolitan area. It is clear the reason for the exponential growth on the urban fringes is principally due to cheaper land and more affordable housing. The statistics clearly show that the peri-urban agricultural areas are under considerable threat from urban developers.

6.3 Peri-Urban Agricultural Spaces: Planning and Management

6.3.1 A Review of Peri-Urban Agricultural Research

The essential and distinguishing feature of peri-urban agriculture is its vicinity to the city: a feature that generates both opportunities and threats. As Von Thünen's model demonstrated at the beginning of the nineteenth century (Chisholm 1962), in such spaces transport costs are lower and a captive market is close by. According to this model, a typical land-use pattern around cities is intensive horticulture because

of its high unit productivity and high rate of return. However, peri-urban agricultural areas are also highly vulnerable to encroachment by city sprawl. The metropolis that motivates peri-urban agriculture very often also threatens it.

We could label much of the research on peri-urban agricultural areas as a 'negative narrative' where the focus is on the quantification and qualification of farmland diminution (Daniels and Bowers 1997, Benfield et al. 2001, Alig et al. 2004, Johnston and Swallow 2006). In the same vein, environmental interests have, generally, not been compatible with the peri-urban agriculture sector as farming and farm methods are often considered environmentally-unfriendly due to damaged ecosystems, reduction in biodiversity or the high consumption of water (e.g., Folch 2003). The promotion of natural ecosystems is considered by many to be preferable to fringe farming. While the arguments are complex and contentious, depending on the farming system,[2] the high levels of agricultural intensity associated with peri-urban *milieus*, especially in the European context, do not necessarily mean more environmental degradation than in other agricultural areas. In fact, most rural biodiversity, at least in Europe, depends directly on agriculture (Pino et al. 2000) as it generates *agrobiodiversity* with important genetic varieties associated with food production (Bassols 2009) in parallel with the existing 'natural' biodiversity. Depending on the context and what might replace agriculture, it could be argued that as agriculture disappears, biodiversity will be reduced if agricultural land is taken over for urban development. Increasingly, ecological research is taking account of the contribution of agricultural activity to peri-urban environments, stating that fringes are rich ecological opportunities (Gallent et al. 2006; see Chapter 5, this volume) and in line with agri-environmental schemes developed in many countries. Further, agricultural spaces are recognised for their potential to secure high value nature areas (Paracchini et al. 2007).

This change of view in environmental discourses has meant there is a willingness to preserve fringe farmlands that is gaining momentum, particularly in Europe. Indeed, there is an emerging European perspective that peri-urban agriculture produces environmental assets, with the potential to frame landscape amenity, touristic and leisure activities, and peri-urban place identities (Vanier 2000). However, peri-urban farming is only possible if it is economically viable. While it is true (at least in developed countries) that peri-urban agriculture produces more than food, the primary focus remains food production. The discussion on multi-functionality in peri-urban agricultural areas is worthwhile (Batie 2006, Gallent et al. 2006), although sometimes it is forgotten that multi-functionality depends on an agricultural foundation. Despite labour trends in peri-urban areas being oriented towards hobby and part-time farming (Bryant and Johnston 1992), it has been stated by the European Economic and Social Committee that 'the real protagonists of peri-urban

[2]Research suggests that in peri-urban agrarian areas there are more organic producers than in other areas (Beauchesne and Bryant 1999). This is directly related with the innovative and highly competitive character of peri-urban farming.

agrarian areas are, and indeed must be, essentially professional full-time farmer' (European Economic and Social Committee 2004, p. 3).

In Australia, Houston (2005) has shown that peri-urban farm areas produce a high proportion of the country's agricultural output. From a strategic point of view then, peri-urban areas are vital for the national provision of food which is also the case in other contexts, such as Catalonia (Paül 2009) and the United States (Thomas and Howell 2003). Beyond international food crises that are predicted to increase (World Bank 2008), metropolitan food production is crucial in several different ways:

- Proximity provides significant opportunities for guaranteeing freshness. Depending on whether the post-harvest phase is committed to freshness, peri-urban commodities such as horticultural products can guarantee freshness compared to similar products produced far away or cold-stored. Consumers can consume peri-urban products soon after harvesting by means of short supply chains (SSC) (Roca 2009). SSC enhance peri-urban agricultural systems, satisfying discerning consumers and increasing farmers' revenues (Dewaelheyns and Gulinck 2008, Donald 2009, Roca 2009). There is no available data regarding the consumption of peri-urban produce in Australia, but in the case of Barcelona peri-urban commodities are entirely devoted to the Barcelona market (Paül 2006).
- The further and longer food travels 'from plough to plate' the more likely it is to be vulnerable to fossil fuel supply, preservatives and chemical colour enhancements (Haslam McKenzie and Stehlik 2005, Weber and Matthews 2008). Locally produced food that is consumed locally is less likely to need chemicals and technology to ensure edibility. This means that in general terms fringe farmlands have the potential to provide better quality food and it must be highlighted that *quality* is a determinant notion in agriculture (Goodman 2003).
- It is a way to link products with origin, identifying each good as a unique commodity from a unique origin. This has been the case in France, where the notion of *terroir* (not restricted to wine) shapes and frames the countryside (Pouzenc et al. 2007). Currently, the idea of traceability (to know the origin and steps followed by commodity producers) has become a key issue in food management. Creating a direct link between farmer and consumer, for instance by selling at the farm gate or by *U-pick* practices, is a traditional form of peri-urban commercialisation (Bryant and Johnston 1992, Donald 2008). Peri-urban farmers have been successful in participating in emerging consumers' trends such as consumers' cooperatives, farmers' markets and Internet food-selling.[3] A related issue to traceability is food certification, branding and labelling (Mutersbaugh et al.

[3]In Spain there is an emerging network of peri-urban farmers selling their products by means of the Internet. Apparently their e-commerce is having a positive impact on peri-urban farming as it gives direct and increasing revenues to farmers with very low transport costs and direct contact with purchasers (leading to trust between the transactors). Farmers usually work together in order to reduce travel costs (Data obtained during the BLAP case study development).

2005), which are playing a significant role in some peri-urban areas, particularly in those areas promoting specific regionality or *terroir*. Branding has a clear potential for the creation of niche markets and can incorporate in the labelling the proximity to the city, potentially adding value to the commodity. This has been the case in Barcelona where 'Barcelona wine' has been promoted as being produced in the city municipality.

- Last but not least, metropolitan food production can be cheaper. It has been estimated that a considerable proportion of the final price of food commodities comes from transport and distribution margins (Roca 2009). Practices such as SSC, *U-pick*, Internet and local markets shorten the 'food miles'[4] and, in many places, provide cheaper food. This is recognised by consumers, at least in Spain, who, apart from valuing freshness or quality, appreciate the lower price of locally produced food (Manetto 2009).

Peri-urban areas are therefore an important source of agricultural products which are distinct from agricultural commodities produced elsewhere. Hence, peri-urban agriculture adds value to these places and provides them with an additional dimension to their *raison d'être*. Peri-urban agriculture makes an important contribution to regional sustainability: the economic returns are appreciable through trade and export of agricultural outputs. It also plays an important environmental role as an urban buffer zone and the peri-urban landscape often has an aesthetic value and provides leisure opportunities.

6.3.2 Planning and Managing Peri-Urban Agricultural Spaces

As noted by Low Choy et al. (2008) the processes and systems of governance are seen as contributing to the strength of democracy, economic growth and sustainability. A range of issues such as the institutional structures, administrative arrangements, information flows, development approval processes, formulation and implementation of policies, public participation, plans and strategies, property rights and regulations are all functions of governance. The Organisation for Economic Co-operation and Development (OECD) outlines metropolitan governance principles which provide an overarching guide for the maintenance and preservation of productive peri-urban land. The importance placed on planning policy for peri-urban areas is derived from the desire to preserve environmental buffer zones and farmland. Essentially, there are two main foci of interests preserving peri-urban areas: the management of urban growth and the protection of open space for its productive outputs (Barr 2003, Bengston et al. 2004). The recognition of peri-urban agricultural spaces as foodbowl suppliers is gaining considerable influence in some planning circles (Campbell 2008) with new policies and tools emerging, particularly those related

[4]Food miles are an interpretative concept related to carbon footprints, measuring the distance food travels from where food is grown to where it is ultimately purchased or consumed by the end user (Haslam McKenzie and Stehlik 2005).

to governance, as will be discussed later in this chapter. Yet, most of the recognised fringe farmlands are currently managed and planned in relation to their metropolis as they are considered to be an 'infrastructure of the city' (Fleury and Moustier 1999, Tonts and Black 2002, Bunce and Maurer 2005, Houston 2005, Mendes 2007). These authors argue that for metropolitan areas, peri-urban agriculture is essential if sustainability goals are to be met.

There is a wide range of tools, used alone or in combination, for managing and planning peri-urban agricultural areas: greenbelts, zoning, agricultural districts, taxation or incentives (see Chapter 8, this volume for further discussion). An in-depth analysis of these tools is beyond the scope of this chapter, but as Bunker and Houston (2003) have noted, directly adopting or discussing planning or management measures between countries should be done with care. Further, Gallent and Shaw (2007) have observed that these types of interventions alone do not guarantee that farming land will be protected. A useful guiding tool is a regional plan which takes into account the peri-urban character and, by doing so, neighbouring urban areas, demographic descriptors, local industry and employment profiles (Scott et al. 2007). However, as is the case in Australia, legislation is widely used as a tool for the protection of land and land uses.

In most developed countries, common problems with the development of a policy or plan is juggling the different needs of diverse stakeholders and effective coordination between public bodies; not only layers of government, but also sectoral agencies. Peak agricultural organisations tend to work in a different way to environmental agencies and other organisations with interest in land-use issues. An example is when environmental organisations protect fringe farmland for its 'natural' values. What often occurs is that the values and aesthetics of food production are what are being protected, but the farmer, who produces and maintains these values, is confined by the conservation policies (Bunce 1998, Bunce and Maurer 2005, Paül 2006, 2009).

Consistent and coherent planning policies and governance approaches are necessary in fringe areas, especially those adjacent to urban edges with competing land-uses. This means real collaborative planning in a comprehensive way, rather than rhetoric and decision-making processes that do not actually shape change but instead perpetuate traditional 'solutions' (Scott et al. 2007). Agricultural areas within the city's boundaries are the locus for farming, but leisure activities, nature protection, landscapes which provide and enhance place attachment and community identity, educational purposes, and urban development are all important and hence, balanced policy guidelines that are not necessarily the sum of different sectoral interests but a co-ordinated whole are preferred. In peri-urban contexts, saving farmland only on the basis of its agricultural value is not necessarily a convincing or suitable management strategy. Bryant (1995) noted that civil society is crucial in the preservation and development of fringe farmlands. Civil society (including farmers' unions and associations), generate narratives that promote fringe production spaces (Bunce 1998, Paül 2006, Scott et al. 2007). Governments shape these areas through planning and protection, but governance in a wider sense is more effective than solely public bodies' actions because:

- Consensus-building is essential if mutual aims for the edge of the city are to be achieved with a wide range of heterogeneous actors. Ambrose (1992) referred to the fringe 'as a battleground' and conflicts can only be solved through governance mechanisms, rather than government interventions.
- Professional farmers are not a significant proportion of the metropolitan population but, as noted earlier, they are critical in maintaining rural character in areas around cities. If they are not actively engaged, peri-urban agriculture could disappear. In Europe, there is now a discussion regarding farmers in peri-urban contexts, where they are considered 'more gardeners than farmers' (Donadieu 2005, p. 20), however it is patently clear that dedicated farmers in peri-urban spaces are strategic and highly productive producers (EESC 2004). It is essential that their businesses are viable and sustainable.
- The 'rural' and the 'urban' must be seen as complementary networked systems, with a governance network based on mutuality and partnerships (Bengs and Schmidt-Thomé 2005). In the European Union this is a recommendation through the ESDP (European Commission 1999) to planners at all levels (national, regional and local).

The municipal level of government is the key land-use planning arena in Barcelona with more than 160 small municipalities in the Barcelona metropolitan area (Fig. 6.1; for a comprehensive description of the Barcelona planning and administrative system see Paül and Tonts 2005). Supra-municipal cooperative levels (district and provincial councils) assist municipalities in their planning policy development and they have been involved in open spaces preservation policy development which includes farmland. The Catalan government has considerable power in areas such as agriculture, environment and regional planning. However, even though this level of government has planning prerogative it has abrogated those powers to municipalities or supra-municipal cooperative levels which have tended to take a leading role in farmland protection. As a result the solutions developed are generally very heterogeneous with variances between municipalities. Some local governments are more committed to farmland preservation while others are not concerned at all. In April 2010 the Catalan government finally passed the Metropolitan Spatial Plan (Generalitat de Catalunya 2010), after a long history of drafts not being passed (Paül and Tonts 2005). The intention of this metropolitan plan is to finally achieve a comprehensive farmland, forest land and natural habitats protection and management scheme for all of the Barcelona metropolitan area.

In Australia, there is no coherent or co-ordinated national policy framework or set of governance arrangements relating to land use and resource management in peri-urban regions (Low Choy et al. 2008). Each level of government (the Commonwealth, States and local government) has varying areas of responsibility which affect peri-urban areas, but there is no spatial approach or framework allowing consistency in the implementation of these responsibilities.

In the Western Australian planning context, the State government plays a pivotal role and decisions made at that level then flow to the municipal level of government. Regardless, land use changes, particularly around urban centres, are often

fraught. Usually, land near to urban areas rises in value and landowners are keen to maximise land values wherever they can. Where land has been preserved for specific uses or purposes, such as for agriculture, the development value is considerably less than if it was developed for residential or commercial developments. Hence, land use decisions are often disputed. There was considerable conflict in the 1980s when agricultural protection areas of Wanneroo and the Swan Valley in the Perth metropolitan area were proposed when extensive urbanisation threatened. 'Residents were most concerned that their rural or semirural life-styles would be seriously disrupted and that valuable agricultural, bush, and wetland areas would be destroyed. Several community-based campaigns arose in opposition to the strategies, and by early 1988 a number of residents' groups and public meetings had been organized' (Yiftachel and Alexander 1995, p. 284). The issues became highly political, but eventually agricultural protection areas were established.

The overarching State government body, the Western Australian Planning Commission (WAPC) has developed the Development Control Policy 3.4 for the Subdivision of Rural Land (WAPC 2008). This policy sets out the principles which are used by the WAPC in determining applications for the subdivision of rural land. This operational policy guides the subdivision of rural land to achieve the four key objectives of State Planning Policy 2.5 Agriculture and Rural Land Use Planning to protect agricultural land, plan for rural settlement, minimise land use conflict and manage natural resources (WAPC 2002). As further protection for the Swan Valley, an important horticultural and viticultural area, the Western Australian Government passed the Swan Valley Planning Act in 1995 which was subsequently amended in 2006. This overtly protects and preserves the Swan Valley as a place of beauty and recreation. However, legislation such as this is unusual and as noted by McKenzie (1997, p. 88), 'the use of legislative protection for the Swan Valley is a more specific and stringent protective tool which highlights the importance of this region within the broad hinterland of Perth'.

6.4 Case Study Area One: Peri-Urban Agriculture in Barcelona

6.4.1 Barcelona's Agricultural Fringe: A General Overview

Despite appreciable reductions in recent decades caused by urban sprawl, agricultural spaces remain in metropolitan Barcelona (Paül and Tonts 2005). Most of the remaining spaces are protected by municipal planning tools as agricultural ('non-urbanisable') lands, and several of them are individually recognised and managed through specific policies and strategies. Baix Llobregat Agrarian Park (BLAP) is the outstanding example.

As noted in Table 6.2, there are substantial land-use transformations, such as loss of farmlands due to urban encroachment. In the period 1987–2002, urban land-uses have increased 60%, while agricultural land has decreased 20% (see Table 6.2). Nonetheless, those fringe farmlands considered most valuable in terms of production have not been affected. For physical and human reasons, Barcelona's

rural-urban fringe has a highly differentiated pattern of agricultural production. It is influenced and shaped by the population growth pressures of Barcelona and nearby secondary metropolitan cities. Agricultural diversity is rich in landscape features and in economic terms. There is a discernible distinction between the two blocks of agricultural spaces as described below: the first type is largely protected while the second is vulnerable to market forces.

Firstly, some areas are used for producing commodities that have high consumer demand in nearby urban markets and local planning has been diligent in the protection of these areas. These farmland areas are mainly market gardens located near the coast and central Barcelona, in the Baix Llobregat and Maresme districts (Fig. 6.2). BLAP is a part of this area. Vineyards in the Penedès area – where the famous Catalan sparkling wine *cava* is produced – are also protected from urban intrusion and sustain a strong agricultural economy, however they do not constitute a food-bowl, with no fruit or vegetable growing. In all these cases there has been a strong sense of farmer solidarity and support from local councils and residents which has motivated a commitment to the conservation of farmlands through planning tools.

Secondly, other agricultural areas are vulnerable, many of which are used for cereal and fodder production, requiring a labour force which is increasingly difficult to maintain and hence the fields often lie idle. The districts of Vallès, located in the inland part of the metropolitan area, are almost entirely in this position (see Fig. 6.2). In these areas, farms suffer from poor investment and in the last few years urbanisation has encroached aggressively. Only a few municipalities in these districts favour the maintenance of farmland. In these cases, local councils are encouraging agricultural diversification through the use of irrigation in order to produce quality goods that might be regionally branded such as a particular type of bean (*mongeta del ganxet*). Several motivated councils (Sabadell, Mollet del Vallès, etc.) have adopted the strategy of innovative commodity development and branding and proactively protect small agricultural spaces assuming that, if they did not act, farmers would leave their lands idle and eventually succumb to speculators. These councils have addressed the threats and developed agreed management plans with the local farmers and residents.

The former example has broad significance as a positive example for an international, and particularly Australian, audience. Specifically, the BLAP case offers a range of tools and measures for the consolidation and recognition of value of peri-urban farmlands suitable for potential adaption in other peri-urban environments.

6.4.2 The Baix Llobregat Agrarian Park

BLAP is located on the southern edge of the Barcelona conurbation. It is almost completely surrounded by urban areas (Fig. 6.3a) with a population of 800,000 people and key metropolitan infrastructure including the harbour, airport and high-speed train. The pattern of urban development in the BLAP area was high-density suburbs, most of them populated prior to 1970, when metropolitan Barcelona

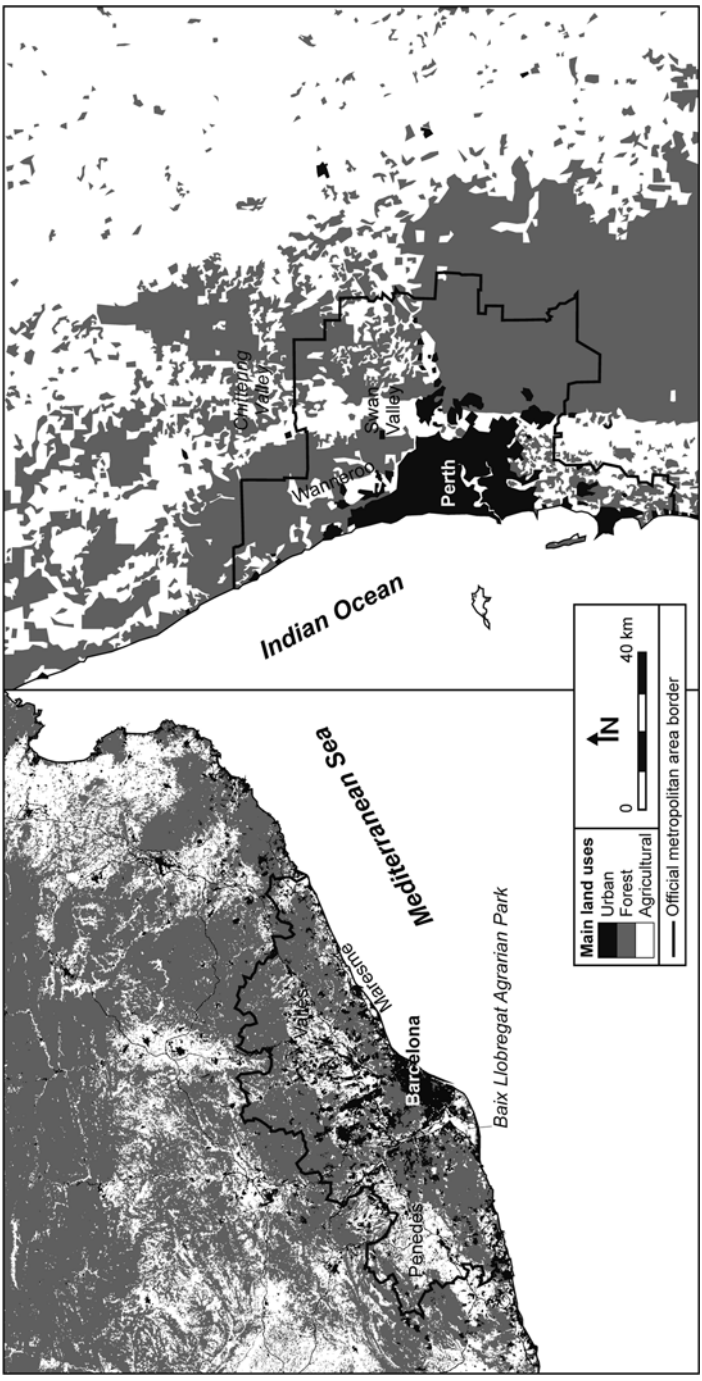

Fig. 6.2 Main land-uses in Metropolitan Barcelona and surroundings (2002) and in Metropolitan Perth and surroundings (2000), at the same scale. Map prepared by Valerià Paül. Data source from land-use maps provided by the Catalan Ministry of Environment and Housing (2004) and Geoscience Australia (2001), both based on remote sensing

Fig. 6.3 BLAP's landscapes and activities. **a** The BLAP constitutes a vibrant agricultural area completely surrounded by urban settlements. Picture by Xavier Pérez (2006–01–31) © Parc Agrari del Baix Llobregat. Reproduced with permission. **b** Artichokes, in process of labelling by means of an EU-scheme, are the outstanding production of the BLAP. Picture by Valerià Paül (2005–03–30). **c** Pedagogic activities are one of the most popular initiatives of the BLAP consortium. Picture by Xavier Pérez (2004–03–17) © Parc Agrari del Baix Llobregat. Reproduced with permission

experienced comprehensive industrial development. These suburbs have expanded and re-densified over the last few decades, due to an increase in commuters to Barcelona (who tend to live in new low-density suburbs) as well as an influx of foreign immigrants.

BLAP has almost 2,000 ha of very fertile farmland from the delta and lower valley of the Llobregat River (Table 6.1). The Llobregat River provides water through a channel network that is the property of farmers (by means of private associations). The main commodities are vegetables (artichokes, lettuce, chard) and fruit (peaches, plums, cherries), most of which are consumed in Metropolitan Barcelona. There are approximately 600 holdings and 1,200 farm owners and workers (70% of who work full time on the farms).

BLAP came about as a consequence of a long-term claim by the principal farmers' union (*Unió de Pagesos*), most of whose members were land owners. Farmers in the area decided some decades ago not to urbanise their lands, but they needed a long-term guarantee that they could maintain their activity without threat from the urban areas and developers. An analysis of why farmers had this attitude is

beyond the remit of this paper, but essentially this action was driven by a group of farmers who had a strong pride in their role as farmers who also had a strong traditional political ethos, which was committed to not speculating or developing land for urban purposes, but rather maintaining farmland for its social and food production, its landscape diversity and the diminution of urban pollution (Paül 2006, Sempere 2009).

Agrarian Park status was achieved in the 1990s, within the framework of a Strategic Plan passed by Baix Llobregat District Council in 1995. Politicians understood that preserving an agricultural area was strategic in planning terms and they accepted most of the farmers' previous requests. A consortium between the *Unió de Pagesos*, the Baix Llobregat District Council, the Barcelona Provincial Council and 14 municipalities was created in 1998, for which most of the resources and the budget was provided by the Provincial Council. The consortium was implemented and a vision was established to maintain the area as a vibrant agricultural landscape linked to its urban environment, not by subsidisation, but by smart and persuasive management procedures. The Catalan Government did not initially formally acknowledge the body, but in 2006 it joined the consortium and showed willingness to accept shared decisions. The local councils seem to be more prepared to accept a new governance structure based on shared decisions, participative processes and multi-level cooperation, while the larger government body resisted participating in collaborative structures, preferring not to share its powers even though it was reticent to use them. Since its creation in 1998, BLAP has made an effort to position itself internationally so as to obtain synergies with other similar bodies through transnational networks. This is especially the case of the Peri-urban Regions Platform of Europe (PURPLE) which seeks to lobby the EU to recognise the important role of peri-urban agriculture throughout the continent. PURPLE is an association promoting the introduction of specific measures for peri-urban agriculture under the EU Common Agrarian Policy (CAP) with recognition that peri-urban agriculture should be treated as a distinctive and separate type of farming within the EU frameworks.[5]

The BLAP consortium is a flexible body, complex in terms of managing such a varied number of partners, but effective in developing policies made by multiple partners. As the farmers' union is a constitutive member of the consortium, the BLAP works with compulsory farmer participation (the key stakeholders), but in cooperation with other partners in their territorial context. The Park has adopted a Management and Development Plan (2002) and a Land-use Plan (2004) and other strategic documents. The Land-use Plan established strong protection of the farmland, while the Development Plan proposed a set of strategies and specific actions to guide future uses. The central aim of the BLAP is to provide mechanisms to facilitate farms maintaining their competitiveness, not only in economic terms but also in the environmental and the socio-cultural dimensions. The basic premise of operation is based on a collaborative network between the stakeholders and their agreement to coordinate their activities and assume a common responsibility.

[5] See http://www.purple-eu.org/. Accessed 30 Jan 2009.

The overall budget is about 2 M€ per year which is comparatively modest but does not include public officers' salaries. Expenditure is directed to agricultural management actions such as a geographic information systems (GIS) of the existing water channels, rural roads maintenance and improvement, research, a plastic recycling centre and rural policing (theft of agricultural products was a major problem prior to the existence of the BLAP). The most important agricultural products are promoted for the urban market and they are recognised through the PGI and PDO labelling schemes.[6] Commodities outside EU labelling schemes benefit from FRESC (meaning *fresh* in Catalan) labelling, whereby BLAP guarantees that a product is indeed fresh and produced in the area. Urban consumer promotion includes the following: marketing campaigns and merchandising; deals with local restaurants to cook with local food; and a website informing consumers which commodities are produced by which farmer, where they are located and where they sell their produce.[7] BLAP has also incentivised farmers' associations that work directly with consumers by means of SSC (with door-to-door delivery).

The promotion of organic farming among the farmers is another of the leading strategies, although, like all the strategies carried out in BLAP, it is voluntary and not necessarily adopted by all farmers. There is support for integrated pest management by the farmers' associations working through the Park headquarters so as to establish crop protection measures. These associations are not subsidised; technicians are directly paid by farmers, but there is the opportunity to interact with public officers working for agricultural development in the area. Although not well understood internationally, the EU CAP does not include horticulture or fruit producing, consequently peri-urban agriculture in the BLAP is not subsidised (Paül 2008), but there is government support for infrastructure. BLAP has other roles through the provision and maintenance of leisure trails, the delivery of educational activities for schools and foodbowl security, all of which have growing importance in Spain as noted by Sanromà and Ramos (2007) (Fig. 6.3c). In terms of public use, BLAP is now focusing on the development of a series of agrotourism activities with tourist offerings that include the following: a visit to farms and farmlands, the interpretation of a museum exhibition on vegetables, a cooking and tasting workshop, and a restaurant meal using local produce.

BLAP emerged from the farming sector, but now has the commitment from all the partners present in the region not just rural ones (for example, there are now urban partners such as the municipalities and the District and the Provincial Councils, with a clear urban basis). The Park is considered to be a crucial part of managing conurbation and, consequently, limiting urban encroachment. However,

[6]The EU has defined two essential legal concepts for assessing value in agriculture since 1992: Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI). It is not easy to achieve these labels and a long-term process must be followed in order to obtain them. BLAP is successful in promoting new commodities to fulfil the fixed requirements and obtain those qualifications. Pota blava chicken was the first and now the process is being followed for the Prat artichoke (Fig. 6.3b).

[7]See (only in Catalan version) http://www.elcampacasa.com/. Accessed 30 Jan 2009.

BLAP is not considered to be an 'empty' area waiting for future developments but rather a project in itself that is linked to the rest of the metropolis.

6.5 Case Study Area Two: Peri-Urban Issues in Perth

6.5.1 Perth's Agricultural Fringe: A General Overview

As noted earlier, Perth has experienced unprecedented population growth since 2001 (Australian Bureau of Statistics 2008c). This comes on the back of three decades of sustained population growth and Perth doubling in area since the 1970s (Environmental Protection Authority 2007; Table 6.1). The majority of the State's population (78%, or approximately 1.5 million people) resides in the capital city, Perth, and the substantial population increases in recent years has created challenges for State and local governments in the areas of housing, planning, service delivery and infrastructure (Australian Bureau of Statistics 2008a). Between 1986 and 2006, the number of houses increased in the State by 63% overall and by 40.5% in Perth (Australian Bureau of Statistics 2009a). Despite Perth's population being considerably less than that of Barcelona, the Perth metropolitan area occupies 7,874 km^2 (Table 6.1; Fig. 6.2) and stretches 170 km, occupying a footprint more than four times that of Barcelona.

The Perth metropolitan area is situated on a sand plain with generally poor, ancient soils. Water is a precious commodity with rainfall collected in reservoirs around the city and groundwater from subterranean sources (Science Matters and Economics Consulting Services 2008). Large areas which have been Perth's traditional food growing locations have disappeared under housing developments, in places such as Wanneroo, Spearwood, parts of the Swan Valley and Armadale, all of which would have been termed fringe farming lands two decades ago (Figs. 6.2 and 6.4) and which in 2008 were the same local government areas that recorded unprecedented population growth (Australian Bureau of Statistics 2009b). The once separate town of Mandurah 75 km south of Perth is now a major city and it could be argued is part of the Perth conurbation, with the area between the two cities now filled with houses and a haphazard patchwork of pastures and horticultural businesses. As discussed in Section 6.3.2 the Swan Valley is the last of the bigger peri-urban fringe farming areas but it has been under constant threat of redevelopment for industry and housing for three decades (Fig. 6.4a).

The Western Australian Department of Agriculture and Food projects that if the Perth population reaches two million people then an additional 630 ha dedicated to horticultural production with the necessary buffer zones, transport links and hydrology should be secured to ensure food security sources (Science Matters and Economics Consulting Services 2008). The bulk of local food for the Perth metropolitan area now comes from the South West, Gascoyne and Kimberley regions (see Fig. 15.2 in Chapter 15, this volume) all of which are more than 100 km distant and in the case of the Kimberley and Gascoyne, thousands of kilometres.

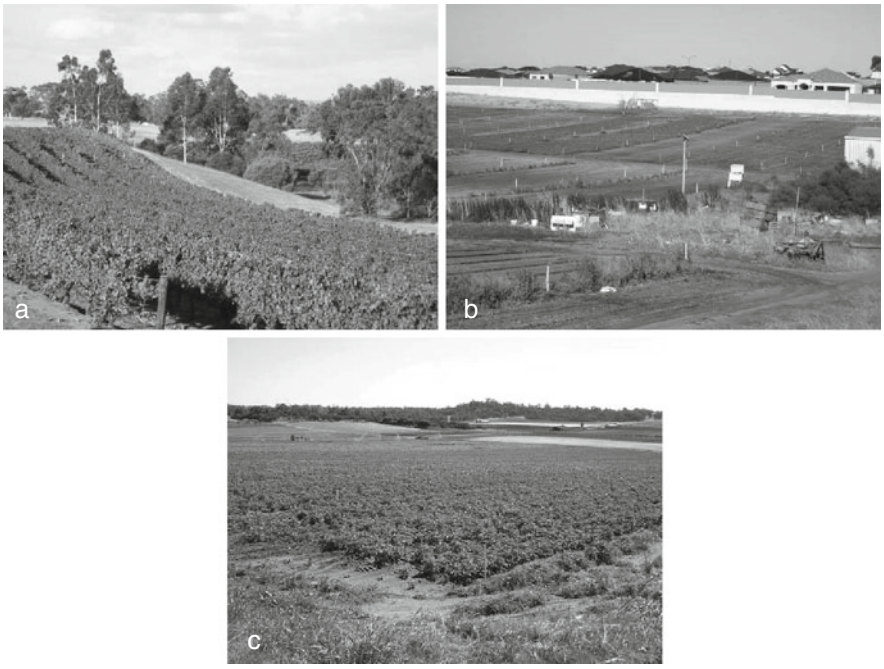

Fig. 6.4 Perth's inner fringe farmlands with strong urbanisation pressures. **a** Swan Valley vineyards, the symbol of the struggle against urban encroachment and the only protected agricultural space around Perth. Picture by Valerià Paül (2003–12–08). **b** Strawberry fields and suburban neighbourhoods in Wanneroo, where a horticultural precinct is now being considered (Science Matters and Economics Consulting Services 2008). Picture by Valerià Paül (2003–12–07). **c** Market gardening in the North of Peel region. Picture by Valerià Paül (2003–11–11)

6.5.2 The Chittering Valley: A Peri-Urban Locality Near Perth

As identified earlier, there is high demand for urban land and housing in Perth and the next ring of regional land is now under scrutiny for urban development. However, much of the land to the east of the city is State forest and important water catchment areas (Fig. 6.2). One area that has been identified by the State government as a potential site for a new urban settlement is the Shire of Chittering, a rural local government authority with a current population of 3,520 people (Table 6.1), which borders the north eastern suburbs of Perth. A new town has been mooted to accommodate Perth's future population growth and which would need to accommodate an indicative population of 10,000 people (approximately one third of the forecast population growth for the North-East corridor) (Western Australian Planning Commission 2001).

Much of the Shire is located in a long and very picturesque valley which has traditionally been highly productive horticultural, grazing and broadacre agricultural land. To date, the residents of the Shire have vigorously proclaimed their Shire to

be ‘rural’ rather than ‘urban’ in nature. Further, unlike the flat Swan coastal plain, the Shire of Chittering is undulating with productive soils, producing quality food and fibre with the potential to adopt more intensive agricultural outputs. The Shire’s proximity to key transport networks adds to this location’s value as a food producer for global and local markets. The Shire and most of its residents have resolutely resisted urban development, but small subdivisions are evident and there are a growing number of hobby farms and lifestyle residents who do not work the land. The Census shows that a growing proportion of the Shire’s residents do not work locally, commuting to Perth or taking fly-in/fly-out work elsewhere (Australian Bureau of Statistics 2007).

Over the last two decades, the industry base has diversified with a variety of intensive agricultural industries such as viticulture, floriculture and aquaculture as well as tourism which has become an important industry. People come to the Chittering Valley for its picturesque farming vistas, the bush and food experiences, driving through the increasingly built-up Swan Valley vineyards en route. The diversification of the industry base brings with it some tensions. The full-time larger-scale farmers, particularly in the northern half of the Shire, are typically broadacre farmers and are keen to expand their holdings to achieve economies of scale. At the same time, the price of land is increasing as farms are divided into higher value smaller, hobby and intensive agriculture farm holdings. The higher prices paid by smaller farmers, developers and small commercial operators are tempting for established farmers wishing to sell up and move on. Some fulltime farmers argue that hobby farmers are often away and are not vigilant with their fencing, animal husbandry, fire prevention programs, or weed and feral animal control, while the hobby and intensive farmers feel constrained by the well-established, traditional farmers. Tourism operators resent farmers who work at night, creating noise when guests sleep, clog the roads with farm machinery and use chemical sprays. Currently, conflicts between different land users are minimal, however, the development of an entirely new town in the Shire, projected to be more than treble the size of the local government authority now, is likely to introduce a different demographic to the Shire, comprising a greater diversity of residents and stakeholders. Managing the inevitable urban, landscape, social and economic changes while also maintaining a highly productive farm area will require prescient planning and governance tools.

The elected members and the employees of the Shire have shown a keenness to optimise development opportunities while at the same time enhancing the agricultural potential and rural attributes of the area. They are cognisant of the dominance of agriculture on one hand and the temptation to diversify at the cost of destabilising what is already a productive and established industry base and community.

The governance tools currently at the disposal of the Shire are local government planning policies which tend to deal with specific locations or particular local issues such as car parking, drainage and town plans. There is a Development Plan Policy which aims to provide consistent guidelines for development plans, integrating various local planning policies with an overarching theme of preserving the rural character of the Shire. There is also a Local Planning Strategy. However, local

government policies are relatively weak, particularly in a situation as is the case here, where the WAPC (a State government agency), through a regional strategy has identified and ratified a location within the Shire that is suitable for a new town.

At a regional level, there is the Wheatbelt Regional Development Commission, which while a State government agency, works with regional stakeholders to develop social and economic strategies to enhance local development. Their remit however is to work across the region which is 154,862 km^2 (see Fig. 6.1 and 15.2) and wherever possible to address regional issues. Further, the challenges facing the Shire of Chittering are not necessarily going to be solved or addressed through planning and protection, the reason being that the WAPC decision overrides that of the local government authority. If the Shire of Chittering is to maintain its rural dominance, albeit a trend towards intensification of agriculture, then there will need to be broad acceptance of that by all residents of the Shire, including those who have no direct or indirect involvement with food and fibre production. As was the case in BLAP, there must be a strong sense of farmer solidarity and support from local councils and residents all of whom are committed to the conservation of farmlands and the promotion of its products.

6.6 Discussion and Conclusion: Lessons from Barcelona for Perth

Throughout the world, cities grow as urbanisation overtakes rural pursuits and certainly this is the case in our two chosen case study areas: Barcelona in Europe and Perth in Australia. Peri-urban regions are consequently contested areas, and farming areas on the fringes of these cities are under threat from government, planners and developers to accommodate phenomenal urban growth trends (Johnston and Swallow 2006, Weller 2008). At the same time, food security and environment costs are emerging as important public policy issues. Unlike most European cities, Perth has a very low density and occupies a relatively vast geographic footprint. The people of Perth have a general antithesis to greater urban densification, particularly in the housing sector, unlike Barcelona where there is relatively high housing density. Until now, the encroachment of urbanisation on productive farm lands has been of limited concern to Western Australians. However public policy is beginning to urge greater urban density and climate change and housing affordability are prompting the people of Perth to change. The potential urban encroachment into the Shire of Chittering presents some new dilemmas. Social changes often adversely affect the economic efficacy of a region and with growth come a raft of other challenges. These include pressure on the environment, increased demand for a wide range of infrastructure and its continued maintenance, and support for an array of viable economic enterprises. In addition to the inevitable diversification of the local demographic, difficult social issues often accompany growth such as income polarisation with the gap between the wealthy and the poor inevitably widening as an economy grows (Baum 2006). To date, there has been no formal collaboration between farm

owners and other stakeholders in the Chittering locale or an organised campaign to recognise or preserve productive farming land.

The lessons from BLAP present opportunities for proactive community development strategies which, potentially, consolidate the established industry base and enhance opportunities for associated value-added activities and industries. The BLAP model provides an example of strategic measures that consolidate urban-rural relationships, particularly through urban consumer markets by way of SSC, and commodity marketing such as regional branding and labelling, promoting freshness and quality. It has shown that local commitment to responsible and responsive governance initiatives are as important and perhaps more effective than adherence to narrow government policies and regulations. Land-use tools are needed, but they are not enough by themselves. A key point of difference between the Barcelona case study and that of Chittering is the role of farmers and producers in the BLAP with the flow-on consequences for governance. Governance means alliances, dialogue, multiple negotiation, partnership agreement, public participation, consensus and trust-building, adaptation and flexibility with and between farmers, other commercial operators, local government, State agencies and other residents. The wider European peri-urban agenda provides an important institutional context which ensures critical support for local initiatives such as BLAP. The literature and examples such as BLAP show that farmers and their peak industry organisations must be a part of planning and negotiations because it is they who work and sustain the peri-urban agricultural areas. Future research could provide insights into how farmers interpret, condition and frame different planning schemes.

It is likely that food production systems will intensify in the Shire of Chittering, just as they have in other peri-urban areas, because land values make all but the most capital intensive agriculture uncompetitive (Bryant and Johnston 1992, Barr 2003). However, rather than undermining the agricultural activities, building on potential food markets and capacity-building alternatives could assist the community and emergent local businesses to position themselves more strategically to take advantage of emerging food production, consumption and environmental trends. At the same time, there is the opportunity to develop new industries and employment around the focus of agriculture, thus developing resilience against unexpected developments. Ensuring the integrity of the Shire and securing a recognised and important peri-urban foodbowl will require effort. Planning for an entirely new population base in an intrinsically agricultural environment will demand different and innovative planning strategies which are likely to challenge local and State policies. It will require a willingness to work across jurisdictions. Nonetheless, the sustainability agenda is asserting the need for responsibility in our use of all resources including those required to produce food and deliver it to market.

The BLAP example has shown it can be done in an economically viable way which also enhances the aesthetic, social and environment values of a strategic location with benefits that flow beyond the local boundaries. Despite being an ‘invention’ (‘agrarian park’ is not a statutory body in the Catalan legislation), it has worked because it was based on partnerships and collaboration with farmers, following general EU principles such as those included in the European Spatial

Development Perspective (European Commission 1999). Australia could develop a similar institutional context and in so doing, frame guidelines to facilitate collaboration between agencies, and real public participation to enable workable and productive rural-urban partnerships. Such an initiative provides a useful tool for governance and public policy purposes while threading through the delicate issues around the protection and management of peri-urban agricultural areas which are exposed to strong demographic pressures.

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Chapter 7
Agricultural Land Ownership Change and Natural Resource Management: Comparing Australian and US Case Studies

Emily Mendham, Hannah Gosnell, and Allan Curtis

Emily Mendham

E. Mendham (✉)
Science into Society Group, CSIRO, Kenmore, QLD, Australia; Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia
e-mail: emily.mendham@csiro.au

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Abstract Rural areas throughout the developed world are undergoing significant restructuring due to a number of socio-economic factors. One aspect of recent rural change has to do with demographic shifts and in-migration to rural areas formerly dominated by agricultural enterprises and other types of working landscapes. Since ownership is a major determinant of land use, and different cohorts of owners interact socially in different ways, these trends have implications for natural resource management (NRM). In this chapter, we present results of research on trends in agricultural ownership change in regions of Australia and the American West that involved analysis of property sales records, survey data, and semi-structured interviews with landowners and other key informants. In the Australian study areas, 50% of properties are likely to change hands between 2006 and 2016, doubling previous rates, and there is good reason to expect continued rapid turnover in the US study regions. Findings from the US and Australian studies highlight that a substantial proportion of newer owners are absentee and many are amenity buyers. Newer and longer-term owners are by and large significantly different in terms of their values, attitudes, levels of knowledge and management practices, although they share important similarities. We consider the implication of these trends for NRM, and the extent to which our findings substantiate theoretical understandings of rural change associated with the concept of multifunctionality.

Keywords American West · Demographic change · Natural resource management · Amenity migration · Multifunctional landscapes · Ownership change

Abbreviations

ABS	Australian Bureau of Statistics
CRP	Current Recommended Practices
GYE	Greater Yellowstone Ecoregion
LMU	Land Management Unit
NRM	Natural Resource Management
RMU	Resource Management Unit
YNP	Yellowstone National Park

7.1 Introduction

Rural areas in post-industrial societies are undergoing significant restructuring. One aspect of recent rural change that is both indicative of and contributing to restructuring has to do with demographic shifts and in-migration of amenity seekers to rural areas formerly dominated by agricultural enterprises. This trend is most obvious in regions of attractive natural and cultural assets and with close proximity to metropolitan centres (Gosnell and Abrams 2010, Mendham and Curtis 2010, see also Chapters 2, 3 and 5, this volume). Changes taking place on private lands adjacent to protected areas and other ecologically important land are of particular

concern to natural resource management (NRM) agencies and conservation interests (Hansen and DeFries 2007).

Since ownership is a major determinant of land use, and different cohorts of owners interact socially in different ways, these trends have significant implications for NRM on private lands (McCarthy 2008, see Chapters 3 and 8 this volume). In particular, high rates of ownership turnover may be complicating NRM agencies' ability to effectively engage landholders responsible for the management of land and water resources valued by society at large (Aslin and Brown 2002, Cary et al. 2002, Curtis et al. 2002), especially when new owners are increasingly absentee (Gosnell et al. 2006, Haggerty and Travis 2006, Mendham and Curtis 2010).

A number of rural scholars have characterised such changes as part of a 'multifunctional transition' contributing to so-called 'post-productivist countrysides' (Barr 2003, Holmes 2002, Wilson 2001, Holmes 2006). These conceptualisations suggest that the former primary rationale of rural land use, agricultural production, has given way to other considerations including urban recreation use and landscape or biodiversity protection values, in part due to the replacement of longer-term owners with a new cohort of landholders. There is continued debate among rural scholars regarding the finer points of multifunctional transitions, particularly the drivers and implications, and how they manifest differently across space.

In terms of implications, a number of studies have been conducted with the goal of identifying generalisable differences between new and longer-term owners in terms of their values, attitudes, knowledge and land management practices (Nelson 1997, Rudzitis 1999, Jones et al. 2003, Burnley and Murphy 2004, Gosnell et al. 2007, Yung and Belsky 2007, Mendham and Curtis 2010). While some object to such a priori dichotomisations (Robbins et al., 2009) and others claim that the differences are fundamentally inconsequential (Smith and Krannich 2000), a number of studies have found enough divergence between the two groups to warrant further investigation into the ways in which property turnover and the influx of newcomers affects rural agricultural landscapes and communities. Some new owners may express more interest in conservation and hold value orientations conducive to improved environmental management (Bohnet et al. 2003, Jones et al. 2003, Jackson-Smith et al. 2005, Travis 2007), but they may not necessarily have the skills or knowledge required to effectively manage their land (Klepeis et al. 2009).

Despite the social, ecological and managerial implications suggested by high rates of ownership change, property turnover has received little explicit research attention internationally (see Huntsinger et al. 1997, Gosnell and Travis 2005, Gosnell et al. 2006, Mendham and Curtis 2010 for exceptions). We suggest that a comparison of studies dealing with ownership trends taking place on agricultural landscapes in Australia and the American West might result in new insights and more generalisable conceptualisations related to rural change. Australia and the American West share many similarities in terms of economic and political context, pressing environmental issues affecting agricultural landscapes, and demographic change driven by similar processes.

In the following sections of this chapter we briefly review the theoretical literature on agricultural landscape change with a focus on how these changes are

playing out in Australia and the American West (Sections 7.2 and 7.3). Next, we explain our methodology and present results of research on trends in agricultural ownership change in sub-regions of Australia and the American West (Sections 7.4 and 7.5). Then we consider the implications of our findings for NRM, and compare results from Australia and the US (Section 7.6). Following, we discuss implications for natural resource managers seeking to engage private landowners in sustainable land use practices (Section 7.7). Finally, we discuss the extent to which our findings substantiate theoretical understandings of rural change associated with the concepts of post-productivism and multifunctionality and provide suggestions for future research (Section 7.8).

7.2 Conceptualising Rural and Agricultural Landscape Change

Rural landscapes throughout the developed world have been undergoing significant change over the past 50 years, referred to in the rural studies literature as rural restructuring (Nelson 2002, Woods 2005, see Chapter 1, this volume), a transition from productivism to post-productivism (Halfacree and Boyle 1998, Ilbery and Bowler 1998, Evans et al. 2002, Walford 2003) or a multifunctional transition (Holmes 2006, Wilson 2008). The concepts of rural gentrification and amenity migration have also been employed to explain rural change. Rural property turnover can be conceptualised as both a driver and result of these transitional phenomena.

Nelson (2002, p. 905) looks at recent changes in the American West through the lens of rural restructuring, observing that 'neoliberal trade policies, capital-labor substitution, industrial restructuring, and diminishing resource quality have resulted in declining employment and income levels in the region's traditionally basic sectors' contributing to out-migration of longer-term residents and the cultivation of new economies by in-migrants. Buttel (2003) likewise points to the role of an increasingly globalised marketplace in putting marginal American lands at a disadvantage in terms of the production of mass commodities. Similarly, declining labour needs in other extractive sectors due to mechanisation and downsizing, for example in timber and mining, have contributed to rural change (Rasker 1995, Power 1996).

Scholars, many of them from the UK, have explored the notion of a post-productivist countryside (e.g., Halfacree and Boyle 1998, Ilbery and Bowler 1998, Evans et al. 2002, Walford 2003). According to this theory, the productivist era placed great emphasis on the role of the rural countryside in food production (key exemplifiers of the use of rural space in this era include intensification, concentration and specialisation). In contrast, the post-productivist era is said to be characterised by a reduced emphasis on the role of the rural landscape in food production and increased emphasis on it as a place of consumption and environmental sustainability (marked by extensification, dispersion and diversification) (Ilbery and Bower 1998, Argent 2002).

In 2002, Holmes observed that the post-productivist notion was the only current conceptualisation offering synergy between previously discrete knowledge bases used to inform rural change in western societies, and sought to apply the concept to the Australian situation. He examined the driving forces for agricultural

landscape change, focusing on the overcapacity of agriculture, societal-held protection values and recognition of the need for sustainability, and amenity values. He found, however, that the post-productivist concept lacked applicability to Australian conditions (see Argent 2002, for similar criticism). The concept of post-productivism has been criticised by others, too, for its linearity, lack of consideration of spatial heterogeneity, bipolar nature and UK-centric origins, and several authors claim there is little evidence of it occurring at grass-roots levels (Wilson 2001, Argent 2002, Holmes 2002, Holmes 2006, Potter and Burney 2002, Marsden 2003, Burton and Wilson 2006).

Multifunctionality, a concept that came into prominence primarily through policy debates concerning protectionist trade policies, has more recently been employed as a replacement to the post-productivist concept (McCarthy 2005, Wilson 2008, Bjorkhaugh and Richards 2009, Dibden and Cocklin 2009, Wilson 2009). Wilson (2001) proposed a multifunctional agricultural regime while Holmes (2002, 2006) suggested a multifunctional rural transition. These concepts are said to better encapsulate the spatial heterogeneity, non-linearity, complexity and diversity of current transitions occurring in rural landscapes.

A diverse literature on the subject has emerged, with some authors focusing on the economic and policy aspects of agricultural landscape change (Hollander 2004, Potter and Tilzey 2005) while geographers have used the concept to explain what is occurring at the farm level by focusing on the spatial aspects of multifunctionality in agricultural and rural landscapes (Wilson 2001, Holmes 2006). Multifunctionality has also been utilised by some scholars to describe conditions outside of the agricultural environment (see, e.g., Klein and Wolf 2007). In summary, rural areas are becoming more heterogeneous (or multifunctional) driven by a reordering of production, protection and consumption values which is causing increased differentiation at all spatial scales (Argent 2002, Smailes 2002, Cocklin et al. 2006, Holmes 2006).

Another dimension of rural change with relevance to shifts in agricultural land ownership is the process of rural gentrification. Both British and American scholars have drawn on gentrification theory from the urban studies literature to interpret the dynamics of counter-urbanisation in specific places (Phillips 1993, 2002, Smith 2002, Phillips 2004, Darling 2005, Phillips et al. 2008). According to this perspective, community change results from the displacement of local households through increases in the cost of living and home prices. Darling (2005), like Phillips (1993) before her, makes use of Neil Smith's 'rent gap' theory, investigating the importance of the revalorisation of devalued rural properties within the sweep of changes from productivist to post-productivist rural landscapes. Revalorised rural spaces are seen as taking on the characteristics of 'positional goods', signifiers of wealth and status available only to the elite few (Cloke and Thrift, 1990, Phillips 1993).

Processes of rural gentrification, and the associated transition to multifunctional landscapes, are intimately tied to the amenity migration phenomenon in which people move to areas of high natural or cultural value (rather than for economic reasons). Rural communities adjacent to wilderness areas, lakes, mountains, beaches and other ecologically sensitive areas have proven to be major magnets for amenity migrants (Rudzitis and Johansen 1989, McGranahan 1999, Frentz et al.

2004, Argent et al. 2007, see Chapter 3, this volume). The advancement of telecommunications networks nationally and globally has enabled white collar workers to be more 'footloose' telecommuting from remote rural areas. The ease of physical transportation due to well-maintained highways and interstates as well as rural airports has also played a role (Jackson-Smith 2003, Jackson and Kuhlken 2005, Ory and Mokhtarian 2006, Travis 2007). Natural amenities have attracted affluent baby boomers (born between 1946 and 1964) in particular to high amenity areas and this trend is expected to continue (Hugo and Bell 1998, Haas and Serow 2002, Nelson et al. 2004, Johnson et al. 2005, Lindberg 2007). Several authors have examined the challenges for receiving areas associated with amenity migration, including new and more diverse stakeholder communities often disengaged from agriculture.

7.3 Rural Change in Australia and the American West

Both Australia and the American West are experiencing rural changes that are consistent with the literature on post-productivism and multifunctionality. A brief review of the ways in which these trends are manifesting in the two places reveals their comparability.

In Australia, the emergence of multifunctional landscapes has been studied by Barr (2003), Barr et al. (2005) and Holmes (2006). These authors identified different 'social landscapes' (Barr 2003) and 'occupance modes' (Holmes 2006) depending on the values that prevail and predicted different trajectories of land use and population growth for each landscape type. For Australia, Barr (2003) identified traditional agricultural, amenity and small farm landscapes while Holmes (2006) outlines productivist agricultural, rural amenity, small farm/pluriactive, peri-metropolitan, marginalised agricultural/pastoral, conservation and indigenous modes of occupance for Australia. For the state of Victoria, Barr et al. (2005) identified irrigation, amenity, production and transitional landscapes (see Chapter 1, this volume for further discussion).

American scholars have not, for the most part, employed these concepts to describe rural change, but there is a robust literature documenting the trends associated with post-productivism and multifunctionality, including economic change associated with the decline of extractive industries in the American West and demographic change associated with the influx of amenity migration to rural and exurban areas.

In the American West, the shift from agrarian economies to post-industrial economies (those based on services, tourism, recreation, government, culture, education, and information technology) became most noticeable in the 1990s (Power 1996). From 1985 to 1995 job growth in the high amenity, largely agricultural, rural West outpaced the nation as a whole by nearly 60%, especially in counties adjacent to metropolitan areas (Beyers 1999). Robust economic expansion has specifically occurred in the service sector, non-farm self-employment, and niche manufacturing rather than in agrarian sectors (Nelson 1997). Several researchers link aspects of the changing economy with new 'quality of life' migrants, sometimes referred to as 'lone eagles' or 'modem cowboys' (Riebsame et al. 1996, Beyers and Nelson 2000).

Analyses of income structures for non-metropolitan counties in the West show areas with the most robust population and employment expansion have higher endowments of non-farm proprietorships and investment income (Nelson and Beyers 1998). Economist Thomas Power characterises these changes as 'post-cowboy economics' (Power 1996).

Restructuring in the Australian agricultural sector has generally been synonymous with rural decline. Entries into the Australian farming sector declined significantly during the period 1976–1986 but have changed little in the following intercensal periods, indicating entry may now have stabilised at a new low equilibrium (Barr 2000, 2004). The increased use of technologies, mechanisation and the resulting reduced need for labour, and pressure to increase the size of holdings has resulted in rural population decline in much of the interior of the continent (i.e., areas dependent on agriculture for income as opposed to mining) (Gow and Stayner 1992, see Chapters 1, 12 and 13, this volume). Farm numbers have fallen by 1.3% per annum (200 farms per year) since the mid-1950s (Lockie et al. 2006). In many industries a small number of producers are now responsible for the bulk of production and many smaller producers survive by obtaining off-farm work or undertaking 'pluriactivity' (Barr 2003, Lockie et al. 2003).

On the other hand, attractive and well-watered regions have experienced population growth. Towns and regional cities close to metropolitan areas, coastal areas along eastern and south-western Australia, snowfields, some Murray River resort towns, in-land mining areas, towns along the Hume Highway linking Melbourne and Sydney, and irrigation districts or mining regions have experienced population growth (Hugo 1994, Budge 1996, Hugo 1996, Newton and Bell 1996, Haberkorn et al. 2004, Buxton et al. 2006). This divergence in growth rates between attractive areas and the rest of the continent has become more pronounced and is expected to continue, reinforcing patterns of uneven development (Hugo 1994, Argent 2002, Smailes 2002). Advances in transport and communications, increasing levels of transferable incomes as a result of the minerals boom and a large cohort of wealthy individuals approaching retirement age are some of the factors driving amenity migration. Much growth has occurred in the peri-urban zone which has become increasingly complex but has received little research attention until recently (Bunker et al. 2004, Buxton et al. 2006, Houston 2005, Holmes 2006, Low Choy et al. 2008, see Chapter 6, this volume).

Similarly, the American West is evidencing significant trends in amenity migration to rural, agricultural areas. Historically, 70% of western residents lived in metropolitan areas, but recent growth has taken place largely in rural (non-metropolitan) counties (Johnson and Beale 1994, Shumway and Davis 1996, Cromartie and Wardwell 1999, Otterstrom and Shumway 2003). Rural western counties grew almost 9% on average between 1990 and 1998, more than twice the national rate of 4.1 and 25% of those counties experienced net migration exceeding 16% (Nelson 2001).

In both the American West and south-eastern Australia, rural property turnover and the trend to multifunctional landscapes are driven by the impending retirement of the post-war baby boom population (Jackson-Smith 2003, Gosnell et al. 2006, Mendham and Curtis 2010). Baby boomers make up a growing percentage of

migrants to the American West (Judson et al. 1999, Travis 2007). Trends in life expectancy and retirement have informed the work of Barr (2003) and our modelling of future rates of property turnover (Mendham and Curtis 2010) (Section 7.5). Given relatively low levels of farming family succession in Australia, farmers are often willing sellers of land. In Australia the median age of farmers is close to 55 years, most farmers retire before 65 years of age, and only a quarter to a third of rural property owners say they have a plan for family succession. Many of Australia's current farmers will cease farming between 2005 and 2015. As Barr (2003, p. 125) explains, 'given the de-traditionalisation of farming, the changing expectations of farm transfer and reducing attractiveness of the farm lifestyle to many young rural people, we can expect that in some landscapes the farm population will be considerably different from today's.'

7.4 Methodology

In this chapter we draw upon published and unpublished data on rates of past and predicted rural property ownership. Data are presented for two regions from south-eastern Australia (the Corangamite and Wimmera watershed/catchments) (Fig. 7.1) and the Greater Yellowstone Ecoregion (GYE) in the American West, with more detailed data from three watersheds within the GYE (Fig. 7.2). We take a comparative approach to analysing property turnover trends and implications in our US and Australian case studies.

Fig. 7.1 The two Australian case study locations – the Corangamite and Wimmera catchments, Victoria, Australia

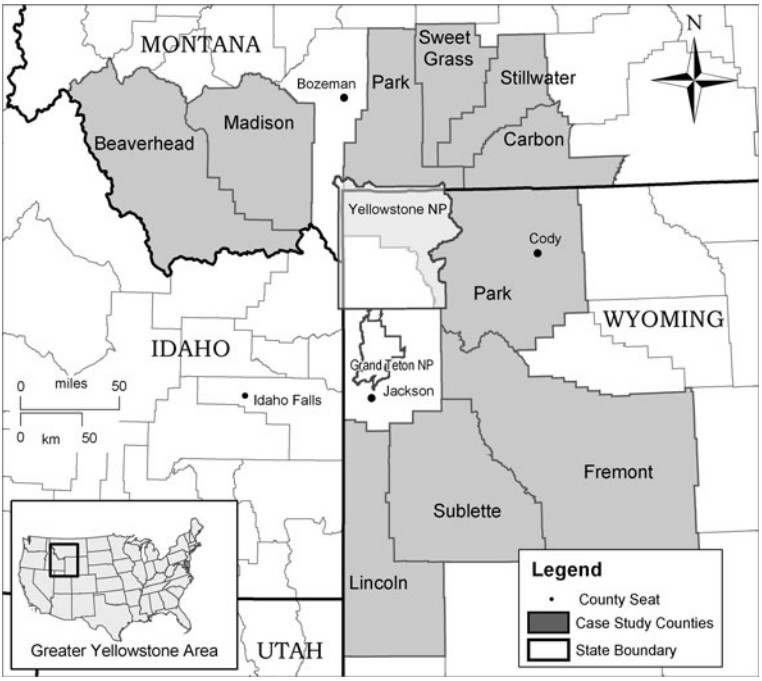

Fig. 7.2 The US case study region – the Greater Yellowstone Ecosystem

Importantly, the Australian and American studies were conducted independently of one another by researchers at Charles Sturt University and University of Colorado respectively, with no knowledge of each other's activities. The questions being investigated by each group, however, were remarkably similar, aimed at understanding highly noticeable (and similar) trends taking place on agricultural landscapes in both regions, with obviously significant implications for NRM. Both involved analyses of trends in property turnover, drivers of ownership change, and ecological implications. Upon discovering each other's work and comparing notes, we developed the plan for a comparative analysis.

Because the studies are thus different in many ways, there are some limitations to our comparative analysis that readers should keep in mind. The case studies utilise vastly different land holding size categories: greater than 10 ha in Australia and greater than 160 ha in the US. This may pose potential problems during comparison and the transferability of findings from one case to another. In both studies the size thresholds selected were in order to stay out of their respective rural-residential and 'ranchette' markets. The sizes selected, although different, are relevant within their farming and ranching contexts.

The contexts of the studies are also different. However, similarities in the two regions' histories including the period of European occupation, physical geography, environmental challenges, and the social and economic trends discussed in

Section 7.3 means there is considerable potential for fruitful comparison between the western US and Australia. We believe that the issues of different size categories and context, when kept in mind, shouldn't detract from the value of comparative studies between the two regions and the potential for important lessons from multi-site research. Our approach has facilitated each author examining their own findings in light of findings in the other context resulting in new, more generalisable insights about the nature of rural change.

7.4.1 Australian Case Studies

The Corangamite watershed is located to the west of the city of Melbourne in Victoria, Australia. Proximity to Melbourne and highly attractive coastal and forested areas are draw-cards for new residents. However, in the farming regions further north and west populations are declining. The Wimmera is primarily a broad-acre farming region that has mostly been cleared for agriculture. The region includes amenity landscapes around the Grampians National Park and large regional centres. Here, 'farming is a business' and farmers strive to maintain competitiveness in global markets. These two regions were selected as they represent the different drivers of property turnover – amenity migration, retirement of the baby boom generation, and the pressures on the agricultural sector forcing property amalgamations. The regions are broadly representative of Victoria (excluding irrigation regions along the Murray River) (Fig. 7.1).

Rates of past rural property turnover were obtained from the analysis of state government property sales data supplied by the Victorian Valuer General's office (Mendham and Curtis 2010). The research also employed large regional landholder surveys (of 1,000 landholders) conducted in the Corangamite region in 2006 (Curtis et al. 2006) and in the Wimmera region in late 2007 (Curtis et al. 2008). The surveys had response rates of 57 and 56% respectively. Curtis et al. (2005) provide a detailed explanation of the mail out and collaborative research process undertaken. Data from these surveys (including landholders' long term plans and age) as well as Australian Bureau of Statistics (ABS) life expectancy tables were used to predict future rates of property turnover (Mendham and Curtis 2010).

Data were collected for all rural properties greater than 10 ha (25 acres) in size. The ten hectare threshold is accepted in Australia as a way of separating rural and urban landuse, particularly on the fringe of cities. Pre-testing workshops and talks with NRM practitioners confirmed that this was a sensible threshold. The Victorian Planning Provision guidelines (which all councils applied as they set about new planning orders from 2004) require a minimum subdivision of eight hectares in the Rural Living Zone (State of Victoria 2009). For this research we were interested primarily in agricultural and rural areas and larger properties that have greater conservation potential as intact units. This is not to dismiss the importance of smaller properties, particularly in peri-urban areas, but the focus of this research was on rural areas and larger properties.

Questions included in the survey sought to gather information that would address watershed managers' needs for data to underpin effective landholder engagement and the evaluation of outcomes from investment in watershed management. The extensive literature on the adoption of sustainable agricultural practices (e.g., Cary et al. 2002, Rogers 2003) and biodiversity conservation practices (e.g., Dettmann et al. 2000, Wilson and Hart 2001) and the authors' previous work to address data needs of watershed managers underpinned the selection of survey topics.

Survey data was analysed using the statistical software package SPLUS7. Testing for normality revealed the data to be non-normal, therefore all statistical analysis included bivariate comparisons using non-parametric statistics including Pearson's Chi-Square Test for count data and Kruskal-Wallis Rank Sum Test for continuous data and Likert scale data (a Likert scale of 1–6 included options: NA, highly unlikely/unimportant, unlikely/unimportant, some, likely/important, highly likely/important). NAs and missing values were removed before analysis. In all analyses a significance level below 0.05 is considered to be statistically significant. There can be limitations to survey data, such as determining the difference between expressed concern for the environment and actual practice. The survey included time-bound questions asking about the adoption of a range of conservation and agricultural practices including the amount of work completed (in kilometres or hectares).

Qualitative work was also conducted to look into the practices of individuals at more depth. One district in each watershed was selected for qualitative semi-structured interviews with landholders, real estate agents and NRM professionals to explore property turnover trends and implications. The Wimmera district selected for qualitative study was an agricultural area, while the Corangamite district was closer to a regional centre experiencing amenity migration while also encompassing some agricultural areas. These regions were selected to represent the divergent population trends occurring in Australia. A total of 47 interviews were conducted by the lead author of this chapter. Sampling was initially purposeful to seek representation from both longer-term and newer landholders, with following selections made using the snow-ball method (Babbie 2004). Interviews lasted from 1 to 4 h and were tape-recorded and transcribed verbatim. The interviews were analysed thematically using NVivo version 7 (Guba and Lincoln 1989, Creswell 1994, Denzin and Lincoln 1994, Neuman 2000). Qualitative coding was undertaken to locate key themes, patterns, ideas, and concepts within the data (Rossman and Rallis 2003).

7.4.2 American West Case Studies

The Greater Yellowstone Ecosystem (GYE), roughly 730,000 ha (18 million acres) in three states (Wyoming, Montana and Idaho) (Fig. 7.2) is a temperate montane ecosystem in the US Rocky Mountain physiographic province with Yellowstone and Grand Teton National Parks at its core. The region is often described as the largest intact ecosystem in the lower 48 states. Some 75% of this land area is in public ownership, including National Parks, National Forests, National Wildlife Refuges,

and Bureau of Land Management lands. Private lands, though they comprise only 25% of the total area, lie along low-elevation, riparian corridors and play a critical role in an ecosystem in which biodiversity declines as elevation increases (Hansen and Rotella 2002).

Ranches comprise the largest blocks of private land in the GYE and provide critical wildlife habitat and open spaces but only a small proportion of the private ranchland in the region is protected by conservation easement (Hansen and Rotella 2002). Historically, ranch landscapes bordering Yellowstone have presented challenges to biodiversity conservation because of sometimes incompatible land use practices including mono-crop agriculture, predator control and forage competition with native ungulates (Glick and Clark 1998, Groom et al. 1999). Macro-scale, regional economic and social trends in the GYE, however, have resulted in a new ownership regime and are creating new land conservation opportunities and constraints, changing the role of ranchlands in the ecosystem (Hansen et al. 2002, Frentz et al. 2004).

Data presented in this chapter are drawn from a study of ranchland ownership dynamics and change between 1990 and 2001 in ten GYE counties in Montana and Wyoming (Gosnell et al. 2006) and a more in-depth study comparing the NRM practices of longer-term and newer ranchers in three of the counties (Madison, Park and Sweet Grass) located in Southwestern Montana. For the earlier study, we focused on larger ranch properties 160 ha or more (400 acres) in GYE counties with significant remaining intact ranchland because they offer greater conservation potential. We relied on property sales data gathered from public and private appraisers and applied a methodology that has been described extensively elsewhere (Gosnell and Travis 2005).

In each county one or more researchers conducted interviews with members of the local agricultural community, realtors, appraisers, conservationists, and representatives of local and federal government. We also gathered baseline data on county socio-economic and agricultural trends from federal and state sources. Real estate appraisers familiar with each of our ten study counties provided data that document ranch ownership change (i.e., sales). We sought to 'type' all the ranchland buyers and the largest current owners in each county by asking individuals familiar with the agricultural communities in each of our study counties to classify each owner using a typology developed through a literature review and three pilot study counties (see Gosnell and Travis 2005).

In the later study, three researchers interviewed 44 ranch owners and managers using a combination of coded and open-ended questions about range management, public lands management, wildlife management, and water and wetlands management. The interviews were undertaken in three watersheds in Madison, Park, and Sweet Grass Counties in January and February of 2005. We targeted landscapes where a combination of newer and longer-term ranchers own property, and sought representation from both groups in each watershed for comparative purposes. We identified interviewees using a combination of sales data from private appraisers, current ownership data and snowball sampling (Robson 1993, Babbie 2004). We interviewed 23 newer owners and 21 longer-term owners. Two of the longer-term

owners did not complete the coded questionnaire, so our results include responses from 23 newer owners and 19 longer-term owners. Interviews lasted anywhere from 1 to 3 h and were tape-recorded and transcribed.

7.5 Trends in Rural Property Turnover

In many ways, property turnover trends in both the Australian and American case studies are comparable. Consistent with literature describing rural change in terms of a multifunctional transition, the dominant trend in both places over the past two decades has been accelerated rates of turnover, and displacement of 'traditional' farmers and ranchers who have been dependent on income from the production of food and fibre by newcomers with an interest in the amenities provided by agricultural landscapes. Most new owners have sources of income unrelated to agriculture, and many are absentee.

7.5.1 Rates of Ownership Change

Specifically, we found that in the Corangamite region in Australia 25% of rural properties greater than ten hectares had been sold at least once in the decade 1995–2005 (Mendham and Curtis 2010). The Wimmera region in Australia saw similar trends with 21% of properties changing hands. In Greater Yellowstone, where agricultural operations, primarily ranches, tend to be larger, 23% of all agricultural operations greater than 160 ha in the study area changed hands between 1990 and 2001, and in some places turnover rates approached 50% (Gosnell et al. 2006).

Analysis of survey results and demographics for the Australian case studies suggest that the rate of turnover identified there will increase, with projections indicating that 50% of properties in the Corangamite will likely change hands between 2006 and 2016, and 45% in the Wimmera during a similar time period (2007–2017) due to either retirement or death of the current owner, sale, or family succession (Mendham and Curtis 2010). These rates are double the previous rates of turnover identified from property sales data. In the Wimmera and Corangamite regions, the median length of residence was 35 years (that is, half the residents in these regions had lived there for more than 35 years) and in both regions past turnover rates were around 23%. Therefore, the predicted higher rates of turnover in property ownership represent a change from the relatively stable populations of the past.

7.5.2 New Owners

We sought to characterise the new owners in the Australian and American studies. An important finding in both studies was that most of the land ownership change involved the displacement of longer-term owners, many of them farmers

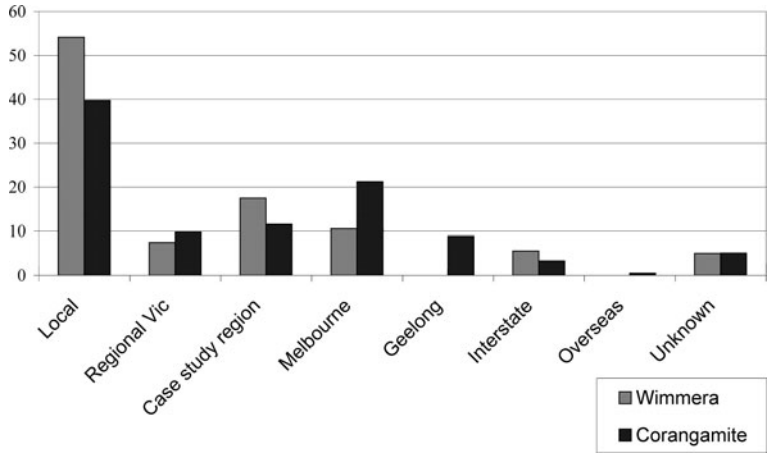

Fig. 7.3 Purchaser locations (1995–2005, shown as a percentage) for the Corangamite and Wimmera regions (property sales data supplied by the Victorian Valuer General). The 'local category' includes purchasers who were from the same Local Government Area

and ranchers, by a new cohort of landholders largely independent from agriculture, with the majority of sales to non-local buyers (Gosnell and Travis 2005, Gosnell et al. 2006, 2007, Mendham and Curtis 2010).

Sixty-seven percent of newer landholders in the Corangamite and 76% in the Wimmera had lived in a different district prior to purchasing their property. In comparison, the majority of longer-term property owners had lived in the same region all their lives. Analysis of property sales data supports this finding: in the past 10 years only 39% of purchasers from Corangamite and 58% from Wimmera were from the same local government area (Fig. 7.3). A large proportion of newer owners in the Australian case studies were absentee owners in that their principal place of residence was off-property. Forty-two percent of new owners in the Wimmera were absentee, while in the Corangamite 40% of newer owners had their principal place of residence elsewhere. By comparison only 18 and 19% of longer-term owners respectively were absentee owners.

In terms of professions, the majority of newer owners were non-farmers while longer-term owners were mainly farmers (Curtis et al. 2006, 2008, Mendham and Curtis 2010). In the Corangamite, 23% of newer landholders were farmers compared with 61% of longer-term landholders. Similar trends were apparent in the Wimmera with 35% of newer landholders stating they were farmers by occupation compared to 73% of longer-term landholders. The higher percentage of new owners who are farmers in the Wimmera is owing to the agricultural character of the region.

This is comparable to trends in the GYE study which indicated 40% of the large ranch sales between 1990 and 2001 went to 'amenity buyers', who were by and large from outside the region and often maintained their fulltime residence somewhere else while only 27% went to 'traditional ranchers'. The GYE has experienced

periods of rapid ownership change in the past, but sales have historically been mainly to traditional ranchers (Gosnell et al. 2006). The current change signifies an important transition not seen before, from traditional ranchers to a diverse set of amenity buyers. Qualitative research involving interviews with owners and other key informants in both Australia and the American West bolsters these findings, as illustrated by exemplar quotes in Boxes Box 7.1 and Box 7.2.

Box 7.1 Working Landscapes in Transition

> When I first came here on the ranch . . . there was one or two [ranchers] that were from outside, what you would call millionaire money, the rest was all small ranchers, all the way up and down the valley here. . . It's the opposite now. (US, GYE)
>
> We're the only ones from this junction down here that are still ranchers, traditional ranchers. (US, GYE)
>
> There are only us four major farmers, we are the only professionals left. All the other landholders in the district are small and work off the farm. (Australia, Corangamite)

Box 7.2 Motivations of Newer Owners

> And we looked at anywhere from a full blown cattle ranch to you know, just a house. We looked at the whole range of things, and I guess the deciding factor when we looked at how much everything was going to cost, this looked like to me, and to my wife, the best value. I liked to fish, it had this entire river [7 miles of private fishing], and it had a house on it. So we decided to go ahead and do it. (US, GYE)
>
> We got a map out and pinpointed an area, I work full time in Geelong [so it had to be within commuting distance] . . . we saw the views, walked on the land, saw potential, and it backed onto a state forest with good walking tracks. It was a lot more land than we wanted but we thought hang the expense. (Australia, Corangamite)

All of the Australian and American case studies were characterised by high levels of spatial variability in property turnover trends. Gosnell et al. (2006) developed a conceptual model and matrix to differentiate between 43 different ranch landscapes within the ten counties based on the degree of fragmentation and extent that ownership had shifted to amenity buyers. As might be expected, landscapes directly adjacent to Yellowstone National Park (YNP) had a much higher concentration of amenity-oriented owners, while landscapes that could still be considered production-oriented were relegated to the perimeters of the GYE. For example, in Park County (MT), which includes the Paradise Valley, the northern gateway to the YNP, and internationally recognised Blue Ribbon fly fishing along the Upper Yellowstone River and its tributaries, 73% of acres sold between 1990 and 2001

Table 7.1 Amenity buyers and traditional ranchers in the GYE market by county. Percentages indicate the portion of all acres that changed hands in large ranch sales (1990–2001) that went to the two most common owner types in our typology (traditional ranchers and amenity buyers) (Gosnell et al. 2006)

Amenity buyers		Traditional ranchers	
Park, MT	73%	Fremont, WY	46%
Madison, MT	64%	Beaverhead, MT	41%
Sublette, WY	62%	Lincoln, WY	39%
Park, WY	57%	Stillwater, MT	38%
Sweet Grass, MT	55%	Carbon, MT	20%
Beaverhead, MT	49%	Sublette, WY	18%
Lincoln, WY	34%	Park, WY	14%
Fremont, WY	14%	Sweet Grass, MT	11%
Carbon, MT	14%	Park, MT	5%
Stillwater, MT	11%	Madison, MT	<1%

went to amenity buyers, while Beaverhead and Fremont Counties, further out, maintained some semblance of a productivist landscape, with nearly half of the acres sold during that time period going to so-called traditional ranchers (Table 7.1).

Using an Australian land classification system based on factors such as vegetation and soil type to assist in NRM (resource/land management unit or RMU/LMU) we analysed variation in ownership change across space. As with the GYE study, attractive areas closer to the Australian coast and major towns and near forested areas had a higher proportion of newer owners, while in agricultural regions the

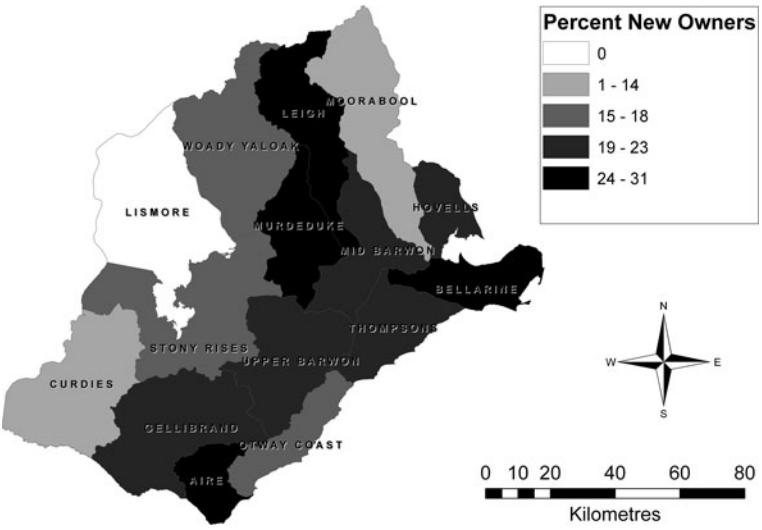

Fig. 7.4 The percentage of new owners as a proportion of all respondents in each land management unit in the Corangamite watershed (new owners are those who have owned their property for less than 10 years)

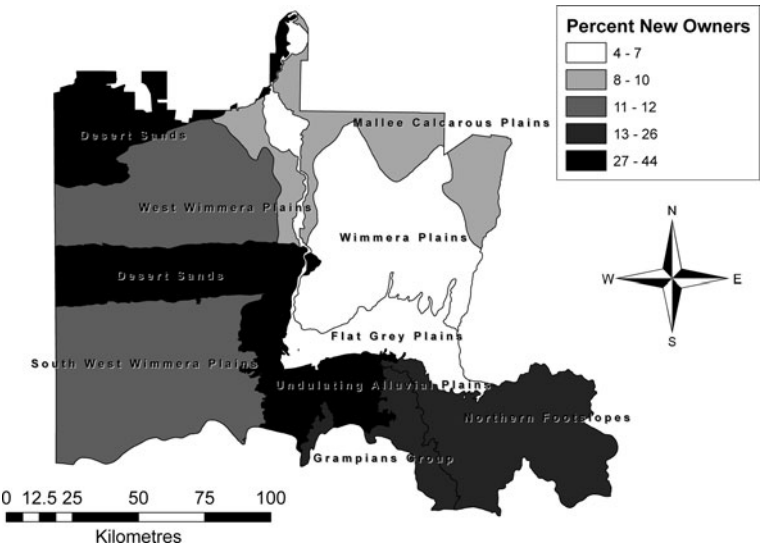

Fig. 7.5 The percentage of new owners as a proportion of all respondents in each resource management unit in the Wimmera watershed (new owners are those who have owned their property for less than 10 years)

proportion of newer owners was much less. As one observer noted, referring to the sales of properties in his district by retiring farmers to those expanding their properties**,** 'you could see the lights of their homes at night and one by one the lights went out and eventually there was no one there,' while another observed, 'the traditional family farm will either get bigger or get out.'

In the Corangamite region, the proportion of newer landholders across the watershed ranged from 0 to 31% (highest in the growth corridor between two major towns) (Fig. 7.4). In the Wimmera, the proportion of newer owners varied from 5 up to 45% (Fig. 7.5). The proportion of absentee owners also varied across the Australian regions, from 12 up to 58% (near Melbourne) in the Corangamite, and from 7 up to 60% in the Wimmera (some of the results from the Wimmera survey need to be interpreted with caution as there were low response rates in some RMU). We consider the implications of this substantial and increased rate of ownership change, and the associated transfer of agricultural land to a new cohort of owners, in the following section.

7.6 Implications of Property Turnover

The substantial and increased rates of rural property ownership change discussed here will have important implications for land management, NRM governance, communities and agriculture in Australia and the American West. In this section

we explore some of these implications using data collected from interviews in both study areas, as well from surveys of landholders across watershed regions in Australia to identify differences between new and longer-term landowners in terms of motivations, outlook and approaches to NRM.

7.6.1 Differences Between New and Longer-Term Landholders

A useful starting point for exploring the implications of rural property turnover is to examine the extent to which differences exist between new and longer-term landholders. In Australia, a 10-year threshold was used to distinguish between new and longer-term landholders (as no distinctive migration wave was evident). In the US study, the division was based on before and after the major migration wave into the area (1980s in this case). In both regions we found similarities and differences among longer-term and newer owners in goals for the land, attitudes towards wildlife and other environmental issues, knowledge about NRM and approaches to learning.

In both Australia and the American West, we found evidence of a production/non-production split between the two groups, especially in terms of goals for their land and management. There was a clear division between the groups based on occupation (Section 7.5.2), but it is also important to keep in mind that there are proportions of newer landholders who were farmers, and longer-term owners who were not farmers (this is of course spatially variable depending on distance from regional centres and amenity areas, and there was a greater proportion of newer farmers in the Australian Wimmera region). Longer-term owners generally prioritised production of food and fibre, while newer owners were generally more preoccupied with recreation, aesthetics, and wildlife. However, many newer non-farming landholders also maintained a strong interest in ensuring the economic viability of their operation. These issues are explored throughout the following sections of the chapter.

In Australia, newer landholders were more likely to value their properties as a place for recreation, as a break from their normal occupation and for providing habitat for native animals (Curtis et al. 2006, 2008, Mendham and Curtis 2010). Interviews with landholders in both Australia and the American West substantiated these findings, with many newer owners stating the reason for purchasing the property was a ‘love of wildlife’ or for lifestyle reasons and country living (Box 7.3).

In contrast to newer owners who prioritised wildlife and recreation goals (in addition to agriculture in some cases) longer-term owners in the Australian case studies were more likely to value their properties for the social and economic outcomes linked to farming such as providing most of the household income, providing a sense of accomplishment from building/maintaining a viable business, being able to employ family members, preserving a family tradition and for producing food and fibre. Longer-term owners also expressed greater concern about lower returns limiting their capacity to invest on-property (Curtis et al. 2006, 2008, Mendham and

Curtis 2010). Interviews with landholders confirmed these survey findings. Longer-term owners expressed conservation values and a stewardship ethic, and undertook conservation and sustainable agricultural practices to higher levels than newer owners (see Section 7.6.2), but the reasons for doing so were framed in a production and business context (Box 7.4).

Box 7.3 Conservation and Recreation Goals of Newer Owners

The ranch is about wildlife. They [the owners] want to see lots of wildlife. How much wildlife? Well the more the merrier is the deal. (GYE, US)

I like to fish. We live in Southern California and we were coming up here almost every year for vacation, so we decided we would look for just for a small place up here and ended up buying this ranch. It was really just recreation that brought us here. (GYE, US)

I love wildlife. I love seeing them. Our property joins the forest, we have duck boxes, it's pretty. We have planted trees and are hoping to buy stock and mess around. Hopefully make as many wins as anything else! You can have both, the farm and wildlife. (Corangamite, Australia)

Box 7.4 Production Goals of Newer and Longer-Term Owners

It's been a business for us, this is our business. We are not just here for lifestyle, although we enjoy aspects of that but we like to think it is a business. Be fair to say we have sort of driven things a bit harder, been a bit more aggressive – not quite as conservative as some. A lot of that has been debt driven – because we've been growing we haven't had scope to put our feet up, always had challenges economically so got to find ways to address it basically. Always on the lookout for opportunities. (Wimmera, Australia, longer-term landholder)

I think they [the new owners] look at it as a clear-cut business operation. They want to see some return. They are not dependent on it but they don't want to pour money down a black hole. (GYE, US)

And then among the new owners, do you have a sense that many of them know what to do with their land?
I think so, I think a lot of them hire consultants, hire good managers. I think one of the greatest benefits is to the land itself because if you have pretty extensive resources, you don't need to hammer a place to make it support you. (GYE, US)

That said, we also found examples of non-agricultural newer owners who were driven at least in part by economic concerns. In the GYE, for example, there were a number of newer owners who like more traditional ranchers, expressed a strong interest in making the operation 'pencil out', even if they were not dependent on the land for income (in one case, simply for the challenge). Similar findings were evident in the Australian studies, with several newer owners running agricultural operations, often subsidised by off-farm income. As one interviewee stated, 'something has to pay for the farm'. These enterprises were often run as a hobby, as an interest in retirement, to keep busy and driven by desire to keep the land productive in some way. Newer, non-farming landholders running agricultural enterprises exhibit significant differences from farmers who are struggling to make a living from the land in that their financial resources often negate the need to push the land beyond its carrying capacity and, in the GYE case, the work was often done by full-time managers.

Other newcomers in the GYE were not necessarily production-oriented, but their goals for the operation were still more about profit from a good investment than recreation or aesthetics (Box 7.5). In Australia, both new and longer-term owners were 'farming capital gain'. For example, farmers who had expanded their properties knew they were not going to be able to make up their expenditure through agriculture alone, but knew they would make a profit when the time came to sell their property. This variation in goals obviously has a diverse set of implications for NRM, a topic we take up in the next section.

Box 7.5 Investment Goals of Newer Owners in the GYE

They did it truly as a land investment; Lord knows he had the money to invest.
But did that actually matter to them? Were they trying to make a profit?
Well, they always told us they were . . . they didn't just sit there and say, 'I don't care'. I've heard a few instances where the [new] owners say that, but it wasn't a matter of them having breakfast in the morning if it didn't. He had ranches in Wyoming, all over the country. Texas. (GYE, US)

He says he is in the real estate business, he swears he is not in love with this ranch. He will tell you, he would look you in the eye and say he's in the real estate business. (GYE, US)

In terms of attitudes toward the environment, and their role as stewards of the land, differences between newer and longer-term owners were not as clear cut. In Australia, newer owners reported higher levels of concern about environmental issues (measured in the surveys using Likert scales) including: the loss of habitat caused by clearing native vegetation; nutrient and chemical run off; decline in soil health and erosion; getting the balance right between water use for agriculture and the environment; the impact of reduced stream flows; and salinity causing a loss of productive capacity and decreased water quality.

These newer landholders were more likely to agree with statements that propose limits to landholder property rights in the name of environmental protection, including those involving a duty of care for biodiversity. For example, newer landholders in the Australian cases were more likely to agree with the following statements: it is reasonable that the wider community asks landholders to behave in ways that do not harm native plants and animals; it is fair that funding be directed to issues identified by priorities in government plans; reduced production in short term is justified where there are long term benefits to the environment; landholders have a moral responsibility to act in ways to minimise harm to the environment; and, landholders benefit from adopting current recommended practices (CRP) designed to effect improved land and water management and environmental outcomes (Curtis et al. 2006, 2008, Mendham and Curtis 2010). Newer landholders also expressed more interest in conservation covenants (an agreement made between a landholder and an authorised body to protect and enhance the environmental values of their property) (Curtis et al. 2006, 2008, Mendham and Curtis 2010).

Similarly, in the GYE, we found some of the most significant differences between longer-term and newer owners in regard to attitudes about wildlife management, especially relating to wolves and elk. For example, many newer owners were supportive of the growing wolf population and felt that they belonged on the landscape in spite of negative effects on traditional ranchers (Box 7.6). This may be because they were more open to the idea of predator conservation, and better equipped to absorb the financial impact of losing cattle to predation. Similarly, while many new owners saw large elk populations as both a recreation and aesthetic asset, longer-term owners in the GYE expressed concern about how ownership change and new priorities regarding elk management were affecting their ability to do business, given elk's propensity to eat grass and hay meant for cattle (Box 7.6, see also Haggerty and Travis 2006).

While longer-term owners who were dependent on food and fibre production were generally averse to conservation efforts that could compromise their economic viability (in the GYE) many simultaneously prided themselves on their stewardship ethic and love of the land. In the Australian surveys, new and longer-term owners both scored highly on an item exploring aspects of a stewardship ethic. Vanclay (1992) developed a stewardship scale utilising a series of statements that explored the extent landholders were prepared to place the long-term health of the land ahead of short-term economic gain. Given space limitations in the survey instrument, only one item from the scale developed by Vanclay (1992) and later adapted by Curtis and De Lacy (1998) was used. This item (reduced production in the short-term is justified where there are long-term benefits to the environment) was considered the best single item from that scale (Box 7.7). Many longer-term owners in the GYE felt that their stewardship ethic, tied closely to their knowledge and understanding of the land, was much stronger than that of newer, presumably less connected landholders. For example, a husband and wife management team in the GYE reflected on their personal goals for the absentee owner's operation, and their sense of responsibility to educate each new owner they worked for during their management career (Box 7.7).

Box 7.6 Differing Attitudes Towards Wildlife Management in the GYE

To me, livestock, domesticated livestock, should stand top dog. And that is probably the agricultural side of me coming out but . . . the wolves get so out of whack so fast. If there was a way to keep them . . . I guess I'm satisfied with a preserve being built . . . fenced parks. . . And that's where the wolves belong . . . but they don't belong in the wild. (GYE, US, longer-term landholder)

I wouldn't mind having a couple of wolves down here cleaning out some of these deer. But no, I don't particularly have a problem with it. I think they need to be here, particularly the wolf. If I lose a calf or two a year it's not going to be the end of the world to me, and I think the benefit you'd have of having a top line predator for a lot of these deer, particularly the deer and the elk, it's going to improve everything. (GYE, US, newer landholder)

There's no question about it, we've got too much game. And they're taking a lot of our grass from our cows. . . .back to the dynamics of the valley with the big money coming in with their places and their ideas, it becomes very much almost impossible to manage their elk numbers. Because this person won't allow any hunting, or won't allow them in to harvest numbers here . . . they want elk, they want deer, they want game. I'm not . . . anti-game. I'm just, I think that they're going to put me out of business if they keep going the way they're going. (GYE, US, longer-term landholder)

Box 7.7 Leaving the Property in Better Condition

We have a responsibility to the land to see that you can make it better. (Corangamite, Australia, newer landholder)

I don't know whether it is so much how long they have been here – it is an attitude thing – they either get it or they don't . . . it is whether or not they are in tune with that as an issue and whether or not they see themselves in an environment or whether they just see themselves pretty much. The ones that only see their own needs won't spend time on it. (Corangamite, Australia, NRM manager)

As far as our goal. . . If I left tomorrow, I'd want to leave the land in better condition that I got it
. . . you also have to educate an owner that with a ranch of this size or that size . . . there are some stewardship principles . . . that is our responsibility. (GYE, US, professional property managers)

There were differences between new and longer-term landholders with regards to their levels of knowledge in both the US and Australian regions. In Australia, longer-term owners ranked higher on self-rated knowledge topics about NRM, such as how to identify new and emerging weed species, which organisations to contact

for information or support with NRM, and the benefits of perennial vegetation (differences between the two groups were statistically significant for 12/17 topics in the Corangamite survey and 7/17 in the Wimmera survey, where a greater proportion of newer owners were farmers) (Curtis et al. 2006, 2008, Mendham and Curtis 2010).

In the Wimmera, newer landholders were significantly more interested in training about how to establish and identify native vegetation. This interest in training was an important finding given the generally lower levels of knowledge of the newer landholders across a range of NRM topics (Curtis et al. 2006, 2008 Mendham and Curtis 2010). Interviews in both regions confirmed the importance of learning about NRM. Landholders outlined how it took time to learn how to effectively manage their new properties, learning from mistakes, and needing to be self-motivated in the search for knowledge (Box 7.8).

Box 7.8 Learning and Knowledge About NRM

> So I started out, I'm a geneticist, and I thought it was all about cows, so I spent a lot of time and a lot of money learning all about Angus cattle... So now after about 5 or 6 years I realised that was not actually the most important thing in ranching, it's really more about grass. (GYE, US, newer landholder)
>
> Our parents came off farms, but I had no experience in farming, so there is a lot I don't know. (Corangamite, Australia, newer landholder)
>
> At the moment we are learning from our mistakes. (Corangamite, Australia, newer landholder)

In terms of sources of information about NRM, longer-term landholders in Australia were more likely to utilise traditional sources such as farming groups, Landcare and extension officers. Newer landholders utilised more contemporary, less traditional sources of information to a greater extent, such as the internet (although both groups most commonly used newspapers, books and mailed brochures) (Curtis et al. 2006, 2008, Mendham and Curtis 2010). Discussions with interviewees in the US and Australia indicated that some new residents valued their privacy and liked to keep to themselves, suggesting that group meetings (in particular Landcare, see Klepeis 2009) may not be an effective engagement tool for some (exacerbated by the high proportion of absentees) (Box 7.9). It is important to note, however, that a number of new owners in the Australian case study areas did indeed join Landcare when first arriving in the area.

Interview data from the US and Australian studies indicated that neighbours were an important source of information of NRM. For example, a number of interviewees from Australia and the US studies recalled the benefit of having a friendly neighbour when arriving on their properties. This closely ties into the theme of newer owners' eagerness to learn, identified above. Some NRM managers expressed concerns, however, about newer owners learning about NRM primarily from their neighbours since the information may not be accurate (Box 7.10). In the GYE, realters also

acted as a source of information for new landowners, often providing suggestions for finding a good manager. Indeed, at least two ranch realters had a ranch consulting business on the side. Relying on realters for NRM advice, however, resulted in some cases of poor management decisions, such as running more cattle than appropriate.

Box 7.9 Challenges Engaging Newer Owners in Coordinated NRM

> But we can't draw people off those properties – we've had all sorts of speakers [at Landcare meetings] . . . really diverse and can't get people coming. 200–300 letter drops before meetings – might be one person come in. If a new one comes in we don't let them sit at the back of the room, we make sure they chat to everybody. Should have broken down the barriers. . . (Corangamite, Australia)
>
> They have only got the weekends, got kids, sport and all that sort of stuff . . . what they class as important, their property becomes their haven but not necessarily the most important thing they do. (Corangamite, Australia)

Box 7.10 Learning from Others

> When I bought the place, agriculture was not foreign to me but I didn't know anything about cattle ranching. I hired a fellow . . . fourth or fifth generation Montana ranchers. In the early days he really helped me learn a little bit about ranching, and he's well connected. . .. So just from that perspective he's been really good because he always knew where to get answers. (GYE, US, newer landholder)
>
> That was one reason I joined the Landcare Group – to get to know the local people. The forthcoming information wasn't there – you had to do the investigation . . . but they don't come along with open arms, they are so preoccupied with running their own businesses. (Corangamite, Australia, newer landholder)
>
> The smaller landholders, newer, probably more self centred in some respects . . . if we get to work with these people and they are interested – they are very good to work with because they don't have preconceptions . . . sometimes it is getting to them before the old farming neighbour gets to them. Sometimes they don't give them the best advice. (Corangamite, Australia, NRM manager)

These findings suggest that new owners, many of whom are well intentioned, may not have adequate information to steward their land properly. In the following section, we explore the NRM implications of our findings regarding differences between longer-term and newer owners.

7.6.2 Land Management Practices

Do these differences between newer and longer-term owners affect their land management practices? While the data suggests that newcomers often exhibit higher

levels of concern about environmental issues, we found that these concerns do not always translate into more conservation-oriented land management, for a number of reasons. Newcomers may not have access to the right information to carry out their goals, or they may not be engaged enough to invest the necessary time and energy into stewarding the land properly. On the other hand, the propensity of newcomers to have more financial resources and generally higher education levels means that they are often able to garner the resources they need to act out their conservation visions.

In Australia, our surveys indicated that longer-term owners were more likely to undertake CRP at higher levels (although only statistically significant for a few items, including planting native vegetation, establishing perennial pastures and employing minimum tillage) (Curtis et al. 2006, 2008, Mendham and Curtis 2010). In the Wimmera it appears that outside of a small number of production focused CRP, especially those linked to cropping, newer and longer-term landholders were adopting CRP at similar levels. This higher level of adoption may be related to farming as an occupation.

In the GYE, new owners were more likely to engage in management practices related to recreation, aesthetics and conservation while longer-term owners were more likely to engage in activities related to enhancing the productive capacity of their land. A series of questions about water resource management, for example, revealed that the most significant differences between newcomers and longer-term owners had to do with longer-term owners' greater interest in enhancing the productivity of their operations by improving irrigation systems, while newcomers by and large were investing in native ecosystem restoration, reallocating water rights to instream flow to enhance fisheries, and installing trout ponds (Gosnell et al. 2007). Given the numerous ecological problems caused by many of the trout ponds that have been developed in the GYE, our findings suggest that changing ranch ownership patterns may have a range of contradictory implications for water management in that although new owners bring concern for amenities together with substantial financial resources creating potential for progressive water management, 'some new owners seem to be as single-minded about recreation as their predecessors may have been about livestock production' (Gosnell et al. 2007, p. 996)

In both the Australian and American case studies, interviews revealed varying levels of involvement in NRM among newer owners. Interviews with landholders highlighted a period of familarisation and learning. For example, one interviewee who had owned his rural property for 2 years had spent most of his time and energy on his other investment properties, but was beginning to appreciate his rural property and thinking about how he might manage it (Box 7.11). At the most basic level there is a need to stimulate active rather than passive land use decision making among amenity migrants (Klepeis et al. 2009).

However, newer owners were very diverse and the interviews showed others were actively involved in improving the management of their properties (Box 7.12). As one interviewee observed, 'the farmers like to bag 'blockies' – but there are bad guys in every demographic.' Newer owners who were farmers were also actively involved. As one new owner who was a farmer in a production area of the Corangamite explained, 'it's basically just to survive in farming'. Actively involved newcomers who were non-farmers in both regions were constrained by a number of

factors that limited their effectiveness, such as the time it takes to learn about management, finding the necessary resources and advice, or being challenged by the poor condition of the land owing to past management. In the GYE study, almost all new owners had full time ranch managers, so time constraints were not as evident as the manager was available to undertake the day-to-day work needed to maintain the property.

Box 7.11 Passive Management Due to Time Constraints and a Learning Period

I would like to see the place improved a bit, improve the fencing and the pasture and get it going as well as I possibly can. When you come up you think going to do all in first year or two but find that things don't get done as quickly as anticipated. (Corangamite, Australia, newer landholder)

Box 7.12 Constraints Affecting Active Management Efforts

It's aesthetic, pride for me. I take pride in things that I do and to be the owner of a block of land that's got gully erosion, dead stock, rusty old fences – can't walk around might be standing on barbed wire, rabbit burrows. Just wanted it all cleaned up and looking aesthetically pleasing, wanted the farm to work with minimal effort with me working full time... We joined as many groups as we could ... when we got stuck I could phone someone from the department ... even local farmers – but to start with they weren't as forthcoming. (Corangamite, Australia, newer landholder)

What you find out pretty quickly is that the problems you have on this ranch are not things that can be solved in 5 years, they are things that can probably never, and you can never recreate this because they had too many horses and cows here for too long. (GYE, US, newer landholder)

Box 7.13 The Role of Owner-Manager Relations in NRM in the GYE

When I first went there he wanted no cattle on the place because it had been overgrazed... When he hired me he just wanted me to basically be there to monitor people coming and going. Now we have a weed problem because we have places on this ranch that haven't been grazed for 3 to 4 years... And then as it's gone on he's been very conscientious about weeds ... so now they are allowing me to graze the entire ranch. (GYE, US)

These findings indicate the diversity of NRM approaches taking place on agricultural land owned by newcomers with little agricultural background and the need for better engaging these owners, especially those who are absentee, in active rather than passive land use decision making. NRM agency personnel will likely continue to be challenged with getting new owners the information they may need to effectively manage their land (see also Klepeis et al. 2009).

In the GYE, where the owner-manager dynamic was an important factor shaping approaches to NRM, we found evidence of poor land management due to eager but ill-informed owners directing managers to manage in ways that went against the manager's better judgment. In one interview, a manager reflected on how the owner's understanding of the relationship between grazing and weed management, and the way he managed his land, changed over time due to the manager's influence (Box 7.13).

7.7 Discussion

Our findings are consistent in many ways with observations made by other scholars studying rural agricultural landscape change, discussed earlier. In both the Australian and American West case studies, we found that production of food and fibre is declining as longer-term, traditional landowners, mainly farmers and ranchers are displaced by newcomers with interests in recreation, aesthetics, and, in some cases, conservation and restoration. However, the fact that many newcomers who are not farmers are still engaged in agricultural practices to varying degrees underscores the superiority of the 'multifunctionality' concept over the more unilateral notion of a 'post-productivist' landscape. What this study most clearly reveals is the heterogeneity of rural landscapes in transition, and the dynamic nature of approaches to NRM as newcomers learn about the land and evolve as land managers.

Both studies revealed that while newcomers often more ardently express their support of environmental protection and biodiversity conservation, longer-term owners also conceive of themselves as responsible stewards of the land with a strong investment in sustainability. Qualitative data from the interviews in both places suggest that scholars may need to better unpack what it means to be a 'good steward' of the land. For example, interviews with longer-term owners in the GYE showed an almost universal opposition to wolves, but a simultaneous dedication to protecting the land; thus opposition to predators, for example, should not be assumed to go hand-in-hand with an anti-environmental outlook.

New ranch owners in the GYE are, because of the high land values, by and large extraordinarily wealthy, and thus have resources available to them that more mainstream amenity migrants in other rural areas, including Australia and other parts of the American West, do not. Therefore, findings from the GYE may not be as representative of the range of NRM implications of ownership change as those from Australia. For example, the time constraints preventing absentee 'blockies' from managing their rural land to the extent they hoped is likely a fairly widespread

phenomenon in rural amenity landscapes across the globe, since most people cannot afford full time managers for their properties, as in the GYE.

While our findings suggest that caution should be used when attempting to portray new and longer-term owners as fundamentally different, clearly, a 'business-as-usual' approach by NRM practitioners involving appeals to landholders based on enhancing agricultural production and profits is unlikely to motivate the increasingly important cohort of newer owners who are non-farmers. Indeed, our contact with NRM agencies indicates they are experiencing difficulties engaging many newer owners. We suggest that appeals should seek to mobilise the pro-conservation values of newer owners. In Australia, for example, newer owners expressed a specific interest in training that would address their knowledge deficits in native vegetation identification, establishment and management (Curtis et al. 2008).

NRM practitioners and landholders need to be proactive in identifying newer owners, making personal contact with them to identify their needs and providing them with ways to engage with local networks and wider information sources. 'Buddying-up' newer owners with a small number of neighbours appeals as an effective approach as many interviewees from both Australia and the US spoke of the value of such relationships. This approach lowers the transaction costs for newer owners and allows them to establish a small number of potentially significant and ongoing relationships that are more likely to be sustained, providing there is not further ownership change. Such relationships can be mutually beneficial in that the longer-term owner are be able to obtain paid employment, while the newer owner can access local expertise and equipment allowing them to undertake farm or conservation work. Strong neighbouring relationships are also critical to landscape scale conservation efforts, such as weed eradication. Rising levels of absenteeism in both regions, however, compromises NRM practitioners' efforts to manage across property boundaries (e.g., Klepeis et al. 2009).

As this research showed, newer owners may be unwilling, and absentees unable, to participate in typical evening meetings, daytime workshops or field days held as part of extension programs. An obvious strategy is to hold activities on weekends and to promote activities addressing specific needs and access to information using a variety of media, including web-based formats. The importance of one-on-one extension should not be underestimated. NRM agencies should work to identify new owners and provide them with information, either directly or through the mail including answers to common NRM questions, where to contact extension officers and links to useful websites.

Gosnell et al. (2006) considered how the implications for conservation and NRM differed across space, noting different kinds of opportunities and challenges in ranch landscapes dominated by different owner types. In areas still dominated by longer-term agriculturalists, conservation opportunities will likely hinge on the extent to which efforts to engage owners are sensitive to and complement production goals, or even enhance the economic viability of their operations. These landscapes, where land prices are generally lower and therefore at a greater risk of development and conversion, would be logical targets for the purchase of development rights and other conservation easement tools. On the other hand, landscapes

dominated by amenity owners may present opportunities for re-aggregating subdivided ranches/farms, or encouraging owners to purchase neighbouring properties as they come up for sale to maximise both privacy and habitat continuity. In summary, a broad mix of policy instruments and appeals is needed to accommodate the growing diversity of landowners in agricultural landscapes across both Australia and the American West.

7.8 Conclusion

In this chapter our aim was to compare and contrast trends and implications of property turnover across case studies from the US and Australia. Similarly high rates of turnover were found in both places, with longer-term residents largely replaced by newcomers from elsewhere, many of whom were amenity buyers and absentee. Newer owners and longer-term residents are different in many respects, including most notably their primary occupations, absenteeism, values in regard to wildlife management, NRM knowledge, and their goals for their land.

Our research suggests that up to 50% of rural properties can be expected to change hands in the next 10 years in south-eastern Australia, a trend that is consistent with changes already occurring in the American West. In Australia, this represents a doubling of previous rates of property turnover.

The substantial rates of property turnover underway and predicted to occur will have important implications for communities, agriculture and NRM. Newer owners in Australia were more concerned about environmental issues, gave a higher rating to the recreational and environmental values of their property compared to production values, said they had limited knowledge across most NRM topics and were less likely to access information through traditional NRM sources, including farmer organisations and state agencies. In the US study longer-term owners were more concerned about maintaining the economic viability of their agricultural operations while newer owners were more likely to be interested in protecting habitat and wildlife.

The trends and implications of property turnover are spatially variable depending on the locality, in particular distance from metropolitan centres and natural areas. In production landscapes, the overcapacity of agriculture and need to expand is driving changes in property ownership, while in amenity landscapes in-migration and counter-urbanisation are the dominant drivers. In both regions the retirement of the baby boomer cohort is important, as farmers retire and sell and baby boomers retiring in the cities look to relocate to rural areas. As properties change ownership, some landscapes retain aspects of their productivist character, while others transition into landscapes dominated by consumption of natural amenities and protection of the environment.

We suggest that trends in rural property ownership in Australia and the American West outlined in this chapter might best be understood in terms of the transition to a multifunctional landscape. Rural property turnover can be seen as both an outcome of the multifunctional transition and as a contributing factor. Our research shows

that the reconfiguration of rural space identified by others (Holmes 2002, Barr 2003, Holmes 2006) is occurring faster and more widely than anticipated. The ageing of farmers and demand for rural landscapes mean higher rates of turnover will occur in the future leading to a fundamental change in ownership from traditional farmers or ranchers, mostly living full-time on their property and with strong connections to the district where the property is located, to a new cohort of non-farmers who are often absentee owners with little previous connection to the district. Property turnover is thus facilitating the emergence of the multifunctional transition in rural areas

Further research on the impacts of newcomers and how to engage them is required, especially in rapidly changing landscapes. In Australia, for example, most research has been focused on migration streams, rather than changes occurring in individual localities where there is scope for research. There is a need for better understanding of the land use practices of new owners. The ecological effects of rural change are often little-researched but are likely to be profound as new owners change patterns of land use and actively or passively transform the landscape. We believe there is also a clear need for more collaborative research across disciplines and national divides in the demographic change literature which could lead to enhanced understandings of the implications of such change.

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Chapter 8
Land-Use Planning and Demographic Change: Mechanisms for Designing Rural Landscapes and Communities

Joanne Millar

Joanne Millar

J. Millar (✉)
Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia
e-mail: jmillar@csu.edu.au

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Abstract Demographic change in rural landscapes presents challenges for land-use planners. Planning policies and mechanisms have to adapt to changing land-use demands and community expectations. At the same time, planning schemes need to set standards which adhere to desired goals for designated areas. This chapter examines the role of land-use planning in managing demographic change in rural areas. International experience indicates that a broad range of planning mechanisms is needed to manage landscapes with multiple functions and values. The design and implementation of planning schemes and tools are highlighted as mechanisms for achieving a balance of appropriate land uses while ensuring environmental and social sustainability in rural landscapes.

Keywords Land use planning · Rural landscapes · Rural communities · Planning mechanisms · Voluntary incentives

Abbreviations

NSW	New South Wales
PDR	Purchase of Development Rights
RLUS	Rural Land Use Strategy
TDR	Transfer of Development Rights
VCAT	Victorian Civil and Administrative Tribunal

8.1 Introduction

This chapter examines the role of land-use planning in managing demographic change in rural areas. Planning is a dynamic process for determining 'what should be' (usually defined by a series of objectives), and for selecting strategies and actions which can help achieve these objectives (Thompson 2007). Land-use planning is the process of deciding in a broad sense which areas of land will be used for particular purposes – for example which areas will be national park and which areas will be state forest; which areas will be available for residential development, industrial use or agricultural production (Conacher and Conacher 2000). The aim is to determine the best use for land based on 'social and economic equity among affected communities as well as the technical and economic suitability of land for alternative uses, avoiding conflict where possible.' (Conacher and Conacher 2000, p. 98).

Land-use planning may be undertaken at national, state, regional or local scales; however planning regulations and incentives are most often delivered at the local, regional or state levels (Bengston et al. 2004, Buxton et al. 2005).

Many planning practitioners emphasise the ongoing nature of planning, with the need to regularly review the success, failure and relevance of a particular plan and the planning process itself (Thompson 2007). Short term interests and political agendas can influence land-use planning to the extent that future generations can be compromised. As Conacher and Conacher (2008, p. 98) state, 'political and economic priorities often skew outcomes away from best use options.' The process of land-use planning needs to be responsive to community needs and expectations.

However, it also needs to be strong enough to avoid being manipulated by vested interests or dominant organisations (Zehner and Marshall 2007).

In regions undergoing rapid population growth, planners face increasingly complex issues as they try to balance growth demands with the need to protect the environment (Thompson 2007, see Chapters 2, 3 and 5, this volume). The challenges facing planners in rural areas with declining populations and rural industries are no less, with the loss of land managers and families, and environmental degradation due to economic forces, drought and climate change.

These challenges are described in the first section of this chapter using examples from Australia, USA and Europe. The second section examines how well land-use planning has dealt with demographic change in terms of being reactive and/or proactive to market demands, community expectations and future goals. The last two sections look at planning policies and mechanisms that can be used to achieve a balance of appropriate land uses while ensuring environmental and social sustainability in rural landscapes undergoing demographic change.

8.2 Demographic Change in Rural Landscapes: Challenges for Land-Use Planners

Demographic change in rural areas presents challenges for land-use planners at all levels of government, but particularly at local and state levels where implementation of planning regulations and incentives takes place. This section looks at challenges facing land-use planners in rural areas experiencing net out-migration and net in-migration.

8.2.1 Planning Challenges for Areas with Net Out-Migration

Chapters 1, 5, 12 and 13, this volume, describe the social and environmental impacts on those regions experiencing net out-migration (due to declining viability of farms, drought and climate change, loss of employment and services or sale and lease of properties to large businesses). The challenges for land-use planning in these areas include maintaining the resource base of traditional industries while encouraging new land uses that can support rural populations without degrading the environment (Bastin 2008, Brouwer et al. 2008). For example, land-use zoning and building permits may have to be changed to accommodate alternative farm enterprises such as farm tourism, farm forestry, horticulture or conservation uses. Regional and local environment plans may enact regulations to overcome land degradation (Conacher and Conacher 2000).

Some land tenures may change from private to public land, or to private land with covenants (e.g., properties sold to organisations for conservation (Fig. 8.1); Daniels and Lapping 2005, Bastin 2008). These changes can create inequities in land rating and affect the market value of surrounding properties (positively or negatively). For example, see Chapter 9, this volume regarding impacts of commercial forestry on land values and social capital in rural communities.

Fig. 8.1 Private land covenanted for nature conservation by the NSW Nature Conservation Trust in Australia.
Source: Nature Conservation Trust of NSW (Nicole Bruce)

Some rural communities with diminishing populations have gone as far as offering substantial incentives to attract people to their area such as offering free land, cheap land and rates, membership to clubs and resort-style living. For example, in 2009 the town of Rappottenstein in Austria near the Czech border offered free plots of 800–900 square metres to anyone pledging to build a house within 3 years and have at least one child in the next 10 years (Canada.Com 2009) (Fig. 8.2).

Fig. 8.2 The town of Rappottenstein in Austria where land is free for those willing to build a house and raise a family.
Source: Rappottenstein Government, Austria

Despite consistent trends in ageing populations and the exodus of young people from some rural regions, community prosperity and social impacts can be highly variable (Cocklin and Alston 2003, Argent 2008, Duffy et al. 2008). Bastin (2008, p. 163) reports that rangelands (81% of Australia's landmass and occurring mostly in inland Australia) have increased in land value by 150–300% in the last 10 years due to sound livestock markets and prices; diversification into horticulture and cropping; the demand for conservation properties and the 'ripple' effect of rising land prices elsewhere. Holmes (2006) describes inland areas that have undergone multifunctional rural transition from marginalised pastoralism to diverse uses based on consumptive, production and protection values. Unemployment has been low in the rangelands during this time, but may rise if businesses are impacted by the global economic crisis that emerged in 2008/2009. The sustainability of rangelands environments may continue to be compromised due to loss of biodiversity and climatic variability (Bastin 2008).

In contrast, the social impacts of drought and declining water availability in the Murray Darling Basin have been profound (Alston and Witney-Soanes 2008). Where there is a heavy reliance on irrigated and dryland agriculture, a negative flow-on effect to dependent businesses has occurred with loss of jobs and government services. In some areas, land is lying idle or being sold for grazing. Recent government investments in developing land and water management plans and water infrastructure may have increased water use efficiency for irrigated pastures and cropping, but there may not be a return on investment due to lack of water entitlements and commodity markets. Furthermore, when rural labour availability and incomes decline, so does the capability of land managers to control weeds and pest animals, invest in fencing and stock control, maintain dams and water troughs or plant trees to enhance biodiversity and productivity on farms (Dibden et al. 2005, Mendham et al. 2007).

Catchment and property planning for natural resource management in marginal areas needs to acknowledge such limitations and actively employ mechanisms to help landholders finance and carry out required works (Morrison et al. 2008). Therefore, planners have to be mindful of possible social, economic and environmental impacts of changing allowable land uses to sustain declining rural areas.

Land-use planning needs to become part of regional development strategies that can restructure economies and attract and retain skilled people (Forth and Howell 2005). Some areas are more resilient due to greater diversity of local employment opportunities and larger regional centres (Barr 2003, Alston and Witney-Soanes 2008). Rural areas can generate their own local businesses by value adding to traditional commodities, developing new commodities or restructuring existing enterprises to reduce costs.

Gray and Lawrence (2000, pp. 121–123) tell the story of community resilience and influence on land-use planning in Cowra Shire in southern NSW. In 1983, the NSW State government introduced planning regulations to limit the growth of small farms and encourage growth of large properties in the shire. People objected on the grounds that it would reduce the ability of future generations to acquire a farm.

The local council was forced to 'soften' but not reject the planning provisions due to the historical influence of state departments and metropolitan Sydney. Despite planning regulations set by state government, local business and farming elites have had the greatest power in council planning decisions and have fought hard to retain local ownership and avoid domination of outside urban interests (Gray and Lawrence 2000). So a compromise was won whereby large properties would not be subdivided, but smaller properties could be subdivided if it created viable local businesses.

As populations decline or age, it can become difficult to harness enough community input and interest in the planning process. Community engagement in land-use planning for marginalised rural areas often treads a fine line between overwhelming or overloading small communities, managing dominant advocates or dealing with lack of interest and apathy (Zehner and Marshall 2007). The loss of social capital (combined knowledge, skills, motivation and cohesion) can hamper efforts to engage local communities in planning their own future (Cocklin and Alston 2003).

However, there are cases in Australia and Europe where marginalised areas have maintained or increased their level of social capital by having active associations, political engagement at the local level, and tapping into external funding support (Argent 2008, Weisinger et al. 2008). As Argent (2008) found, it is not the absolute population density that necessarily determines social cohesion and level of community function, but the rate of change in population densities. Hence, planners and community leaders have to work towards managing the rate of demographic change, and in some cases controlling the rate of change through their planning systems.

8.2.2 Planning Challenges for Areas with Net In-Migration

For rural areas experiencing net in-migration, the planning challenges are somewhat different. Previous Chapters 2–7, this volume have illustrated how rural landscapes with high amenity value or close to regional towns and cities are under increasing development pressure and property turnover (often referred to as the 'sea-change' or 'tree-change' phenomenon). Generally situated within 200 km of major cities or regional towns, amenity landscapes attract buyers wanting a rural lifestyle in attractive landscapes or intensive agricultural pursuits where water supply is reliable (Tonts and Greive 2002, Barr 2003, Buckley et al. 2006). These areas are typically more 'multifunctional' in nature as they support a wider range of land uses compared to more traditional commodity production areas (Bills and Gross 2005, Cocklin et al. 2006, Sinclair and Bunker 2007).

Planning issues arise when there are increasing demands on services, land-use conflicts, decline in environmental or amenity values and loss of prime agricultural land due to subdivision (Sinclair and Bunker 2007). For example, development of lifestyle residential lots in these landscapes creates demand for better road access, fire protection, dam or bore water construction, and waste management. Over time, subdivision into rural residential lots affects the amount of land available for agricultural production and increases land values relative to agricultural returns on

investment (Barr 2003). The ability of farmers to maintain profits or expand their operations is impacted unless they can diversify into high-value commodities and sell direct to consumers (Pfeffer and Lapping 1994). On the other hand, many farmers are reaching retirement age with no prospect of younger generations wanting to continue farming (see Chapter 12, this volume), so selling their land becomes a lucrative and in some cases only option for them (Gibson et al. 2005).

In peri-urban areas around rural towns, there can be conflicts between intensive farming and residents over noise or smells from agricultural operations (Buxton et al. 2006, also see Chapter 6, this volume). Complaints are often referred to environmental officers and planners, so that their time is taken up dealing with reactive issues instead of proactive planning which could alleviate such situations. Planners must balance the needs of farmers and rural residents when determining development applications and developing policy responses (Sinclair and Bunker 2007).

In some instances, a change in land use can also affect the visual landscape which is a large component of the amenity landscape's aesthetic appeal. The 'rural idyll' created by traditional agricultural activities may be threatened, potentially leading to a destruction of that landscape due to its rural overdevelopment or 'commodification' (Esparza and Carruthers 2000, Tonts and Greive 2002, Carruthers and Vias 2005). The story of Bridgetown in Western Australia is a case in point. Situated 270 km from Perth, the capital city of Western Australia, Bridgetown developed as a service centre for the surrounding agricultural and forestry industries from the 1850s. Economic downturn of agricultural commodities during the 1960s and 1970s led to loss of employment, out-migration and falling land prices (Tonts and Greive 2002). Increasing disposable incomes in urban areas and growing popularity of the region for tourism created a market for city dwellers searching for a rural lifestyle and retirement. As a result, the population in the town and shire increased from 3,283–3,904 between 1976 and 1996 (an increase of 621 people) (Tonts and Greive 2002, p. 66).

However, continued subdivision of agricultural land during the 1980s and 1990s resulted in the hilly, visible landscape around the town being consumed by small lifestyle farms and suburban-style estates. Tensions grew within the community between those wanting to capitalise on rising land values and demand, and those determined to retain the rural aesthetics which attracted them in the first place. Strong opposition to a major subdivision proposal in 1995 became the turning point with the shire and its community recognising the potential negative impacts from further residential growth. Tonts and Greive (2002) concluded that the local planning strategy needed to be based on an ethic of countryside preservation, taking a more strategic approach than the haphazard and politically driven planning that characterises much of Australia's growing rural areas.

Bridgetown and Greenbushes Shire has since changed its local planning strategy in response to community consultation in 2008. The community identified that private and public subdivision and development, particularly housing, had been unsympathetic in design and materials to the heritage character of Bridgetown. Key directions are now to 'Retain the compactness and limit growth of the Bridgetown

Townsite; Retain the heritage character of the Town; Require all future development to achieve high levels of sustainability in their design and construction; and Provide an improved mix of lifestyle and compact lots.' (Shire of Bridgetown and Greenbushes 2008, p. 4).

The interim report states that 'It is evident that the community has a clear 'sense of direction' as to how the future form of the Shire should evolve. The key values identified by the community are held very deeply and clearly help distinguish Bridgetown from many other rural locations. Their preservation and enhancement where possible is critical to broad acceptance and ownership of the Strategy.' (Shire of Bridgetown and Greenbushes 2008, p. 3). However, the local planning strategy is yet to be finalised so its role in preventing further degradation of the rural landscape is largely unknown. Zoning maps for Bridgetown show substantial ad-hoc residential development in rural areas around the town indicating a non-reversible situation that the community now has to live with (WA Planning Commission 2008).

The following is another example of land-use planning issues facing Indigo Shire, a rural shire in North East Victoria, Australia. Indigo Shire is experiencing pressures on land uses as a result of steadily increasing in-migration of this amenity-rich rural area. The Shire has a population of about 15,000 people, with 503 individual farming businesses, involved in a variety of agricultural enterprises (livestock, cropping, horticulture and viticulture). The fundamental issue for land-use planning in Indigo Shire is balancing protection of aesthetic and ecological values of the landscape with economic drives to increase residential population, minimise infrastructure costs and maintain the Shire's agricultural base. Tension exists between the desire to preserve productive agricultural land, and farmer's expectations of capital gains through selling all or part of their farm for residential or hobby farm development (Fig. 8.3).

Indigo Shire is in the process of developing a Rural Land Use Strategy (RLUS) which will include recommendations on a long-term strategy for land use in rural areas. This strategy is due to be completed in mid-2009. In a RLUS survey of

Fig. 8.3 Farmland abutting residential zones, creating planning dilemmas in Indigo Shire, Victoria, Australia (Joanne Millar)

stakeholder groups, highest support was for the protection of high quality agricultural land, followed by support for expansion and diversification of the rural economy, and directing rural living or hobby farm development into nominated zoned areas. Moderate support was given to the retention of heritage assets and landscapes, measures to support agricultural production and the restructuring of agricultural land. This indicates multiple community values for preserving land for agricultural production, diversifying the economy, protecting heritage and controlling rural subdivision. Gibson et al. (2005), Moore-Colyer and Scott (2005) and Peterson and Liu (2008) also found strong community support for protection of farmland and rural landscapes in northern New South Wales, the Teton Valley in USA and the UK, respectively, along with concern over rapid unplanned growth and loss of local culture. However, belief in individual and property rights often prevents people from voicing their concerns or taking action (Peterson and Liu 2008), resulting in opposition to land-use planning.

The challenge for land-use planners is to have planning mechanisms that can guide and control appropriate multiple land uses and accommodate the range of changing community and landscape values. The next section examines the extent that land-use planning policies and mechanisms have dealt with demographic change.

8.3 Land-Use Planning Policies and Mechanisms: Are They Addressing the Challenges?

Several authors confer that traditional land-use planning schemes in Australia and the USA have been largely ineffective in coping with rapid demographic change in rural areas, particularly in regions with net in-migration (Esparza and Carruthers 2000, Bunker and Houston 2003, Bengston et al. 2004, Daniels and Lapping 2005, Buxton et al. 2006). This failure has resulted in ad hoc residential and industrial development with consequent loss of environmental, agricultural and even social values in some cases (Conacher and Conacher 2000, Tonts and Greive 2002, Gibson et al. 2005).

Using the case of Sierra Vista County in Arizona, Esparaza and Carruthers (2000) showed how conventional planning approaches actually hastened the rate of exurbanisation (people locating to rural areas), despite increasing regulation aimed at controlling growth. The county annexed land around the southern and eastern edges of the town for low density residential purposes to act as an urban growth boundary. The expectation was that development would occur in this area and not 'leapfrog' over it. However, less stringent land-use regulation and building codes in areas further out meant that rural residential continued to develop outside the designated area. The consequent leapfrogging of development forced the county to rezone the land left behind to promote infill development (Esparza and Carruthers 2000). They concluded that the county would have been better off not annexing land in anticipation of future development if rural preservation was the goal.

Bunker and Houston (2003) and Buxton et al. (2006) described similar failures in Australian local and state planning systems that have led to market forces dictating land use in peri-urban areas around Australia's major cities and regional towns over the last 30 years. Back in the 1940s, post World War II planning in Australia was influenced by British planning approaches aimed at containing large cities and towns by establishing 'green belts' and urban growth boundaries around satellite towns. In Sydney, the Cumberland County Council defined a green belt around the city beyond which a rural zone was retained for farming, afforestation and water harvesting (Bunker and Houston 2003). However, this vision was lost in the 1960s and 1970s as the rural-urban fringe was considered for expansion of suburban metropolitan Sydney due to population growth. As Bunker and Houston (2003, p. 310) explained 'the green belt was dismantled, the Cumberland County Council abolished and vision was replaced by pragmatism.' As a result, agricultural production around Sydney has come into conflict with urbanisation despite its importance as a 'food bowl' for the city and the state of New South Wales (Sinclair and Bunker 2007).

A different story, but with similar outcomes, relates to the rural hinterland of Adelaide City where a 'Hills Face Zone' was established in 1962 by the Town Planning Committee. Minimum allotment sizes of 4 ha (10 acres) were designated with land uses permitted only if they would not degrade the natural character of the Adelaide Ranges. A Rural Zone with larger minimum lot sizes was established to the east of the ranges and north of the city to support horticulture, which still operates today. Despite stringent controls over subdivision of rural land, growth boundaries for towns within catchments and intensive livestock production, land-use conflicts and policy paralysis continue to occur (Bunker and Houston 2003). It appears that land-use conflicts are an inevitable consequence of allowing multifunctional uses in peri-urban areas (see Chapter 6, this volume). The role of land-use planning is therefore to try and minimise incompatible land uses and avoid potential conflict.

Such experiences in Australia have also shown that existing statutory planning schemes are not sufficient to prevent the fragmentation of the landscape due to the sale and subdivision of multi-titled farms (Bunker and Houston 2003). Attempts to protect agricultural land using farming zones and minimum lot sizes have not worked either. As Barr (2003, p. 127) explains, 'For planners these (rural) landscapes provide a challenge to the minimum lot size of protecting farm landscapes. Essentially, this is not a landscape of economically viable farm business. Minimum lot sizes bear no relationship to the minimum size of a viable farm.'

In Australia, there is confusion over whether land-use planning should be flexible and adaptive or protective and controlling in catering for multiple land uses (Buxton et al. 2006). For example, a study in 2002–2003 of the effectiveness of changes to the Victorian Planning System introduced in 1999 showed that only one of the six objectives aimed at providing greater planning certainty and efficiency had been achieved (Buxton et al. 2005). In rural areas of Victoria, levels of regulatory control on land uses were reduced and the number of development permit applications

increased thereby leading to a steady rise in the number of appeals taken to the Victorian Civil and Administrative Tribunal (VCAT).

Local governments have traditionally managed development using basic regulatory tools such as zoning, subdivision laws, codes of practice and capital improvement programs (Bengston et al. 2004, Sinclair and Bunker 2007). However, as Daniels and Lapping (2005, p. 318) state 'land use regulations are notoriously impermanent, subject to variances, rezonings, special exemptions and conditional uses.' Zones can be manipulated to promote development and may not match the capabilities of the land (Esparza and Carruthers 2000, Buxton et al. 2006). There is growing recognition among governments and the planning profession that these traditional planning instruments are not enough on their own in dealing with complex and conflicting land-use issues in rural areas. According to Bunker and Houston (2003, pp. 318–319), 'Traditional planning instruments, emphasising the nominal use of land and minimum allotment sizes, are being questioned, and new performance-based approaches that seek to emphasise management and actual environmental outcomes are being investigated. The former are still widely used, of course, although the reputation of rural land division controls has been tarnished through abuse and misuse. The latter, whether in the form of codes of practice or 'performance standards' in statutory plans, are in a formative stage but have been embraced enthusiastically, at least at the level of concept and rhetoric.'

International experience indicates that a broad range of proactive planning strategies and mechanisms are needed to manage demographic change in a fashion that protects and sustains rural landscapes and communities (Dobbs and Pretty 2001, Daniels and Lapping 2003, Bengston et al. 2004, Buckley et al. 2006). The next section looks at planning policies and mechanisms that can be used to achieve a balance of appropriate land uses and manage drivers of demographic change.

8.4 Developing Mechanisms for Managing the Impacts of Demographic Change

Managing the impacts of demographic change requires a wide range of planning policies and mechanisms which can be categorised as either regulatory (i.e., mandatory) or voluntary (i.e., incentive based). These planning mechanisms are designed for different purposes, with some being more effective than others in meeting social and environmental needs and expectations (Buckland 1987, Jacobs 1989, Pfeffer and Lapping 1994, Bengston et al. 2004, Cocklin et al. 2006, Peterson and Liu 2008).

Table 8.1 outlines some of the planning mechanisms available to planners and their prevalence of use in rural Australia, USA and Europe (underline denotes greater use in that continent or country). This is followed by a discussion on the strengths and weaknesses of these mechanisms for managing the impacts of demographic change in rural landscapes using examples from all three continents.

Table 8.1 Land-use planning mechanisms for managing the impacts of demographic change

Regulatory	Country/ continent	Voluntary (incentives)	Country/ continent
Development moratoria, building limits and phasing	USA Australia Europe UK	Preferential tax treatment and subsidies	USA Australia Europe UK
Zoning	USA Australia Europe UK	Density bonuses, offsets and set-asides	USA Australia Europe UK
Green Belts	Europe UK USA Australia	Purchase of development rights (PDR)	USA
Urban growth and service boundaries	Europe UK USA Australia	Transfer of development rights (TDR)	USA
Land acquisition	USA Australia Europe UK	Environmental Stewardship payments	Europe UK USA Australia
Right to farm laws	USA Europe UK	Rural and economic development programs	Europe UK USA Australia

8.4.1 Regulatory Planning Mechanisms

In rural areas experiencing rapid and uncontrolled growth, short-term regulatory measures can be taken to buy time for planning longer term solutions such as a moratorium on issuing building permits or interim development regulations (Bengston et al. 2004). Other options are to place an upper limit on the number of building permits issued annually in sensitive areas and/or a total limit on the number of properties and dwellings permitted (Esparza and Carruthers 2000). The stages of development can also be controlled by making sure public services, open space and safety measures are in place before allowing residential development to go ahead (often levied at the developer). If areas with significant conservation or heritage values are under immediate threat from development, then an option is for government or private organisations to compulsorily acquire the land and put a covenant on the title (Daniels and Lapping 2005). In Australia, large areas of threatened ecosystems have been protected by government and donor sponsored land acquisitions by organisations such as the Bush Heritage Fund, Australian Wildlife Conservancy and Nature Trusts (Parker and Fitzhardinge 2006).

Urban growth boundaries are commonly used to set limits on urban growth and define a boundary between urban and rural areas, which can be reviewed and

changed. They are often implemented in conjunction with setting aside green belt areas for farmland, recreation, conservation, tourism or heritage preservation, and have been effective in managing growth in the UK and parts of Europe (Bills and Gross 2005, Buxton et al. 2006). Land use within greenbelt areas can be controlled by zoning, land acquisition, purchase of development rights, stewardship payments or codes of practice. According to Bengston et al. 2004, greenbelts have not been widely used in the United States compared to the United Kingdom and Europe. However, they cite the City of Boulder in Colorado as having the longest running greenbelt in USA (since 1959) through their comprehensive plan aimed at protecting agricultural lands. The use of greenbelts has not been a strong point in the history of Australian planning as illustrated in the previous section, although urban growth boundaries are regularly used around major cities and towns (Buxton et al. 2006).

Zoning can be used creatively to regulate land use, such as cluster zoning to concentrate housing on small lots, leaving remaining land in open space for community uses (e.g., UK and Europe). Large lot zoning is more commonly used in Australia to create open space around dwellings and discourage residential development. In the United States, land can be zoned for agricultural or forestry use only. However, as previously described, zoning as a regulatory tool on its own is usually ineffective in managing impacts of demographic change (Daniels and Lapping 2005).

Right-to-farm legislation is a 'de-facto' regulatory tool which gives farmers the right to continue farming in the face of objections or lawsuits from residents about noise, odours or other impacts from farming operations. Popular in the United States, all states have at least one right-to-farm law, but they have limited influence on land-use planning and have not been adopted in Australia where there is more emphasis on environmental regulation (Sinclair and Bunker 2007). More effective perhaps is the legal designation of agricultural districts where farmers can voluntarily receive differential tax assessments, conservation grants and strict limits on subdivisions (Bengston et al. 2004). Hence, a mix of regulatory and voluntary planning approaches has been found to work best (Sinclair and Bunker 2007).

8.4.2 Voluntary Planning Mechanisms

Voluntary approaches involve setting incentives or disincentives for developers, purchasers, banks, councils, governments and landowners to adhere to preferred land uses and growth strategies. The weakest tools are those relating to preferential tax treatment, council rate rebates or subsidies such as tax exemptions or reductions. These mechanisms aim to encourage growth in certain areas or acknowledge the opportunity cost of changing from a productive land use to conservation. However, such incentives may not be large enough to outweigh other economic benefits or costs (Buxton et al. 2006, Sinclair and Bunker 2007).

More persuasive incentives include density bonuses, offsets and set-asides. These are conditions put on developers to set aside areas for open space, biodiversity or landscape protection (Bengston et al. 2004). Developers may be able to clear or develop certain areas only if they revegetate or rehabilitate other areas known as off-sets. Density bonuses may be granted to increase density of occupation as

compensation for keeping low density areas on the same property (Sinclair and Bunker 2007). Conditions need to be monitored and penalties applied if conditions are not met to the satisfaction of the authorities.

An effective incentive tool aimed at encouraging closer settlement and urban containment has been to waive development fees for development of 'Infill or Brownfield' sites (i.e., vacant lots or abandoned industrial land). Bengston et al. (2004) provide examples of Smart Growth Initiatives in the USA that offer state funding and development waivers to promote infill development. In Great Britain, local and federal agencies have mandated the use of Brownfield sites over Greenfield areas in an attempt to:

- make the best use of existing services such as transport and waste management;
- encourage more sustainable lifestyles by providing an opportunity to recycle land, clean up contaminated sites, and assist environmental, social and economic regeneration; and
- reduce pressure to build on Greenfield land and help protect the countryside (Environment Agency UK 2009).

Despite barriers to Brownfield development such as the cost and regulation of de-contaminating land, the UK Government's target of 60% of new developments to be built on previously developed land was met 8 years ahead of schedule due to the high demand for housing. More recently, the Government has identified a need to find land for 4.4 million new housing units in England and Wales which has reignited the debate over using Greenfield sites (Sustainable Build 2009).

Purchase or transfer of development rights (known as PDR and TDR) are voluntary mechanisms that have led to long-term protection of some farmland and natural areas in the United States (Buckland 1987, Duffy et al. 2008, Pfeffer and Lapping 1994). In essence, PDR and TDR are a way of compensating landholders for regulatory restrictions on their land and loss of potential income. PDR means that if land is zoned or protected for agriculture or conservation, then landowners can voluntarily sell their development rights to an authority while accepting a conservation covenant or easement to prevent future subdivision. Daniels and Lapping (2005) highlighted the advantages of purchasing development rights as providing greater long-term land protection, keeping farmland affordable, providing working capital for farms, overcoming estate planning problems and paying farmers for public good values. The main disadvantages of PDR are seen as high cost particularly where land values are high (although it is still cheaper than land acquisition), incomplete landscape protection due to some landholders not wanting to participate (an issue with all voluntary mechanisms) and closing off future land-use options (Bengston et al. 2004, Daniels and Lapping 2005).

Transfer or tradeable property rights allow landowners to transfer their development rights to other properties, known as 'receiver areas' (Bengston et al. 2004). TDR programs are more administratively complex and resistance is often encountered in areas receiving the development (Bengston et al. 2004). Nevertheless, the market driven nature of TDR means it creates its own momentum, instead of

relying on federal support or philanthropy. In Australia, there has been limited use of PDRs or TDRs for protecting rural landscapes (compared to their use in heritage management). A trial was conducted, but abandoned, in the Adelaide Hills (Evans 1993). The Wollongong City Council included the option of TDRs in the Illawarra Escarpment Land Use Plan 2008, but has yet to commit to using them due to uncertainties over administration and negative community responses in receiver areas. According to Pfeffer and Lapping (1994), the use of PDR and TDR in the Northeast of America has been successful in preserving farmland for agriculture and open space, while promoting orderly growth.

Stewardship payments can be used to assist landholders with managing their land according to recommended environmental or agricultural practices (Dobbs and Pretty 2004). In Australia, land stewardship schemes may include one-off government grants for revegetation, fencing, salinity control, perennial pasture establishment or waterway protection (Dibden et al. 2005, Mendham et al. 2007). In some states, farmers receive annual payments for up to 5 years for substantial conservation works or areas protected by a covenant on title. The payments are aimed at covering the cost of materials, labour and ongoing management only and do not offset the rising costs of agricultural production (Morrison et al. 2008). As a land-use planning tool, stewardship payments are generally so small they provide little incentive to encourage farmers to stay on the land if the farm is not viable and land values are high.

In contrast, agri-environmental stewardship schemes in the UK, Europe and USA provide more substantial payments to farmers as they are linked with agricultural policies and environmental compliance (Dobbs and Pretty 2004). These schemes have enabled farming communities to continue in remote hill areas as well as exurban areas close to major towns. As production-related support declines, farmers will be relying even more on environmental stewardship payments as supplementary income, along with diversification into new enterprises and off farm employment (Dobbs and Pretty 2004). Environmental stewardship schemes may play an important role in the future in managing demographic change in rural areas. Coupled with rural development programs that stimulate social and economic wellbeing, stewardship schemes have the potential to employ landholders as managers of valued rural landscapes for tourism, agriculture, biodiversity and local businesses (Sinclair and Bunker 2007, Peterson and Liu 2008), although the outcomes for biodiversity conservation are mixed (see Chapter 5, this volume).

8.5 Taking Control: Using the Right Mix of Planning Mechanisms to Design Preferred Rural Landscapes and Communities

Planners have statutory planning laws and schemes that provide a framework for decision making regarding land use in rural areas. Within and outside each planning framework there is a variety of planning mechanisms or tools that can be used to

manage demographic change. The key to good planning is to know which mechanisms will be effective in achieving designated goals for promoting growth and development, slowing it down, maintaining a steady state or changing the type of land use. Planners can draw on the experiences of other shires and states to work out what mix of tools might work and why. For example, the Sea Change Task Force in Australia commissioned a University of Sydney study to review innovative planning tools being used by coastal shires to manage growth (Gurran et al. 2006). A similar review needs to be done for regional and rural areas in Australia, addressing useful planning mechanisms for managing 'tree change' growth.

In areas experiencing out-migration, an effective mix of planning approaches might combine land rate reductions and stewardship payments with rural development and youth education programs. Business development incentives and subsidised housing are also needed to attract growth and jobs in rural towns with declining populations (Forth and Howell 2005, Brouwer et al. 2008). Short-term funds based on political cycles have proven to be ineffective as it takes several years to build skills, knowledge and confidence (Alston and Witney-Soanes 2008).

Planning needs to be based on long term strategies with commitment at all levels of government and community. An example is the establishment of the Western Plains Regional Development Board in 1999 which developed a Population Strategy for the Lachlan Shire in western New South Wales. Forth and Howell (2005, p. 276) described increased confidence of shire staff and community representatives in working with state and federal agencies, improved housing for teachers and doctors, better amenities and services, targeted marketing strategies to attract more skilled people and a vision for the future.

Managing demographic change in rural landscapes under development pressure requires a different set of planning mechanisms. If the aim is to limit overall growth, then regulatory tools are likely to be more effective including setting strict limits on building permits, assessable conditions on zoning, urban growth boundaries and long term greenbelts. Voluntary planning incentives may divert growth to other areas and protect significant habitats or farmland, but may not limit growth on their own. Where ordered growth is desirable and open space needs to be preserved, voluntary incentives can play a greater role if they provide a relative advantage for landowners and developers. For example, areas where protection of rural landscapes has strong community and government support, the following combination of mechanisms could be used: zoning for farming and conservation; substantial rate reductions; tax concessions, stewardship payments; covenanting; purchase of development rights; and participation in rural development programs.

In Australia at present, these mechanisms are poorly implemented, often in isolation without the potential accumulative benefits from a comprehensive program. Rural land-use planning in Australia has reached a critical point where an incremental, reactive approach is no longer tolerable or acceptable. Rural communities want proactive planning strategies that create long-term certainty based on an agreed vision for local and regional landscapes. State planning policies need to support regional and local efforts to find the best mix of planning mechanisms to manage demographic change in a sustainable and responsible manner.

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Chapter 9
Demographic Change and the Implications for Commercial Forestry: Lessons from South-East Australia

Hugh T. L. Stewart, Digby Race, and Allan Curtis

Hugh Stewart

H.T.L. Stewart (✉)
Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia
e-mail: htlstewart@gmail.com

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Abstract Plantation forestry policy in Australia is driven by a strategy with a notional target of trebling plantations from 1 million ha to 3 million ha between 1997 and 2020. Development of new plantations is focused on agricultural land in the high rainfall regions of Australia – the most densely populated part of the country, with rural landscapes undergoing profound change in demographics, employment, land tenure and management, and evidence of the decoupling of land prices and agricultural returns from the land as new settlers enter the rural property market. Results of plantation expansion were compared in two case study regions – the Murray Valley and the Green Triangle – in south-east Australia known to be undergoing differential rates of socio-economic change. In the Murray Valley region, a multifunctional landscape in that socio-economic change was bringing about more diversity and complexity in the way that rural landscapes were operated and used, plantation forestry had experienced difficulty in meeting expansion targets because of the high price of land driven primarily by buyers from Melbourne, and the generally low social acceptability of forestry. Further, the management of existing plantations was becoming more complex as a consequence of new neighbours with different values to long-term farmers. In contrast, in the Green Triangle, which was comprised of agricultural production and transitional landscapes, plantation expansion was occurring at a rate broadly expected by the forestry industry. Key strategies to increase the social acceptability of forestry in multifunctional landscapes, including integrated forestry development, are discussed.

Keywords Landscapes · Plantations · Social acceptability · Socio-economic change · Forestry

9.1 Introduction

In Australia, plantation forestry policy is driven by 'Plantations for Australia: The 2020 Vision' ('Plantations 2020') launched in 1997 by government and the plantation industries, with a national target of trebling the area of plantations from 1 to 3 million ha during 1997–2020 (PVIC 1997). This expansion is occurring on agricultural land in the high rainfall regions of southern and eastern Australia.[1] These rural landscapes are the most densely populated regions of Australia outside major cities (Haberkorn et al. 2004), and are undergoing profound change in demographics, employment, land tenure and management (Gray and Lawrence 2001, Alston 2004, Barr et al. 2005).

While some of these landscapes may outwardly appear to be an 'agricultural production' landscape in that agriculture is the dominant land-use, the role of agriculture is diminishing in rural areas where there are new settlers with employment in other sectors, who may bring different approaches to the use of rural land. Where

[1] Regions that receive, on average, at least 600 mm of annual rainfall.

farming is undergoing social and economic transition, debate has centred on the extent to which this phenomenon signifies 'new' or 'post-productivist' landscapes (e.g., Argent 2002, p. 98; Barr and Wilkinson 2005, p. 1497; Mather et al. 2006, p. 442), and whether 'post-productivist' is better expressed as 'multifunctionality' (Holmes 2002, Bjørkhaug and Richards 2008) in that agriculture produces multiple benefits that sustain rural landscapes (Potter and Burney 2002).

In another construct specific to the State of Victoria, the main rural landscapes were broadly classified as 'agricultural production', 'rural amenity' and 'transitional' (Barr 2005, p. 1). This typology has informed to a large extent the State Government's perspective on socio-economic changes in rural areas (e.g., DPI 2008), and is problematic for the forestry industry as there are substantial areas of agricultural land with capability for plantation development in the so-called rural amenity landscapes.

Our research addressed the extent to which socio-economic changes in rural landscapes influenced the achievement of the government and industry strategy to expand plantation forestry, and the management of existing plantation forests. The research was grounded in the experiences of a range of stakeholders in two plantation regions in south-east Australia known to be undergoing differential rates of socio-economic change and plantation expansion.

9.2 Research Methods

The research approach involved the use of multiple methods to collect data in plantation regions selected as case studies. Research methods were semi-structured interviews with a purposeful sample of informants from stakeholder groups, and analysis of longitudinal quantitative information to understand socio-economic trends in the case study regions. The interviews were framed by themes that emerged from an extensive literature review, and content analysis was applied to the qualitative data.

9.2.1 Selection of Case Studies

The primary case studies were two regions of the National Plantation Inventory ('NPI'),[2] the Murray Valley region (NPI region 11, Fig. 9.1) and the Green Triangle region (NPI region 4, Fig. 9.1). These were selected because of their national recognition as plantation regions with established plantation forestry industries, their different socio-economic characteristics, and their different levels of success in achieving plantation expansion.

[2]There are 15 National Plantation Inventory regions in Australia that form the basis for regional reporting of plantation statistics (Wood et al. 2001).

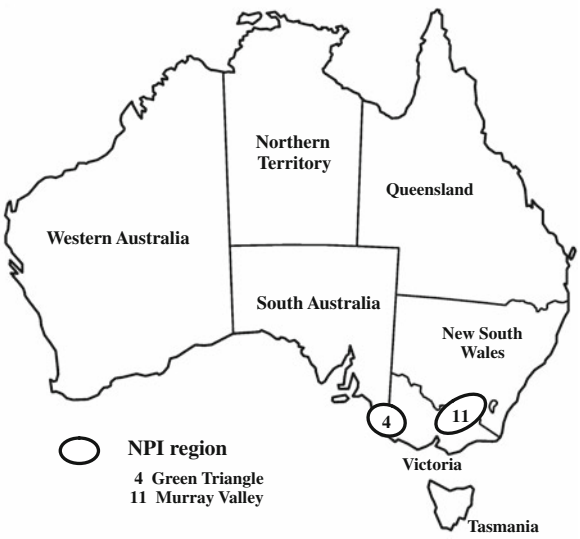

Fig. 9.1 Location of the Green Triangle and Murray Valley case study regions

The NPI regions, identified by government and industry, represent zones of economic wood supply (NFI 1997). Because such zones are not constrained by political borders the two case study regions spanned three States, but Victoria was common to both (Fig. 9.1).

In regard to the part of the case study regions in the State of Victoria, a perspective of the Victorian Government (the Department of Primary Industries), informed by the research of Barr (2005, p. 1), was that most of the Murray Valley was an amenity landscape whereas the Green Triangle comprised agricultural production and transitional landscapes (DPI 2008). In an amenity landscape, the population would be expected to be rising and this was a key factor in the choice of the Murray Valley region for inclusion in the study. The Victorian Government's population forecasts of population growth for Local Government Areas ('LGA')[3] within this region up to the year 2020 (DSE 2004) were used to confirm this choice.

Both regions had substantial plantation forestry industries, and were earmarked by the forest industry for plantation expansion, but had achieved different levels of success. Plantation expansion in the Green Triangle was occurring at a rate broadly expected by industry, but in the Murray Valley it was low save for some recent expansion in southern New South Wales.[4] While recognising that the regions had different market dynamics, other potential factors underlying the differences in forestry activity were not readily apparent as both regions had substantial areas of

[3] An LGA is a spatial unit in the Australian Standard Geographical Classification that is commonly used by the Australian Bureau of Statistics to disseminate demographic statistics (ABS 2001).

[4] The rate of expansion in the Murray Valley region during 2001–2007 was 14,960 ha compared with 97,936 ha for the Green Triangle region (Gavran and Parsons 2008, p. 4; Wood et al. 2001, p. 19).

agricultural land with capability for plantations and both regions operated under a supportive national plantations policy.

In order to share the same State policy environment relating to forestry and to be informed by the landscape typology of Barr (2005), the research in the two NPI regions was grounded in Victoria.

9.2.2 Sources of Data and Methods of Collection

Longitudinal statistical data were sourced from the Australian Bureau of Statistics ('ABS') for the Australian Censuses of Population and Housing during 1991–2001. Rural property sales data for the State of Victoria for 1995–2006 were accessed through the Office of the Valuer-General and customised for research purposes for the exclusive use of Charles Sturt University.

These data were collected at the spatial level of LGAs. This ABS statistical boundary is a common geographic unit used to define regions because the local government authorities that administer LGAs control development. However, the two NPI regions used as case studies are not part of the Australian Standard Geographical Classification ('ASGC') used by the ABS to collect and disseminate social, demographic and economic statistics, and had poor concordance with the hierarchical spatial units of the ASGC. Thus, judgements were made, on a case-by-case basis, using a set of 'rules', about which spatial units from the ASGC to include when examining statistics disseminated by the ABS and other agencies relevant to the case studies. Accordingly, the Murray Valley region was represented by 16 LGAs, and the Green Triangle region by 10 LGAs, based on statistical boundaries as at 2001.

The quantitative data collected through these processes did not address all topics for which information was sought, nor did it provide an understanding of the drivers of socio-economic change. Thus, the statistical information was cross-referenced with qualitative data collected from 60 in-depth, semi-structured interviews (Minichiello et al. 1995) with informants from nine stakeholder groups. This large and diverse sample of key informants represented key groups with a stake in the use and management of rural land in the case study regions, and included: farmers; farmers with farm forestry experience; forestry companies; local government authorities; State Government agencies; national agencies; catchment management authorities; regional forestry organisations; and persons working professionally in agribusiness. An interview guide was prepared for each group and interviews were recorded by use of field notes.

9.2.3 Regional Settings for the Case Studies

Geographically, the Green Triangle plantation region spreads from the south-east corner of South Australia to the south west corner of Victoria in south-east Australia, and its commercial centre is the city of Mount Gambier (population 22,750 in 2001) located approximately 440 km south-east of Adelaide and 550 km west of

Melbourne. The Murray Valley plantation region spreads from Melbourne to just short of Yass in south-east New South Wales, with Albury–Wodonga its commercial centre (population 73,468 in 2001) (ABS 2003).

The Green Triangle has been a major softwood plantation region since the early part of the twentieth century, and includes some of the most productive Radiata Pine (*Pinus radiata*) plantations in Australia, providing forest products (mainly sawlogs) for regionally-concentrated processing industries and for export from the regional port of Portland. Recent expansion of plantations has been dominated by Blue Gum (*Eucalyptus globulus*), grown on short rotations to produce pulplogs destined for export as woodchips, or possibly regional processing into pulp prior to export. On the other hand, plantation forestry in the Murray Valley region is mostly Radiata Pine providing products to regionally-dispersed processing industries, and plantation expansion during the past decade has been low compared to that in the Green Triangle region (Parsons et al. 2006).

9.3 Characteristics of Socio-Economic Changes and Factors Influencing the Changes

The main trends in population and employment in primary industries are presented as background to the information provided by stakeholders about the extent to which there were changing landscapes and the drivers of those changes.

Time series statistics on population, agriculture and rural property value were the main sources of quantitative data used to make informed judgements of the extent to which particular regions were agricultural productivist landscapes, or were uncoupling from their dependence on primary production and emerging as new or multifunctional landscapes.

9.3.1 Population Changes

The population of a region is a fundamental indicator of human capital, and the rate and direction of population change is an indication of the ability of a region to attract and retain residents (Webb and Curtis 2002). There is substantial population variation within regional Australia (Hugo 2002), and an understanding of population change is important to understanding socio-economic outcomes in rural areas (Baum 2006). The main characteristics of regions likely to lose population were dependence on farming (Johnson and Beale 1994, Argent 2002), remoteness from metropolitan areas, low population density, and a low level of natural amenity (McGranahan and Beale 2002). Results from the case studies were consistent with these findings, as evidenced by the different trajectories of population change for the Murray Valley and the Green Triangle regions.

Specifically, the total population of the Murray Valley region increased by 4.7% during the 10-year period of 1991–2001, while the total population in the Green

Triangle region declined by 5.6% over the same period. The regions had different population densities (4.5 people/km^2 in the Murray Valley in 2001 compared with 1.9 people/km^2 in the Green Triangle) (ABS 2003),[5] different levels of amenity, with large areas of the Murray Valley characterised as amenity landscapes (Barr 2005), and different levels of proximity to urban centres, with the Green Triangle more remote from metropolitan areas.

However, there was substantial variation in the geographic distribution of population change: in the Murray Valley, the change in total population among the LGAs ranged from an increase of 17% to a decline of 11%, and in the Green Triangle it ranged from an increase of 16% to a decline of 15% (ABS 2003). In the Murray Valley, for example, the highest population growth occurred in LGAs closest to Melbourne and the provincial centre of Albury–Wodonga. Such spatial selectivity of population growth has been a common phenomenon in rural Australia (Tonts and McManus 2000).

An important population cohort is the 'youth' component (people aged 15–24 years) (Haberkorn et al. 2004, p. 8). Youth migration is a factor in the decline of rural areas, indicative of a lack of education services and employment opportunities (Gabriel 2002). In the Murray Valley region, the youth cohort of the population fell in each census year from 1991 to 2001, and over that period there was a decline by 7.7% in the size of the youth population, but there was a larger decline in this cohort in the Green Triangle region (19.6%) (ABS 2003). The loss of rural youth skews populations to an older demographic (Webb and Curtis 2002).

9.3.2 Employment Dynamics

9.3.2.1 Employment in Primary Industry

The role of primary industry (agriculture, forestry and fishing) in the Australian economy, measured by its contribution to total employment, has decreased substantially in the past 40 years. Primary industry's share of employment has more than halved since the mid-1960s, when it accounted for 10% of the workforce compared to 3.8% of the workforce in 2004–2005. However, primary industry remains an important employer in rural and regional Australia, and in 2001 accounted for almost 14% of non-metropolitan employment (ABARE 2006, PC 2005).

The proportion of people employed in the agriculture, forestry and fishing sector in the Murray Valley is similar to that in non-metropolitan Victoria, but less than half the proportion in the Green Triangle region. During 1991–2001, the trend in the Murray Valley and non-metropolitan Victoria was decreasing dependence on agriculture, forestry and fishing for employment whereas in the Green Triangle region the level of dependence was similar (Table 9.1).

[5] Population statistics are based on analysis of enumerated population excluding overseas visitors.

Table 9.1 Employment in the rural industries in the Murray Valley region, the Green Triangle region and non-metropolitan Victoria, 1991–2001 (ABS 2003)

Region	1991	1996	2001
Murray Valley region[a]	10.9%[b]	10.4%	10.1%
Green Triangle region[a]	27.6%	28.7%	28.1%
Non-metropolitan Victoria[c]	12.5%	12.4%	11.2%

[a]Region as defined in the National Plantation Inventory (Wood et al. 2001, p. 84) and represented by 17 Local Government Areas ('LGAs') for the Murray Valley and 10 LGAs for the Green Triangle
[b]Persons employed in agriculture, forestry and fishing as a proportion of total persons employed
[c]All Victoria outside the Melbourne Statistical Division

9.3.2.2 Off-Farm Employment

A dimension of the concept of post-productivist agriculture is increased off-farm employment, or an increase in pluriactivity (Evans et al. 2002). Statistical data were not available to examine trends in off-farm income in the case study regions, so this was explored through interviews, which revealed that off-farm income was an important part of the livelihood of farmers, and came from diverse sources of employment and business.

Two-thirds of the farmers, and three-quarters of the farmers with farm forestry that were interviewed had off-farm income. This was an important part of their household income ('. . . in good years the farm only just breaks even, without paying me a wage'). Another commented: '. . . most of the farmers are dependent on off-farm income to survive'. Off-farm sources of income were diverse, and included contracting businesses, employment in regional centres and surrounding districts, government superannuation, pensions, and residential property investment.

An informant from a financial institution had a client base of more than 200 farm businesses in the Murray Valley (north-east Victoria and southern New South Wales) that were mainly beef and dairy enterprises. About 70–80% of these clients had off-farm income, and many would earn more off-farm than on-farm. A senior staff member of another financial institution operating in the same general area reported that off-farm income was increasing – it was important for cash flow and nearly every young farmer had a job in town to maintain the lifestyle of their family with that of their peers.

9.3.3 Purchase of Rural Property

9.3.3.1 The Value of Land for Agriculture

Data on sale price of rural properties were used to examine trends in the market value of land in relation to its underlying value for agriculture. The idea of constructing a measure of the affordability of land for agriculture as an indicator of

changing social landscapes was used by Barr (2005) in Victoria, and Race et al. (2005) found evidence of the 'uncoupling' of land prices from the agricultural value of land from interviews with rural landowners in southern New South Wales.

Data were obtained for all sales of rural properties that were 10 ha or more in area from 1995 to 2005 in Victorian LGAs in the case study regions. Results are presented as the ratio of the median property sale price to the estimated value of the land for broadacre agriculture. The latter was estimated from net farm income, which was taken as the expected value of future income from agriculture, using capital asset price theory. That is, the value of land today can be represented as the discounted sum, or present value, of the expected value of future income or rents, with the opportunity cost of investing in the land being the discount rate (Alston 1986, Clark et al. 1993). The annual level of net income achieved from farming was estimated using the data from the Farm Monitor Project operated in Victoria, where net farm income was gross income minus enterprise and overhead costs (DPI 2005, pp. 59 and 63). A real discount rate[6] of 5% was applied to the estimated net farm income, on the basis that the nominal cost of finance for a farm business was about 8% (Holmes Sackett 2006) and recent and expected inflation was in the order of 2.6–3.0% (Reserve Bank of Australia 2006). A 3-year moving average of the ratio was calculated to better illustrate trends, and results for three LGAs are shown at Fig. 9.2.

The estimate of the value of land for agriculture peaked in 2001–2002, the year in the longitudinal data in which the net farm income, used as an estimate of future farm income, peaked. In that year, farmers in the broadacre sector of Australian agriculture recorded one of their best financial performances compared to the previous 26 years, a result of high commodity prices and good seasonal conditions (ABARE 2002).

The results suggested that the largest differential between the rural property price and the agricultural land value occurred during 1997 and 2001 and again in 2005 in the LGAs of Mitchell and Murrindindi, to the extent that land prices on average appeared not to be affordable for a viable agricultural enterprise. In such areas, it was likely that an increased area of rural land was being purchased by people who did not identify themselves as farmers, some deriving their income from employment in towns or major cities within commuting distance.

The results for the LGA of Towong in the Murray Valley region (Fig. 9.2) suggested that agriculture was a competitive mainstream land-use, and that land was being purchased primarily for its agricultural value – Towong would therefore be considered to be an agricultural productivist landscape on the basis of this indicator. The results for the LGAs of Glenelg, Moyne and the Southern Grampians in the Green Triangle were similar to that of Towong, thus indicating agricultural productivist landscapes.

[6]Nominal money value is the dollar value over time, in terms of the actual face value at each particular point in time. Real money value is the dollar value over time, with the effect of changes in purchasing power removed (Makeham and Malcolm 1988, p. 148).

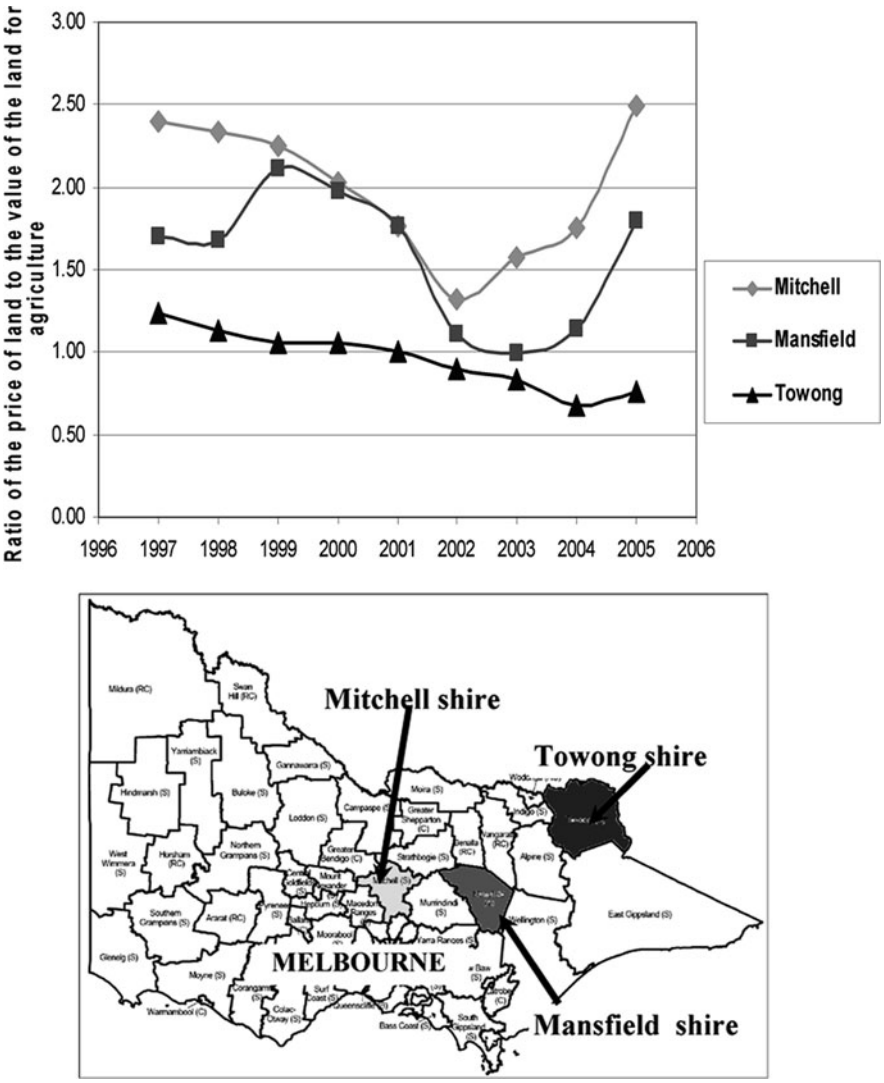

Fig. 9.2 Ratio of the median sale price of rural land to the value of the land for agriculture in three Local Government Areas in the Murray Valley – Towong shire (about 400 km from Melbourne), Mansfield shire (about 200 km from Melbourne) and Mitchell shire (about 100 km from Melbourne). Map not to scale

For both the Murray Valley and Green Triangle regions, there was no reduction in agricultural production during 1997–2001,[7] which was contrary to one of the central

[7] As measured by the change in the total estimated value of agricultural operations for 1997 and 2001, expressed in 2001 dollars, with data at the level of LGA aggregated for each of the case study regions (ABS 2007).

ideas of a shift to post-productivist agriculture. That is, the level of agricultural activity was maintained in the Murray Valley region despite profound socio-economic change.

9.3.3.2 Spatial Distribution of Persons Who Purchased Rural Property

Given the regional differences in the affordability of rural properties for agriculture, the spatial distribution of persons who purchased rural property was examined to explore the relationship between location of purchaser and the level of purchase activity. This idea was used by Barr et al. (2005) as an indicator of rural amenity landscapes – they presented the ratio of 'local' to 'non local' purchasers of rural land in Victoria aggregated over the period 1991–2001, on the premise that migrants from provincial centres or Melbourne were bidding land away from farmers for non-farming uses.

The data for rural property sales for each LGA were analysed by coding the geographic location of each purchaser as follows: 'Local' – from the same LGA; 'Albury–Wodonga' – from these two LGAs (i.e., from the main provincial centre in the Murray Valley); 'Melbourne' – from the Melbourne Statistical Division and the Greater Geelong Statistical Subdivision; 'Rural Victoria' – from the balance of Victoria; and 'Other State' – from other States and overseas.

The results for the LGAs of Towong, Mansfield and Mitchell (Fig. 9.3) illustrate the different proportions of purchasers for the most distant LGA from Melbourne in the study (Towong, about 400 km distant), an LGA about 200 km or 2 h travel time from Melbourne (Mansfield), and an LGA close to Melbourne (Mitchell, about 100 km distant or 1 h travel time).

Across north-east Victoria in the 3 years of 1995, 2000 and 2005, Melbourne buyers purchased nearly 500 properties with a total area of 27,000 ha.

Overall, provincial city buyers (i.e., from Albury–Wodonga) were only active for a distance of 100 km. On the other hand, Melbourne buyers were active in all LGAs and were the dominant group of buyers in four LGAs within 200 km of the city, with a range of 50– 65% of properties purchased. In two of these LGAs – Mitchell and Murrindindi – land was least affordable for farming of all LGAs studied (Fig. 9.2).

On the other hand, in the Green Triangle region, local purchasers were the dominant group across the three LGAs of Glenelg, Moyne and the Southern Grampians (all at least 300 km from Melbourne) for 1995, 2000, and 2005, buying 35–66% of properties within an LGA.

9.3.3.3 Patterns of Property Purchase in North-East Victoria

Views about the patterns of rural property purchase were obtained from government agency staff and agribusiness people operating in the wider north-east region of Victoria. One informant was selling rural property from a Melbourne base to Melbourne residents. The informant said that clients were buying rural property for reasons of balancing their portfolio of investments and satisfying personal goals. Such people typically had reached a high level of achievement in their professional

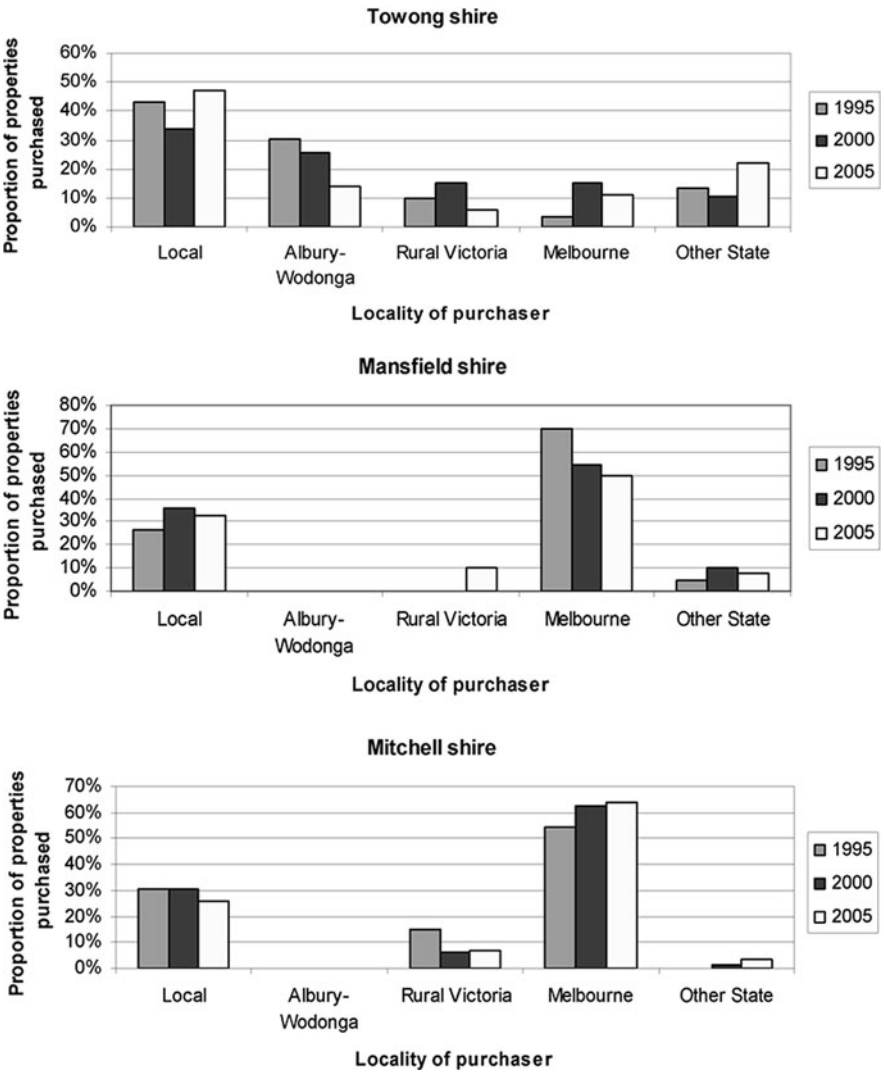

Fig. 9.3 Locality of purchasers of rural property in three Local Government Areas in the Murray Valley – Towong shire (about 400 km from Melbourne), Mansfield shire (about 200 km from Melbourne) and Mitchell shire (about 100 km from Melbourne)

and commercial life and wanted to do something different ('. . . never had a farm before and always wanted one'); such people fitted the 'baby boomer' group (born 1946–1961 (this is often extended to 1964), an era of prosperity (Salt 2006, p. 2)). The sharp rise in the value of Melbourne residential property had allowed people to increase the mortgage on their home to finance a lifestyle property.

This had been a driver of Melbourne residents buying rural property in the 'magnetic field' – broadly defined as being within 2 h travel from Melbourne ('... Benalla is generally the outer edge of tolerance in north-east Victoria'). That is, access was considered important for lifestyle properties – people wanted to be able to get out of the city at the end of the week and have no more than 2 h driving before they could settle down, relax and enjoy the weekend. Thus, upgrades of roads had opened up new rural areas to Melbourne people. Further, rail infrastructure was important for Melbourne people who were shifting to rural areas to commute to work in the city, for example, to Seymour and its surrounding district (in the Mitchell shire).

The informant said that the ideal property had good ambience – land that was undulating rather than flat, with a creek running through it and hills in the background. The informant commented: '... Melbourne clients like good rainfall and beef cattle'. Barr (2005) observed that beef enterprises were attractive to lifestyle landowners. As explained by an informant from a Victorian Government agency: '... for lifestyle farmers, sheep are more difficult than cattle because of more intensive animal husbandry – crutching, shearing, dipping, fly strike, drenching, lamb marking, etc'.

Clients buying farm land commonly did not have roots in the country or farming experience, but were not daunted by this ('... I know nothing about it, but that's not a concern, there are services to help me out'). Another informant, from one of Australia's four major banks commented: '... affluent investors who live in the city are having a significant impact on rural land prices, this affluence has enhanced their capacity and desire to take on semi-commercial and fully commercial farms rather than hobby farms'. This had created demand for services from the local community. For example, an informant from the Department of Primary Industries said that an increasing number of new farm owners were Melbourne and Sydney investors who had employed local people as farm managers.

Another informant, who was a long-term farmer in the Benalla region, part of the 'magnetic field', said there was a wave of 'lifestyle' farmers, which was quite different to hobby farmers – new landowners, particularly from Melbourne, had bought large-scale properties (some more than 1,000 ha), and had spent considerable money on capital improvements (fences, water supply, roads, buildings) and pasture improvement ('... they are doing good things, things I could not afford to do ... these people have made a lot of money in their careers or businesses ... they take pride in what they do').

The informant who was selling rural property from a Melbourne base to Melbourne residents also had a small number of clients who were 'land banking' – they purchased high quality rural land and planned to hold it for up to 10 years, primarily to achieve capital gains. The informant expressed the view that the high rainfall parts of Victoria would become increasingly sought after ('... the new era buyer will hold water in very high esteem – its availability and reliability will be paramount').

9.4 Impacts of Socio-Economic Changes in Rural Landscapes for Plantation Expansion

9.4.1 Introduction

The dynamics of markets for wood products, land suitability (i.e., the fitness of land for forestry, as expressed by such criteria as land price), and the social acceptability of forestry (e.g., as expressed through planning controls for forestry as a land-use) are key factors that shape the way in which plantation expansion occurs at a regional level. There is interplay of these factors that vary temporarily and spatially, and land suitability for forestry and the social acceptability of forestry are influenced by socio-economic changes with implications for plantation expansion.

9.4.2 Market Dynamics and Regional Expansion Targets

9.4.2.1 Regional Markets

Domestic and export markets shape the Radiata Pine and Blue Gum industries in the Murray Valley and Green Triangle regions. Informants from processors of softwood logs in the Murray Valley indicated that there was strong demand for Radiata Pine logs across the region. These views were consistent with those expressed by informants from the largest producer of softwood plantation logs in Victoria, which was supplying wood to processors in Victoria, South Australia and New South Wales ('... all of our major customers want more wood and have aggressive expansion aspirations'). They said that this was driven by an optimistic outlook for domestic demand and export opportunities, and the need for increased throughput to increase the efficiency of processing to remain competitive in a trade-exposed international market.

On the other hand, the potential for expansion of short-rotation Blue Gum plantations was generally confined to the southern part of the Murray Valley region within economic road haulage (about 170–200 km) of export facilities at either Geelong or Melbourne.

9.4.2.2 Regional Targets for Plantation Expansion

Plantations 2020 recognised that each region would make different contributions to achieving the national expansion target, depending on prevailing markets and the availability of suitable land (PA 2002). Plantations North East, the private forestry development committee for the north-east region of Victoria, supported plantation expansion towards a goal of 25,000 additional hectares in north-east Victoria from 2006 to 2020, to bring new investment in sustainable land-use for the region (PNE 2005). An informant from a state agency, with a role of developing community relationships in the changing landscapes of north-east Victoria, expressed the view that such a target would not have a big impact ('... 25,000 ha is not a big issue in

the region'). Independent from this plan, individual forestry companies had specific expansion targets, as discussed later in this chapter.

9.4.3 The Supply of Land for Plantations

9.4.3.1 Studies of Land for Plantation Forestry in the Murray Valley

Given existing markets and strong demand for plantation products, and a regional target for plantation expansion in the Murray Valley, the supply of land is a key determinant of the rate and extent of plantation development.

In the Murray Valley region, 1.8 million ha of land was assessed as having the capability[8] to grow commercial Radiata Pine plantations (Burns et al. 1999, p. 128).[9] Another assessment reported that there was about 810,000 ha in north-east Victoria that had the capability for Radiata Pine plantations (Borschmann 1998, p. 17); thus, the expansion target of PNE (25,000 ha) was about 3% of this land. Within this land base, the greatest concentration of land with the highest capability for plantations was in the LGAs of Murrindindi and Mansfield (combined area of approximately 260,000 ha) (NFI 2007), both indicated to be new landscapes. However, the supply of land for new plantations is ultimately dependent on the willingness of landowners to sell or lease suitable land to forestry companies, or enter joint ventures.

9.4.4 Recent Experiences of Companies Seeking to Expand Plantations

The rate of plantation expansion in the Murray Valley region during 2001–2007 was low (14,960 ha) compared with the Green Triangle (97,936 ha) (Wood et al. 2001, p. 19, Gavran and Parsons 2008, p. 4), and most of the expansion in the Murray Valley occurred in the southern New South Wales part of the region.

9.4.4.1 A Project to Develop Hardwood Plantations Within 200 km of Melbourne

A new plantation forestry project was announced in 1999, in which a Japanese consortium planned to establish Blue Gum plantations in north-east Victoria to produce

[8] 'Land capability' is the identification of land where the biophysical growth requirements of a particular tree species are satisfied for a given management regime, whereas 'land suitability' involves the integration of biophysical factors and social and economic factors affecting the fitness of land for plantations (Stephens et al. 1998, pp. 5–6). Existing land-use, land price and distance to existing or notional markets are common attributes used to assess the suitability of land for forestry.

[9] In comparison, in the Green Triangle region, 1.4 million ha of land was assessed as having the capability for Radiata Pine plantations (Burns et al. 1999, pp. 95–96).

woodchips for export to Japan, preferably through the port of Melbourne (Hopkins 1999). The company operating the project, East Victoria Plantation Forest Company of Australia ('EPFL'), operated from the regional city of Benalla and planned to establish 10,000 ha over 10 years on land leased from farmers within 200 km of Melbourne. The focus was the LGAs of Delatite (since split into Mansfield and Benalla), Alpine and Murrindindi (Hopkins 1999) – LGAs indicted to be new landscapes and assessed to have substantial areas of agricultural land with capability for commercial plantations (as discussed earlier in this chapter).

An informant from the company said that the project did not meet its target, only achieving 3,100 ha. Land was only leased from farmers in LGAs in north-east Victoria in 1999 and 2000, and the project ceased expansion in 2003. In practice, most plantations in north-east Victoria were established in the LGAs of Mitchell, Murrindindi, Benalla and Wangaratta. The informant said that the company could not afford to pay the lease rates of at least $300/ha/annum that were typically sought by landholders. Land purchase was considered, but land was not affordable for the company within the wood supply zone.

The issue of leasing or attempting to purchase land for the EPFL project would have been compounded by the sharp increase in land prices in the LGAs within 200 km of Melbourne from about year 2000. In the LGAs originally targeted by the project, the annual rate of price increase in rural properties 10 ha or more in size during 2000–2005 ranged from 20–26%, up from an annual rate of 7–12% during 1995–1999. In the period 2000–2005, land prices also went up faster than in more distant LGAs such as Wangaratta and Towong (both at 10% per annum) where there was less influence of Melbourne buyers.

Under the EPFL project, properties were leased for 20 years plus or minus 4 years, or until the completion of two harvests. The informant from the company was concerned about the impact of increasing land prices on the project in the long-term ('. . . beyond the second crop, we may not be able to compete in this land market'). That is, rising land prices were a threat to the sustainability of the resource.

In 2002, another company started a new project, acting as the forestry manager for a forestry managed investment scheme[10] to grow hardwood plantations to produce woodchips for export from Geelong or Portland. The maximum road haulage distance to market (Geelong or Portland) was set at 180 km. The Murray Valley was considered as a land base, but the high price of land made the project unviable within the wood supply zone delineated by the maximum transport distance ('. . . land was not available at an affordable price').

9.4.4.2 Projects to Develop Radiata Pine Plantations

Three major growers of Radiata Pine had recently expanded their plantation estate in the Murray Valley. The LGAs most approximate to processing industries were

[10]Since 1998, privately-funded forestry managed investment schemes have been the main source of capital for expansion of plantations in Australia (Cummine 2009).

Towong, Tumbarumba and Tumut, but the focus of expansion had been in the latter two LGAs in southern New South Wales, because the planning requirements for plantations in the Towong shire had been more onerous – a dimension of the social acceptability of forestry discussed later in this chapter.

The expansion plans of two of the companies provided insight to the scale and rate of land acquisition and other factors affecting land suitability. Willmott Forests Ltd ('Willmott') and Gunns Plantations Limited ('Gunns') were operating managed investment schemes for the development of softwood plantations in the Murray Valley. Informants from both these companies were interviewed. Gunns had an annual expansion target of 1,000 ha of softwood plantations in southern New South Wales, with the aim of developing a minimum of 10,000 ha in the region. The business model provided for leasing or purchase of land ('. . . we would prefer to lease, less cash required upfront'), but land had been purchased in order to quickly assemble the land required for the early stages of the project.

Similarly to Gunns, Willmott selected southern New South Wales in the Murray Valley as a focal point for development of softwood plantations. Reasons included the established forestry infrastructure (e.g., forestry roads), the strong forestry contractor base in the region, and the strong and expanding processing capacity for plantation logs. Agricultural land was purchased by way of direct negotiation with the landowner or at auction, and about 5,000 ha was bought during 2001–2005. The informant commented that land for plantation expansion was becoming more difficult to acquire, reporting that their regional forester was the losing bidder at auction on five properties in 2006 – the winning bidders were local buyers and buyers from outside the region, including dairy farmers from New Zealand.

The largest grower of industrial plantations in the southern New South Wales part of the Murray Valley was Forests NSW, a state agency. A staff member with management responsibilities across the region, including land purchase, said that Forests NSW had not purchased land for their own plantation expansion for 7 years because land had not been affordable under the agency's investment model ('. . . cannot meet the hurdle rate set'). Forests NSW was only involved in plantation expansion by providing forestry services to other investors, including purchase of agricultural land on behalf of investors, mostly for forestry projects operated under managed investment schemes. The informant said that in the Tumut shire, there was suitable land but little was available for purchase because most was tightly held by farming families. The Tumbarumba shire was the main priority for plantation expansion based on the availability of land.

9.4.5 The Affordability of Land for Forestry

The price paid for plantation forestry land was explored to understand how affordability varied across the case study regions under the influence of socio-economic changes. Data were obtained from two sources: property sales records provided by

the Valuer-General of Victoria were analysed, and typical prices paid for forestry land were obtained from informants from forestry and agribusiness companies.

In north-east Victoria, there were only 31 property sales to forestry companies during 1995–2006, with a median sale price of $3,254/ha. This low level of land transactions involving forestry companies was in stark contrast to the high level of activity in the Green Triangle. There, forestry companies operating managed investment schemes purchased 378 rural properties during 1995–2006 with a total area of 65,377 ha and a median price of $3,256/ha, with the median price peaking at $5,000 in 2004. The level of land purchases by the forestry sector was strongly associated with the level of funds raised by managed investment schemes.

An informant who had been purchasing farm land for plantations in the Murray Valley for more than 10 years provided information indicating that the highest prices paid for farm land for development of Radiata Pine had been about $5,000/plantable (i.e., net) hectare of plantation. Other informants said that similar prices had been paid for farm land purchased in other regions for Radiata Pine plantations.

Higher prices had been paid for farm land for Blue Gum plantations. An informant who specialised in research on forestry managed investment schemes, said that in 2005, forestry land for managed investment scheme projects (mostly Blue Gum) typically cost $5,000 per net hectare, but was bought at up to $7,000 per net hectare. The informant's opinion was that this was the maximum that managed investment schemes could afford to pay for farm land for plantation development in real terms in the future. An informant from a forestry company operating a managed investment for Blue Gum in the Green Triangle region had a similar view ('. . . $6,000–$7,000 per plantable hectare is the ceiling for forestry'), and an informant from a private forestry development committee added: '. . . the cap for managed investment scheme forestry land, anecdotally, is about $7,500 per plantable hectare'.

These results indicated that in substantial parts of the Murray Valley, land with capability for commercial plantations was not affordable for forestry, as evidenced by the median prices for rural property sales in such LGAs as Mansfield, Mitchell and Murrindindi where prices were more than $10,000/ha in 2005, mainly under the influence of buyers from Melbourne.

9.5 The Social Acceptability of Plantation Forestry

In addition to market dynamics and land suitability, the expansion of plantations and the management of existing plantations are influenced by the social acceptability of forestry. This centres on the comparative judgements of the use of the land for plantations versus alternative uses – mainly agricultural, but also including for lifestyle purposes. Dimensions of social acceptability are incorporated into planning controls related to forestry because it is argued that these are a derivative of the social acceptability of forestry as a land-use, and wider perceptions and specific issues related to plantation forestry as a land-use and industry.

9.5.1 Forestry Land-Use Determination Under the Planning System

In Victoria, the planning system allows local government authorities to require that a permit be obtained for development of a timber plantation if the area is 40 ha or more (Cameron et al. 2004). In 2008, 60% of the local government authorities in the Victorian part of the Murray Valley had such a permit provision for plantation development in their planning scheme (Alpine, Indigo, Mansfield, Strathbogie, Towong, and Wodonga), yet only one (Southern Grampians) of the four local government authorities in the Victorian part of the Green Triangle controlled forestry in this way (DPCD 2008). An implication of the permit system is that when an application for a permit is lodged, anyone can object. An informant from a forestry company with widespread operations in Victoria summarised the situation: '... local government is so variable across the State, from supportive to openly hostile. Its approach is very ambiguous and arbitrary'.

Recent plantation expansion in north-east Victoria, which had only occurred at a small scale, had not been impacted by objections from lifestyle landowners. However, experience in the adjacent Central Victoria region showed this could be a factor in landscapes undergoing socio-economic change, where land was affordable for forestry, but the region was attracting new landowners. An informant from a company with operations in the Colac–Otway shire said that in recent years, there had been four appeals to the Victorian and Civil Administrative Tribunal by people who objected to the shire approving plantation projects presented by the company ('... objections have come from non-farming landowners, mainly on the issue of the use of chemicals for plantation establishment'). This came at a cost to the business of the company ('... in our case, expansion has been at considerable expense, frustration and difficulty because of a hostile planning environment'). The informant added that this issue had been a failure of Plantations 2020 ('... the key for us with the Plantations 2020 Vision was to get forestry treated the same way as agriculture. Forestry has gone backwards regarding its planning and regulation').

Where there had been recent expansion of plantations in the Murray Valley, most had occurred in southern New South Wales. Although there were substantial areas of agricultural land affordable for plantations in the Towong shire in north-east Victoria, informants from forestry companies reported that a significant impediment in Victoria was the difficulty in dealing with Statewide controls applied though planning schemes related to removal of native vegetation on agricultural properties purchased for plantation development. In contrast, the planning system for plantation development in New South Wales was straightforward and predictable. An informant who had first-hand experience in dealing with a plantation development application to the Towong shire explained: '... I am not that keen about doing anything in Victoria, it was painful enough last time, it is not a streamlined process by any stretch of the imagination'.

In the Towong shire, this planning issue was compounded by the generally low social acceptability of plantation forestry that was reflected in land-use controls

in the planning scheme (e.g., forestry discouraged in the Farming Zone, permits required in certain areas) and expressed by council and an entrenched farming community in concerns about impacts of forestry on communities and environmental issues ('. . . council views expansion of forestry with trepidation . . . pines have their place as long as they do not interfere with agriculture'). While there was a perception among plantation companies that plantation forestry was not a preferred land-use in the Towong shire, the forest industry was likely to focus its expansion activities in other regions where the planning environment was relatively supportive of their activities.

9.5.2 Impacts of New Landowners on the Management of Existing Plantations

Informants from forestry companies were asked about the impacts of socio-economic changes on their business. An issue that emerged was the impact of new landowners not traditionally involved in farming (i.e., lifestyle property owners) who became neighbours to forestry or owned property within the immediate locality of plantations. According to an informant from HVP Plantations, the impact of lifestyle landowners on plantation management was variable across the State ('. . . we have experienced issues with lifestyle landowners in north-east Victoria and in the Ballarat region, but not in the south west'). Complaints were lodged with local government authorities or the company directly. The informant said that most problems in dealing with issues occurred in north-east Victoria ('. . . people have moved there without understanding what rural living is about . . . their lifestyle is in conflict with plantation forestry'). The informant said that this compromised forestry as an existing land-use, and that the issues often related to harvesting operations, though their experience was that when consulted, residents were usually willing to find a solution with the company.

An informant was employed part-time as a forest officer with the Murrindindi shire, and dealt with plantation issues on a case-by-case basis. The informant said most issues were concerns by neighbours about log truck traffic (e.g., noise from early morning truck movements from the plantation to meet mill opening times, and safety of residents using local roads used by log trucks). One such complaint resulted in a protocol agreed by all parties for haulage of logs. According to the informant, no long-term farmers made complaints, because they understood the practicalities and constraints of operating an agricultural enterprise ('. . . always came from new settlers who moved in after the plantation had been established').

A lesson from the experiences of Forests NSW was that apart from adding cost to operations, new neighbours could result in a reduction of the plantation area. An informant operating in the Murray Valley, but with statewide experience in the business said that hobby farmers and lifestyle farmers as plantation neighbours were a concern around Bathurst, located about 200 km from Sydney, explaining that the company had increased setbacks from private property boundaries for

silvicultural works (e.g., helicopter spraying for weed control) and harvesting. A consequence was that when the plantation was re-established, plantation boundaries were adjusted, resulting in a reduction in the net area ('. . . the impact of new people is that they are encroaching on our forestry footprint').

An informant from a forestry company described another dimension of the issue of new neighbours in relation to Radiata Pine plantations in north-east Victoria ('. . . treechange[11] properties alongside a plantation can turnover two to three times in the life of the plantation'). As a consequence, the company had to spend more time and resources in building relationships with the community.

However, forestry companies had not been adverse to creating opportunities for lifestyle property owners to become new neighbours to their plantations. An informant managing forestry properties in southern New South Wales in the Murray Valley region explained: '. . . where we buy agricultural land for plantation development, we sell off the non-plantable land to hobby farmers', and added: '. . . in our experience, nuisance neighbours can be managed'. An informant from a forestry company operating a managed investment scheme in the Murray Valley said that the company recently purchased a group of properties (total area 1,200 ha) in the Tumbarumba shire, and some of the land that had houses was subdivided to create four lifestyle properties for sale ('. . . very strong interest by the local community in purchasing these properties'). An informant from another forestry company operating a managed investment scheme in the Murray Valley had a similar approach ('. . . we do not bulldoze houses . . . we prefer to subdivide the land and sell the house; if local government will not allow this, we try to rent houses').

9.6 Discussion and Conclusion

There was rapid plantation expansion in the Green Triangle region during the past decade because of the dominance of managed investment schemes in providing capital for new plantations and the focus of these schemes on short rotation hardwood projects, whose location was driven by the supply of suitable land within economic haulage of export facilities. In contrast, the relative isolation of most of the Murray Valley region from export markets had precluded investment in short rotation hardwood projects by forestry companies operating managed investment schemes. Where there was land with capability for commercial forestry within economic haulage distance of export markets, land had become unaffordable for forestry mainly because of the influence of urban people purchasing rural properties for lifestyle purposes.

With management of existing Radiata Pine plantations, there was evidence of declining affinity with forestry in north-east Victoria as expressed by new neighbours to plantations in new landscapes – unlike in the Green Triangle.

[11] Rural properties purchased by urban people for lifestyle purposes.

Results from this research suggested that to describe north-east Victoria as an amenity landscape was a simplification of the socio-economic changes occurring. It is argued that north-east Victoria is better described as a multifunctional landscape. That is, a rural landscape built on traditional agriculture, but experiencing change in socio-economic structure that was bringing about more diversity and complexity in the way that rural landscapes were operated and used. In this interpretation of multifunctionality, while there was a shift to less dependence on agriculture at a regional level, land-use remained dominated by agriculture while profound socio-economic changes were occurring, particularly in LGAs within 200 km of Melbourne under the influence of metropolitan buyers of rural property.

In the broadacre agricultural industries in the Murray Valley, beef cattle farming was the dominant enterprise in 1997, 2001 and 2005 (ABS 2007). This industry was generally not profitable in Victoria during the past decade,[12] illustrating the tenuous viability of farming in the high rainfall zone targeted by forestry. However, despite a sustained period of poor economic returns, there was no trend for a reduction in land-use by agriculture.

As such, forestry will still need to negotiate a shared space with agriculture in these changing landscapes. Maintaining, and enhancing, the social acceptability of forestry will therefore be an important aspect of the future of planted forests. Key strategies to increase the social acceptability of forestry in multifunctional landscapes include the following: integrated forestry development[13] designed to maintain diversity in landscapes, achieved through more detailed planning at a property level and engagement with resource-management agencies at a regional level; continuing dialogue with stakeholders affected by forestry expansion, formalised through certification of sustainable forest management by such schemes that have a focus on community engagement (e.g., the scheme offered by the Forest Stewardship Council); enhancement of the biodiversity of properties undergoing plantation development by using well-established principles (e.g., Salt et al. 2004) and by engaging partners with expertise in the discipline; and commercial forestry partnerships between landholders and corporate partners.

Forestry partnerships have operated for many years, with varying levels of success. New approaches to partnerships may appeal to the changing demographic of landowners in south-east Australia, that is, partnerships that emphasise integration of forestry in multifunctional landscapes, and seek to capture emerging markets

[12] Across Victoria during the decade 1996–1997 to 2005–2006, farm business profit was negative for every year (ABARE 2007).

[13] The term ‘integrated forestry’ as used here is consistent with the terminology of Robins and Marcar (2007, p. 8) in that it describes the establishment and management of trees on agricultural land for profit (both direct and indirect benefits), as compared to ‘environmental plantings’ established primarily for non-commercial purposes. Integrated forestry includes larger blocks of plantations managed by forestry companies on owned or leased land, smaller blocks of farm forestry managed by forestry companies and/or landowners, and agroforestry in which commercial trees are incorporated with pastures, for example configured as timberbelts (Robins and Marcar 2007). A vision of this latter land-use was presented by Reid (2008).

for environmental services, should be more acceptable to landowners and their surrounding communities. This approach may provide greater access for forestry to the substantial areas of land in high rainfall zones occupied by small farms with beef and/or sheep enterprises operated by long-term farmers with off-farm income or by lifestyle property owners – characteristics of changing communities in new landscapes.

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Chapter 10
Why Farming Families Decide to Maintain Native Biodiversity on Their Farms and the Implications of Demographic Change for Conservation Policies

Quentin Farmar-Bowers

Quentin Farmar-Bowers

Q. Farmar-Bowers (✉)
Faculty of Law and Management, Centre for Sustainable Regional Communities, La Trobe University, Bendigo, VIC, Australia
e-mail: q.farmer-bowers@latrobe.edu.au

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Abstract Global and local influences are leading to demographic changes in who is managing farmland in Australia. These changes are important for policy developers wishing to encourage the conservation of native biodiversity on private farmland; a vital aspect of biodiversity maintenance in Australia. Understanding the decision processes used by the managers of farmland is seen as important information for policy developers. Decision-systems theory (DST) and the 4-Group-Stakeholder model provide a systems based and hierarchical interpretation of the processes farming families use in making strategic decisions. The ultimate-driver in strategic decision making is the desire of farming families to satisfy family aspirations and this is made possible, in part, by the results of farmers' activities stimulated by the intermediate-driver of business profits. Farming families satisfy their aspirations by actively creating opportunities from options. Policy developers can influence the opportunities farming families create by changing some of the options available. The two major policy alternatives for conserving biodiversity on farmland are to create options that encourage people to conserve biodiversity (1) as a business venture that generates income (the intermediate-driver) or (2) as a family opportunity that directly satisfies family interests and aspirations (ultimate-driver). The appropriate mix of policy depends on the demography of the policy area and the purposes people have for holding farmland.

Keywords Biodiversity · Decision-systems theory · Farming families · Farmland policy · Strategic decisions

Abbreviations

DST	Decision-systems Theory
HDI	Human Development Index
TQM	Total Quality Management

10.1 Introduction

Agriculture in Australia is not immune to the changes in society that are occurring right across the world stemming from globalisation, environmental awareness and political actions. Globalisation is complex but tends to encourage agricultural production to capture trading profits. Environmental awareness tends to encourage conservation of nature and ecological processes. Political actions can alter both trends. The future of rural Australia, including the management of farmland and the maintenance of native biodiversity in rural areas, is caught up in how these forces play out, but at least two other factors are important. The possibility of extreme weather patterns stemming from climate change may alter conservation and production possibilities and the desirability of rural life in Australia. Ongoing regional demographic changes influence who manages farmland and what they manage it for. Overall, the management of farmland is gradually moving from farming families to

professional managers running corporate farms on the one hand and to smaller holdings managed by families for a variety of personal reasons on the other hand (Barr 2005). Despite these demographic changes, farming families[1] will continue to be important decision-makers in rural resource use (Brookfield 2008, Johnsen 2004, Kaplinsky 2008, Pritchard et al. 2007) and so their decisions will continue to be important for the maintenance of native biodiversity in rural areas for the foreseeable future. Consequently, environmental policy will need to maintain its focus on farming families but at the same time broaden this focus to deal with the alternative management arrangements.

The importance of native biodiversity and the major role agriculture continues to play in its decline worldwide are well documented (Millennium Ecosystem Assessment 2005). Croplands and pasture have become one of the largest terrestrial biomes on the planet occupying about 40% of the land surface (Foley et al. 2005). In Australia, agricultural practices have eroded and continue to erode native biodiversity (ESAC, 1992; CoA, 1994, 1995a, 1995b). The maintenance of native biodiversity is an objective of all Australian governments and is supported by an Inter-Governmental Agreement on the Environment (CoA, 1992), a national strategy for biodiversity conservation (CoA, 1996) and State strategies on biodiversity. Although National and State parks, and flora and fauna reserves have been established for protecting wildlife, the maintenance and restoration of native habitat on private land are seen as an essential part of the conservation of native biodiversity in Australian landscapes (Fitzsimons 2006). This requirement extends to farms and farming practices (van Rees 2003, Wilson and Lowe 2003, Bennett and Radford 2004, Dorrough and Moxham 2005, Crosthwaite et al. 2007, Dorrough et al. 2007). From this it would seem that consensus in government and scientific circles is that it would be beneficial to future generations if more native biodiversity is maintained in rural areas including on private farmland.

Although the aim of policy might be biodiversity conservation in rural areas, particularly on farmland, the notion that such exclusively focused policy can be effective in the long-term was made obsolete with the acceptance of sustainable development ideals in the late 1980s (WCED, 1987). Robinson (2004, p. 378) noted '[it is]. . .increasingly obvious that solutions that address only environmental, only social or only economic concerns are radically insufficient'. The implication is that biodiversity conservation can only be achieved in the long-term via policies that apply the ideals of sustainable development. Thus environmental policy aimed at biodiversity conservation on farmland must also take account of the wider range of needs that the land managers (farming families, professional managers or families on smaller holdings) have.

Although farmers' main business aims are the profitable production of food and fibres rather than the maintenance of native biodiversity, many farmers conserve

[1] I define 'farming families' as families (one person or more) whose activities include running (controlling, managing and working in) a farming business enterprise.

native biodiversity out of interest without expecting compensation from the public purse (Williams 2003). Beyond that, it seems that financial compensation is necessary (Herzon and Mikk 2007, Mendham et al. 2007).

Barr and Cary (2000), Burton (2004), and Cocklin et al. (2007), noted that in order to influence change it is important to understand the decision-processes farming families use. Farming families make decisions about their farming activities or landholdings either as business people or as family members. The differences between business-people and family-member decision-making are clear cut from the farmers' point of view, but because families run their own farming business ventures, the differences are difficult to distinguish from the outside. Additionally, the farm itself is a business asset, but also a family asset for current and future generations that provides identity, a home and is a valued place (Foskey 2005).

Decision-systems Theory (DST) and the 4-Group Stakeholder model are outlined in this chapter. DST provides an understanding of the decision processes used by farming families in making strategic decisions in their personal lives and also in their business ventures over their lives (Farmar-Bowers 2004, Farmar-Bowers et al. 2006, Farmar-Bowers and Lane 2006, 2009). The 4-Group-Stakeholder model (Farmar-Bowers 2008) suggests that farming families' aspirations are the ultimate-driver in farm decision-making and that producing agricultural products and the monetary returns are the intermediate-driver in farm decision-making. DST and the 4-Group Stakeholder model also shed light on the decision processes used by professional corporate farm managers and by families on smaller rural allotments.

The intentions embodied in the ultimate-driver (family aspirations) resonate with the global ideals of sustainable development but the 4-Group-Stakeholder model shows that without policy intervention from governments and businesses[2] sustainable development ideals (including biodiversity conservation) are unlikely to be achieved by farming families. The DST and the 4-Group-Stakeholder model provide an understanding of the relationships between the different roles and responsibilities people have in society, including the obligations policy developers[3] have to current and future generations in terms of helping people move towards achieving sustainable development ideals. Understanding these different roles and responsibilities would help biodiversity policy developers because the policy mixes needed to assist or encourage farming families, professional managers and families on smaller holdings to conserve native biodiversity on their properties in the long-term are different.

Biodiversity conservation within the framework of sustainable development ideals could be encouraged by policy interventions that rely on either the ultimate-driver or the intermediate-driver. For farming families, the policy mix that preferentially promotes the ultimate-driver is more likely to lead to biodiversity conservation than policies that rely on the intermediate-driver. In contrast, professional corporate farm managers are more likely to conserve biodiversity in the long-term if the

[2]Businesses, like governments, use policy to control their activities.

[3]Policy developers include government ministers and law makers.

policy mix promotes the intermediate-driver. The required policy mix to encourage families on smaller holdings to conserve biodiversity is problematic. However, DST provides sufficient understanding of the decision processes to enable policy developers to ask these families the pertinent questions to determine the appropriate policy mix.

This chapter does not describe demographic change or discuss how people relate to or feel about the demographic changes that may be occurring in their regions (for a discussion of these issues see Chapters 1–5, this volume), rather it provides an understanding of the decision-processes farming families use in making strategic decisions which include decisions about conserving native biodiversity on their farms. This understanding can help policy developers (1) determine how best to deploy the available financial compensation[4] to encourage the conservation of native biodiversity by farming families and (2) adjust their conservation policy mix in the light of demographic change.

10.2 Decision-Systems Theory (DST)

DST[5] is an interpretation of what farming families said about making strategic decisions, such as leaving farming, expanding or downsizing the farm, encouraging their children to leave farming or stay farming, taking off-farm employment, looking after their health, taking up educational opportunities, succession planning, changing locations, retiring, taking holidays, investing in non-farm ventures, changing their business model and changing their living arrangements. DST provides an explanation of the decision-processes they used in making these kinds of decisions.

DST was developed using a grounded theory analytical approach (Strauss and Corbin 1998, Corbin and Strauss 2008), from 33 in-depth interviews with farming families in Australia. DST was confirmed and extended using an additional ten in-depth interviews with farming families in New Zealand and 13 in-depth interviews with women farmers in Australia in 2007 and 2008. It provides an emic view of decision-making (Harris 1999).

DST incorporates a systems-thinking approach that suggests that families and family businesses can be seen as classes of semi-closed systems among other classes of systems (Bates 1997, Midgley 2000, Bosch et al. 2007). The interactions between these classes of systems are purposeful and lead to changes in the systems over time. Thus the interactions between farming families and other classes of systems (such as businesses in the supply chain, governments, communities and religious and social organisations) influence the decisions families make over a life-time.

The six concepts that make up DST have been given titles in order to remind the reader of their content, but these titles should not be taken literally. For example, the

[4]Financial compensation is taken to mean any form of expenditure of public monies to encourage biodiversity conservation including grants, research or educational programs.

[5]See Farmar-Bowers and Lane (2006, 2009) for a fuller account of DST.

concept of Lenses is about how decision-makers in farming families view the things that influence their decisions; it does not imply that decision-makers literally have a set of physical lenses. Although DST comprises six concepts, I will only outline five in this chapter as these are relevant to implications of demographic change for conservation policies. The sixth concept, Boxes of Influence, concerns the details of policy development and is discussed in Farmar-Bowers and Lane (2006, 2009).

DST applies to the life-span of decisions-makers and provides an interpretation of the processes they use in developing and then satisfying (or trying to satisfy) their family's aspirations. DST covers the entire spectrum of family activities. It is not just about business decisions. The five individual concepts of DST are interrelated and overlap to a degree as they provide an interpretation of different aspects of the strategic decision making processes. DST attempts to provide an all-of-system understanding because the issues farming families face, such as globalization, environmental degradation, climate change, demographic change, and national policies are also all-of-system changes.

The relationships between the DST concepts and three of the numerous feedback loops are shown diagrammatically in Fig. 10.1. I will not deal with these feedback loops in this chapter but they are very important for ensuring the adaptability or resilience of farming families over time (Berkes 2007).

(1) I conceptualise family aspirations as five motivation-stories which apply to all families and represents the important purposes that engage and motivate families over their lives. It is important to note that wealth creation is not one of the

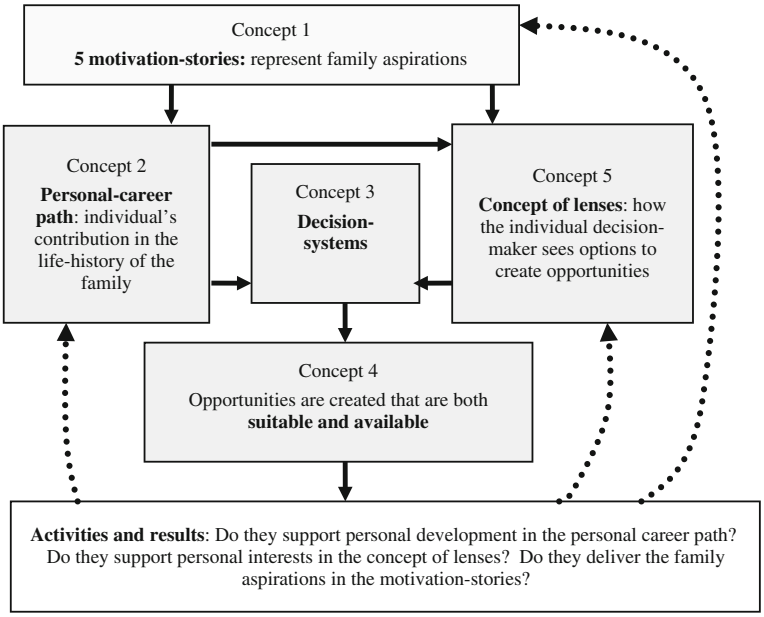

Fig. 10.1 Interaction between the five concepts in Decision-systems Theory (DST) including three feedback loops from the activities and results box

motivation-stories. The farming literature supports this. For example, Greiner et al. (2007) and Pannell et al. (2006) noted that the highest ranking motivations/goals for being a farmer/grazier were of a non-monetary nature and that making money is not a core goal, but it is important for achieving higher order goals such as a secure family lifestyle. What they call 'higher order goals' I have set out as motivation-stories.

The intentions of family motivation-stories resonate with sustainable development ideals (WCED, 1987, Langhelle 1999). The farming family wants to secure family welfare now and for the future (human welfare in sustainable development terms) and at the same time to be supported by their farm environment (conserve Earth's environment in sustainable development terms). Leiserowitz et al. (2005) noted that the global public in general also supports the main tenets of sustainable development.

(2) The personal career path concept allows the individual careers of family members to be understood in terms of the family and in terms of seeking satisfaction for personal interests and goals. For example, a well established male farmer gave his reasons for pursuing a farming career as shown in Box 10.1

Box 10.1 A Farming Career

> Yes, I do find it [farming] exciting. . .. You've got to have an appreciation of animals and the soil and the climate and your general environment in waterways and the geological formation of the country. All of those sorts of things form an ideology in your mind about what it is you want to be involved in. It's from that sort of formation and understanding of those ideas is the reason that I pursue a career in farming.

Frequently individuals have off-farm jobs to help support the family but they also gain personal benefits from alternative occupations (Bessant 2006), and their work can help sustain the local community (Albright 2006).

(3) The decision-systems concept is the central concept in DST. It deals with how decision-makers organise information and how they justify their decisions (Spash 1997). Decision-systems can be grouped into (a) those that concern business/employment; making profits and income, and (b) those that relate to family affairs; spending profits/income. There are hierarchies of decisions within each decision-system. The decisions in the upper-tier of these hierarchies tend to be justified in terms of caring for the family and its members, care ethics (Held 2006, Slote 2007), although rights-based ethics (Butler 2008) or land ethics (Callicott 1999) might also be used as justifications. In contrast, decisions made in the lower-tier of decision-systems are justified on technical and business terms (business ethics, Velasquez 1998). The success of decisions in the upper-tier depends on the output of decisions made in the lower-tier of the decision-system hierarchy (Wilber 2000).

(4) The suitability and availability of opportunities concept refers to the two criteria families use in creating opportunities that they hope will satisfy the family's motivation-stories (aspirations). The concept applies to all opportunities created by farming families; business and family affairs. 'Suitability' depends on opportunities satisfying important aspects of the motivation-stories. 'Availability' depends on the decision-maker having the necessary (a) personal components of opportunities (e.g., skill, time, resources, aptitude and energy), (b) being able to get the necessary external components of opportunities (e.g., finance, labour, market access, transport, government programs and irrigation water) and (c) when the necessary random components of opportunities are favourable (e.g., weather, interest rates and market prices).

(5) The concept of Lenses is an interpretation of the processes individual decision-makers follow for each strategic decision. Figure 10.2 sets out the concept of Lenses diagrammatically. Each lens represents one area of influence on the decision-maker. Lenses 1, 3 and 5 tend to limit the ability of decision-makers to create innovative opportunities, whereas lenses 2 and 4 tend to encourage the decision-maker to consider wider issues when creating opportunities.

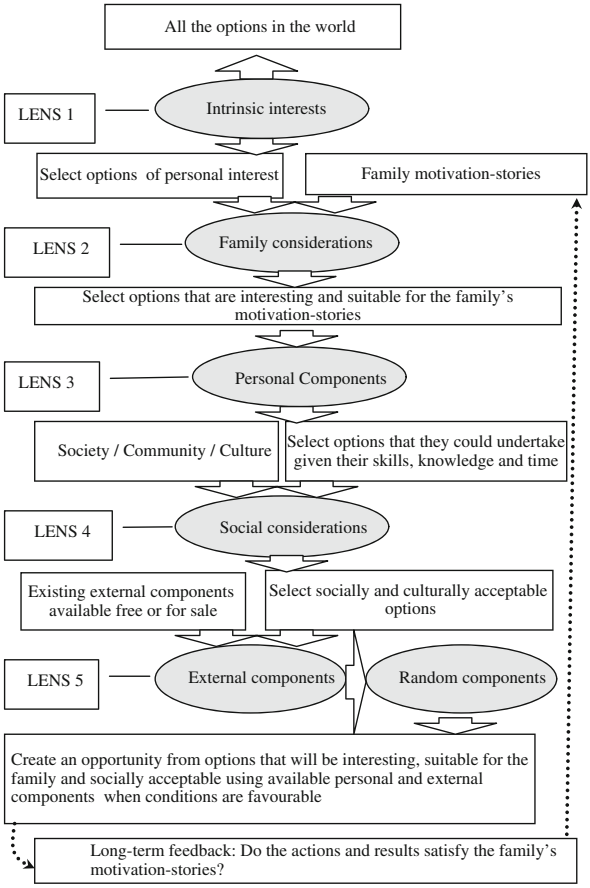

Fig. 10.2 The concept of lenses

10.3 The 4-Group-Stakeholder Model

The 4-Group-Stakeholder model condenses the roles and responsibilities people have into four stakeholder groups (Farmar-Bowers 2008). The four Groups in the 4-Group-Stakeholder model are as follows:

- Group 1 Stakeholders are people when they have the role of a private individual; the personal role of a family member.
- Groups 2 and 3 Stakeholders are people when they have the role of a working person in government, business or as a volunteer.
  - Group 2 Stakeholders focus mainly on people (e.g., social work, lawyer or medical professional).
  - Group 3 Stakeholders focus mainly on the environment (e.g., meteorologist, environmental policy developer or farmer).
- Group 4 Stakeholders are people in future generations.

Everybody living has a Group 1 role. Employed people have Groups 2 and 3 roles. Thus farming families have Group 1 roles when they are acting as family members (adult singles, spouses, parents or children), but when they are working on the farm, in off-farm jobs, in businesses, or in volunteer work they are acting in Group 3 roles.[6,7]

Group 1 Stakeholders are driven to create opportunities to satisfy their motivation-stories. This is the ultimate-driver of the whole system. Total quality management (TQM) supports the notion that the expressed preferences of the ultimate customers drive the whole system (Deming 1986). Group 2 and 3 Stakeholders satisfy the goals of the organisation they work for; profit for business organisations and political power for governments. This is the intermediate-driver in the system. They do this by providing services and material goods that customers[8] are prepared to pay for. These services and goods are the external components of opportunities referred to in the concept of suitability and availability of opportunities in DST. These two drivers are shown in the top part of Fig. 10.3. I refer to this whole as the human development system because it is about how whole societies work together.

Group 2 and 3 Stakeholders have enormous political, economic, resource management and ownership power within the system. The information flow in society among Group 2 and 3 Stakeholders, from élites to élites as it were, is significant in retaining political and economic power (Davis 2003). But information boundaries that exclude the requirements of the end users (Group 1 Stakeholders) can have negative consequences for businesses ultimately (Pfeffer and Salancik 1978). Expanding the boundaries to include the end user can also help Group 2 and 3

[6] Some off-farm work might put them in Group 2 roles – teachers or medical professionals etc.

[7] Not all Group 1 stakeholders earn money as Group 2 or 3 Stakeholders; for example, children and unemployed adults may be supported by families and welfare payments.

[8] The organisations in Groups 2 and 3 trade among themselves of course (when one business sells to the next in a supply chain) but the ultimate customers are Group 1 Stakeholders.

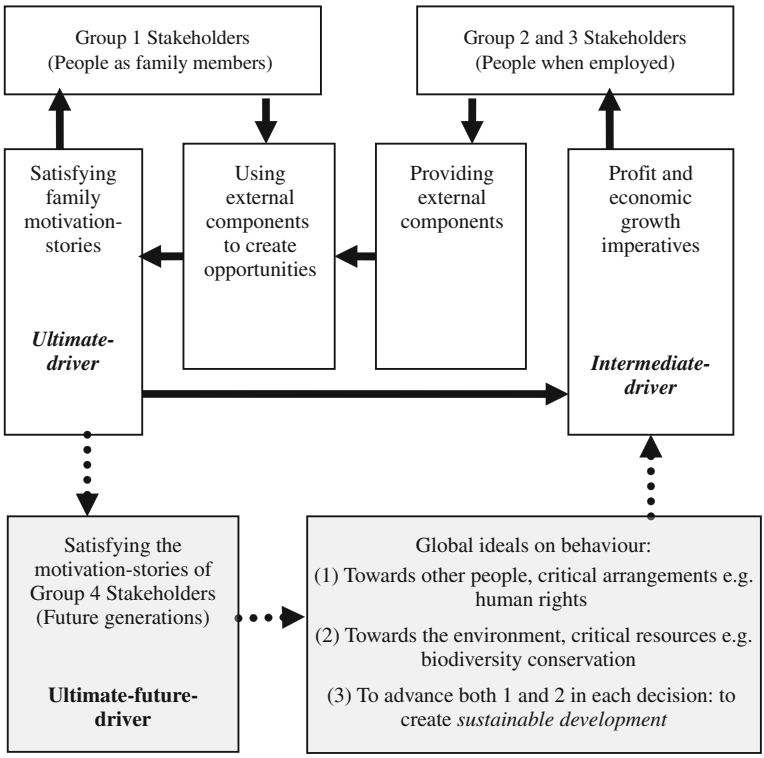

Fig. 10.3 The 4 Stakeholder Groups, the ultimate-driver and intermediate-driver of the system and the relevance of sustainable development ideals for the ultimate-future-driver of the system

Stakeholders overcome what Shiva (1993) called the TINA syndrome: There Is No Alternative. So although Fig. 10.3 shows the goals of Groups 2 and 3 Stakeholders as the intermediate-driver in the whole system, it is a very large driver and the amount of information, time and effort given to it tends to swamp the notion that there is an ultimate-driver.

There is an implicit understanding that the services provided by Group 2 and 3 Stakeholders, especially the long-lived services, such as laws, international agreements, constitutions, education, infrastructure and biodiversity conservation, should also be of value to Group 4 Stakeholders (future generations). This was put more formally, but negatively, in the Brundtland report on sustainable development as, 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987, p. 43).

Group 1 Stakeholders will always want to satisfy their motivation-stories. Group 2 and 3 Stakeholders (businesses and governments) will continue to require profits and power. What has to change to meet sustainable development ideals is how they satisfy their motivation-stories and how they make profits and retain power. To get a brighter future for future generations, Stakeholder Groups 2 and 3 would have

to produce external components of opportunities for Group 1 Stakeholders that are more supportive of critical arrangements (defined below) and more able to maintain critical resources (defined below) than the external components they currently produce (Farmar-Bowers 2008). If future generations have human rights then Group 2 and 3 Stakeholders have the equivalent responsibilities for Group 4 Stakeholders (Butler 2008).

Critical arrangements are those arrangements (laws and customs) in society that deliver people's needs and ensure the maintenance of critical resources. They are essential for fairness and justice in the delivery of people's physical and psychological needs. Perhaps distributive justice principles, such as those suggested by Rawls (1971, 1993), provide a guide for arrangements to reduce unfair inequalities. The Universal Declaration on Human Rights and its Covenants are important guides on rights for policy developers (Wronka 1998, Sachs 2006). Ruttan (1999) suggested that failure to become sustainable will be more to do with the failure to develop innovative institutions (critical arrangements) than because of resource and environmental constraints (critical resources).

Critical resources are all the forms of life on the planet (biodiversity; ecosystems, species and genes, see: CoA, 1996) and all the conditions and ecological processes needed to maintain them that provide for people's fundamental human needs (Max-Neef 1991). Critical resources should not be confused with resources that are critical for a technology. For example, Uranium is critical for atomic bomb technology, but is not a critical resource for human needs; indeed mining and using these resources actually damages critical resources such as water, air quality and biodiversity. Thus critical resources are not the same as those referred to as natural capital and critical natural capital (Chiesura and de Groot 2003).

It seems that the current level of protection for critical resources and the development of critical arrangements are not meeting the needs of a substantial proportion of the current human population. Moran et al. (2008) suggest that the Human Development Index (HDI) and ecological footprint paint a clear picture of near universal trends in development away from sustainable development. It seems quite possible that without considerable effort from Group 2 and 3 Stakeholders the projections from the *Limits to Growth* (Meadows et al. 1972) and *Beyond the Limits of Growth* (Meadows et al. 1992) will prove substantially correct. Indeed, Turner (2008, p. 397) in comparing the various scenarios Meadows et al. developed with actual data between 1970 and 2000 noted that '. . .30 years of historical data compare favorably with the key features of the business-as-usual scenario . . .which results in collapse of the global system mid way through the twenty-first century.' The relationships between the Stakeholders and the role of global ideals such as sustainable development are shown diagrammatically in the lower part of Fig. 10.3. The difference between the ultimate-driver and the ultimate-future-driver is the incorporation of sustainable development ideals in a practical way.

Unfortunately, although the aspirations of farming families equate with sustainable development ideals, their collective actions will not deliver sustainable development because of the lack of appropriate external components of opportunities and also the lack of reliable information.

Johns (2003) noted that people base decisions on local, immediate and personal concerns rather than on large-scale social consequences over extended periods of time. This short-term pragmatism occurs because farming families have to address their long-term needs by selecting from currently available external components which may not allow them to create the opportunities that could deliver sustainable development ideals. Roberts (1996) noted that environmental or social concerns expressed by the public do not translate directly into consumer behaviour. Public concern does not instantly materialise into the appropriate external components because businesses and government (Group 2 and 3 Stakeholders) create these external components and not the general public. Of course, farming families as consumers can buy what they feel are the better options on offer (so long as businesses or governments have created the better options). Eckersley (1999) suggests that such small personal changes could have big outcomes in the future.

The lack of reliable information on cause-effect, systems, and collective-impact information is a hindrance for moving towards sustainability. It is often very difficult to determine the unintended outcomes of actions when the outcomes occur in different time periods, ecosystems, localities and countries.[9] It is also difficult for farming families to choose the appropriate boundaries to use in decision-making. A wrong decision can result if the decision is based on information within boundaries that are too small.[10] A further problem is the lack of information on the collective impact of actions. Often, a single action is acceptable because its long-term consequences are small in totality, but when many people carry out the same action, the collective impact on the environment or society can be substantial.

Although the human development system is unlikely to deliver sustainable development given the external components currently available, there are people who could do the research and develop more appropriate external components. For convenience, I refer to the process involved as policy development (to be done by people employed by governments and business as they are responsible as Group 2 and 3 Stakeholders). It is likely to be an ongoing process.

10.4 Policy Implications

The policies of businesses as well as governments are relevant as they both influence the ability of farming families to meet their needs and satisfy their family aspirations as represented by their motivation-stories. The principal motivation-story for farming families concerns the ongoing welfare of future generations which requires a supportive environment and society. If families accept the idea that conserving biodiversity on their farms and in their region is part of what a ‘supportive environment’

[9]These are the emergent properties of systems.

[10]The farmer may choose a system to reduce the cost of production without appreciating that the customer will not buy goods produced in this way.

means, then they would have the motivation to take action. The policy imperative is to provide the external components to (1) encourage this understanding and (2) encourage action based on this understanding.

Policy developers have the option of focusing on specific objectives such as biodiversity conservation or focusing on encouraging the adoption of sustainable development ideals and ensuring biodiversity conservation is fully realized as part of this. Policy that is guided by sustainable development ideals is more likely to stand the test of time, but developing and implementing such policy may require much more cooperation between all the parties involved than is currently the norm.

The conservation of native biodiversity in rural Australia is one of the necessary processes in implementing sustainable development ideals (see Chapters 2 and 5, this volume). What biodiversity conservation actually means in practice in rural areas in Australia (what do farmers actually have to do) is not at all clear and so clarifying this on a regional and perhaps farm basis is an important job (Wilson and Lowe 2003). Without this information being available, conservation orientated farming families will conserve nature and wildlife as they see and appreciate it, which is unlikely to be what a trained ecologist would hope to conserve (Williams 2003). To be part of sustainable development, environmental policy has to support, or at least not damage, the wider range of needs that the land managers (farming families, families or professional managers) have.

I have already noted that the motivation-stories of farming families equate to sustainable development ideals but that farming families are unlikely to be able to implement these ideals because the existing external components of opportunities are not adequate. Policy developers, as Group 2 and 3 Stakeholders, have the role of helping farming families satisfy their families' motivation-stories as a practical route for addressing sustainable development ideals. They can do this by providing the external components of opportunities to help farming families create opportunities that will deliver their motivations-stories. This means encouraging new thoughts on the issues as well as encouraging the provision of hardware needed to get the job done. It also means getting rid of existing policies that are hindering progress.

10.4.1 Policies Implications in Relation to Farming Families

Policy operates via the farming families decision-systems. The processes families use in making decisions automatically create decision-systems for all the ventures the family embarks upon. The decision-systems can be divided into those that concern the ultimate-driver in the development system (family needs, motivation-stories and family affairs), and those that concern the intermediate-driver (making money, creating financial wealth). Farming families respond to policies that concern both drivers because they use their farm to make money (intermediate-driver) and also as a home and family asset for current and future generations (ultimate-driver). A quotation from a well established male farmer shown in Box 10.2 illustrates the importance he attributes to farming and his family.

Each decision-system contains a hierarchy of individual decisions. The initial decisions are in the upper-tier of the hierarchy and are justified in terms of caring while the subsequent decisions are in the lower-tier and justified on technical, economic or financial grounds. Policy can be directed to influence the decisions farming families make in either tier (or in both tiers) of each decision-system and in decision-systems that concern the ultimate-driver or the intermediate-driver.

Box 10.2 Farms as Homes and Businesses

> I am not going to get $5 or $6 million of land out of this, the only thing I am going to get out of this land, what I am getting out of it, is lifestyle so I may as well have my comfortable home and I may as well have my space down at the beach and I may as well go on an overseas holiday because at the end of the day I am not selling it. I am just going to pass it on. Yes, it is not for the money. It is not a money thing. . .. [Dollars] is not what I see flashing up at all. I just sort of see, I am enjoying what I am doing I am happy here . . .. and that is what is important to me. Having been able to have good discussions and a lot of fun together, rather than at the end of the day we are going to sell out and then have a life. Well it's not going to happen. If I sell out I would be miserable I reckon.

The intermediate-driver encourages farming families to create opportunities that make money and when they are doing this they are acting as Group 3 Stakeholders. If farming families equate biodiversity conservation with making money they will seek out biodiversity conservation options to create profitable opportunities (Curtis and Robertson 2003). Conservation of native biodiversity on farms is not normally an activity that makes money because there is no market; it is not possible to sell native biodiversity even though it may have enormous value. However, it is possible for governments to create situations in which farming families are paid to protect native biodiversity on their farms such as direct payments for ecosystem services (Greiner et al. 2008). Such government direct payment programs could become the external component decision makers require in order to create a profit making opportunity. The government direct payment programs might be limited to a specific location or to a specific kind of biodiversity to address urgent conservation objectives. Very likely such programs would be framed on economic criteria (supply and demand) so that the amount of biodiversity conserved depends on the price effect; the more money the more biodiversity is conserved. However, there are some problems. For instance, ongoing conservation will depend on the willingness of taxpayers to continue payments indefinitely at the appropriate marginal rate. There may also be resistance from farmers to switching from producing food to maintaining biodiversity (Burton 2004). In addition, the crowding out effect may result in less biodiversity being conserved than the price effect predicts if the family was already conserving biodiversity on their own volition (Frey and Jegen 2001, Reeson and Tisdell 2006).

It might be possible to encourage farming families to view biodiversity conservation as a legitimate business by using policy to create an external component to address the upper-tier decisions. An example of this might be programs to encourage, within the farming community, a professional interest in recognising biodiversity conservation opportunities and their practical conservation. This would encourage farming families to view biodiversity conservation favourably within the first four lenses in the concept of Lenses (i.e., it is interesting, it provides income for the family, they have acquired the skills, they have the time to do it, and it is a socially acceptable activity for making money).

To ensure any environmental program supports the sustainable development ideals it needs to advance a number of the family motivation-stories. For instance, the principal motivation-story suggests farming families ought to help create a supportive society and therefore the environmental policy ought to make a contribution to this, perhaps by improving equity within society, as declining equity tends to lead to dissatisfaction and social tension. An environmental policy that increases inequity in society goes against sustainable development ideals.

The ultimate-driver encourages farming families to create opportunities that directly satisfy their motivation-stories and when they are doing this they are acting as Group 1 Stakeholders. These are the opportunities on which they spend the money gained from their pecuniary on-farm or off-farm employment. Not all these opportunities involve the farm; they may include travel for holidays and education. Farming families may gain income for the farm ventures they run but their lifestyle can also directly contribute to satisfying family aspirations as suggested in the landscape shown in Fig. 10.4. The policy options that are desirable to the farming family are those that create external components to help the farming family create opportunities in either the upper-tier or lower-tier of decision-systems or preferably in both, that help the family satisfy its motivation-stories. In the upper-tier, the objective of an environmental policy could be to encourage the development of intrinsic interests in biodiversity perhaps by providing opportunities for very young people

Fig. 10.4 A photograph from the kitchen window of a farm house in New Zealand. Farming families will continue to be important managers of farmland (Quentin Farmar-Bowers)

to participate in nature study and be actively involved in caring activities associated with the natural environment. Policy cannot generate people's intrinsic interests in biodiversity, but early educational and certainly participation programs can prevent an intrinsic interest in biodiversity (nature and ecology) being swamped by other matters and being derailed by socially learnt negative feelings about the natural environment (Bixler and Floyd 1997). Chipeniuk (1995, p. 508) noted that children who foraged[11] more natural kinds (such as plant material and animals) have a better sense of biodiversity as adults. He suggested that foraging should be accompanied by an ideology of conservation and preservation as a . . . 'Mere foraging experience and mere possession of a strong sense of biodiversity are not enough to render a person unwilling to destroy the richness of nature'. Unfortunately children in metropolitan areas have a reduced opportunity for foraging compared to country children which might become a problem for maintaining political support for conservation in the future as the population becomes more urbanised.

In the lower-tier, the objectives of policy would be to facilitate the expression of this interest in practical ways. For example, the external components created by policy might encourage individuals to take charge of and manage conservation programs and their assessment. The primary purpose of these activities from the farming families' point of view is to satisfy motivation-stories, such as personal fulfillment and enjoyment that comes from the successful conservation of native biodiversity on their farms in their region. It might also include the feeling of growing competency and being a responsible adult and making a positive contribution to the future. This contrasts strongly with arrangements that rely on the intermediate-driver where external control and auditing would be the norm, as the purpose of the arrangements from the farming families' point of view is making money and the purpose from the policy developer is to get value for money. The transaction costs in these policies may be considerable because of the asymmetry of knowledge between the policy developers and farmer and the expert external auditing and review that would be required.

Overall, biodiversity conservation that relies on the ultimate-driver is likely to be more effective in the long-term as it would generate a large population of knowledgeable people acting out of intrinsic interest and expressing a deep commitment to themselves and the future of their families by conserving native biodiversity on their own land and in their own regions.

10.4.2 Policies for Professional Managers of Corporate Farms

The main aim of corporate farms is the creation of income and wealth for their owners. Therefore, the professional managers would wish to create opportunities in response to the intermediate-driver. The policy options would be similar to those

[11] Foraging refers to collecting items and using them for a particular purpose such as collecting flowers and giving them to a parent.

in the farming family decision-systems responding to the intermediate-driver of making money. Policies aimed at the upper-tier of decision-systems would aim to establish biodiversity conservation as a legitimate business model and policies aimed at the lower-tier in decision-systems would establish how the schemes would function and deliver a financial return. Of course, such schemes may not use the positive incentive of making money; they may use the punishment of imposing fines if conservation objectives are not achieved. However, the process of payment or punishment is the same as professional managers would participate in the scheme in order to make or not to lose money.

A wide variety of policy options are available to conserving biodiversity on farmland. Some aim to integrate conservation and business decisions (Crosthwaite et al. 2007). Pannell (2008) developed an economic framework to assist in selecting policy tools to achieve efficient resource management on private land.

A likely corporate response to increasing public concern about environmental issues is the use of audited environmental management systems (Farmar-Bowers 2000) and corporate sustainability reporting. These approaches can help with compliance and demonstrate environmental concern to the public and so benefit the financial and marketing performance of the company. The Global Reporting Initiative provides guidelines for reporting the organisation's performance towards the goal of sustainable development to internal and external stakeholders (GRI, 2006).

Rationally one would expect business people to opt for biodiversity conservation when the net present value of such a land use was greater than the net present value of other land use options over a long period. The returns used in these calculations may include non-dollar items such as marketing advantage perhaps via the creation of good will or exclusive market access. To be effective, biodiversity conservation has to be perpetual which may reduce the flexibility of the business. Although the vineyard shown in Fig. 10.5 could not be used directly for biodiversity conservation,

Fig. 10.5 A professionally managed vineyard on a corporate farm in South Australia (Quentin Farmar-Bowers)

it could be managed in a way that reduces its carbon footprint and also protects adjacent ecosystems such as waterways.

10.4.3 Policies for Families with Smaller Holdings of Farmland

Families who have smaller holdings of farmland may have them for a variety of reasons and will respond to policies accordingly. Although they may respond to policies designed for farming families and professional farmers, the policy developer may have special reasons for targeting these families with specific policies. If policy developers want to devise specific policies for these families, an early preparatory task would be to identify the various reasons for having their land holdings. A framework for developing the appropriate questions would be Max-Neef's list of fundamental human needs. These are subsistence (income), protection, affection, understanding, participation, leisure, creation, identity, and freedom. It is unlikely that a family would have a single reason; they are more likely to have a mix of reasons and these may change as the family matures. Asking the family how their holdings of farmland meet their various needs will clarify the mix of reasons. Many families may have other property and it is important to know how the family uses the property to satisfy the needs of its members.

If the family does not require their smaller holding of farmland to generate income their response to policies may be similar to the farming family in terms of the ultimate-driver. Their response to the intermediate-driver may depend on the intended income significance of their property fading out to nothing when the property is expected to yield no income. Where the families have other properties they are likely to use the smaller farmland holding for some of their needs. For example, the farmland holding may be used for recreation and leisure for a family with young children and have little long-term significance for the family. Or they may intend to use it as a retirement location.

Once the reasons for the family holding farmlands are known, specific policies can be developed to create the external components of opportunities that will help families develop opportunities that will satisfy their needs and hence their motivation-stories. One would only expect a positive response to policies that create external components for opportunities that the family actually wants to create. For example, if they use their property for horses they would be unlikely to respond to a policy that encourages them to create an opportunity to conserve native grassland or woodland that requires the exclusion of stock as illustrated in Fig. 10.6.

10.4.4 Landholdings and Biodiversity Conservation

It is impossible to be dogmatic about what landholding arrangements would be best for biodiversity conservation. If taxpayers are willing to provide the ongoing

Fig. 10.6 Direct seeding of native trees and shrubs in Central Victoria on a 50 ha property retired from family farming and now managed for amenity purposes (Quentin Farmar-Bowers)

financial support to make biodiversity conservation a profitable venture for landholders[12] then the best arrangements may be ones that rely on the intermediate-driver of making (or saving) money. This may be so even when the downside of crowding out people's intrinsic interests is taken into account. All three types of holdings could participate in such schemes (farming families, professional managers of corporate farms and families with smaller holdings). However, if taxpayers are not willing to fund these programs on an ongoing basis then the best arrangements may be the ones that rely on the ultimate-driver. These would have the added benefit of crowding in people's intrinsic interests and voluntary work. Policies that support the ultimate-driver would mainly be relevant to farming families and perhaps some of the families who have smaller holdings (depending on the reasons they have for holding farmland).

Policies that rely on the ultimate-driver and hence the continuing dominance of farmland management by farming families have three jobs to do. They have to establish ongoing institutions to encourage existing farming families and families with smaller holdings of farmland to identify and then conserve the native biodiversity on their properties. They have to ensure families have leading roles in conservation and are not dictated to by professionals. They have to address other social issues (including economic issues) to ensure that farming families continue in agriculture. Environmental policies have to be integrated with other policies to create and maintain a society that supports farming families. This requires researching existing policies that appear to have an affect on the continuation of families in farming and checking with farming families to ensure these are the

[12]By paying them money or by paying to have landholders prosecuted for non compliance.

most relevant policies and how they are influencing decisions. Some of the relevant policies might be employment, development or taxation policies rather than agricultural. For example, members of farming families frequently have off-farm employment, and some run non-farm businesses. These activities can be referred to as pluriactivity. Policies that support pluriactivity would help farming families remain farming and retain a rural lifestyle (Bessant 2006) and supporting off-farm activities can also help support local communities by improving the availability of skilled workers in the local community. Help for farming families might also come through the development of social capital (Woodhouse 2006). The ability to be involved in a wide range of activities would tend to encourage younger people and people with a wide variety of skills to remain in rural areas. Farming families noted that a supportive and progressive community was important in maintaining the desirability of rural living especially in terms of socializing and overcoming isolation. This is important for maintaining farming families across generations.

10.5 Conclusion

The conservation of biodiversity on privately owned farmland is a vital part of the overall conservation of native biodiversity in Australia. The managers and their management of farmland are changing as a consequence of the interaction of global and local forces. Although the number of farming families is declining they will continue to be important managers of farmland. Professional managers of corporate farms and families occupying smaller holding are growing in importance. Policy developers need to modify their policy mix to take account to these changes.

Farming families respond to two kinds of environmental policies; those that encourage them to create business opportunities based on biodiversity conservation (intermediate-driver) and those that encourage them to conserve biodiversity to satisfy family aspirations (ultimate-driver). Professional managers of corporate farms are likely to respond best to policies that encourage them to create business opportunities based on biodiversity conservation (intermediate-driver). The response of families occupying smaller holdings of farmland is more problematic as it relates to the principal reasons for them holding farmland. Investigating their reasons (their motivation-stories) will allow policy developers to select the appropriate policy mix to encourage these families to conserve native biodiversity on their properties.

Encouraging farming families to conserve biodiversity to satisfy family aspirations is likely to be a very effective long-term policy approach. To make this approach advance sustainable development ideals, other policies are needed to encourage farming families to remain farming. Among other things these policies would need to ensure that a supportive rural society is maintained.

10.6 Key Terms and Definitions

Ultimate-driver	The desire people have to create opportunities to satisfy their family's aspirations. All together their actions drive the human development system
Intermediate-driver	The desire people have to create opportunities to make money and generate wealth. All together their actions drive national economies
Ultimate-future-driver	The desire people have to create opportunities to satisfy their family's aspiration in a way that delivers sustainable development ideals. All together their actions would drive the human development system towards sustainability
Critical resources	Materials, plants, animals and ecosystems that people require in order to satisfy their fundamental human needs
Critical arrangements	The arrangements within society that ensure the protection and availability of critical resources to people and the arrangements required so that people can satisfy their fundamental human needs
Upper tier, lower tier decisions	A classification of decisions within every decision system; upper tier decisions are justified in terms of caring and lower tier decisions are justified on technical and economic grounds

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Chapter 11
Immigration and Multicultural Place-Making in Rural and Regional Australia

Kirrily Jordan, Branka Krivokapic-Skoko, and Jock Collins

Kirrily Jordan

K. Jordan (✉)
School of Finance and Economics, University of Technology, Sydney, NSW, Australia
e-mail: Kirrily.Jordan@student.uts.edu.au

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Abstract There has been comparatively little research on the relationship between immigrants and place in the context of rural and regional Australia. Considering that immigration to regional and rural Australia has been given important national importance we argue that the contemporary research on rural ethnic landscapes should be broadened to discuss the impact of different ethnic groups on the built environment of rural townships. The immigrants settling down in rural areas have transformed rural landscapes through the construction of public and private spaces expressing their cultural heritage. These sites can significantly impact the dynamics of social cohesion and intercultural relations in multicultural rural communities. They can also have a role in attracting and retaining immigrants in non-metropolitan areas. This chapter links the built environment and immigration in rural Australia and explores the potential role of the sites built by rural ethnic minorities in facilitating intra-group and inter-group social encounter, trust and networks. The chapter then outlines the empirical findings from applying these concepts to the sites built and used by non-Anglo-Celtic immigrants to Griffith, a regional city in south-western New South Wales (NSW), and Katanning, a small rural community south-east of Perth in Western Australia (WA).

Keywords Multicultural · Rural communities · Place-making · Built environment

Abbreviations

ABS	Australian Bureau of Statistics
ACG	Allen Consulting Group
NESB	Non-English Speaking Background
NSW	New South Wales
SSMM	State-specific Migration Mechanism
WA	Western Australia

11.1 Introduction

The rate of immigration to regional and rural Australia has increased substantially in the past decade, due to the introduction of a number of policies/schemes encouraging newly arriving immigrants to settle in non-metropolitan areas (DIMIA 2005, DIAC 2007). This regionalisation of Australian immigration policy is an important new initiative, given the urban–orientation of most immigrant settlement in the first half a century of post-war Australian immigration policy. In 1996 the State-specific migration mechanisms (SSMMs) were introduced to allow the states and territories to use the immigration programs to address skills shortages or achieve a more balanced dispersal of skilled immigrants. Hugo (2008) argued that the state-specific and regional migration schemes were successful since the number of immigrants with visas granted under these schemes increased from 1,753 in 1997–1998 to almost 28,000 in 2005–2006. While the numbers involved are relatively small–only 19% of all immigrants to Australia–the numbers are critical to regional and rural Australia and represent a turning point in Australian immigration history. It is also

worth noting that during the last 10 years the contribution of SSMMs in the total non-humanitarian intake of immigrants increased by nearly ten times, from 2.3% in 1997–1998 to 19.2% in 2005–2006. Immigration to regional and rural Australia has been given important national importance. This is a very significant change that has the potential to benefit rural and regional Australia. The key challenge is to attract sufficient numbers of new immigrants across the range of occupations and to keep these new immigrants and their families in small regional townships and rural communities.

While there is a solid body of research into the immigrants in Australian cities there have been only a handful of the studies focusing on immigrants in regional and rural Australia. Apart from some historical account of immigrant groups in rural industries during the nineteenth and twentieth centuries (Burnley 1976, 2001, Frost 2000), research by de Lepervanche (1984) on Indian immigration to rural areas of eastern Australia, and by Gray et al. (1991) on immigrants of non-English speaking background (NESB) in rural areas of New South Wales and Queensland explored the settlement process of immigrants in rural areas. Also, the community studies have focused on groups of immigrants who have been settled for a longer period (mainly due to the process of chain migration), and managed to establish strong ethnic communities, which shaped rural landscapes. In the study of Greek communities in South Australia, Hugo and Menzies (1980) found little social integration with the mainstream population, while at the same time there was a high degree of group solidarity. Burnley (2001) refers to such settlements in rural Australia as 'cultural islands', and argues that the motivations and processes of immigration strongly influenced the nature of ethnic rural settlements.

More recent studies on attraction and retention of immigrants in non-metropolitan areas (Hugo et al. 2006, Wulff and Dharmalingam 2008, Collins and Krivokapic-Skoko, in press) reinforce the findings that new immigrants in rural and regional Australian tend to settle in a particular community because of the strong ethnic social networks, availability of cultural support and religious activities as well as the existence of 'meeting' places. The construction or acquisition of shared community spaces in order that immigrant groups can 'meet at certain places of a common interest' (Lalich 2003, p. 7) can be seen as part of immigrant adaptation to a new Australian landscape and the desire for staying in a new place. As the surveys of the new immigrants in non-metropolitan Australia (Wulff and Dharmalingam 2008, Collins and Krivokapic-Skoko, in press) indicated, ethnic concentration and access to place of worship have been found to have a positive and significant impact on the location choice of non-Anglo-Celtic immigrants in particular.

For immigrants in general, a place of worship, a club, or a cultural centre can thereby become a 'social anchor' in their new environment, providing identification and belonging as well as a sense of identity (Lalich 2003, ACG 2005). So, ethnic sites or buildings can become essential reference points in ethnic identity because of special cultural, social and spiritual associations with the place. These sites can also significantly impact the dynamics of social cohesion and intercultural relations within communities, particularly if they are built through 'cross-cultural design and planning practices' (Stewart et al. 2003, p. 240). In that sense it can refer to both visible expressions of cultural diversity in the built environment as well as places

that are 'visually unremarkable but... culturally heterogeneous in their production and habitation' (Stewart et al. 2003, p. 239).

A focus on the built environment and 'multicultural place-making' can help us to unpack the complexities of immigrant settlement in rural areas and the intercultural relationships that emerge. The sites built by ethnic groups are important in attracting more immigrants and therefore in promoting recent rural immigration schemes. However, these sites may also impact on current residents and a whole community through the need for multicultural planning, especially in the area of places of worship as well as in creating opportunities for new cross-cultural encounters and understandings. Thus, ethnic community facilities and the ethnic sites in general are at once an expression of existing social networks and a platform for generating further networks, norms and trust within and between ethnic groups.

The research in this chapter links the built environment and immigration in rural Australia and explores the impacts of the sites built by rural ethnic minorities on social cohesion – do they bring disjuncture to rural neighbourhoods or offer opportunities for positive rural intercultural encounter? Immigration to regional and rural Australia has been given national importance, and a number of initiatives encouraging new immigrants to settle in non-metropolitan areas have been introduced. Immigrants settling down in these areas will keep transforming the rural landscapes through the construction of public and private spaces expressing their cultural heritage. So, research exploring the use of ethic sites and how they can impact social cohesion and intercultural relations in increasingly multicultural rural communities becomes relevant and important.

This chapter is divided into two parts. The first part explores the literature on immigration, interethnic relations and built environment. It mainly builds on earlier work that employs the concept of social capital in examining the role of community spaces in cross-cultural exchange interethnic relations and built environment (Lalich 2003, Wise 2005). It also explores other theoretical approaches to understanding intercultural interaction, including the concepts of dialogue (Pedersen et al. 2005), and prosaic negotiations in micro-cultures of space (Amin 2002).

The second part of the chapter outlines the empirical findings from two rural communities – Griffith (NSW) and Katanning (WA). Drawing on qualitative research (in-depth interviews and participant observation) and quantitative tools (visitor survey), it explores the significance of the sites built by non-Anglo-Celtic immigrants in rural interethnic encounter in Griffith and Katanning.[1] The specific sites explored are Griffith's Italian Museum and Cultural Centre, Griffith's Riaz Mosque and the Katanning Mosque.

[1] A total of 17 interviews were carried out across the two locations. Interviews were carried out in Griffith in January and February 2007, with interviews in Katanning completed in November of the same year. Interview participants included individuals closely associated with the specific buildings being studied (such as members of management committees), users of the sites, local council staff and local councilors. Ten visitor surveys were completed at Griffith's *Festa Delle Salsiccie* in August 2006. The surveys were anonymous. Interview participants are reported here under pseudonyms.

11.2 Inter-ethnic Relations and Built Environment

One way of expressing the change immigrants make on the landscape is through the lenses of their effects on the built environment. The built environment may be seen as a 'form of expression'. It is a 'mode of communication through which people express to others something about themselves, their values, aspirations, needs and desires' (Lalich 2003, p. 41). Within a context of immigration and ethnicity built environments can become essential reference points in ethnic identity, cultural continuity and social interaction. As well as being important for a sense of identity and belonging for first generation immigrants, places built in a new environment can also be central to the transmission of culture to future generations. Armstrong (1994, 1997) also suggests that many of the buildings and markers of cultural difference in Australia's landscape that form the inheritance of contemporary society facilitate a way of life or continuing cultural practices. This has important implications for cultural continuity and the intergenerational sustainability of minority cultures in multicultural environments.

According to Lalich (2003), Collins and Lalich (2006, Ethnic community capital in Sydney, unpublished) and a report on historic heritage in Australia done by the Allen Consulting Group (2005) the community facilities built by non-Anglo-Celtic immigrants have special significance as sites of social interaction. Not only do they draw on existing social networks within an ethnic or immigrant group, once built these facilities provide a place for intra-ethnic social encounter that leads to even denser networks and greater social cohesion within the ethnic community. Likewise, the Allen Consulting Group (2005, p. 8) highlights the potential for built heritage sites to 'contribute towards social stability and cohesion.' Collins and Lalich (2006, Ethnic community capital in Sydney, unpublished) also posit that since many of the ethnic sites are publicly accessible and have members from more than one ethnic group, they have facilitated the development of social networks not only among 'co-ethnic' compatriots, but also between 'co-ethnic' and 'non-co-ethnic' members.

While the literature highlights the positive potential of multicultural place-making in intra- and interethnic relations, it is clear that attempts of immigrant groups to alter the built environment do not always go unchallenged. As Hayden (1995) has noted, all spaces are contested terrains. In Australia, this has been played out recently in attempts by non-Muslim residents of a number of Sydney suburbs to prevent mosques being built in their neighbourhoods. Dunn (2001, 2003a, 2004) has documented this opposition, noting attempts by non-Muslim residents to cast themselves as the legitimate arbiters of the use of neighbourhood space as opposed to the Muslim 'outsiders'. These contests are reflective of broader tensions around what constitutes 'Australianess', diminishing the notion of citizenship by challenging the rights of cultural minorities to 'participate in the making and use of space' (Dunn 2003b, p. 162).

Notions of contested citizenship in place-making are also a strong theme in the planning literature. Several authors have noted that standard approaches to planning practice have failed to accommodate the realities of multicultural neighbourhoods, both in Australia (Winikoff 1992, Stewart et al. 2003) and overseas (Qadeer 1997,

Sandercock and Kliger 1998a, b, Sandercock 2000, Burayidi 2000, 2003). In response, there has been a growing emphasis placed on the need for participatory and citizen-based modes of planning that can better accommodate composite and diverse interests (Qadeer 1997). Sandercock (2000) has argued further for a 'transformative' or even 'therapeutic' planning practice that challenges fear of difference and facilitates not only multicultural place-making but a constructive inter-cultural learning and coexistence. While Sandercock (2003) recognises the importance of planning in both cities and regions, much of the literature on multicultural planning is focused on urban areas. As rural communities become more culturally diverse there is a need to extend this literature to multicultural neighbourhoods outside the metropolis.

Some authors have related the built environment to the concept of social capital to the built environment. The *Social Capital Framework* developed by the Australian Bureau of Statistics (ABS) includes cultural heritage as a condition underpinning social capital. According to the ABS, culture (such as history, shared beliefs and cultural events) influences the type and structure of groups and institutions present in a given society (ACG 2005, p. 10). The Allen Consulting Group have drawn on this framework to argue that historic heritage sites are not merely the 'backdrop' for social capital, they may also engender it since they facilitate community involvement and networking (ACG 2005, p. 11). Studies of the relationship between social capital and the built environment have also explored the social impacts of neighbourhood design (Leyden 2003) and urban and regional museums (Burton and Griffin 2006). They have argued that the built environment assets of a community can facilitate the development of social capital that can be mobilised for community development.

In applying the concept of social capital to a study of social cohesion, many authors have employed the notions of 'bonding' and 'bridging' social capital. For Putnam (2000, p. 22), bonding social capital is exclusive. It is 'inward looking' and tends to 'reinforce exclusive identities and homogenous groups.' Bridging social capital, on the other hand, is inclusive, involving 'outward looking' networks that 'encompass people across diverse social cleavages' (Putnam 2000, p. 22). Portes and Landolt (1996) and Adler and Kwon (2002) have highlighted the potential for strong social capital within a group to inhibit movement or joint action across social boundaries. According to this view, close communal ties hinder interaction between groups. Such views are reminiscent of ongoing debates about multiculturalism in Australia, with critics of immigration suggesting that it is inevitable that culturally diverse neighbourhoods will continue to 'erupt into open conflict and aggression along ethnic lines' (MEAC et al. 1989, p. 31).

In research on community facilities built and used by Sydney's non-Anglo-Celtic immigrants, Lalich's (2003) drew extensively on notions of social capital. As noted earlier, he argued that ethnic community facilities are at once an expression of existing social networks and a platform for generating further networks, norms and trust within and between ethnic groups (Collins and Lalich 2006, Ethnic community capital in Sydney, unpublished; Lalich 2003). Wise (2005) further highlights the importance of not only establishing that a space provides opportunities for

inter-cultural encounter, but also reflecting on the kinds of encounter and whether there are positive or lasting effects. This is an important concern since it has been shown that attempts to bring conflicting ethnic groups together may actually exacerbate tensions rather than leading to increased understanding and cooperation (Pedersen et al. 2005). One useful way of understanding the nature of interethnic relations is the notion of dialogue. To be effective in improving relations between ethnic groups where there is existing prejudice, this must mean 'talking with' rather than 'talking at' (Pedersen et al. 2005, p. 25). As Pedersen demonstrates it is active, rather than passive, engagement that can best bridge across intercultural differences.

This is not to say that positive intercultural encounter must involve active or organised engagement. For example, British geographer Ash Amin (2002, p. 1) has focused attention on 'the daily negotiation of ethnic difference' in everyday urban encounters, arguing that while the 'mixture' of people in shared space will not necessarily lead to effective cross-cultural exchange, places of prosaic negotiations and habitual engagement (such as workplaces, sports clubs, youth centres or other venues) are key sites for reconciling cultural differences. However, Amin (2002) stresses that the 'terms of engagement' in shared space are crucially important. Where people from all ethnic backgrounds are empowered through democratic and participatory politics, interethnic understanding and cultural respect in shared space are possible. Local initiatives and national policies can support a 'democratic everyday urbanism' that facilitates inter-cultural interaction through prosaic negotiations in micro-cultures of space (Amin 2002, pp. 1–10). Amin's (2002) work suggests an important role for the state in maximising the potential for positive interethnic encounter in shared space.

11.3 Immigrants and the Built Environment in Rural and Regional Australia: Two Case Studies

The concepts developed within the literature on immigration, place and interethnic relations are now discussed in the context of ethnic sites built and used by non-Anglo-Celtic immigrants to Griffith, a regional city in south-western New South Wales (NSW), and Katanning, a small rural community south-east of Perth in Western Australia (WA).

11.3.1 Griffith, New South Wales

Griffith is a regional city in south western New South Wales. With a population of around 25,000 people it is a major regional centre, but it is employment in farming and related industries that has attracted many of Griffith's non-Anglo-Celtic immigrants. While the large majority of Griffith residents are Australian-born, the local population includes immigrants from almost 80 countries and the census shows that over one fifth of the population has Italian ancestry (ABS 2008a). The cultural

diversity of Griffith makes it unusual for a regional city, with immigrants in Australia (particularly those from outside the main English-speaking countries of the United Kingdom, New Zealand, Canada and the United States) having tended to settle in the large cities along the coast (Burnley 2001). With federal government policy having shifted in recent years to encourage 'regionalisation' – the settlement of immigrants in regional and rural areas – Griffith provides an interesting case study in which to examine the experiences of immigrants in multicultural place-making in the regional context. The last three decades have seen Griffith develop into an unusually ethnically diverse rural region, with large numbers of immigrants from South and Central Asia, the Pacific Islands and the Middle East.

Southern European immigrants (particularly Italians) started moving into Griffith since the early 1900s. The first Italian immigrants to Griffith were mainly from the Veneto region of northern Italy, with subsequent Italian immigrants coming from many other regions. Prior to World War II, they were mostly from the northern provinces, especially Veneto and Friuli (Huber 1977, Piazza 2005). The new wave of Italian immigrants after World War II was mostly from the south, particularly Calabria and Sicilia (Piazza 2005, pp. 10–19). While the ABS Census for 2006 data put the proportion of Griffith residents claiming Italian ancestry at around 23% (ABS 2008a, b), some locals estimate that the proportion is much higher. It is commonly estimated that up to 60% of Griffith's population has Italian ancestry, with some 'Italian' families now into their fifth generation in Australia (Kabaila 2005).

The early Italian immigrants took up farming and trades, bringing valuable skills as builders, tailors and small-scale farmers with them from home. With skills and experience in a 'mixed economy' – working for cash as well as producing their own food in small plots and vegetable gardens – the Italians found success while many of the soldier settlers failed (Kabaila 2005, p. 55). Where Anglo-Celtic Australians had abandoned farms that had been damaged by salt intrusion or water-logging, Italian farmers were able to repair them and 'bring them back to full productivity' (Kelly 2001, p. 497). Italian immigrants became central to the region's economic growth, dominating the fruit and vegetable farming industry and introducing new industries such as wine production that remain central to Griffith's prosperity today. By the 1930s, the relative success of the Italian farmers had contributed to an 'increasing hostility towards Italian settlers' in the region (Heritage Branch NSW 2006).

Following the Italians, the next largest immigrant group in Griffith is Sikh Indians. Sikhs began arriving in Griffith in the mid-1970s, with the first group coming via Melbourne to work as fruit pickers on local farms. In the mid 1980s a new wave of Sikh immigrants arrived, many with formal qualifications. Some members of the Sikh community moved up the employment ladder to become supervisors and being able to employ their family and friends as pickers, and others able to purchase their own farms (Kabaila 2005, pp. 66–67). In a number of cases they bought out the farms previously owned by Italians. The last three decades have seen further immigration to Griffith from South and Central Asia (India, Pakistan and Afghanistan), the Pacific Islands (Fiji, Samoa, Cook Islands and Tonga), the Middle East and Southern Europe (Iraq, Turkey and Lebanon) and, most recently, Africa

(Zimbabwe, Uganda and Sudan). Many immigrants from these regions have formed sizeable communities and have often taken up work in fruit picking, farming, or agricultural processing.

Turkish immigrants and refugees have mostly come from farming villages in Turkey's border regions. In 2006 there were just over 100 Turkish immigrants in Griffith (ABS 2008a, b), with most finding employment in farming, particularly picking and labouring work (Kabaila 2005). The influx of Afghan asylum-seekers in 2000 was significantly larger than the earlier inflow of Turkish arrivals, with most of these new entrants unaccompanied men. Kabaila (2005) records that by 2004 there were around 300 Afghan immigrants living and working in Griffith. Most of Griffith's Turkish and Afghan communities are Muslim. The city's Muslim residents also include a small number of Pakistani, Egyptian and Iraqi families and a significant number of Fijians. Along with Griffith's Tongan, Samoan and Cook Islander immigrants, Griffith's Fijian residents are often referred to together as 'Pacific Islanders'. Together, local Pacific Islanders include almost 300 immigrants and their families. However, while the migration stories of those arriving from the different Pacific islands are similar, their cultures are certainly distinct. Many of Griffith's Pacific Islanders made the trip to Australia via New Zealand, coming to Griffith in a process of chain migration as word spread about employment opportunities in fruit picking in the region (Kabaila 2005). While Fijian immigrants are predominantly Muslim, Christian Fijians and many of the other Islanders have adopted the local Christian churches. For example, the Griffith Uniting Church has a Minister from the Cook Islands and regularly conducts services in Fijian, Tongan and Cook Islander languages.

The history of ethnic settlements in Griffith can be also traced through the ethnic sites and the impact these sites had on social cohesion and intercultural relation in that rural township. The influence of the immigrants on Griffith's built environment is mostly evident in the Italian Museum and Cultural Centre and the Riaz Mosque.

11.3.1.1 Italian Museum and Cultural Centre

The history of Italian settlement in Griffith and the surrounding regions can be traced through the built environment. From the early 1900s, Italian immigrants built cultural and religious institutions – such as the Italo-Australian Club, Yoogali Club and Our Lady of Pompeii Catholic Church – where families and young men and women could meet and share language, religion and cultural traditions. Huber (1977), Kelly (2001) and more recently Jordan et al. (2007) explored the social interaction and integration of Italian migrants to Griffith. They found that Italian immigrants formed close-knit communities which had a strong capacity for internal social and economic support. The importance of family commitments is still a strong feature of Griffith's Italian community.

In more recent years, with an ageing Italian population, new buildings have included the Scalabrini retirement village and the Italian Museum and Cultural Centre, the latter indicating a period of reflection on earlier days. A 2005 study of local history recommended that the Italian Museum and Cultural Centre be listed on

local and state heritage registers for its 'high significance to the Italian community' (Kabaila 2005, p. 151). With construction completed in 2003, the museum traces the history of Italian immigrants to Griffith and the surrounding region. Photographs and artefacts point to the central role of Italian immigrants in the economic and cultural development of the area. They are a clear illustration that Italian immigrants and their descendants not only belong in Griffith, but were an integral part of its growth.

The design of the building was deliberately inclusive. It is intended to reflect both Griffith's Italian heritage and Australian rurality, with the front of the building consisting of Italian columns and arches that is reminiscent of building designs in Italian villages (Jordan et al. 2007). The back of the building with its corrugated iron roof represents a common rural Australian shed. One of the members of the original museum committee, a middle-aged man with Italian heritage, here called Lorenzo, described the significance of the design (Box 11.1).

Box 11.1 Inclusion of Italian and Australian Symbols

> This was meant to mould the two communities together, the Anglo-Saxon and the Italian . . . the building had the arches and the tiled roof at the entrance as a portico, and that's typically Italian, and then the rest of the building is in zinc alum iron, which is styled like . . . an early Riverina shearing shed, so that the two came together. . . Rather than build a typically Italian building we just wanted to show the community that we wanted, we weren't being divisive, and here it is, a building that it achieved, that the two cultures could meet and live together.

The relationship of the museum to social cohesion among Italians and Italian Australians in Griffith is complex. According to Joe, an elderly Italian immigrant who is on the current museum committee, one aim of the museum is to remind young Italian Australians about their cultural backgrounds and the heritage of Griffith's Italian pioneers. However, empirical assessment of the use of the museum (Jordan et al. 2007) suggests that the museum has failed to engage at least some of this target audience.

When the original idea of the museum was proposed, there was widespread enthusiasm among residents with Italian ancestry. For example, many Italian groups – including regional associations (Abruzzo, Trevisani and others), armed forces groups (Alpini and Marinai D'Italia) and Italian sports and social groups – generously donated funds (Piazza 2005, p. 53). But the museum has also aroused tension and division among Italian immigrants and their descendants. For example, there is some perception that the museum is largely a celebration of northern Italian heritage. This highlights a longstanding tension between northern and southern Italian immigrants to this area. This was explained by Angelo, a middle-aged Italian immigrant and current museum committee member, commenting on the perceptions of some southern Italians (Box 11.2).

Box 11.2 Tension between Northern and Southern Italian Immigrants

> thought that there was an overbearance of northerners in the committee… [and in] what was going to be displayed… So that alienated the groups from the south, who thought „this is a northern thing. And I don't think that's waned yet, I think that's still there.

The *Festa Delle Salsicce* (Salami Festival, or Festival of the Sausage) adds yet another layer of complexity to the impact of the museum on relations among those with Italian ancestry. The festival is held annually on the lawns outside the Italian museum and is organised by the museum committee as a fundraiser. It involves traditional Italian music, dancing and food, with food and wine for the day donated by local businesses and an Italian-style lunch cooked by local women (Jordan et al. 2007). These processes can be seen as part of community-building through shared traditions as well as an operationalising of informal networks in organising and preparing for the day. In this way, it can be seen that the museum has played a role in developing and reinforcing social networks among some of Griffith's Italian and Italian-Australian residents, while at the same time playing into existing tensions and arguably undermining trust among others with Italian heritage. This raises important questions about conceptualising social capital, particularly the notions of bonding and bridging. While bonding social capital is often taken to refer to networks within immigrant or ethnic groups, the north/south tensions around Griffith's Italian museum highlight the ambiguity of group boundaries.

The Italian Museum and Cultural Centre has not only affected relations among Griffith's Italian immigrants and their descendants, but has also impacted upon the relations between these residents and others in the town (Box 11.3). When the museum was built there was some local opposition. For example, Lorenzo, introduced earlier, recalls that:

Box 11.3 Initial Reactions to the Italian Museum

> there was a little bit of resistance when the idea was initially floated about having an Italian museum. There was suggestions that it would divide the community and dah dah dah… someone got pretty keen and actually painted some graffiti on the wall but it wasn't nice.

However, despite these initial reactions the museum has also provided opportunities for cross-cultural learning and exchange. In particular, the Festa Delle Salsiccie provides evidence of the active and participatory interethnic exchange identified by Pedersen and colleagues (Pedersen et al. 2005) as effective in generating lasting

changes in attitudes to difference. It provides an opportunity to both develop and strengthen informal networks between residents with Anglo-Celtic and Italian heritage. Prior to the festival, the organisers (who are of Italian descent) work with local entrepreneurs from diverse backgrounds to secure donations or discounts on food, wine and prizes for the day (Jordan et al. 2007). In many cases this leads to an ongoing relationship of trust and reciprocity, with the organisers promoting these businesses and returning to them the following year. It provides an opportunity to develop and strengthen informal networks between Anglo-Celtic residents and those with Italian heritage. On the day of the festival, while Italian women prepare the food, Anglo-Celtic and Italian men work together to set up the marquee and tables and chairs. A similarly mixed group of volunteers stays behind after the days' events to pack up. In the scoping survey of the festival participants in 2006 (Jordan et al. 2007), some noted the festival was meaningful for them because it brings people from different cultural backgrounds together. Promotion of Italian heritage and the festival only recently started shaping the regional identity of Griffith (Helzer 2001). The festival is currently being marketed mainly as an 'ethnic' event promoting 'Italianness'.

11.3.1.2 The Riaz Mosque

The Riaz Mosque is very near the centre of Griffith but remains quite inconspicuous. Located in a largely commercial and industrial area, the Mosque is architecturally unremarkable and set some way back from the street – only the sign above the door gives its presence away.

Prior to founding the mosque, many of Griffith's Muslim residents established regular prayer meetings at the local showgrounds. In 2000, the group decided to hire their own premises, renting a former service station near the Council Chambers on Benerembah Street. The hall was bought outright in approximately 2005, but unlike the relatively formal process of collecting donations for building the Italian museum, the Riaz Mosque was purchased with a large, single, anonymous donation.

The Riaz Mosque, like the Italian Museum and Cultural Centre, shows a complex reality about what is often thought to be a homogenous group. The Mosque is used by a number of different ethnic and national groups, including Turks, Fijians, Pakistanis, Iraqis and Egyptians. This creates particular challenges as religious services must try to accommodate significant cultural differences. The users are predominantly Sunni, with most of the Afghan immigrants in Griffith – who are Hazara refugees from the Shia sect of Islam – preferring to use a public park and a rented school hall as places to gather and conduct Friday prayers. One Afghan resident of the area noted that there are no plans to build a Shia mosque in Griffith because the community is too small. However, plans are underway among Griffith's Afghans to raise funds for their own community centre (Jordan et al. 2007).

The Riaz Mosque is used primarily for religious purposes. It also plays a social role, being a place where people can get together both on a regular basis and for special occasions like feast days. On some occasions, non-Muslims have been specifically invited to attend the celebrations, including a member of the local city

council and a member of parliament. However, unlike some larger mosques in urban centres, the Riaz Mosque has not held any open days to encourage the participation of the broader community. A senior member of the mosque, here called Mr Ahmed, stresses though that the mosque is open to anyone who wishes to attend at any time, provided they observe rules about appropriate dress and respectful behaviour. Since his arrival in Griffith, Mr Ahmed has worked to improve relations between local Sunni and Shia Muslims, speaking at the mosque about what he sees as the fundamental similarities between the two branches of Islam. He emphasises that Shia Muslims are welcome to attend the Mosque or even to lead the Friday lecture.

Dunn (2003b) has outlined the rise of anti-Islamic sentiment in Australia since the early 1990s, noting an upswing in discrimination against Muslims since the first Gulf War. Several researchers have noted the continuation, and even accentuation, of this trend since the 2001 terrorist attacks in the United States and the subsequent wars in Afghanistan and Iraq (Poynting 2002, Poynting and Noble 2004). In some cases, existing mosques have been vandalised, while in others, development applications for mosques have been fiercely resisted. Is this also true for rural areas, such as for instance in non-metropolitan areas of the United Kingdom, as was reported in the case of the mosque in Lancashire (Colombo 2007).

Agyeman and Spooner (1997) explored the nature of racism in the context of the English countryside and referred to a series of reports of the 1990s which found an extensive amount of racial violence, harassment and a resistance to the arrival of incomers into rural communities. Similarly, Neal (2002), Ray and Reed (2005), Holloway (2007), Williams (2007) and Knowles (2008) investigated the experience of other ethnic groups within the English countryside, highlighting the problems with increasing ethnic diversity in the predominantly white populations. In a study on attitudes to racism and cultural diversity in Australia, Forrest and Dunn (2006) found a strong acknowledgment of the existence of Anglo-Celtic privilege and racial prejudice. The most intolerant are the rural communities where views are dominated by a very strong opposition to multicultural values and any form of cultural pluralism.

However, Dunn (2003b) has also noted the resistance to these processes by Muslim-Australians who have emphasised the positive role of mosques in the community. While Griffith's Riaz Mosque has not suffered any vandalism or public opposition, the local Imam has been concerned about the possible spill-over effects of anti-Islamic discrimination in larger cities such as Sydney. Senior mosque figures such as Mr Ahmed have taken an active role in attempting to build understanding between Muslim and non-Muslim residents. For example, while the Riaz Mosque does not have official open days, in 2006 Mr Ahmed gave a lecture at the local public library where non-Muslims could ask questions about Islam.

According to Mr Ahmed, since the word Islam means peace, it is the mosque's role to contribute to peace and harmony in the community. That means encouraging local Muslims to have good relations in their family, neighbourhood and workplace. As well as encouraging those attending the mosque to be neighbourly, lectures at the mosque promote active participation in employment in the local community. The Mosque also provides an avenue for local Muslims to contribute to charities or

other local community needs. For example, at various times, the donations collected at the Mosque have been presented to organisations such as the Heart Foundation or suicide prevention groups. And without the Mosque, Mr Ahmed argues, the Muslim community in Griffith would lose its way, with Griffith more likely to suffer religious tensions under the influence of events elsewhere (Box 11.4).

Box 11.4 The Riaz Mosque and Muslim Community in Griffith

> If there was no mosque actually. . . I can see that Griffith was not going to be having a matter of co-operation. . . and the Muslim group themselves I feel that they are going to be lost. . . if he [sic] sees something happening overseas or something on television he may come on the [next] day not feeling well towards another one which is not correct – you are Sunni, you are Shia, you are Christian, all are human beings. . . So if there is no mosque actually, there will be a big gap in the community. . . Because, without the mosque who is going to say. . . Muslims ones be in harmony with others?. . . the mosque or the place itself it will guide the whole group.

The active engagement of senior mosque figures in promoting the economic and social participation of Griffith's Muslim residents in the local community, the active attempts at intercultural dialogue and the donation of funds to local charities present intriguing counterpoints to critiques of mosques that present them as divisive, alien and encouraging irreconcilable differences.

11.3.2 Katanning, Western Australia

Katanning is a rural town about 280 km south-east of Perth in Western Australia's Great Southern sheep and wheat belt. With just over 4,000 residents it is a much smaller town than Griffith. It lies in the traditional land of the Kurin Bibbulmun, or the east Bibbulmun people, but prior to European arrival was the meeting ground for two dialect groups and three distinct 'tribes' (Bignell 1981, p. 2).

The British colonisation of Katanning occurred in much the same way as it did in Griffith, with the arrival of pastoralists in the mid-nineteenth century meaning the land was increasingly alienated from the Kurin Bibbulmun. British and Irish immigrants and their descendants, along with itinerant Chinese market gardeners, took over the land for agricultural production and were soon joined by a number of German settlers. By the early nineteen-hundreds the district had become an important agricultural region with Katanning its major centre (Bignell 1981). The town also remained highly significant for the Aboriginal people of Western Australia's south west, with an Aboriginal camping ground and school established in around 1905.

Italian immigrants came as part of Australia's post-war immigration program that eased restrictions for Italians wishing to enter the country and encouraged their

arrival through recruitment schemes and assisted passages (Stransky 2001). Like in Griffith, early Italians who arrived in Katanning are regarded as 'pioneers' who helped to build services in the town (Turiyo 2005), although many of the early Italian immigrants have since moved away and evidence of Italian settlement in Katanning is much less apparent in the built environment than it is in Griffith.

Just as Katanning's Italian population was beginning to decline in the mid-1970s, the town's first Malay residents arrived from the Cocos and Christmas Islands. In the following year several more Malay families moved from the islands to mainland Australia and made their way to the town, attracted by news of employment opportunities at the halal export abattoir, then called Southern Meat Packers (SMP). Katanning has since become home to a large number of Malays from these islands, with estimates putting the number at around 300 families[2] (Turiyo 2005). Since the 1990s, Katanning's non-Anglo-Celtic immigrants have grown to include new settlers from China, Pakistan, Afghanistan, Singapore, South Africa, Vietnam, Sierra Leone and Kenya (ABS 2008c). Many, such as those from Afghanistan, are refugees. Others have come as skilled migrants, including a number of South African doctors.

Over the last thirty years the Malay community in Katanning have become firmly established, building their own mosque and madrasa which provide a focal point for the community and, combined with employment prospects at the abattoir have attracted more recent immigrants from countries such as Malaysia and Indonesia.

11.3.2.1 The Katanning Mosque

With several Malay families arriving in Katanning at once, there was immediately a need for a place for prayer. They first gathered in old vacant buildings and then rented halls while raising funds to build their own mosque. The growing Malay community sought support from government agencies as well as implementing a formal fundraising strategy among their own members. When the Katanning Mosque was officially opened in 1981 it was the only mosque in Western Australia outside of the State's capital city (Indonesian Observer 1981). According to Osman, the Katanning Mosque has become central to the town's Islamic community not only as a place where 'people can gather together,' but also as 'a landmark for us' and a 'contribution to the community now. The mosque today is shown in Fig. 11.1.

[2]Katanning's Cocos and Christmas Malay populations are often spoken of (and refer to themselves) as immigrants and they have retained a strong and distinct culture and religious practices. Many speak Malay at home and some of the older residents have never learnt English. However, a significant proportion of the first-generation arrivals are not immigrants. Both the Cocos and Christmas Islands are Australian external territories. Those who were born on Christmas Island after it became an Australian territory in 1958 are Australian citizens by birth and are included in the Australian-born census count (Pereira 2008). The same is true of Cocos Islanders who came to Australia after 1978, when almost all residents of the Cocos Islands opted to take Australian citizenship (Bell 1981, p. 13).

Fig. 11.1 Katanning Mosque, Andrews Road Katanning, November 2005 (Kirrily Jordan)

Young people are heavily involved in the Katanning Mosque. The madrasa – operating since the early 1990s – is used for weekend school where primary and secondary school children attend classes to learn the basic precepts of Islam. Classes run for 2 h every Saturday and Sunday and are taught by three volunteer teachers, all in their late twenties or early thirties, who have trained overseas. The mosque is open every day for prayer, and people can also come for social support and as noted in the interviews with the Malay immigrants people can go to the Mosque for canceling, business advice for help with politics, business, or just 'to be together so we can talk, we can share a problem, you can talk fishing together, this or that you know?'. At the regular Friday lecture, people take it in turns to give the sermon. For Osman, an important message that the mosque conveys is about education – it can play a role in emphasising not only values such as 'honesty, sincerity and trust' but also the importance of applying oneself to education and work.

While the Katanning Mosque has remained important for the younger generations of Malays, it has not been adopted by all of the town's Islamic groups. In particular, just as in Griffith, the Afghan population has chosen not to use the mosque on a regular basis. Again, this reflects the differences between Sunni and Shia Islam. One young member of the Katanning Islamic Society, born in Australia of Malay heritage in the 1970s and here called Jati, notes that while 'we welcome all the Muslims if they want to come,' the Afghans 'haven't come yet,' except to 'some of our special occasions, like. . . Hari Raya'. While the Katanning Mosque is rarely used by local Afghans, it has been adopted by some non-Malays. Regular users include Indonesian and Malaysian immigrants and a number of Noongars (local indigenous people), the latter having married into Malay families and adopted Islam. A small number of Pakistanis also use the mosque.

Like in Griffith, there have been some concerns in Katanning in recent years about the rise of anti-Islamic sentiment in larger cities. Katanning is often spoken of by locals as a multicultural success story. However, as in Griffith, the reality is somewhat more complex. For example, some local men resent Chinese workers on 457 visas for 'taking local jobs' at the abattoir, and attitudes towards Noongars can be

less accommodating than those towards immigrants. However, in spite of such continuing problems, the predominant attitude among Katanning's diverse communities does seem to be tolerance and mutual accommodation. Despite some initial resistance, most people soon accepted the Malay arrivals, particularly because Malay labour ensured the survival of the abattoir by facilitating exports to Asia and the Middle East. More recently, the rise of anti-Islamic sentiment has had some impact on the town. Osman explains that post-September 11 some local people expressed negative attitudes towards Malays (Box 11.5).

Box 11.5 Anti-Islamic Sentiment in Katanning

> When September 11 occurred, a lot of resentment, not directly but indirectly about our faith. . .Osama Bin Laden came along, they call me terrorist. . . they call me, um, 'where's you bomb?'. . . Sometime you gotta swallow it, yeah, especially if it's said in front of other people and then you gotta have a thick skin. . . it's hard. . . people call me Bin Laden in the supermarket in front of other people.

Leaders at the mosque and the local Catholic Church responded by encouraging tolerance and calm, with the Catholic priest telling his congregation that 'there's good and bad of anything. . . if you point the finger at other Muslims are we better than them?' With these combined efforts, tensions seem to have subsided without much lasting effect.

The mosque is occasionally used by non-Muslims when they are invited for special events like Hari Raya. The mosque community also facilitates educational visits for non-Muslims, with school groups and senior citizen groups shown through the mosque on request. On these occasions the mosque leader or a member of the Katanning Islamic Society gives a talk and answers questions about the mosque and Islam. As Jati explains, for the mosque in Katanning has 'a very big effect' because it can help to facilitate these intercultural encounters (Box 11.6).

Box 11.6 Katanning Mosque and Local Community

> recently, last Thursday, we had the Bayside Primary School, having a day trip, and they came here to see the mosque and. . . [to get] more of an understanding of our culture and our religion. . . [and] we have some seniors from Wagin and Narrogin come a few months ago, come to Katanning to have a look at the mosque.
>
> So that's why in Katanning we're very comfortable here, because the whole community they understand our culture and our religion so it's not like an alien thing to them.

Some locals believe that cultural diversity (celebrated in the annual Katanning Multicultural Festival) has become a 'selling point' in attracting new residents to the town (Turiyo 2005). In addition to that the Katanning Mosque is listed in many

tourist brochures, including the state-sponsored guide *Hidden Treasures of the Great Southern* which lists the mosque as one of fifteen 'sightseeing' stops in the town, and 'a landmark' of the community. Accordingly, it is expected that the mosque may encourage new immigrants to settle in Katanning and surrounding regions.

11.4 Conclusion

The places built and used by non-Anglo-Celtic immigrants have been crucial in forming an identity and sense of belonging in a new place. The sites may create interethnic social capital and therefore promote social connectedness of immigrants. Moreover, as the empirical research on immigrants in non-metropolitan Australia demonstrates these sites are very important in attracting and retaining them in small regional townships and rural communities. The construction of shared community spaces, places of worship or other forms of ethnic sites can be seen as part of immigrant adaptation to a new Australian landscape and the desire for staying in a new place. They have been also found to have a significant impact on the location choice of immigrants. Therefore, the ethnic sites will also have a role in stimulating new pathways for immigrant settlement to rural areas which have been introduced in the past decade.

The Riaz and Katanning Mosques are central in allowing Griffith and Katanning's Sunni Muslims to continue their cultural and religious traditions. In reflecting on Griffith's Italian heritage, the Italian Museum and Cultural Centre represents in some ways an 'end point' in Italian belonging in Australia – a looking back on how Italian immigrants and their descendants have worked to make the region what it is today. The Museum and *Festa Della Salsicce* are expression of Italianness as well as Italo-Australian place making. The Italian Museum was designed to represent belonging to place and an emergent interethnic relationship, as it reflects both Italian heritage and Australian rurality. While the Museum provides a symbolic reference to an interethnic relationship the *Festa* can be seen as part of a process of community-building through shared activities in celebrating Italian rural traditions. The *Festa* provides the Italian immigrants with a statement of their presence in Griffith and provides forum for more active and participatory interethnic exchange – characteristic of Pedersen's notion of dialogue (Pedersen et al. 2005) – that can create and reinforce networks and interethnic trust.

Regarding the role ethnic community facilities may have in intra- and interethnic social interaction there are the notions of inclusivity and homogeneity which would raise the questions of where to draw 'group' boundaries and who has the authority to ascribe them. The Griffith Italian museum illustrates that while much common parlance would ascribe Italian immigrants a shared ethnic identity, regional affiliations and strong differences in culture mean that some Italian immigrants self-ascribe to distinct groups. This makes concepts such as bonding and bridging social capital very difficult to apply. For example, would we treat strong ties between northern and southern Italians as bonding capital? To do so presumes the authority to ascribe

an Italian group identity. So is it bridging social capital? Maybe, but this is inconsistent with the notion that bridging social capital is evident where there are weak ties. It illustrates a lack of conceptual clarity in how bonding and bridging social capital are defined and we call for further research on this.

Similarly, the opportunities for active and participatory intercultural encounter provided through the Katanning Mosque – with school groups, elderly associations and other interested visitors able to take part in guided tours and ask questions about Islam – demonstrates the possibilities for multicultural place-making in developing intercultural trust and understanding. In Griffith, while the leaders of the Riaz Mosque have not run guided tours, they have encouraged cooperation and understanding not only among the region's Muslim's, but also with the non-Muslim community. The congregation are encouraged to actively participate in their neighbourhood through paid work and being friendly with their neighbours and are able to pool their resources to donate money to community services in need. For Mr Ahmed, the function of the mosque is so important that he believes it 'guides the whole group' to understanding each other and their neighbours: by bringing a small group of people together, it can help them to participate more harmoniously in the local neighbourhood. Similarly, for Jati at the Katanning Mosque, it is the mosque's physical presence and its role in intercultural learning that has helped the Sunni Muslim community to feel so at home.

These examples suggest that while immigrants may seek to create their own spaces, this may simultaneously involve inscribing a degree of exclusivity and a strategy of becoming more a part of their new environment. They provide a counterpoint to critiques of spatial diversity by demonstrating that a period of intra-community consolidation may actually be the precursor to broader community engagement.

It is important to note the often complex relationship between interethnic politics in shared space and spatial management. It is useful here to reflect again on Amin's (2002) argument that for local micro-publics of social contact to facilitate the reconciliation of cultural differences, each ethnic group must be empowered through democratic and participatory politics. It is reasonable to assume that one aspect of this empowerment must be full access to spatial management. For example, if proposals to build places of worship by religious and ethnic minorities are routinely opposed by neighbors asserting their greater legitimacy in spatial management, whether the developments go ahead or not, if the process has been bitter or is perceived as unfair, the opportunities for positive intercultural encounter in shared space are undermined. Likewise, if an immigrant group comes to be accepted as a valuable part of the local community, objections to their engagement in spatial management are likely to be limited.

Specifically, local authorities should seek to ensure that planning and design processes are truly multicultural. Creative and innovative approaches may be required to overcome the common Anglo-Celtic dominance of community consultations and engage people of diverse backgrounds. Crucially, while ethnic symbols in the landscape are likely to be interpreted differently by different people and interpretations may change over time, an inclusive and multicultural design process can best

minimise the risks that the representation of ethnicity will invoke stereotypes and reinforce notions of an ethnic 'Other.' In addition, the public attitudes of all levels of government to immigration and ethnic diversity, including state support for anti-racism campaigns, can maximise the potential for multicultural place-making to contribute to an interethnic social capital.

The case studies explored in this chapter demonstrate the complexities of immigrant settlement and the intercultural relationships that emerge. They suggest that, unlike the reported ethnic exclusivity of rural areas overseas, a multi-ethnic Australian rurality may be less problematic, with immigrants in at least some Australian rural towns more concerned with trying to prevent the spread of perceived ethnic prejudice in larger cities and elsewhere. The focus on place-making and spatial analysis also shows that places built by non-Anglo-Celtic immigrants can become key sites in generating intercultural understanding, networks and trust. However, the analysis also points to the potential for multicultural place-making to exacerbate existing tensions, highlighting the need to be conceptually clear both in identifying the nature of interethnic interactions in shared space and the heterogeneity of what are often assumed to be homogenous ethnic and religious groups.

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Chapter 12
Too Bad to Stay or Too Good to Leave? Two Generations of Women with a Farming Background – What is Their Attitude Regarding the Sustainability of the Australian Family Farm?

Ingrid Muenstermann

Elva John

I. Muenstermann (✉)
School of Humanities and Social Sciences, Charles Sturt University,
Wagga Wagga, NSW, Australia
e-mail: imuenstermann@csu.edu.au

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Abstract Globalisation has prompted many demographic changes, leaving some rural communities impoverished and others flourishing. One of the negative facts is that between 1971 and 2006, Australian family farms have declined by 46%. Reasons for this decline are increased competition due to globalisation, the year-long drought and increased debts. Family farming makes up 99% of the farming industry and Australia relies economically on its output, therefore, it is important to consider the role of women in farming. This qualitative research project looks at the attitudes of two generations of women, at their motives for staying or for leaving the land, at professional aspirations, and the prospects regarding the family farm. The study shows that the young generation does not believe that family farming offers a secure livelihood or future, and they are encouraged by their mothers to leave the farming industry, to acquire a profession, and to seek professional fulfilment outside of farming. Theoretically this is linked to the process of individualisation, which not only may be influenced by the mothers, but also by an influx of so-called lifestyle migrants. The discussion includes the view of women who moved from the city to the country. What was their influence on their rural cousins?

Keywords Family farming · Individualization · Resilience · Succession · Women in farming · Lifestyle migrants

Abbreviations

ABS Australian Bureau of Statistics
CSU Charles Sturt University

12.1 Introduction

> Young people provide energy, fresh ideas, future leadership, and hope. Their presence in numbers and their talent are symbolic of the future prospects of a town. Their departure for the bright lights signals the loss of these markers of likely future success, particularly if they stay away. (Collits 2007, p. 14)

Significant changes have occurred in Australian agriculture during the twentieth century. According to Alston (1995b), until the mid-1950s, agriculture contributed 85–95% to the Australian export earnings, but this had decreased to 30–35% by the mid 1990s, and in 2007 it had further decreased to 20% (Australian Bureau of Statistics (ABS) 2008). In 1953, 204,350 farms were listed in the census (Alston 1995b, p. 1) (it can be safely assumed that these were family farms), by 1971 the figure was 190,466, and by 2006 the number of family farms had decreased to 102,616 (ABS 2006), indicating a loss of 46%. Women currently make up 40% of Australian farm business partners, they earn 48% of the farm income through their on- and off-farm work, while 50% of farm families rely upon off-farm income, and 80% of that off-farm work is performed by women (Alston 2003, p. 477, 2004a, p. 40). Off-farm work has become increasingly important to Australian family farms since the last drought, which started in 2000 (Alston and Kent 2004, p. xiii), and

women usually seek this sort of work to supplement the family finances, to help shore-up the farm, or to pay for the children's schooling (Alston 1995a, 2003, Stehlik et al. 2000, Alston and Kent 2004).

Corporate farming is increasing quickly; it generates 24% of agricultural production but represents only 1.5% of all farms (Clark 2008). Gladigau (2007) found that the investment community is becoming an important player in Australian farming and that the future of agriculture and family farming is becoming uncertain. Globalisation and increased competition, exacerbated by the unprecedented drought, bush fires and hail storms, have created a great deal of fear and scepticism among grass roots farmers. Interestingly, census data states that in 2001 the majority of farms were owned by family-operated businesses, with around 99% of broadacre and dairy farms operated by owner-managers (ABS 2003, p. 2). These figures are confirmed for 2006 by the National Farmers Federation (2007, accessed 18 Dec 2008). There are other farming family businesses such as the Australian horticultural industry of 30,000 growers (Horticultural Australia Council, accessed 29 June 2009), 7,500 wine grape growers, and 2,600 wine makers (Wine Grape Growers Australia, accessed 29 June 2009). All of these family businesses provide work for local communities.

In 2002, farming provided 3% of the GDP and 2% of Australian employment (Regional Surveys of the World 2003), indicating that the farming industry is important to the Australian economy. However, can it persist and how crucial is the role of women in farm success? The position of women in farming was relatively unacknowledged until the 1970s when farming women became of interest to social scientists (Hannan and Katsiaouni 1977, Hannan 1982, Sachs 1983, Pfeffer 1989, Whatmore 1991, Alston 1995a, 2004a, 2005, O'Hara 1990, 1998, Bryant 1999, Pini 2005a). According to Alston (1995a), only 5% of farms in Australia are inherited by women. However, if women do inherit the family farm, or if they marry a farmer, their role ranges from livestock care to business management and includes most of the household work and responsibility for the children. Some scholars point out that farming is seen as a male occupation (Alston 1995a, 2004a), that the image of the 'man on the land' is ingrained in Australians' concept of the farmer (Lawrence 1987, Gray and Lawrence 2001, Cocklin and Dibden 2005), and that farm women are 'peripheral' to the existence of the male farmer (Alston 1995a, 2004b). According to Alston (2004a), the small percentage of farms inherited by women ensures male control over farming, leaving women in a subordinate position and their work being connected to the 'ideology of wifehood'.

This chapter explores the attitudes of two generations of Australian women with a farming background, outlining their motives for staying or for leaving the farm, their professional aspirations, and their hopes regarding the family farm. When leaving rural areas they contribute to the decline of rural populations and communities in some districts. What influenced them? Is it the attitude of the mothers? What other forces are at play?

This chapter is structured as follows: firstly it provides a short overview of the research method which is followed by conceptual issues, such as individualisation. The literature review includes the situation of farming women in some overseas

developed countries, followed by the situation of Australian women. The results section involves a definition of the family farm, background information of the participating mothers and daughters, the advice mothers have given their daughters regarding professional development, and the young women's reasons for studying at University. This will be followed by a comparison of the answers to the following four questions:

- Would you have liked to take over the family farm?
- Do you like living on the farm?
- What was it like to grow up on the family farm?
- What is your opinion regarding the future of the Australian family farm?

Mothers and daughters reveal that they have no illusion regarding the family farm. Daughters are aware of the hardships their mothers endured and of the problems which Australian farming faces today. But it seems that their lives are also influenced by educational opportunities and, to some extent, by the demographic changes that have taken place – the influx of some so-called lifestyle migrants (i.e., women who have migrated from the city, or a different country, to the regional area). Their voices will be heard in the discussion. Looking at the older generation, they exerted considerable power to encourage their daughters to leave the farming industry and to seek personal and professional fulfilment elsewhere. Such a push has implications not only for family farms, but for the future viability of rural communities in general.

12.2 Research Method

A qualitative approach was used to gain insight into people's personal and social experiences, and to understand their motivations and actions (de Vaus 1995). Promotion of the research was through the Charles Sturt University (CSU) website,[1] via the local paper and community radio station, and interested people were asked to approach the researcher. To establish a comparison regarding women's attitudes to family farming, mothers *and* daughters were invited to participate. Because some participants are enrolled at CSU, there is a selection bias, which limits the generality of the results. Despite this, it is argued that the findings present an important tendency of the overall situation of women in agriculture. Sixteen semi-structured interviews (eight with young women, daughters; and eight with women of the older generation, mothers) were conducted; 14 face to face and two by telephone. The semi-structured interviews involved a series of open-ended questions about attitudes towards farming. The conversations lasted between 45 and 75 min and the questions addressed background demographics, the interviewees' positive and negative memories regarding life on the farm, professional aspirations, and attitudes

[1]Charles Sturt University, Wagga Wagga (a regional town in New South Wales, Australia), has a large number of student nurses, teachers and social workers who come from farming families.

regarding the future of the Australian family farm. Transcripts of the interviews were sent to all participants. Grounded theory was used to analyse the answers, which were then coded, emerging themes fleshed out and comparison of the answers carried out.

12.3 Women in Farming Families – Exploring Some Concepts

O'Hara (1998) established that social scientists have mainly analysed women in farming families by way of Marxist political economy. She deduced that feminist theorising of women's subordination has led to a theoretical cul de sac whereby patriarchal structures become determinate and the ways in which women negotiate and resist them cannot be accommodated. Farming women are in subordinate positions, but have achieved lessening of their subordination by husbands and have gained some power. They should now be seen as active agents who challenge and negotiate patriarchal structures.

Alston (1994, 1995b) and Hogan (1994) came to the conclusion that radical feminist theory is not appropriate to farming women. Both authors explained the major problem for the conservative women when they were confronted by feminist ideology: the stridency with which the ideas of patriarchy and opposition to men have been proclaimed and the attacks on personal relationships with men. These have been difficult for some women to understand and have alienated many. Feminism has had a limited, but important effect on social structure (i.e., women have been recruited into public life from which they were previously excluded), however, basic structural changes, called for by radical feminists, have not occurred and women now find their gains under threat from the New Right in Australia, a movement which originated in the late 1970s and 1980s, advocating economic rationalism and increased socially conservative policies.

Feminism and critical feminist theory cannot be discredited, but because of the opposition by conservative women of country Australia to these approaches (Alston 1994, 1995b, Dempsey 1994, Hogan 1994, Poiner 1994, Teather 1994) it was decided to apply the theory of individualisation, developed by Ulrich Beck and Elisabeth Beck-Gernsheim (2005, pp. 30–60), to explain the findings. This theory is embedded in Karl Marx's and Max Weber's theories of social inequality and relates to a course of action, of women having some power but not (yet) achieved equality. The theory of individualisation relates to structural transformation of social institutions and to the relationship of the individual to society. Individualisation has undermined traditional securities such as religious faith and has, simultaneously, created new forms of social commitment. According to Beck (2005, pp. 202–203) women are cut loose from their 'status fate' of compulsory housework and support by a husband. Industrial society has been dependent upon the unequal positions of men and women, but modernity does not stop at the front door of family life, and the entire structure of family ties has come under pressure from individualisation and a new negotiated provisional family of multiple relationships – a 'post-family' – is emerging. Besides the freeing of individuals from traditional constraints, new norms

have emerged because of the individual's dependency on the employment market. This simultaneous individualisation and standardisation of our lives is not only a private experience, it is institutional and structural. The liberated individual becomes dependent on the labour market and because of that, dependent on education, consumption, welfare state regulations and support. Dependency on the market extends into every area of life.

One way of explaining the findings of this study is by way of relating them to the theory of individualisation. For instance, young women of this study strive to become educated and independent; and they are supported by their mothers, but also influenced by other women, by lifestyle migrants. Therefore it can be said that motivation of the young generation relates to the fundamental changes which have occurred in women's lives over the last decades, in the family and in relation to education, work, legislation, and public life; changes which have provided women with some power and brought their lives closer to that of men. Beck and Beck-Gernsheim (2005, p. 55) found that subtle everyday changes in women's lives are often taken for granted because 'they contain aspects of adaptation, while also having a momentum of their own which tends to challenge existing conditions'. This suggests, for example, that it is not the major systemic changes, power struggles and revolutions on which history has concentrated, but rather the many little steps in education, work and the family which have given the women's movement of the last three decades its momentum and brought obvious changes in society. These little steps have been 'creating an awareness of traditional inequalities which can hardly be legitimated and are . . . politically explosive' (Beck and Beck-Gernsheim 2005, p. 55).

12.4 Women and Family Farming in Some Developed Countries – Literature Review

The purpose of this chapter is to determine the future of the Australian family farm. In order to compare and to create a sense of the overall situation, the circumstances in some developed overseas countries were considered. Until recently farm women have remained largely invisible, their role was that of the farmer's wife and support (Sachs 1983, Alston 1995a, b, 2005, O'Hara 1998, Bryant 1999, Pini 2005b), and most of the research documents their off-farm work, demonstrating the way their contribution to the farm is under-represented in official statistics. However, some empirical and qualitative studies now provide important data on women's involvement in farming and how it is changing.

In the absence of comparative studies of mothers and daughters regarding the family farm, I include a short history of women's contribution to the family farm. This provides some indication of why young women may *not* be eager to stay on the farm. The effects of open markets, technological, cultural and demographic changes within the farming industry and farming communities during the last decades are posing challenges to family farming. Many young people, especially women, leave the family farm in order to look for personal and professional satisfaction in larger

cities. A study by Ni Laoire (2001) dealing with rural-urban migration found that the majority of people leaving rural areas of Ireland were those with the highest educational qualifications, that is young women. They leave rural areas to further their education, their career, to find employment, and to leave the dominance of a masculinist pub-football culture. Pfeffer (1989, p. 71) found that farming depends on the continued willingness of women to do farm work, however, 'there are indications that such willingness is eroding', and 'a large proportion of young women object not only to the prospect of participating in farm chores, but to the very idea of being married to a farmer.'

According to O'Hara (1998, p. 3), within family farming, as well as in the wider world of agriculture, women are subordinates, and the way in which they deal with this situation has a significant effect on the evolution of family farming. An explanation for subordination can be found in Cummins' (2005) observation of farm women in Ontario: women are socialised to believe that their role on the farm is to look after not only their own family, but the multitude of other workers on the farm. They also have to be available to help on the farm, are required to manage the house and look after the children, and to contribute to decision making – not as a decision maker but as a contributor. The gender differences in family farming and especially in labour on farms represent an ideology of different 'spheres'; an ideology that involves the concept that women's contribution to the farm has a spatial dimension that is distinguishable from men's work. This ideology of spheres assists in the perpetuation of a negative self-image, a down-playing of the importance of women's contribution to production, and encourages the hegemonic idea that a farming woman's 'place' is in the home as wife and nurturer.

O'Hara (1998, pp. 5–11) produced an overview of farming women in Europe. A 1987-study of some six thousand farm households across the European Union revealed that 49% of farm wives were working regularly on the farm. Thirteen percent of farm operators in the legal sense were women, and the vast majority of these were actively involved in running their farms. O'Hara discussed in detail studies from England, France, Spain, Switzerland, The Netherlands, Ireland, Norway, Crete, and Germany. All of these discussions show similar results, namely women's important contribution to family farming but hardly any official recognition of this kind of work.

Sachs (1983), in a study of farming women in the US, found that the family farm as an institution encourages religion, morality, democracy, and individualism, and that it is based on patriarchal authority. Taking into consideration that this study is about 25 years old, do her findings still hold true? Women are involved in most aspects of agriculture, but there are no national data to compare the level of involvement of women over time. They have worked in formal (i.e., Women Food and Agriculture Network, Country Women's Association, Women involved in Farm Economics) or informal organisations (i.e., fund raising activities, organising sport events), but, according to Sachs (1983) because of the patriarchal bias that operates in conjunction with the capitalist system in trying to retain women as a reserve labour force, women as individuals face some constraints in their attempts to make decisions in agricultural production. National Agricultural Statistics from

2002 (accessed 7 Jan 2009) showed that 5% of women operate commercial farms. A survey of Pennsylvania State University (Bharadwai and Findeis 2003, accessed 7 Jan 2009) showed that the percentage of working-age farm women, involved in off-farm work, has increased from 37% in 1985 to 62% in 2003, and one third noted that they work off the farm to help finance the farm operation.

The literature on women in overseas countries provides an indication of their contribution to the family farm, and there is clear evidence that they are taking up off-farm work. By helping finance the farm operation they are reconstructing their identity and renegotiating power relations. What is the situation in Australia?

12.5 Women and Family Farming in Australia – Overview

> In Smalltown men used the resources and labour of women for facilitating their paid work, and their leisure and prestige-enhancing activities, without adequate reciprocity. The relationships that husbands established individually and collectively with their wives in the sphere of domestic labour, economic activity, leisure, religious and service club activity were so palpably one-sided that we felt justified in describing them as exploitative. (Dempsey 1994, p. 41)

Statistical data show that at the beginning of the twentieth century, 61% of the Australian population lived in rural areas, but at the end of the twentieth century, only 17% of the population lived in 'the bush' (Regional Women's Advisory Council 2001, p. 16). Significant demographic changes have occurred, apart from the influx of lifestyle migrants, out-migration has been high. We know that, according to Alston and Kent (2001, p. iii), 85% of 15–24 year old women and 71% of 1–24 year old men intended to leave surveyed rural towns in Australia. This indicates dissatisfaction with their perceived future life in rural towns and also reflects the reality of lost opportunities. More conservative figures of some 6 years later (Collits 2007, p. 14) indicate that 24% of 15–24 year olds left rural areas and did not return during the census period 2001–2006. There is a difference between intent and behaviour, however, there can be no doubt that rural out-migration has left many rural areas without services, without education facilities, and without employment opportunities (Alston 2004b, p. 300).

The situation of farming women in Australia is similar to that of women overseas. According to researchers such as Dempsey (1994), Alston (1995b, 2004a), Bryant (1999), and Pini (2005b), farm women are not involved in key decision-making, they carry, however, the responsibility for domestic duties and off-farm employment since globalisation, market forces, and the Australian drought have left many family farms in financial strife. This need to work off-farm and the lack of opportunities in rural areas has led to an exodus of young people, mainly young women, from rural areas (Alston 2004b). It must be mentioned that young women stay longer in rural high schools than young men, that they are more motivated to go on to University,[2] but that employment opportunities in rural areas are aimed at males, through

[2] 62% as against 39%.

apprenticeships and farm-based work. Full-time employment opportunities in most rural districts declined in the last decades, but full-time employment opportunities in select rural areas for young women have declined to near extinction.[3] However, it is important to recognise that some regional areas are growing rapidly owing to in-migration from cities, i.e., lifestyle migrants, and the settlement of refugees; see Chapters 1, 2, 3 and 4, this volume. This has some implications for the role of women on farms and rural communities in general, it provides a greater variety of opportunities (i.e., in the health services industry; see Chapter 13, this volume).

Apart from employment opportunities, there is also the issue of further education for women, and the need to escape the small town milieu (Alston 2004b). Deliberating the macho culture of rural Australian society, Alston found that the secondary status of women is borne out in the male-centric conception of sport: in order to play netball and to be supported financially as a team, women's netball teams are forced to follow the men's football team to the places where the men play. The Regional Women's Advisory Council (2001, p. 15) stated that young rural people believe that the rural life is 'second rate' to urban life. Overall, there are educational and economic reasons for young women to leave rural areas, in addition to the cultural aspects (e.g., 'male-dominated' society).

12.6 Results of This Study

A variety of definitions of the family farm emerged from the interviews (Box 12.1).

Box 12.1 Definitions of the Family Farm

a safe place to spend the childhood;
an excellent place to spend time when on holidays from boarding school;
a wonderful place to contemplate, I can't think in the city, it's too noisy.

All participants stated that the concept of the family farm is based on farm ownership, is, if possible, passed down from generation to generation, and provides residence for the family. 'Dad's management of a farm, even though we lived on that property, is not a real family farm. Farm ownership is important,' was one of the responses. A more formal definition is provided by Elliott (cited in Tanewski et al. 2000, p. 15): the family farm includes ownership, place of residence, the family's contribution to labour, the family's responsibility for management, and the family's rural ethos or ideology. As can be seen, informal and formal definitions are closely linked.

[3] Alston and Kent's (2001) study on young, rural people in New South Wales discusses regional development, transport, employment, education and makes recommendations regarding job creation (especially to Woolworths) in rural and regional areas.

12.6.1 The Participants

Eight semi-structured interviews with younger women (daughters) and eight with women of an older generation (mothers) were conducted. Table 12.1 provides some demographic details of both generations.

Table 12.1 Demographics of participants

Eight mothers, aged 46–66	Eight daughters, aged 19–42
Schooling: Year 10–3 Year 11–1 Year 12–4	Schooling: Year 11–2 Year 12–6
Professional: Housewife/Farmer's wife – 1 TAFE – 2 General Nursing – 2 Registered Nursing – 2 Studying Education – 1 PhD – 1	Professional – Studying: Social work – 1 Nursing – 3 Psychology – 2 Nuclear Medicine – 1 PhD – 1
Living/working on the family farm – 4 Studying education/living in town – 1 Retired/living in town – 1	Living/studying/working in town – 7 Living on family farm/working in town – 1

Table 12.1 shows that schooling and occupational achievements were important for both groups of women. Therefore it must be assumed that both generations had educational opportunities. The high proportion of educated women may be explained by the biased selection process of the participants, but it is believed that the findings show general trends that are affecting women in rural Australian society today.[4]

12.6.2 What Advice Did You Give Your Daughter Regarding Her Future?

At first, the mothers were asked what advice they had given their daughters regarding their professional future (Box 12.2).

The answers demonstrate the mothers' emotional responses and a rational emphasis to their daughters' professional futures. The younger generation is being encouraged to leave the family farm, to undertake professional training and to become independent. The attitudes of the older generation are explained by Beck and Beck-Gernsheim's (2005) theory of individualisation, which includes challenging existing conditions and achieving small steps towards better education, work and family; it relates to action of women having power but not (yet) achieved equality.

[4]Further research should be carried out to relate the findings of this study to ABS Census data.

Box 12.2 Mothers' Advice to Daughters

Leave the farm!

Move away!

Get a good education!

Go to uni or TAFE!

I wish I had had your opportunities – make the most of it . . . don't waste your chances!

Get a job which promotes independence!

Get an education in case the marriage breaks down!

12.6.3 What Is the Reason for You to Study at University?

The first question to the daughters related to their studies, what is the reason to study at university (Box 12.3).

Box 12.3 Daughters' Reasons for Studying at University

We were always encouraged to finish year twelve, get an education afterwards and then, years down the track, come back to the farm. We always had to have something behind us in case the farm was sold.

Why study at uni? The encouragement of mother to create as many opportunities as possible.

I have an interest in learning – and I want a job once this all is finished.

. . . University study was an escape route from my parents.

Three issues can be identified from the responses. The first two answers demonstrate the influence of the mothers. The third answer is practical and relates to personal career aspirations. The last response demonstrates some resentment towards the parents but also the use of education as a strategy of resistance, 'The family farm was rather restricting and University study was an escape route. . . studying presented an opportunity to develop my own personality'. It can be assumed that this escape route from parents was used by many young people.

12.6.4 Would You Have Liked to Take Over the Family Farm?

This question was asked to establish some parameters regarding the family farm. The general consensus was *no*, most participants were reluctant to take over the family farm, but three themes emerged: outside influences, farm management, and traditional values (Boxes 12.4, 12.5, 12.6, 12.7 and 12.8).

Box 12.4 The Outside Influences – Mothers

Probably not – it's too uncertain today.

Early on yes, but not now, the present situation is too difficult – you know, the global markets and competition.

Box 12.5 The Outside Influences – Daughters

No, definitely not, because of climate change, especially the drought, it's too hard. . .

. . . increased competition, local requirements and laws, the global markets – it's all too difficult, it's easier to study and get a 9 to 5 job. . .

Box 12.6 Farm Management – Mothers

Women did not farm, they were there to support the husband, the farmer, the father in law and even brothers in law.

It would have been physically too hard. I was quite happy to leave all that hard work to my husband!

We were brought up – our parents and grandparents told us – farm management is not for women, you were there to support your husband but not to take over. . .

Box 12.7 Farm Management – Daughters

Farm work is physically too hard. And the gender issues. . . Farming is still seen as a male profession.

There is increased isolation, more and more people leave farming. And no labour available. . .

I have great concerns regarding gene modification of crops and animals. I suppose I could make a difference and go organic but it's easier to nurse . . .

Box 12.8 Traditional Values – Mothers

No, my brother did that, he had the opportunity. I would have liked to but girls did not farm in those days.

Daughters went away and got married.

I wanted to pursue jillarooing but my parents discouraged it. They were very wise. . .

Both groups of women were realistic in their approach to the family farm, looking at outside influences and considering issues over which they have no control such as the climate and the global market. The younger generation was mainly concerned about farm management, gender issues and physically hard labour. This last point brings to mind Haraway (cited in Holmes et al. 2003, p. 77) who argued that physical work should not be an issue as far as gender is concerned. The latest technology lets women perform the same chores as men. Realistically, how valid is Haraway's argument if we are looking at the industry of farming? Has she ever tried to fit a trailer to a car or truck, has she managed heavy farm machinery or handled sheep and cattle? Despite modern technology, things may not be as easy as Haraway suggests, and it may be wise to leave the final judgement to those who are experiencing farm life on a day to day basis.

Interesting are traditional values, such as 'girls did not farm in those days' and 'daughters went away and got married'. These values affected the life chances of the older generation; their roles were defined to be the farmer's wife, and to provide support on the farm. The responses of the mothers show that they want their daughters to embrace available opportunities.

A very different direction took the answer of one of the young women, her response relates to the treatment of animals (Box 12.9).

Box 12.9 Treatment of Farm Animals

> I am not interested in farming; the treatment of animals... We have in our area feedlots owned by a group of farmers producing beef and lamb, mass-produced, fed same time every day, and injected every week. It's terrible, when a cow has to be put down, has had an accident, broke a leg or such, they can't even cut it up for the dogs because of the growth hormones that'd kill the dog. If a cow has been injected on Monday and it dies on Tuesday or Wednesday, it can't be cut up for the animals unless it dies on Friday or after because of the hormones.

These thoughts indicate great concern for the treatment of farm animals. Peter Singer (1990, 2000) developed philosophies of animal rights within secular traditions (i.e., animal liberation). This concept is based on the ability of the dominant group to ensue unequal benefits by using their power to define the 'other' as inferior. Singer's main point regarding animal liberation and rights is not the degree of intelligence, wealth, or status held by a living creature but rather the degree to which a living creature is capable of suffering. He argued that the capacity of animals to experience suffering and pleasure implies that they have their own interests, which ought not to be violated. When humans allow the interests of their own species to justify causing pain and suffering to another species the pattern is identical to that of racism and sexism, Singer called it speciesism. The concern of the young woman regarding animals in feedlots shows that society is using its power in order to dominate over 'inferior', helpless creatures.

12.6.5 Do You Like Living on the Farm?

The next question referred to living on the farm. Do or did the women like living on the farm? (Boxes 12.10 and 12.11).

Box 12.10 Do You Like Living on the Farm – Mothers

I would like to leave, but the husband objects – he wants to stay close to his parents.

Family ties and expectations are too strong to leave.

. . . There is not enough money to buy a house in town.

No, not now – not even enough money to buy fodder for livestock.

Yes – there is hope that the relationship with my parents-in-law will improve.

There is always hope that the climate [drought] will improve.

Hope, despair, family ties and responsibility are expressed by the older generation. The response 'not even enough money to buy fodder for livestock' shows the demise of the small-scale family farm in today's rural Australia.

The answers of the younger generation regarding living on the farm are quite matter-of-fact (Box 12.11).

Box 12.11 Do You Like Living on the Farm – Daughters

No – too many worries – bills, irrigation, drought, and you can't get any labour.

No – too hot in summer and too cold in winter. We do not have air conditioning and with the climate, it's not comfortable out there. . .

No – but visiting yes! Experiencing the family life, the space, going fishing, horse riding, bike riding and roo-shooting.

Yes – but there should be better security [occupational health and safety measures].

Yes, I enjoy living on the farm – but I wish to be made a full-fletched partner; all the money I am earning keeps the family farm going but I am not a partner.

These responses are influenced by different circumstances. Most of the older generation is still living on the farm and their answers demonstrate commitment to relationships but also some frustration ('he wants to stay close to his parents'), while most of the younger generation have options.

The wish to become a fully-fletched partner shows frustration. This woman has been married to a farmer for 15 years, the couple has two children, and the whole family lives on the farm with the husband's parents, who are the owners of the farm. The woman is full-time employed in a professional capacity and her income plays an important role in the maintenance of the farm. Despite this, the woman has so far not been made a partner of the farm business. All decisions are

made by her husband, father-in-law and brother-in-law. This confirms findings in the literature: women work off-farm, contribute their income but are not involved in key decisions (Alston 1995a, O'Hara 1998). Alston found that women who threaten the gender order risk their relationship, therefore 'there are good reasons for women to consent to their subordination: if the farm is owned by her father-in-law or is jointly owned with her husband's brothers, the woman will remain marginalised within the family and the business for much of her life' (Alston 1995b, p. 63).

12.6.6 What Was It Like to Grow Up on the Family Farm?

Experiences and memories influence behaviour. In order to determine reasons for staying or for leaving the farm, the participants were asked to talk about positive and negative memories of growing up on the farm. The older generation's recollection of negative issues referred to:

Distances to:

- medical services;
- local schools;
- shopping facilities;

The emotional trauma when being at boarding school;
The consequences of the drought such as:

- financial hardship and decreased living standard;
- ill health of parents and partner as consequence of drought and of financial difficulties.

When they were young, the distances often prevented the older generation from taking part in after school activities such as sport, music, and drama lessons. A consequence of the drought on the well-being of the partner and on living standards was also of concern. The general sentiment of the older generation to the question can be summed by one woman's response (Box 12.12).

Box 12.12 What It Was Like to Live on the Farm, One Woman Captures It

City life is easier, the rubbish is collected, you turn on the tap and water comes out, mail is delivered, there are bus services, doctors are close at hand, there is a hospital, and you most probably have a house with air conditioning... nothing like it on the farm – and yet...

The younger generation's recollection of negative issues referred to:
Distances to:

- medical services;
- schools;
- shopping facilities;
- after school activities;

The climate (the heat and flies in summer, the cold in winter);
Financial difficulties ('It was very tough, we never went away');
No spare time ('Help on the farm was necessary');
Emotional trauma when at boarding school;
Stigmatisation by young people in the city (being called country bumpkin).

A comparison of the responses shows similar concerns regarding distances to various locations, financial difficulties, the climate, and missing the family when at boarding school. Differences relate to stigmatisation by young city people, for instance being called a 'country bumpkin'. Assaults on identity can be very confronting because they threaten one's basic understanding and sense of self. Another difference is that 'help on the farm was necessary', a response by a daughter, while one of the mothers remarked 'you just accepted life as it was, we did not have television telling us about our rights'. These answers are related to changing circumstances which create different attitudes and expectations.

The somewhat negative responses can be offset by many positive memories. The older generation referred to:

- Feeling secure and safe on the farm;
- Enjoying close family ties;
- Enjoying the lifestyle (freedom, space, outdoors leisure activities, family picnics, playing tennis, helping parents, Saturday dances after the football match);
- Appreciating social networks (friendly, helpful, reliable neighbours);
- Resilience of country people.

The younger generation and positive recollections:

- Freedom on the farm (the space, the outdoors, horse riding, bike riding, roo shooting, days off school when rain had made the roads inaccessible);
- Connection to the land;
- Relationship to animals;
- Awareness of the environment;
- Connection to parent ('helping Dad mustering brought us closer to Dad');
- Social networking (community of farming families);
- Resilience ('We developed a sense of hardship').

Family ties, social networks, the freedom and the space on the farm, outdoor living, and resilience were mentioned by both groups. Differences related to the connection to the land and awareness of the environment, relationship to parent and appreciation of animals, which were all important for the daughters.

Resilience is an interesting point. This research shows resilience of the mothers (staying on the farm), but also a keenness to initiate change by influencing the daughters to leave the farm. The younger generation embraces change – does this mean they are less resilient? The literature defines resilience as being a positive behavioural adaptation to adversity or trauma (Luthar et al. 2000), and as a positive outcome despite constant stress (Masten et al. 1990). A study by Elder and Conger (2000) of young people who had grown up during farm crises of the 1980s and 1990s in Iowa, USA, shows 'successful life achievements' of these young adults. In comparison, a Queensland study[5] elaborates on resilience in a different way. Hegney et al. (2007) looked into community and individual resilience in rural Australians and found that not all members of the community were resilient, that resilience was not a steady state within an individual, and an individual's level of resilience would vary over their lifetime. Internal resiliency factors as well as factors in the environment influence individual resilience. Hegney et al. found that because of increased drought, bushfires and hail storms, rural people are becoming less resilient. Another study on coping and resilience also found 'that adaptive coping mechanisms traditionally employed by these farming families are starting to weaken' (Caldwell and Boyd 2009, p. 1). Alston and Kent (2004, p. 22) concur with this and state that 'psychological poverty', produced by natural disasters, increased workloads and paucity in access to services, leads to a withdrawal from the community, which, in turn, leads to a loss of social capital and those social networks that are needed for resilience. The topic of resilience is important and needs further research. The younger generation mentioned that they developed a sense of hardship, that their experiences of living on the family farm had prepared them well for life's ups and downs. And the older generation interpreted resilience as 'accepting life as it was'. One of the mothers elaborated further (Box 12.13).

Box 12.13 Resilience of Country Women

> . . .the resilience of women, year after year, no holidays, one year after the other, working on the farm. And they are doing the local thing as well, always helping, doing community work. . . fabulous women, not walking out when things go wrong, staying with their man. It's interesting, they see the bigger picture, it's much bigger than themselves.

[5] Using a critical participatory action research methodology.

12.6.7 What Is Your Opinion Regarding the Future of the Australian Family Farm?

> If the season wasn't with you, there was nothing you could do about it, it did not matter how hard you worked.

This question was posed in order to find out opinions regarding the future of the Australian family farm. What are the threats, hopes and circumstances people assume they can tolerate? Issues are stated in order of importance. The older generation's fears related to:

- Natural disaster(s);
- Financial difficulties;
- Increased global and local competition;
- Big corporations taking over the farm.

Anger and disappointment was voiced regarding:

- Limited security (government encourages small farmers to get out of farming);
- No government support regarding transport (railway) and regarding the 'single desk' (farmers now have to deal with different agents to arrange transport of wheat).

The younger generation's fears regarding the family farm related to:

- Globalisation:
  - market forces;
  - increased competition;
- Natural disaster(s);
- Financial stress:
  - prices offered for wheat and livestock;
- Farm management:
  - water buy-back scheme;
  - new costly technologies;
- Negative influences on health of parents;
- Encouragement of parents (for the daughters) to leave the farm indicating problems for the farm's future.

The encouragement of parents to become educated and leave the farming industry provided a stimulus for the daughters to change direction. Comparing the groups, differences exist not in issues but in order of importance. The anxious opinions regarding the future of Australian family farming were offset by both groups by some encouraging views relating to:

- The optimism of the farming community ('After a shower of rain, they are the eternal optimists');
- Planning an appropriate marriage;
- Resilience of country people.

Planning an appropriate marriage is an interesting point, one mother states 'Marrying the right partner can save the family farm, my son has to marry a woman with business skills'. This answer demonstrates some kind of resilience and an expectation that the son will inherit the farm.

One woman was adamant that the family farm will continue to exist. Part of her response can be found in Box 12.14.

Box 12.14 Positive Thoughts Regarding the Family Farm

> . . . the family farm will continue to exist . . . there will be some small farmers drop out because the younger people don't come back to us, that's inevitable. At the same time, some young people are coming back to us . . . their positivity and excitement is encouraging, they have got a fighting spirit.

The younger generation echoed this positive remark (Box 12.15).

Box 12.15 More Positive Thoughts Regarding the Family Farm

> It's challenging and it's changed, but I feel if you have passion and determination, you can still make the farm a viable future for yourself and the family. But I think you'd need a double income, some cash flow, the husband needs the wife's income.
>
> I think we have to assume that droughts will be more frequent and that will be the normality, so we have to adjust our management to meet the circumstances. We have been doing that, we have gone into different types of sheep, sheep that can handle dry conditions, that's just one example.

It seems that both generations of women thought about the future of the Australian family farm in a realistic way. There is hope that the family farm will remain but the participants realise that changes are inevitable, for instance 'the husband needs the wife's income' and 'we have to adjust our management to meet the circumstances'. These answers show that the young generation's mindset is influenced by, and embedded in, the competitive capitalist market society, global and local competition drives business and influences our way of life.

The last question was 'Apart from the drought, are there any other issues that are important regarding the future of the Australian family farm?' The answers did not provide any concerns that had not been discussed previously. The older generation mentioned increased competition between local and international companies, financial difficulties, increased costs to manage the farm, water buy-back scheme,

lack of staff, and minimal government support to stay on the farm. The answers of the younger generation were similar, but they also mentioned costly technology, the need for improved education for farmers, the need for improved occupational health and safety standards, increasing isolation, and inadequate succession planning. Both generations of women predicted that the problems experienced would lead to increased stress and decreased resilience which, in turn, lead to relationship breakdown and to mental illness.

12.7 Discussion and Conclusion

The 16 semi-structured interviews of women with a farming background showed that the mothers' attitudes were influenced by continuity (resilience?), there was emphasis on the family and on traditional values, but the mothers clearly promoted change for their daughters. And the younger generation opted for adjustment to circumstances, for education, acquiring a profession and for leaving the farming family. The answers can be explained by the structural transformations which have taken place within society during the last decades. The structure of the farming family has not changed (i.e., individual property rights are still upheld and protected in Australia and disadvantage women because they are based on, and central to, the social custom of patrilineal land transfer, Pini and Shortall 2006, Shortall 2004); however, structural transformation has occurred, providing possibilities to achieve professional status, to become independent, and to delay motherhood. All participants saw these developments in a positive light. But their responses were also influenced by global markets, climate change, and by educational opportunities and this study uncovered three main themes of concern, both for mothers and daughters: outside influences, progressive farm management, and the consequences of these on individual health. The issues interlink. Here is some analysis of the responses.

First, outside influences: all participants mentioned globalisation and the global economy. A global market requires increased competition which leaves some family farms, especially the smaller ones, behind. The participants also mentioned the drought; one consequence of it being that there 'was not enough money to buy fodder for livestock', which is a clear indicator of a struggling business. But outside influences can also be seen in a more positive way: the structural changes that have occurred during the last three decades or so provided the young women with greater opportunities than their mothers.

Second, progressive farm management: a global market needs an efficient system, well-educated farmers and improved technology, which the small farmer may not be able to afford. In order to compete, the farmer, or his wife, would have to improve their skills (e.g., computing), striving for educational advancement (e.g., to check out world wide market trends to sell their produce). This usually means increased debts of an overall stretched budget.

Third, the consequences of globalisation and climate change, and more progressive farm management often lead to health issues in the owner of small farms which, in turn, affects the overall well-being of the family, often resulting in family

breakdown. This concern was raised by all participants: mental illness, depression often leading to suicide, and alcoholism constituted problems in most families. And women (mothers) are expected to pick up the pieces – holding the family together and keeping the business going.

There is another important issue which was addressed mainly by the younger generation: culture. Culture here does not only refer to gender issues and the macho-culture of some Australian men, it also refers to succession planning and to the younger generation of women who are educated and want to be included in decision-making processes. The question is would the family farm survive local and global pressures if young, educated women (including daughters-in-law!), would be granted greater power? This is hard to predict. Bryant 1999 found that increasingly women want to enter the occupational community of farming, and construct their place within farming as well as their identities as farm managers. However, Bryant could not find any evidence that women would break down the male culture. They would, however, use their knowledge of male farming communities to gain an equal footing with their male counterparts. Maybe this is the beginning of change?

Looking at present circumstances, at traditional norms and values, and relating them to opportunities available to women, should we perhaps be more realistic regarding women managing and/or taking over the family farm? The outcome of this research may have been influenced by the selection bias of participants, but national as well as international literature shows that many young people, especially young women, once educated, leave rural areas. Pfeffer (1989) discussed that the willingness of women to farm is eroding and that many women do not want to be married to a farmer. Following the modern 'individualisation' path (Beck and Beck-Gernsheim 2005), provides many occupational prospects for the young women. The women's movement has provided for ideological as well as for practical changes in western industrialised societies. These changes are institutional and structural, and, when linked to individualisation, are governed by disintegration of old norms and reinvention of new ones. Societal expectations are that women take up the opportunities offered to become independent.

Analysing issues of culture from a somewhat different perspective, globalisation has influenced the women's movement and, although women in country Australia may not embrace (radical) feminism, the influx of educated, self-assured and confident women, female lifestyle migrants, has contributed to demographic changes and prompted attitudinal changes in country women. The stories of 27 women (Scutt 1995), who crossed boundaries and moved (most of them) from the city to the country, provide evidence about their involvement in, and influence of, local communities. They established permaculture and organic farming facilities, they developed and taught strategies to support women's self-sufficiency, wrote and performed feminist comedy, taught women's programs at technical and further education institutions, and taught French at regional schools. Many of these lifestyle migrants were, and still are, active in local politics, others improved the conditions for childcare, neighbourhood houses, sexual assault services, family planning clinics, emergency services, organised festivals, and negotiated with Indigenous Australians, political decision-makers, and with rural communities. One of the women, working as rural affairs advisor in Gippsland, was given the advice 'not

to bother with greenies, single parents, bring ins, newcomers, hobby farmers and women whose husbands had not inherited their farms'. It was suggested that she 'not waste her taxpayer funded time in talking with other than 'real farm women' (Davey 1995 in Scutt 1995, p. 86). Remarks like these show the difficulties newcomers had to combat. Wilkinson (1995 in Scutt 1995, p. 62) found that country living has provided opportunities she would not have experienced in Melbourne, it has sharpened her political consciousness, and she 'now understands why a farmer's favourite topic is the weather'. In her heart, however, she will never be a country woman, but she has contributed significantly 'to the community which is different [to the community she grew up in] but valuable'. Davey (1995 in Scutt 1995, p. 87) also paid tribute to the strength of rural women, the tenacity and courage of those involved in the environmental movement, of 'people who make no individual gain out of battling to protect what is left of our environment and who attract considerable personal attack in their own communities for doing so. Most of them are women'.

What are the consequences of all of these findings in relation to rural communities? The literature (Hugo 1995, Alston 2005, ABARE 2009) predicts that the number of farms will further decline and it can be assumed that more and more young women will leave rural and remote areas to further their education, to have better professional prospects, and to escape the macho-culture of rural Australia. The young women were talking about increasing isolation because neighbours and friends are leaving the area. However, it seems they found some role models in those who moved from the city to the country. Boxes 12.16 and 12.17 show what two young woman mentioned.

Box 12.16 Doing Better Than Becoming a Farmer's Wife?

My attitude towards life in the country has changed, not spontaneously, but gradually. I grew up on a farm, about 200 km away from here, when I left school I moved to town, got a job as check-out chick at Woollies, then started to study, and it opened my eyes. Female lecturers, well educated, some spoke with an accent. It made me look at what I wanted to do with my life. I mean, if they can succeed here, in our environment, we should be able to do better than become the wife of a farmer – shouldn't we? On the other hand, I was in love with a young farmer. . .

Box 12.17 Paintings, Wine and Long Stemmed Glasses

I can remember my grandmother saying 'now, you stay away from those people who speak with a foreign accent, God knows what they are up to'. But when I was 7 or 8 Mum took me to an exhibition, paintings, in Bendigo, and there were lots of women in strange but beautiful clothes, and they were drinking wine out of long stemmed glasses, and they were speaking with an accent. . . I liked that atmosphere, it was new and it was exciting. I am not sure – but I think the impression they left, was that one day I wanted to live in an environment like that – with nice paintings, and drink wine, and have long stemmed glasses.

These responses show some of the impressions lifestyle migrants made on young country women, indirectly underlining the attitudes of the older generation, persuading the younger generation to channel their energies into a direction that provides for professional satisfaction, security and a different lifestyle. All participants want the family farm, based on farm ownership and inheritance, to continue, but they are also realistic in their attitudes, knowing that outside influences jeopardise the old lifestyle, that better education and costly technology are required for a more progressive farm management, and that changes in management are inevitable. Globalisation, and the demographic changes it has prompted, lets the concept of resilience fade – a little. But resilience clearly needs further exploration, both in relation to those who are remaining on the family farm and those who are leaving. The influence of female lifestyle migrants may have had a much greater impact than described in this chapter.

During this project I could not help but think of one of Karl Kautsky's (1988 [1899]) remarks. He stated one hundred and ten years ago 'To study the agrarian question according to Marx's method, we should not confine ourselves to the question of the future of the small scale farming, … we should look for all the changes which agriculture experiences under the domination of capitalist production.' Modern capitalism has made globalisation possible, which has prompted demographic changes which, in turn, has contributed to the process of individualisation. So what IS the future of the Australian family farm as we know it? Too bad to stay or too good to leave?

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Chapter 13
Doing More for Fewer: Health Care for Declining Rural Communities

Ann Larson

Ann Larson

A. Larson (✉)
Combined Universities Centre for Rural Health, The University of Western Australia, Geraldton, WA, Australia
e-mail: ann.larson@cucrh.uwa.edu.au

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Abstract Thirty per cent of Australians live outside of major cities and 20% of them live in towns which are declining in population. Like residents of other rural communities, they experience poorer health and have less access to health services than those living in cities. In addition, declining rural communities have a higher proportion of vulnerable groups with high health care needs, including Indigenous Australians, farmers and the elderly. As a result of explicit policies and persistent workforce shortages, health services in declining communities are at risk of being closed or down-sized. Such actions can cause a political uproar and have also been shown to have an adverse effect on health, economic sustainability and population growth. As a consequence of these costs, Australia and other countries are adopting other rural health strategies that maintain primary and essential health services in rural communities which are responsive to the needs of the residents and attractive to health care professionals.

Keywords Rural health · Rural population decline · Health reform · Health services · Health workforce · Indigenous health

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
CCD	Census Collection District
GP	General Practitioner
SLA	Statistical Local Area

13.1 Rural Population Decline and Health

The phenomenon of rural population decline is global, affecting at least some regions of most developed countries (Pezzini 2001). This geo-demographic transition has common antecedences. Most notable is the massive restructuring of the agricultural sector, which has brought greater capital investment and reduced demand for labour (Tonts 2000, Pezzini 2001). Communities dependent on agriculture have lost both farming families and the people who produced the economic and social services they needed.

The inland rim of Australia has been experiencing population decline for at least the last 30 years (Larson 2002). During periods of European settlement these areas have been part of the agricultural zone, growing grains and livestock. While some areas were highly productive, many were ill-suited to this form of exploitation (Barr and Cary 1992). The land clearing and settlement was driven by political imperatives such as soldier-settler schemes rather than good farming principles. Damaging land use practices, frequent and extended droughts, and changes in the global markets for agricultural products, make this large part of the country especially vulnerable.

The population change in 2006–2007 illustrates a dynamic which is replicated annually (Fig. 13.1). The largest population declines in that year occurred in the

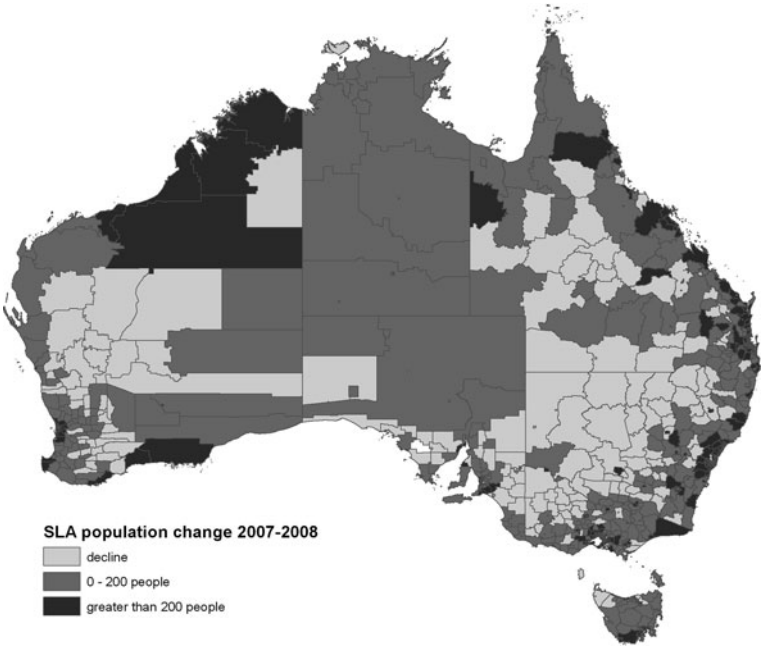

Fig. 13.1 Statistical local area (SLA) population change, Australia (2001–2008). Source: 3218.0 – Regional Population Growth, Australia, 2001–2008

drought-affected north-west of New South Wales (Australian Bureau of Statistics 2008). The more remote regions of Australia's interior and north have also had long-term declines but the recent minerals boom has attracted population in some of these regions (see Chapter 15, this volume).

Many of the health issues for communities with declining populations are shared with rapidly growing communities in amenity-rich areas. For example, both types of communities find it challenging to recruit general practitioners and receive specialist care. However, growing communities have time and political will on their side. As their communities become larger and more attractive to professionals, both the demand for and the supply of quality health services will increase. As this chapter shows, declining communities frequently face a policy environment that views developing their services as a poor investment. However, ignoring the health of rural communities has been found to have expensive social, economic and political costs. Partly as a result of this politically charged landscape, strategies to improve health care to rural communities, discussed in the last section of this chapter, are some of the most innovative in the sector.

Although this chapter is about Australia, much of the research cited has been conducted in other countries. Canada, the United States, the United Kingdom and a few European countries have vibrant rural health research sectors that have explored the nexus between health and population decline.

13.1.1 Demographic Characteristics of Declining Rural Communities

Studies of rural populations usually use the Australian Bureau of Statistics remoteness classification (Australian Institute of Health and Welfare 2004). This measure, based on accessibility to major cities and towns, is divided into five categories: major cities; inner regional; outer regional; remote; and, very remote. These are occasionally collapsed into three categories: major cities; regional; and remote. Communities undergoing a population decline can be found in any one of these remoteness categories but, as shown in Table 13.1, the more remote statistical local areas (SLAs) are more likely to have experienced declines in the 2001–2006 inter-censal period.

SLAs are the smallest geographic unit for which a large range of population and infrastructure data are available. In large cities SLAs correspond to suburbs, and in rural areas they are usually equivalent to a local government area or recognised subdistricts and incorporate the major town and hinterland. While only 20% of SLAs in major cities and inner regional areas had a population decline, 40% of outer regional SLAs and up to 60% of remote SLAs declined. This amounts to 3,774,823 people living in SLAs which declined during the last inter-censal period of whom 33% of them lived outside of major cities and 5% lived in remote or very remote locations.

Table 13.2 is restricted to people living in declining SLAs outside of major cities and outer regional areas. Approximately half of this population is living in SLAs which are declining or had zero growth. As is apparent from the table, declining SLAs have a much higher proportion of their workforce dependent on agriculture, a slightly higher proportion of residents over 65 years old and a higher proportion of Indigenous people. Each of these vulnerable groups has particular needs for health services which are discussed later in the chapter.

Table 13.1 Population growth for 2001–2006 by remoteness and SLA or population size

	Major cities	Inner regional	Outer regional	Remote	Very remote	Total
>–1% decline	4.4%	1.8%	10.6%	40.7%	39.2%	10.6%
–1 to 0%	17.5%	19.9%	28.9%	18.7%	18.3%	20.6%
0 < 1%	28.9%	28.8%	32.5%	20.9%	10.0%	27.5%
>1%	49.2%	49.4%	28.0%	19.8%	32.5%	41.2%
Total number of SLAs	612	271	311	91	120	1,405
>–1% decline	0.5%	0.5%	6.7%	23.3%	35.8%	1.6%
–1 to 0%	17.8%	13.1%	23.3%	20.5%	17.2%	17.4%
0 < 1%	41.0%	31.9%	38.2%	34.1%	7.5%	38.6%
>1%	40.7%	54.5%	31.9%	22.1%	39.5%	42.3%
Total population	13,724,908	3,852,486	1,829,256	267,364	134,195	19,808,209

Source: ABS, 3218.0 Regional Population Growth, Australia, 2008.

Table 13.2 Demographic characteristics of growing and declining rural communities (outer regional, remote and very remote only)

	>–1%	–1 to 0%	0 < 1%	>1%	Total
Percentage of Indigenous	18.7	8.7	6.2	9.9	9.2
Percentage of the labour force in agriculture, fishing or forestry	26.8	20.1	13.5	6.7	14.2
Age distribution					
0–14	23.2	22.0	21.5	22.5	22.1
15–29	17.7	16.9	17.2	19.3	17.9
30–49	28.0	27.7	28.2	30.6	28.8
50–64	18.3	18.9	19.0	17.9	18.5
65+	12.9	14.5	14.1	9.8	12.7
Total population	232,662	503,770	799,645	694,738	2,230,815

Source: ABS 2006 CDATA and ABS, 3218.0 Regional Population Growth, Australia, 2008.

13.1.2 The Health of Rural Populations

Rural–urban health differentials have been extensively studied in Australia. The Australian Institute of Health and Welfare (AIHW) has produced biennial reports on the state of rural and remote health since 1998 (Australian Institute of Health and Welfare 2008b). Unfortunately, these data cannot be broken down by whether people live in growing or declining communities.

The health disadvantages of living outside of major cities are considerable. Life expectancy is 1–2 years lower in regional areas and up to 7 years lower in remote areas (Australian Institute of Health and Welfare 2008b). Excess mortality is the result of deaths from coronary heart disease and other circulatory diseases (37%), cancers (15%), motor vehicle traffic crashes (9%) and suicide (4%). Confining the analysis to people less than 65 years old, excess deaths are due to motor vehicle and other transport crashes (20%) coronary heart disease and other circulatory diseases (24%) and suicide (9%).

Life-style factors play some part in higher mortality rates. A recent report by AIHW summarised the rural–urban differences found in national surveys of health-related behaviour (Australian Institute of Health and Welfare 2008b). The proportion of current smokers is 15–30% higher in regional and remote Australia and, while smoking rates have declined in recent years throughout Australia, declines have been less pronounced outside of the major cities. Risky or high-risk alcohol consumption is higher, as is self-reported use of illicit drugs. The same report showed that contrary to popular stereotypes, adults in regional and remote areas are more likely to be sedentary (less than 100 min of physical activity in the previous two weeks) than adults in major cities. Consumption of vegetables is high, but the consumption of fruit and low-fat dairy products is lower. These findings must be interpreted with caution as they mask what must be considerable differences in health behaviour between rural communities.

Rural and remote residents also face individual, community and environmental risks that compromise their health. The same AIHW report used the 2001 National Drug Household Survey to conclude that males and females in outer regional and remote areas were more likely to report having worked, swum, driven a car, or operated hazardous machinery while intoxicated with alcohol or an illicit drug (Australian Institute of Health and Welfare 2008b). Considering the higher consumption rates, it is not surprising that after adjusting for age, the rates were 4% higher in outer regional and 16% higher in remote areas compared to major cities. The self-reported rates of causing a disturbance, damaging property or abusing people while intoxicated was also higher (32 and 12% higher in outer regional and remote respectively).

Rural occupations such as fishing, mining and farming are among the most dangerous, with high rates of injury and mortality. Greater distances between home and work or services mean that rural people spend more time on the road, greatly increasing their risk of a motor vehicle crash. Finally, rural residents are much more likely to experience natural disasters such as fire and floods.

13.1.3 Socioeconomic Status and Social Interaction

Rural people have much lower rates of university enrolments and of post-secondary school qualifications, although there have been gains in the proportion with qualifications in recent years (Bureau of Rural Science 2008). Household income declines with increasing remoteness, with some exceptions for remote communities involved in mining. Those communities have some very high income households in addition to the majority of low income households.

The social capital of rural communities has been the subject of much research, which has found that the connectedness of people in small communities is both a source of strength and a burden (Onyx and Bullen 2000, Black and Hughes 2001). What has increasingly been shown is that the structures that underpin positive social relations are fragile and very sensitive to economic prosperity (Caldwell and Boyd 2009) and population size (Tonts and Atherley 2005). For Indigenous people living in communities where they are not the majority, the relentless experience of acts of racial discrimination is associated with poorer physical and mental health (Larson et al. 2007).

13.2 Health Care in Rural Australia

Large hospitals, multi-general practitioner (GP) practices and specialist medical centres are commonplace in Australia's capital cities. They are much rarer in rural areas. Perhaps more importantly, services that look similar are actually structured very differently, deliver different services and cater for different populations.

13.2.1 Primary Health Care Workforce

Primary health care is the foundation of Australia's health care system and in most of the country GPs are its main providers. More than 90% of Australians see a GP at least once a year for reasons ranging from coughs to ante-natal care, depression to cancer treatment. Through Medicare the Australian Government covers part of the cost of each GP visit but GPs can charge more than the Medicare fee.

Rural residents are not equal participants in the primary health care system. There are fewer GPs per person in rural areas (Australian Institute for Health and Welfare 2008), fewer visits made per year, and greater out-of-pocket expenses per visit (Young and Dobson 2003). For geographers, this is a familiar pattern. Utilisation of non-urgent services declines with distance, following a familiar distance-decay function. Services, on the other hand, cluster where there are larger populations. The cost of time and transport and the greater competition for services based in regional centres contribute to lower utilisation rates of those in smaller, isolated communities.

Furthermore, the work of rural GPs is different from their metropolitan counterparts. The patients they see have more serious health problems and they have to manage far more of those problems themselves, because of the lack of local specialist services. GPs serving small rural communities routinely undertake complex tasks at a rate higher than GPs in regional or remote centres with larger populations and access to a hospital or medical, nursing and allied health colleagues (Humphreys et al. 2003). Fewer, sicker patients who see GPs less often has proven to be a poor business model for rural primary health care (Rural Doctors Association of Australia 2003).

A demanding work load and lack of financial viability are among the many factors which have been attributed to the problems of attracting and retaining general practitioners in rural areas. Other factors include professional isolation, lack of educational opportunities for children and lack of employment opportunities for spouses (Hayes et al. 1997).

For patients in small towns, their continuity of primary care is at risk because of the workforce problems. In Australia doctors in private practice may be employed under a range of arrangements such as locums (in which they are temporarily filling the post, for example for a GP who is on vacation), or under contract by the owner of the practice or a recruiting agency. Doctors who graduated overseas comprise 41% of all rural and remote GPs and many are on restricted programs which require that they work in areas of workforce shortage for a designated period (Australian Government Department of Health and Ageing 2008). This situation is a major source of frustration for rural residents (Box 13.1).

Communities experiencing significant population decline face the greatest challenge in attracting and retaining GPs. A sensitive measure of the GP workforce was developed for Western Australia based on a census of the rural medical workforce done in 2002 (Scott et al. 2006). The workforce measure was based on census collection districts (CCD) and used a floating catchment to reflect that people could travel outside of their CCD boundaries, up to a maximum distance of 100 km. The resulting ratios of the available primary care doctors to population were calculated.

Table 13.3 Access to primary care medical workforce in non-metropolitan Western Australia in 2002 by per annum population change 1996–2001

Population change	Adequate	Inadequate	None reported	Population total
>–1% decline	31.3	62.0	6.7	98,909
–1 to 0%	74.2	24.2	1.6	90,580
0 < 1%	70.0	29.9	0.1	142,023
>1%	73.1	25.9	1.0	141,280

Source: Workforce measures derived from Scott et al. (2006).

Table 13.3 uses those measures to compare the adequacy of the GP workforce in areas with rapid and moderate population change using a benchmark devised by the state rural health workforce agency, ranging through one full time GP to 1,200–1,500 people depending on health care needs. This shows that less than 40% of people living in the 29 SLAs that experienced population declines of greater that 1% per annum from 1996 to 2001 had an adequate GP workforce. Slower rates of population decline did not appear to compromise access to GPs.

Box 13.1 The Revolving Door of Rural Doctors

> We've had doctors here for as little as a few months, locums will come in for three weeks sometimes . . . it's not as bad here as it was in the other northern community I lived . . . I actually attribute a lot of my health problems to that I didn't get proper care through those years. (Wong and Regan 2009, p. 6).

13.2.2 Hospitals

Hospitals are not evenly distributed through the country. Regional areas have approximately 10% fewer hospital beds per person and remote areas about 20% fewer than major cities (Australian Institute of Health and Welfare 2008a).

Studies in a number of countries have found that hospitalisation use decreases by distance, just like the use of primary health care services. However, because of the extreme distances in Australia and the relatively poor coverage of primary care, hospital use and length of stay actually increases with remoteness (Australian Institute of Health and Welfare 2008a, Brameld and Holman 2006). Health problems are detected later, the patients are sicker, and there is less capacity to receive the necessary care within the community. Hence patients from rural and remote areas may be admitted to hospital more readily and encouraged to stay longer than would occur if they lived in a town with good primary health care and a hospital.

Unfortunately, the better-late-than-never approach to hospital admissions leads to significantly lower survival rates. There is evidence of delays in seeking treatment, choice of less aggressive treatment and suboptimal use of best practice by rural

patients or their providers. These have been particularly identified for coronary heart disease (Burnley and Rintoul 2002), some cancers (Jong et al. 2002), and end-stage renal disease (Cass et al. 2001); the very conditions that contribute to excess rural mortality (Australian Institute of Health and Welfare 2008a). For example, regional and remote residents have lower rates of coronary angloplasty and coronary artery bypass grafts (Australian Institute of Health and Welfare 2008a).

Especially since the 1980s, hospital closures or restructurings have been a common occurrence across much of the developed world (Sorensen 2008). Rural hospitals, from either the private or public sector, have been particularly vulnerable because they are small, with low occupancy rates, poor financial performance and serving a declining population (Barnett and Barnett 2003).

13.2.3 Specialist Services

Medical specialists other than GPs are very scarce outside of major cities. The ratio of fulltime equivalent specialists to 100,000 population falls from 122 in major cities to 56 in inner regional areas, 38 in outer regional areas, and 16 in remote areas (Australian Institute of Health and Welfare 2008a). Some of this shortfall is made up by having a regular visiting service of specialists from tertiary hospitals (Gruen et al. 2002).

Debates about the provision of specialist services in rural areas usually revolve around the issues of safety and quality. Maternal care is an example of a hotly contested service. Rural communities understandably want normal births to be delivered locally. Some rural GPs are prepared to undertake the extra study and the additional demands on their time to be trained as a GP-obstetrician, enabling them to complete a caesarean section (with adequate anaesthetic cover) and handle emergencies. The debate is whether such proceduralists, or even a qualified obstetrician, can maintain skills when performing a small number of deliveries a year. The result has been a precipitous decline in maternity services in rural areas. The number of small hospitals delivering births annually almost halved between 1991 and 2006, from 325 to only 159 (Maternity Services Review 2009).

13.3 Vulnerable Populations

As shown in Table 13.2, declining rural populations have a disproportionately larger number of people whose health is among the poorest in Australia. Indigenous people, the elderly and farmers are important members of these communities, but history and other circumstances cause their needs for health services to be greater. As has already been suggested, they live within an environment in which the risks of poor health are high and the difficulties in accessing health services are even higher. This section will discuss the demographic and other factors which have led to a preponderance of these groups living in declining rural communities. The health profile of these populations is reviewed and some of their unique health service needs are identified.

13.3.1 Indigenous Australians

European settlement dispossessed Indigenous people from their land and denied access to both cultural connections such as kin, language and country and opportunities for education and employment. The continuity of cultural strength despite this systematic violence is a testament to the resilience of Indigenous Australians. Nevertheless, it has come at a high cost, including persistent high rates of mortality and morbidity with average life expectance 17 years lower than non-Indigenous Australians (Australian Bureau of Statistics and Australian Institute for Health and Welfare 2008).

Although 32% of Indigenous people live in major cities and a further 43% in regional Australia, they make up a higher proportion of rural and remote Australia (Australian Bureau of Statistics and Australian Institute for Health and Welfare 2008). This proportion is likely to increase, especially, as shown in Table 13.2, in rural areas experiencing population decline. This is because non-Indigenous residents are more likely to move out of these communities than Indigenous people who place a greater value in remaining close to traditional country and family and lack the ability to take advantage of educational or employment opportunities elsewhere. In addition to different rates of out-migration, the somewhat higher fertility rate of Indigenous people is another reason for the higher growth rates. John Taylor has studied this process extensively and has documented that the population growth of Indigenous people in Australia's inland and interior regions has been some 15–20 percentage points higher than the non-Indigenous population growth rate (Taylor 2002).

Indigenous Australians experience significantly higher mortality and morbidity rates for virtually all causes compared to non-Indigenous Australians (Australian Bureau of Statistics and Australian Institute for Health and Welfare 2008). The higher proportion of Indigenous people living outside of major cities means that they are frequently the main consumers of rural health services. Unfortunately, rural mainstream health services have not served Indigenous people well. There are relatively few rural Aboriginal community controlled health services and few Indigenous people employed in mainstream services. An increasing awareness of the importance of providing culturally secure health services has heightened interest in improving the quality of care provided but most mainstream rural health services still do not have formal processes to improve knowledge and skills in working effectively with Indigenous colleagues, patients and communities (Coffin 2007).

13.3.2 Older Australians

The increasing proportion of older people has been attracting considerable attention in recent years. Ageing in rural Australia has a unique set of causes which means that the pace and characteristics are different than in major cities. These are acute in communities with population decline. In Australia as a whole and in large cities,

population ageing is the result of prolonged below-replacement fertility, complemented by increased life expectancy, particularly in the older age groups. These are features of rural areas as well. However, rural populations are also characterised by high rates of out-migration of youth and young adults (Larson 2006). While some growing regional centres are able to attract adults, often with young families, to work in businesses and public services, rural communities that are shrinking fail to attract people to make up for those they have lost.

Not all declining rural communities have a high proportion of older people, but a disproportionate number do (Larson 2006). Chronic and complex illnesses, increasing fragility and declining cognition are among the health problems that older Australians face regardless of where they live. Older people in these communities are more likely to be living without close relatives nearby.

The preferred policy strategy is to provide support for these older people to stay in their homes or in local residential care facilities. However, workforce problems, small caseloads and poor access to specialist support means that these services are logistically and financially challenging to offer in small rural settings (Cloutier-Fisher and Joseph 2000).

13.3.3 Farming Families

In the current uncertain climate for farmers, their general health is emerging as a key issue. In the past, occupational risks such as tractor roll-overs and pesticide contamination were the greatest focus, and such-occupational related injuries are still a feature of farming. However, as the pool of farm labour contracts and farm sizes increase, the remaining farmers are taking on a greater work load for more years. The average age of farmers (male and female) is increasing and with that a host of age-related chronic illnesses which, if left unattended, can develop into acute complications (Brumby et al. 2009). Furthermore, working in isolation and at the mercy of uncontrollable forces such as weather and global markets puts farmers at greater risk of anxiety and depression. Suicide rates are higher among farm residents than the rest of the rural population (Miller and Burns 2008).

13.4 Impact of Declining Health Services on Rural Communities

In Scotland as in Australia, research has shown that the citizens of small rural communities define a medical practice or a hospital along with a school, a church or community hall and a shop, as essential for the well-being of the community (Humphreys and Weinand 1991, Farmer et al. 2003). Yet, there are multiple pressures to shut small hospitals, including low utilisation, high costs, concerns about safety, and workforce shortages. In this section I look at the effects of loss of health services on rural communities. Attention is given separately to health effects, the social and demographic effects, economic effects and political effects.

13.4.1 Health Impacts

The health impact of the withdrawal of services is difficult to quantify. Mayors of American towns that lost their only hospital during the 1980s were interviewed about the consequences (Hart et al. 1991). Three-quarters felt that it had harmed access to medical care and that the impact was most keenly felt by the poor and the elderly. Yet a study in Canada found the closing of small rural hospitals had no effects on health or use of in-patient services of residents (Liu et al. 2001).

Removing obstetric services from a town has a much greater effect than just the inconvenience to the mother and her family, although that can be considerable. When obstetric services go, the antenatal service is also usually disrupted, potentially leading to adverse outcomes. A study in a rural state in the United States found a nearly 20% increase in low birth weight infants following the closure of obstetric services in seven rural towns (Sontheimer et al. 2008). This highlights the importance of planned transitions before services are removed.

13.4.2 Demographic and Social Change

Poor health and poor health services can potentially accelerate population decline. One of the most direct ways that poor health services can influence population size is in the out-migration of people with high health-care needs. An Australian study, using a national sample of middle-aged women, found that after controlling for socio-economic and marital status, moves from a rural to a more urban location was significantly associated with multiple recent visits to a medical specialist (Larson et al. 2004). Such moves would be likely to involve other close family members as well.

Efforts to demonstrate that the out-migration of the less healthy actually result in a net loss for rural communities have been inconclusive (Verheij et al. 1998, Brimblecombe et al. 2000). One reason may be that there is also a countervailing migration of people to rural areas who are attracted by the lower cost of living. These people are frequently among the chronically unemployed and have relatively high needs for health services.

A Danish study is one of the few to examine the potential demographic impact of a rural hospital closure (Sorensen 2008). A survey was conducted of residents of a Danish island with a single hospital and a population of about 7,000. Numerous hospital closures had occurred in Denmark as a result of population decline and consolidation of local governments so the closure of this island's hospital was not inconceivable. As many as 29% of adults surveyed said they would consider moving away if the hospital was closed. Those who were most likely to consider moving had children living at home. However, elderly adults placed the highest importance to the hospital, but were the least likely to say that they would move. In the event of a hospital closure, the elderly, with their greater health care needs, would be the most likely to remain in their under-serviced community.

The Danish study brings up a number of themes that feature in Australian studies of residential mobility and are pertinent to the issues of health care in areas of population decline. First, longer distance mobility is most common among younger people, who are more likely to have higher levels of education and assets (Bell 2002). Second, those with fewer economic or educational advantages are more likely to make short distance moves. If they do move longer distances they are most likely to move to areas that are relatively disadvantaged, with lower average income levels and higher levels of unemployment (Larson, unpublished). Third, moving house used to be associated with economic motivations for employment or education but, increasingly, residential mobility in Australia is associated with the search for greater amenities (see Chapters 2, 3 and 4, this volume). For those with high levels of education, employment or assets, this might mean settling near the coast or in an attractive bush-land setting. For the elderly and those on lower incomes, it might mean affordable housing. Access to better services also consistently ranks among the most important reasons for moving.

13.4.3 Economic Impacts

Much research in the United States in particular has quantified the economic contribution of a robust health sector in rural communities (Doeksen et al. 1990, McDermott et al. 1991, Thompson 1996). One study calculated that for a rural town of 3,000 with a hospital, two doctors and two pharmacies servicing a district of about 10,000 people, direct wages equated to 11% of total non-farm employment and, through indirect effects, contributed about 20% of total employment (Doeksen and Schott 2003). Several studies have been done of the actual impact after a hospital closes. One of the most recent found that in the United States the closure of a community's only hospital reduced per-capita income by 4% and increased unemployment by 1.6 percentage points (Holmes et al. 2006).

13.4.4 Political Impacts

Worldwide the threatened closure of rural hospitals evokes strong community resistance. Numerous studies have demonstrated the importance in which these institutions are held (James 1999, Durey and Lockhart 2004). This has been noted by New Zealander researchers (Box 13.2).

Careful analyses of community responses to rural health service restructuring find that community protest alone does not result in communities' retaining their health services (Liu et al. 2001, Barnett and Barnett 2003). What is critical is strong local leadership, especially with the support of the local GP, which is able to make effective use of external support and eventually gain community consensus regarding new forms of service delivery.

Box 13.2 Importance of Health Services to Rural Communities

> They provide an array of health services and aid in the retention of local primary care practitioners. They are a source of civic pride; often the major source of employment; their presence may help communities attract investment; but perhaps above all they are a source of security and a symbol of legitimacy for a town and its inhabitants. (Barnett and Barnett 2003 p. 60)
>
> We advocate the view of rural health services in which the symbolic importance of local services and institutions may equal or exceed their value as providers of health care. (Barnett and Barnett 2003, p. 60 quoting Kearns and Joseph).

Local leadership is critical because formal public and private health bureaucracies have little skill or even motivation to help communities understand and embrace new models of health service delivery. Where centralised governments retain control of health services, community participation in decision making is intended to persuade rather than to consult (Durey and Lockhart 2004).

An analysis of a sweeping withdrawal of funding from small Saskatchenwan hospitals concluded that this was politically acceptable because the decision was based on low utilisation rates. Hospital services were replaced with community services that addressed real unmet needs (Lepnurm and Lepnurm 2001). This is not always the case. The American study of mayors of towns who had lost a small general hospital found that closures were sudden and unanticipated, although, eventually, more than half of the facilities were put to use as a new health care service (Hart et al. 1991). While in Saskatchenwan there was a relatively smooth transition from one model to another, in the US the closures were sudden and did not include forward planning.

The under-utilisation of small hospitals is a real problem. As the number of services small hospitals can offer dwindle, people vote with their feet and bypass local facilities for all of their health needs. In Australia, the people most likely to do this have private health insurance or supportive family in the city. Increasingly small inland hospitals serve mostly Indigenous patients who have neither private insurance nor urban networks. This emerging two-tiered hospital system means that there is less political cost to closing or downsizing hospitals. Communities where more than half of the population is Indigenous are much less likely to have hospitals and resident doctors than non-Indigenous communities of the same size (Ellis and Kelly 2005).

13.5 Policy Responses

Addressing the health service challenges for small communities with high health care needs is not simple and there is no magic bullet. However, there are a suite of policy options that have been trialled in Australia and elsewhere. Some targeted

workforce programs have been effective. Other options require broader health care reform and the evidence base for these is emerging.

13.5.1 Workforce Recruitment and Retention

In Australia the most well-known rural health strategies have not involved closing or down-sizing services. Instead they have focused on addressing workforce shortages by facilitating improved recruitment and retention of health professionals. These can be divided into programs to encourage rural people to take up health careers; preparing students in health fields for rural practice; programs to attract qualified professionals into rural practice; and, programs to improve retention.

The value of enabling rural residents to take up health careers has the strongest evidence base. Studies in the United States and Australia consistently show that health professionals who grew up in rural areas are more likely to return to practice in the country (Laven and Wilkinson 2003). Yet, on-going promotion strategies are required to ensure that young rural people take up these opportunities. There is little question that even with these programs, people from small towns will be least likely to take advantage of programs. Although alternative entry pathways are available in recognition that rural high school students do not have the same range of opportunities, rural high school students are still likely to lack the knowledge, aspiration and confidence necessary to pursue health courses (Durey et al. 2003). This has as much to do with low socio-economic status as with locational disadvantage because the direct and opportunity costs of university study are high (Shaw and Larson 2003).

Strategies to 'grow your own' involve offering nursing and other health courses in rural areas, enabling residents to study without moving to a city. These opportunities are still usually confined to regional centres, but they are more accessible to rural residents than metropolitan based courses.

The value of offering rural experiences during the training period is also relatively well-proven. Students of medicine, nursing and allied health fields such as physiotherapy and occupational therapy who have some of their learning program in a rural area, are more likely to practice rurally once they qualify (Playford et al. 2006). This evidence compelled the Australian government to establish academic units in regional centres to facilitate these learning opportunities. Area Health Education Centres in the US offer similar education and training programs in areas of special need.

Other recruitment programs have a weaker evidence base. In small communities local governments often purchase the surgery, supplement salaries, provide the house and car and in other ways assume the financial risk of private practice. These opportunities are rarely available for other health professionals within the private sector but jurisdictions offer incentives such as housing, longer leave entitlements and study days to attract medical, nursing, and allied health professionals to rural and remote sites. Do these strategies work? Most evidence suggests that it is possible to improve recruitment by offering attractive employment practices but, despite attraction incentives, workforce shortages continue.

Will they stay? Retention is a different matter. An important paper by Pathman et al. (2004) found that physicians working in underserved areas of the United States had no different retention rates than those working in other areas. This suggests that rural and other high need areas can be as effective at retaining a health workforce as other areas. Retention is largely influenced not by salary inducements and community amenities but through community engagement, job satisfaction and professional support (Dunkin et al. 1992, Cutchin et al. 1994, Kamien 1998, Stagnitti et al. 2005).

13.5.2 Health Care Reform

The political ramifications of leaving communities without health services can be severe and most countries attempt to avoid this by devising initiatives especially for small rural communities. These schemes retain basic emergency care capacity, some sub-acute care such as rehabilitation and respite, and coordinate a range of preventive and community-based services. These require new funding models and a different workforce and many countries have tailored programs especially for small rural communities.

During a reforming era, New Zealand created Crown health enterprises with the main aim to return a surplus to the government through promoting competition and greater efficiency. However, the inability for hospitals catering to rural communities to operate under these arrangements became apparent and the ruling conservative government created community trusts which incorporated financial incentives other than profit and were more explicitly community controlled (Barnett and Barnett 2003).

Canada has been trialling a strategy called Group Medical Visits. This is a multidisciplinary team which makes regularly scheduled visits to rural communities, facilitating routine medical care, health education and facilitated group support sessions (Wong and Regan 2009).

In the United States rural hospitals can elect to become Critical Access Hospitals which are reimbursed by Medicare. This program was introduced explicitly to ensure the financial viability of small rural hospitals.

In Australia the preferred response is the creation of integrated systems of care that offer a suite of primary care, aged care and some acute care from a multipurpose facility. These can include a mix of resident and visiting service providers. New forms of health workers have also been created to work in these and other health care settings. In particular, legislation has passed in all jurisdictions to allow extended scope of practice for rural and remote nurses and to create nurse practitioners and, in some sites, physician assistants. With appropriate education and accreditation, these workers will be able to provide care with varying degrees of autonomy, assessing, diagnosing and prescribing for a range of common conditions. These workforce reforms have the potential to increase access to primary health care to small rural towns.

13.5.3 Reducing the Tyranny of Distance and Size

If you cannot bring the health service to the patient, perhaps you can bring the patient to the health service? Rural people routinely subsidise their health care by travelling to services. Australia is unique in providing payments to meet those costs for rural people who require specialist care. These patient assisted travel schemes are very popular programs. Among the first actions of the Liberal – National Party government voted into Western Australia in 2008 was to increase funding for the Royal Flying Doctor Service and the travel scheme. The National party members who hold the balance of power have their electorates in areas of population decline and down-sized health services. Patient assisted travel schemes have never been subjected to a rigorous evaluation of their cost savings or health improvement. Still, they are clearly an important part of a strategy to reduce rural-urban health inequities by reducing the out-of-pocket costs for people with serious health conditions. This assistance is likely to improve the timely delivery of quality specialist care.

A criticism of patient travel schemes and other strategies which focus on enabling rural patients to receive specialist assistance distant from their own community is that local health care providers are bypassed. These can lead to de-skilling of local health professionals or a failure to seek primary health care such as in the case of poorer antenatal attendance when deliveries are moved to a distant, larger facility. A national study of the experiences of rural patients transferred to tertiary hospitals found that local general practitioners and hospital staff were not informed about discharge dates, medication changes and on-going needs for management or rehabilitation (Webber 2005). This is in addition to the stresses that the patients themselves experienced in needing to navigate a large and distant city and hospital system without family.

Electronic methods of overcoming distance are increasingly being seen as part of the solution for rural health care delivery. Tele-consults by psychiatrists, paediatricians and burns specialists are commonplace, reducing travel time for patients and increasing the likelihood of specialist input. Other initiatives provide support to rural health professionals, providing advice and second opinions, enabling them to continue to manage their patients locally (Santamaria et al. 2004). Such initiatives have consistently been shown to be popular with patients and to have at least the same outcomes as face-to-face delivery (Currell et al. 2005).

13.6 Conclusion

Population decline is a persistent feature of rural Australia, despite many other rural communities enjoying considerable growth and prosperity. As the number of residents decline, those who remain are likely to have high health care needs but their local services will be under greater stress. Some of the challenges for health services are attracting and retaining health professionals to practice in the small towns,

maintaining an infrastructure built decades ago for a larger community, and offering the range of care required by the community without jeopardising clinical safety. Poor health and poor health services create a vicious vortex which can result in greater disability and premature death for individuals and an unsustainable future for the community.

Fortunately, governments around the world are reassessing their rural communities and their rural health policies. Rural areas, including those previously dependent on agriculture and now in decline, which are the focus of this chapter, are increasingly being viewed as national assets rather than antiquated drains on public finance (OECD 2006). Rural communities are the custodians of nations' natural and heritage environments and are a platform for future economic growth. The thrust of current rural policy is to invest in rural communities in ways that are responsive to their aspirations and capacity. For the health sector this means finding smarter ways to provide quality health care to fewer people in the forms that communities need it, often leading the way in workforce reform and use of technology.

Maintaining quality health care by using innovations such as funds pooling, integrated services, new types of health professionals and forms of eHealth will be the foundation of rural health policies into the future. The greatest challenge will be to meaningfully engage with each community to find the combination of solutions which will work for them so that they can continue to feel safe and well-supported to maintain good health and to receive treatment when illness or misadventure strikes.

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Chapter 14
Staffing Rural Schools: A New Perspective

Colin Boylan

Colin Boylan

C. Boylan (✉)
Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia
e-mail: cboylan@csu.edu.au

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Abstract One of the major challenges facing rural schools is the recruitment of experienced teachers. Currently, many rural and remote schools are staffed by newly appointed or beginning teachers who remain in these places for the minimum period of appointment, often 2 or 3 years. Drawing upon the recent sea-change phenomenon, where city residents move to coastal locations often based on a change in lifestyle (e.g., approaching retirement or escaping the 'rat-race'), this chapter will explore a new and emerging group of lifestyle changers known as tree-changers. A tree-changer is a person who voluntarily relocates from a city environment to a rural or remote inland place. In particular, this chapter examines teachers in New South Wales who are tree-changers, and identifies that tree-change teachers choose to relocate to a rural place often with little researching about the services and facilities within their chosen rural place. For many teachers, they went through an adjustment process in which they used community integration strategies, including joining a number of sporting/recreational groups, interest/service clubs or community/church organisations that assisted their inclusion. Finally, some of the lived experiences of these tree-change teachers are recounted. The chapter concludes with a discussion of the concept of a rural lens and its application to systemic staffing practices and identifies policy recommendations that capitalise on the staffing potential associated with actively recruiting experienced tree-change teachers for rural and remote schools.

Keywords Rural education · Rural school staffing · Tree-change teachers · Recruitment and retention

Abbreviations

HREOC	Human Rights and Equal Opportunity Commission
NSWDET	New South Wales Department of Education and Training

14.1 Introduction

As the baby-boomer generation (those born between 1946 and 1964) draws closer to retirement, the question: 'Where will I spend my retirement years?' becomes significant. The concept of embarking on a sea-change is often associated with this retirement question. Some people will retire in their current location while others plan and select a different retirement location prior to reaching retirement age and then relocate upon retirement. Another group plans and selects their preferred retirement location and relocates to this chosen place well before their actual retirement commences. This change in career pathway, lifestyle, work place and geographic location has been called a 'sea change' (Burnley and Murphy 2004). This term has been popularised through the media and, in particular, in the Australian television series 'Sea Change' in which the lead character, Laura Gibson (played by Sigrid Thornton), changed her career and lifestyle from a corporate lawyer in the city for magistrates' robes in the laid back coastal town of Pearl Bay. Another fictional television series along similar lines to 'Sea Change' was 'Always Greener'

in which social worker John Taylor (played by John Howard) is struggling with the strains of his city based career and while visiting his sister in the country, decides to trade places opting for a farming career. Additionally, the reality television program, 'The Real Seachange,' hosted by John Howard follows the challenges and joys as couples and families who are often city based move into their new lifestyle in a coastal or rural or overseas location. Typically, in this series the majority of lifestyle or sea-change events documented are associated with an actual sea-change, i.e., a move from a city to a coastal location. The telemovie, 'Emerald Fall', represents another depiction of the change in lifestyle aspirations as kindergarten teacher, Joni Ferguson (played by Georgie Parker) opts for a complete change of pace by relocating to the New South Wales Blue Mountains area and managing a Bed and Breakfast establishment (Daily Telegraph 19th March 2008). The media has created substantial interest in the sea-change phenomenon.

In the rest of this chapter one group of tree-changers, teachers, is examined and the variety of factors influencing their decision to relocate and their subsequent adjustment to their new rural lifestyle are analysed. Finally, a number of policy implications affecting the school staffing operations of educational authorities for rural schools is suggested.

14.2 Background

14.2.1 Sea-Change and Tree-Change Phenomenon

The lifestyle, career and place phenomena described above and in Chapters 2, 3 and 4, this volume, are a well documented demographic trend that has been labelled variously by researchers as a rural rebound, a turnaround, a counter-urbanisation event, a deconcentration and/or a trend reversal (e.g., Hugo 1996, Johnson and Beale 1998). Implicit in all of these definitions is the core idea of a voluntary relocation from a metropolitan environment to a non-metropolitan environment. Over the past 10 years, a new language of descriptive terms for this phenomenon has entered the public discourse in Australia. These language terms include 'Sea change', 'Tree change' and 'Vine change' with the person(s) undergoing this relocation usually referred to as: 'sea changer', 'tree changer' or 'vine changer'.

Initially the term 'sea-change' entered the general and popular literature about 10 years ago (Salt 2001). Burnley and Murphy (2004) described a 'sea changer' as 'someone who more or less makes a free choice to leave the metropolis' (p. 34). Additionally, the term 'sea change' has the connotation of a significant change in career pathway, geographic location and/or vocation. The sea-change phenomenon has become popular among the Australian baby-boomer generation (Burnley and Murphy 2004, Curtis et al. 2006). Salt (2001) argued that the baby-boomer has a fascination with the coastal lifestyle surrounding the beach and the sea-change phenomenon is a cultural feature of the baby-boomer generation as well as a demographic trend occurring around the whole of Australia. Australians are among the most mobile people in the world with Newton and Bell (1996) reporting that Australians relocate 11 times over their lifespan. These places are often where the

sea-change person seeks to establish their new life. Carter et al. (2007) asserted that the Queensland Sunshine Coast is the fastest growing sea-change region in all of Australia, reaffirming the popularity of the sea-change phenomenon. Using demographic data on population mobility, Burnley and Murphy (2004) noted that Australians have been engaging in the sea-change phenomenon since the 1970s.

More recently, the concept of a 'tree change' has entered into the public discourse as a way to distinguish between a person choosing to relocate to a coastal or non-coastal place. The name 'sea changer' defines the person relocating to a coastal city, town or village while the 'tree changer' descriptor identifies that the relocation destination is a rural location (regional city, rural town or farm property) that is non-coastal. Since 2006, the tree-change phenomenon has been promoted actively through the print-based media (e.g., *When tree is not enough*. Sydney Morning Herald 23–24 February 2008 and *Escape; All Change*. OUTthere 2008, see also Chapter 4, this volume).

During 2007, the term 'vine change' appeared in the public discourse. Unlike the previous two terms, 'vine changers' are most often from the baby-boomer generation who are employed in highly paid financial management positions who seek to relocate specifically to where they can own and either operate or manage a commercial vineyard. Salt (2007) described a vine-changer as a person from the entrepreneurial class of Sydney.

The tree-change phenomenon is not unique to Australia. It has been reported in other countries including America where Johnson and Beale (1998) and Rudzitis (1999) have commented on the urban to rural migration as a demographic phenomenon. In their research these authors sought to identify the reasons underlying the move from urban to rural American locations. Collectively they reported the main reasons for this tree-change decision centred on:

(i) social and environmental conditions such as low crime rate, the importance of the scenery, the pace of life; and,
(ii) outdoor recreational opportunities as significant influencing factors.

In both of these American reports, the tree-changers were retirees seeking a better quality of post-employment lifestyle. In contrast, the research reported in this chapter focuses on tree-changers who are currently employed and will continue to be employed full time after their tree-change. This group of people were not identified in the literature cited above (although are a significant component of the tree change phenomenon – see Chapter 4, this volume).

The Australian sea-change and tree-change phenomenon have been documented by Burnley and Murphy (2004) for rural and regional Australia. Their analyses of the demographic trends for New South Wales identified that most people were relocating from Sydney to:

(i) coastal regions to the North or South of Sydney (i.e., the sea-changers);
(ii) regional cities (such as Orange, Wagga Wagga, and Dubbo) (i.e., the tree-changers); and,
(iii) rural places (such as the Mudgee region and the Snowy River region) (i.e., the tree-changers).

Complementing and extending this sea-change research, the 'A Current Affair' program on tree-change (8 January 2009) identified the best/popular tree-change locations for eastern Australia in 2008 were: (i) Queensland – Mapleton; (ii) New South Wales – Kangaroo Valley; (iii) Victoria – Bright; and (iv) Tasmania – Richmond. These locations were identified by Salt (2009) during the program.

One important difference between the Australian research of Burnley and Murphy (2004) and the USA research was the differing demographic: the majority of Australian sea/tree-changers were of working age (70%) with the balance being retirees (30%). Burnley and Murphy (2004) found that for the 6 year period prior to their publication the proportion of the baby-boomer population embarking on a sea-change or tree-change increased as they neared retirement age. It is suggested that the baby-boomers were relocating to the new chosen location prior to retiring as a strategy to develop community ties and links while still employed. Finally these authors' research sought to identify the primary reason(s) why people choose to relocate to these non-metropolitan places of New South Wales. Their main reasons for this relocation were:

(i) lifestyle related (e.g., better place to raise a family, live in a quieter place, less crime);
(ii) employment based reasons;
(iii) quality of the local environment reasons; and,
(iv) transition to retirement reasons.

More recently, Curtis et al. (2006) have identified that the tree-change phenomenon is a significant and continuing rural event. These authors analysed the demographic changes in settlement patterns in the Corangamite Catchment Management region of Victoria. This region geographically accounts for 6% of Victoria's landmass, consists of nine local government areas with a population of 330,000 people. They found that 17% of the population were 'newcomer farmers'. Most of these newcomer farmers were employed in non-farm work and owned small properties or 'hobby farms'. Some of these newcomers are tree-changers who have relocated to this region because of (i) career pathway opportunities, and/or (ii) quality of environment reasons.

14.2.2 Teachers as Tree-Changers

The above discussion has focussed on the general attributes of sea/tree-change populations. In contrast, this chapter has a specific group – teachers – as its focus and seeks to explore their reasons for opting for a tree-change. The attraction, recruitment and retention of teachers to rural communities across Australia are major staffing issues for all educational employer organisations that have a long history (e.g., Turney et al. 1980, HREOC 2000, Vinson 2002, Gerard Daniels 2007). A significant body of educational literature exists about teachers and teaching in rural places which addresses issues such as the following: (i) teacher pre-service programs (e.g., Boylan 2005); (ii) staff recruitment and retention (e.g., HREOC

2000, Roberts 2005); and (iii) incentive programs for rural appointments (e.g., Scott 1990). In this literature, the staffing of rural schools was identified as a long and continuing problem for state education authorities (e.g., Scott 1990, Roberts 2005). Some of the key issues raised in this educational literature on rural teacher appointment and retention are summarised below.

(i) Rural living implies that everyone knows everyone else and new teachers would be expected to become part of the community (CSC 1988, Illingworth 2004, Roberts 2005).
(ii) The experience of teaching in a rural school can be extremely rewarding due to the sense of the strong school–community links that creates opportunities to individualise/adapt instruction to meet the needs of students more closely and to know most of the students personally (CSC 1988, Meyenn et al. 1991, Preston 2000, Boylan 2003, Roberts 2005).
(iii) Mentoring and induction programs have been developed for beginning teachers and newly appointed teachers as a support mechanism to assist with adjusting to life as a teacher in a new rural school and life in the rural community (Yarrow et al. 1999, NSWDET 2002).
(iv) Recruitment and retention incentives are suggested as a strategy to attract teachers to rural places as well as being effective in retaining experienced teachers (HREOC 2000, Koreneff 2005, Roberts 2005).
(v) Rural teaching can be a positive social and personal experience in which the teacher experiences other cultures and other world views, sees life from a new perspective as exciting and challenging to be a participant in a new culture, enjoys the environmental conditions and open spaces in a rural location. However, rural teaching does have its disadvantages which are often linked to personal anxiety, isolation and alienation. Long-term 'stayers' feel that their teaching work is valued by parents, their social capital contributions to the community are valued and the community values having their teachers live locally (Boylan and McSwan 1998, HREOC 2000, Roberts 2005).
(vi) Professional development access and participation is a crucial issue for rural teachers. Often, professional development is available predominantly in large regional centres at a high cost to both the teacher and the school. The benefits of professional development participation include: (a) supporting classroom teaching practice, (b) remaining current with the teaching curriculum, (c) acquiring new ideas for the curriculum implementation, and (d) receiving current information about the teaching discipline and educational practice (CSC 1988, HREOC 2000, MCEETYA 2001, Murdoch 2002, Sharplin 2002, Vinson 2002, Williams 2002, Skilbeck and Connell 2003).

A significant teacher succession planning issue has also been identified. The majority of currently employed teachers are baby-boomers who will approach retirement over the period 2008–2015. The Australian Education Union (2001), Lonsdale and Ingvarson (2003) and Pegg (2007) reported that teacher supply, especially in rural places, is facing severe shortages that are predicted to worsen in the near future. Roberts (2005) reports that 27% of the New South Wales teaching workforce will

be eligible for retirement commencing in 2007. Nationally, he predicted that 50,000 more teachers will be eligible for retirement between 2007 and 2012. The Western Australian Department of Education and Training (Gerard Daniels 2007) recognised that it has a looming staffing crisis when a demographic analysis of its teachers revealed that it has the oldest average age of teachers in Australia (50 years). Major succession planning challenges confront this educational system as over half of its teachers become eligible to retire in the next 5 years. The New South Wales Department of Education and Training predicts that during the period 2012–2021, 15,000 teachers will reach retirement age. The numbers retiring are not being met by the numbers of new teachers entering the teaching profession in New South Wales. One predicted feature of this imminent retirement–led exodus from teaching is that the shortfall will be more pronounced in the rural areas of New South Wales (Smith 2002, Lonsdale and Ingvarson 2003, Koreneff 2005).

While there is a significant body of literature focussing on these broad rural teacher issues, the implications of the sea-change/tree-change phenomenon for teachers in rural places has received little educational research attention. Some descriptive research by Boylan and Koreneff (2007) on tree-change teachers provided the impetus for this chapter which seeks to redress this omission by examining the tree-change phenomenon in New South Wales and identify who opts for a tree-change and their reasons why. Through the findings reported in this chapter, potential staffing implications and practices for human resource sections of educational organisations will be identified. This will assist employer organisations to understand the tree-change phenomenon and how to capitalise upon it to recruit experienced urban teachers to rural places where they are likely to remain and provide the program continuity and staffing stability in these rural schools that much of the broader educational literature suggests is lacking (Vinson 2002, Roberts 2005).

14.3 Case Study of Tree-Change Teachers

Below, the tree-change phenomenon in an education context is examined and the reasons why teachers opt for a career and life changing move to a rural place are explored. The biographies and demographics of tree-change teachers are documented, along with information about the adjustment and settling in processes for tree changing teachers as they moved into both their new rural school and the community in which they lived.

14.3.1 Data Collection

Both quantitative and qualitative techniques were used as methodological tools to explore the tree-change phenomenon for the teaching profession. Quantitative data were collected through a self-report questionnaire. This questionnaire sought information on the following: (i) general teaching experience; (ii) teaching expertise; (iii) biographical information; (iv) the decision process to relocate; (v) professional development; (vi) life in a rural school/community; (vii) reasons

for relocating; and (viii) adjustment to rural living. Qualitative information was collected through an interview designed to follow-on from the self-report questionnaire. Key areas explored in the interview were the following: (i) identifying reasons/factors that contributed to the decision to relocate to a rural place; (ii) the perceived degree of acceptance and integration into their rural workplace and community; (iii) the processes employed by these tree-change teachers to achieve workplace and community integration; (iv) the personal and social challenges involved in adjusting to the new rural lifestyle; (v) their participation in work related professional development activities; (vi) the community infrastructure available in their new rural place; and (vii) identifying what advice they would provide to other teachers thinking about a tree-change experience (Boylan and Koreneff 2007).

The teachers who participated in this case study were chosen based on the following selection criteria: (i) they had taught at their current rural school for at least 4 years; and (ii) they had relocated from a metropolitan (i.e., Sydney) school to their current rural school. Using a selective stratified sampling process (Burns 2000) a sample of 121 schools including government and non-government primary and secondary schools were invited to participate in the study. Twenty four rural teachers completed the self-report questionnaire. It is acknowledged that the small sample of participating tree-change teachers and the geographical area of investigation (New South Wales) are limitations that may restrict generalisability to other educational systems.

14.3.2 Identifying the Tree-Change Teacher

The biographies of the 24 participating teachers revealed that 14 were female (58.3%) and nine were male (37.5%) with one no response (4.2%). Seventeen teachers were in a permanent partnership relationship while the remainder reported that they were single, divorced or separated. The majority of the tree-change teachers were over 50 years of age ($N = 15$) with another five teachers being between 40 and 49 years of age and the final four teachers were in the 30–39 age bracket. Nineteen of the 24 teachers had children. Collectively the 19 teachers had 38 children of whom 15 were under 14 years of age, eight children were aged 15–19, and the final 15 were over 20 years of age and not living with their tree-change teacher parent. At the time that this study was conducted, the tree-change teachers were living in rural places in New South Wales including Deniliquin, Hillston, Leeton, Parkes, Forbes Collarenebri, Armidale and Inverell.

14.3.2.1 Teaching Background

Seventy-five percent of the teachers ($N = 18$) were employed in government schools with the balance ($N = 6$) in non-government schools. The majority (55.9%) were employed in primary schools with the balance (44.1%) employed in secondary school. The range of total years of teaching experience was 4–37 years with the mean number of years of teaching being 25.3 (S.D. ± 8.5). All teachers had taught in urban schools prior to their tree-change with the range being 1–26 years (mean = 12.2, S.D. ± 7.0).

Eighteen teachers had been initially appointed to a metropolitan school while the remaining six teachers had been appointed to a rural school. At the time of the study, all 24 teachers were located in rural places with the 18 ex-metropolitan teachers now being located in either the rural areas of a coastal educational administrative region ($N = 8$) or in a rural place within an inland educational administrative region ($N = 10$). Of the six initial rural appointments, these teachers had undertaken a two step process which involved a first move to a metropolitan appointment prior to their current tree-change appointment. Four of these teachers had been appointed to a rural place in a coastal educational administrative region (e.g., North Coast Region or South Coast Region of the New South Wales Department of Education and Training (NSWDET) or Diocese of Wollongong Catholic Schools Office) while two teachers had sought a rural place in an inland educational administrative region (e.g., Western Region of New South Wales Department of Education and Training, Diocese of Wagga Wagga Catholic Schools Office).

14.4 Key Research Findings

14.4.1 Deciding on the Tree-Change

The decision-making process that led to the tree-change was explored in both the self-report questionnaire and the interviews. One self-report question asked: how long from the time the decision was made to leave the urban lifestyle until you moved to a rural area? For 21 teachers (87.5%) the length of time to consider their tree-change and make their committed decision to relocate was less than 1 year. For three teachers (12.5%) the decision making process took more than 2 years prior to their relocation. A subsequent open ended question asked the participants to explain why they had chosen a rural place to live and work. A total of 45 responses were provided which are shown in Table 14.1.

Table 14.1 Reasons for the tree change provided by 24 teachers

	Frequency	
Category	Number[a]	Percent
Quality of lifestyle	16	35.6
Career path/promotion	8	17.8
Children	7	15.6
'Returning' home	5	11.1
Family	3	6.7
Escape competitiveness	3	6.7
Self sufficiency	1	2.2
Land	1	2.2
Death in family	1	2.2
	45	100.1[b]

[a]Responses = 45 as an individual teacher could provide more than one response.
[b]Percentage variation due to rounding off to one decimal place.

The quality of lifestyle available in their chosen rural location (35.6% of all responses) was the most frequently cited reason for relocation. The second most common reason was the opportunity to advance their career through accepting a promotion (17.8% of responses). Examples of written comments provided by the teachers are displayed in Box 14.1.

Box 14.1 Comments to Support the Tree Change

It was an area where we had gone for holidays for a number of years and wasn't too far from Sydney.

I had worked as a community artist in a rural setting and enjoyed the community spirit, the pace i.e., I had done the city thing and tired of the competitivism; crowded environment; and looked for a more natural lifestyle surrounded by space.

In the interview, a similar question asked the tree-change teachers to identify what were the contributing influences that motivated the teacher to seek the rural relocation. Again the majority of responses (54.4%) focussed on quality of lifestyle considerations. As one teacher stated: 'compared to Sydney, [name of rural place] provides a better quality of life for myself, wife and family.' Family-related reasons were the second most frequently mentioned influence for the tree-change in the interviews. For one teacher this influence is described this way: 'Married to a partner that wanted to move to the country. Part of the alternate lifestyle in the mid-1970s.'

Another self-report question probed the degree to which the tree-change teacher had researched their chosen rural area prior to the relocation. Of the 24 respondents, 22 chose to respond to this question. Fifteen of the 22 tree-change teachers indicated that they had conducted *some* research. Surprisingly the remaining seven tree-change teachers stated that they had not done *any* research. This unexpected high proportion prompted the inclusion of an interview question that asked: what advice would you have for someone thinking of moving from the city to a rural area? The responses provided to this question focussed on two dissimilar aspects of the relocation process. The most frequent piece of advice recommended that the potential tree-change teacher embrace the change and enjoy the opportunities provided: e.g., 'Once there, enjoy the community and the teaching.' The second area of advice suggested by these teachers recommended that the potential teacher do some preliminary investigation into the rural place with comments such as: 'prepare for "sea change"'; and, 'take a number of holidays in the area firstly.'

14.4.2 Career-Related Matters

A series of questions was included in the self-report questionnaire that sought information from the tree-change teachers about their perceptions of workplace

conditions relating to teaching resources (namely: books, library facilities, bookstores, videos and internet access) and professional development provision in their tree-change location. The issues of access to and availability of teaching-related resources are examined in this section of the chapter.

Overall, the majority of tree-change teachers reported that they were able to access and use a range of teaching-related resources in their workplace. In particular, their use and ease of access to library facilities (22 teachers, 92%), to teaching related books (20 teachers, 83%), to videos (19 teachers, 79%) and to the internet (18 teachers, 75%) were all identified as 'readily available' in their chosen rural location. Access to bookstores split the tree-changers almost evenly with 11 teachers (46%) indicating this resource was available while 13 teachers (54%) reported that bookstores were not available locally. The advent of internet/online book stores is one way that this accessibility issue can be resolved for some teachers.

The second career-related matter focussed on availability and accessibility to relevant professional development for the teachers and gaining support from specialist educational consultants. In the general educational literature (see HREOC 2000, Roberts 2005) it was reported that participation in appropriate professional development activities was an important issue for teachers in rural places. Participation in these on-going professional development programs is regarded as a significant strategy for maintaining teacher currency with curriculum matters, adopting new pedagogy practices linked to quality teaching and learning initiatives at the Federal and State levels, and renewing/upgrading content specific knowledge linked to the specific curriculum areas of specialisation. Given the significance of these concerns, a question exploring these career-related professional development matters was included in the self-report questionnaire. The question asked teachers to distinguish between the availability of professional development which implied that the professional development was provided within their educational region, and their ability to access this professional development. The latter considered distance to the venue, travel times, accommodation costs, and locating a replacement teacher to cover for the teacher accessing the professional development program as significant determinants of the teacher's participation in any professional development program.

Fifteen teachers (62.5%) indicated that professional development activities were readily available in their rural place, while nine teachers (37.5%) reported that they could easily access professional development activities in the rural region to which they had relocated. Nineteen teachers reported that specialist educational consultancy support services were *readily available* (79.2%) in their rural location. These locations included Deniliquin, Leeton, Parkes, Forbes and Armidale.

In the follow-up interview, the tree-change teachers were questioned about whether they had attended/participated a professional development activity during the preceding 12 months. All the tree-change teachers had attended some form of locally provided professional development whether it is a weekly faculty or whole school staff meeting. A small percentage reported that they attended a monthly professional development activity either organised by their local professional association or by their regional/diocesan administrative centre.

14.4.3 Adjustment to Rural Place

One of the key questions examined in this chapter focussed on how these urban based, experienced teachers who had relocated to a rural school and its community managed the adjustment and acclimatisation process.

Specific questions were included in the questionnaire and the follow up interview that probed the level of adjustment to the selected rural area and the perceived degree of acceptance of the teacher by colleagues and by the community. The tree-change teachers reported that they were well accepted by the fellow teaching colleagues (21 teachers, 87.5%) and that their perceptions of their acceptance by the local community was also high (22 teachers, 91.6%). In the subsequent interview, the teachers were asked what strategies they had adopted to facilitate their acceptance. A total of 43 responses were made with the majority (33 responses, 76.7%) revealing that the respondents gained acceptance in both their workplace and the community through active participation and involvement in a variety of activities. Some teachers stated that they had accepted 'voluntary positions within the community', while others reported on the generosity of local people with 'invitations to attend small to large social gatherings'. For some teachers being recognised as an experienced, capable classroom teacher brought acceptance by their colleagues. The comment in Box 14.2 by one teacher provides some insight into this community acceptance and adjustment process.

Box 14.2 Comments by One Teacher on Community Acceptance

> You can only expect to be accepted by the local community if you are prepared to get involved in the community and make a contribution to it in some way (over and above teaching).

Twenty teachers (83.3%) reported that they had settled into their new rural surroundings with no difficulty. In the follow-up interviews the participating teachers were asked about how they were adjusting to rural living. Overall the same high majority of these tree-change teachers responded that they had adjusted well to rural life. When this adjustment issue was further teased out through asking the teachers to identify differences between living in the city and in their rural location, the main differences identified were:

(i) Cost of living (25 comments, 25.5% of responses);
(ii) Separation from family and friends (22, 22.4%);
(iii) Social functions (18, 18.4%);
(iv) Travel (17, 17.3%); and,
(v) Housing (16, 16.3%).

Each above difference was further probed to reveal the following: (i) 12 of the 25 comments about cost of living focussed on the additional expense of life in a rural place while seven comments indicated that cost of living was cheaper; (ii) 11 of the 22 comments dealing with separation from family and friends listed negative aspects of the separation and isolation while the remaining 11 comments focussed on positive aspects including receiving more visits from family and having more family living in the local area; (iii) 13 of the 18 comments about social functions indicated that the teachers were involved in more social gatherings that often had a specific purpose attached to them, while two teachers reported that the number of social functions was similar to their city lifestyle, and only one teacher reported that there were less social functions in their new rural place; (iv) all the tree-change teachers recognised the need for greater travelling times often associated with visiting family and friends as well as accessing facilities and services located in metropolitan Sydney; and (v) all teachers commented that affordability of housing was greater in their tree-change location compared to Sydney with many teachers also commenting that they were able to purchase a newer or bigger house often with more space around the house than the one they owned in Sydney.

14.4.3.1 Perceptions of Life and Working in a Rural Place

In addition to seeking information from the tree-change teachers about their adjustment to rural working and living, the teachers were asked to reflect on and identify their perceived positives and negatives about working in the rural school and living in the rural community. One question specifically explored the benefits/positives of working in a rural school and 22 of 24 participants responded producing a total of 51 responses that are reported in Table 14.2.

The tree-change teachers most frequently mentioned benefits associated with teaching rural students ($N = 20$, 39.2%). This finding is consistent with research on rural teacher retention by Boylan and McSwan (1998) in which they reported that long-staying rural teachers found the personalised interaction with their students to be the most significant and implicit motivator to remain in their rural school.

Tree-change teachers' responses to the oppositely focussed question probing the disadvantages/negatives of working in a rural school are reported in Table 14.3 with 22 of the 24 teachers providing 42 responses.

The major disadvantage/negative feature associated with their rural employment focussed on matters relating to school organisational and administrative issues and the feeling of being overworked. This finding is consistent with earlier research by Boylan and McSwan (1998) and Roberts (2005) who collectively suggested that the non-teaching demands placed on teachers can become a significant disincentive to remain in a rural school. If these perceived disadvantages become too demanding, potentially this situation could lead to the tree-change teacher applying for an early retirement package as a way to resolve this problem.

Two parallel questions invited the tree-change teachers to reflect on their perceptions of the advantages and disadvantages of living in their rural community. Twenty-one of the 24 teachers provided 53 responses describing the advantages of

Table 14.2 Benefits/positives of a rural school

Category of response	Frequency of responses		Examples of responses
	Number[a]	Percent	
Students	20	39.2	Less worldly; Less self interested; Less influenced by peers; Behaviour management easier
Teaching	13	25.5	Teaching easier; Teaching not as competitive; Young staff combined with experienced teachers; Inexperienced teachers get the chance to offer ideas and run with them; Greater chance for promotion
Community	11	21.6	All embracing. Very social, very supportive. Friendly
School climate	4	7.8	Supportive place to work
Fresh air/space	2	3.9	Open spaces
Generations of contact	1	2.0	
Total	51	100	

[a] Responses = 51, as an individual teacher could make more than one response.

Table 14.3 Negatives of working in a rural school

Category of response	Frequency of responses		Examples of responses
	Number[a]	Percent	
Professional	19	45.2	Every staff member has to take on multiple roles – overloading; Lack of support for senior students e.g., HSC study courses
Geographical	12	28.6	Distance to educational sites
None	5	11.9	None that you wouldn't find in any school, other than distances to travel, excursions
Personal	3	7.1	You can't 'hide' – if you have a problem or an 'off' day everyone knows about it
Social	3	7.1	Little social interaction
Total	42	99.9[b]	

[a] Responses = 42, as an individual teacher could make more than one response.
[b] Percentage variation due to rounding off to one decimal place.

their rural community while 21 of the 24 teachers provided 43 responses to the disadvantages of the rural community.

The perceived quality of their lifestyle in the teacher's chosen rural place accounted for over half (55%) of all advantages. Typical comments made by the tree-change teachers included: 'Friendly, relaxed'; 'No traffic problems'. The second most frequently mentioned advantage focussed on the interactions with other

residents of their rural location (25%) with a typical comment being: 'definitely helpful'. A further 15% of the teachers' comments identified community and environmental benefits as being important e.g., 'safer'; 'calmer'.

The tree-change teachers identified a range of perceived disadvantages associated with living in their chosen rural location. Their comments reveal sensitivity to the local contexts. The most prevalent issues dwelt on community interaction and acceptance issues. Community interactions accounted for almost half of all responses (44%) and identified the slow rate at which community members began to accept the tree-change teacher as a community member, e.g., 'not trusted for a long time'. The acknowledgement of the 'goldfish bowl syndrome' (Turney et al. 1980, HREOC 2000, Roberts 2005) to describe the lack of privacy some teachers (16% of all comments) can feel in their rural community is reflected through the comment provided by one teacher, e.g., '[Feel] under the microscope'.

The other major disadvantage of living in the rural location reinforced earlier comments about the long distances involved in travelling to other places, accessing services and facilities and visiting family. Specifically, these teachers provided comments (19%) on the distance to access services: e.g., 'distances to medical; cultural opportunities'; 'Costs of travel'; 'fuel'. Yet from Section 14.4.3 and the subsequent interviews conducted with these teachers, the overwhelming pattern to emerge from their comments is that they have settled successfully into their chosen local rural community and are actively engaged in a range of community activities and programs that have facilitated their adjustment, acclimatisation and acceptance by the local residents. This suggests that they are aware of the lifestyle issues associated with rural communities and they have negotiated the path through and around these issues by active participation in and support of the local community.

14.5 Synthesising the Case Study Findings

The key outcomes to emerge from this exploratory research are summarised below.

1. The majority of the tree-change teachers were female (58.3%), government employees (72%) teaching in a primary (K-6) school (55.9%), over the age of 50 (62.5%) with an average teaching experience of 25.3 years who are in a permanent relationship (70.8%) and typically have two teenage or older children.
2. Three-quarters (75%) of the tree-change teachers had no rural teaching experience before embarking on their tree-change.
3. About one-third (35.6%) of the tree-change teachers chose their rural location for the quality of its lifestyle (peace and tranquillity) with another one in six teachers (17.8%) choosing their rural area for career path/promotional reasons.
4. With regard to adjusting to their new surroundings, three-quarters of the tree-change teachers adjusted easily. It was almost unanimous that they were easily accepted by their workplace colleagues and the community.
5. Life in a rural school had many positives, the most important being the students who were regarded as being easier to teach. The most valued aspects of living in

a rural community were the quality of lifestyle, and the generosity of the people within the community.
6. Professional development programs were reported as being available and accessible for the majority of the tree-change teachers (over 70%) and the ability to gain advice and input from consultancy support services was readily available (82.6%).
7. But with positives, often come negatives. Some of the negatives cited about teaching in rural schools were professional overload as well as 'life in a fish-bowl'. The geographical distance from amenities was quoted as a negative for both working in their rural schools and living in their rural communities.

One interesting finding to emerge from this study challenges previous conclusions (e.g., Turney et al. 1980, Roberts 2005) concerning the difficulty of acquiring teaching resources in rural schools. In this study almost two-thirds of the teachers reported they had good access to a range of books, library, and Internet resources within their rural place. On the availability of a good bookstore or video store the tree-change teachers were evenly split. Similarly, the literature suggested that professional development is difficult to access in rural and remote locations (e.g., HREOC 2000, Roberts 2005), while the results from this exploratory study contradict the literature with all interviewed teachers indicating that they had participated in at least one professional development program sometime in the 12 month period prior to when the interview was conducted.

14.6 Policy Implications for Rural Staffing

I have argued that there is very little educational research on teachers as tree-changers and through the case study described in this chapter a potential human resource that is unknown to or ignored by employers has been identified. The potential for educational employer organisations to actively recruit tree-change teachers for rural school appointments to provide the educational leadership, expertise, experience and staffing stability for rural schools requires significant new and innovative human resource management practices and policies that have 'rural' as their centre focus.

This assertion leads directly to consider the following question: why are the practices of rural staffing and education provision in rural areas so centred in historical views of rural staffing, rural schools and communities? This question draws the reader's attention to the new policy direction to adopt a *rural* view of education, rather than a *metro-centric* set of solutions to rural education from a centralised, expedient but often counter-productive policy perspective (Wallace and Boylan 2007). In more recent times, creative, innovative and different strategies, practices and policies have been implemented internationally to address staffing rural schools and rural education provision. These practices embody the application of a new way of thinking which has been identified through a reconceptualisation of education policy, and the application of a *rural lens* (Corbett and Mulcahy 2006).

14.6.1 Adoption of a Rural Lens

The concept of a *rural lens* has drawn international attention. It originates in a Canadian federal government initiative that focuses on recognition of the principles of equity, difference and the uniqueness of rural locations as government policies and programs are developed and implemented (Rural Secretariat 2007). In Canada, the *rural lens* is a strategy that seeks to sustain the social, cultural and economic attributes of rural communities as well as strengthening their community capacity building options through the provision of contextually relevant services, of which education and the staffing of rural schools is one cornerstone. Adopting the *rural lens* poses critical questions for policy and program developers and decision makers about quality of life, accessibility to and delivery of service provision and measuring the impact of government policies on rural communities and their people (Rural Secretariat 2007). For education systems charged with the responsibility for the staffing of rural schools, these questions are essential for the provision of a high quality education which by necessity involves quality teachers being appointed to rural schools.

The notion of a *rural lens* is useful in developing staffing practices and policies that reflect the changing nature of population demographics, teacher workforce planning and rural places. In essence it involves a reversal of thinking – to begin in rural schools and their communities and understand their staffing needs, and then looking outwards for proactive, creative and imaginative policy rather than being reactive to policy developed in other places and times.

The challenge thus emerging for educational administrators and rural educators armed with a *rural lens* as a framework to explore critically educational provision in a changing rural environment needs to incorporate two fundamental theoretical perspectives, these being the Challenge-Deficit theory of rural education (Ankrah-Dove 1982), and our growing understanding of the concept of Place (Gray 1991, Bryden 2003).

14.6.2 Challenge-Deficit Theory

The Challenge-Deficit Theory (Ankrah-Dove 1982) draws on theoretical foundations in psychology linked with personal and job satisfaction and sociological concepts associated with personal and professional adjustment and person-environment fit. The theory uses these concepts and then applies them to staffing rural schools. In this model, Ankrah-Dove (1982) argued that teachers (either pre-service or in-service) predominantly hold either a *challenge* or a *deficit* viewpoint about rural appointments, rural schools and their communities. The model effectively adopts a *rural lens* to question teacher belief systems about rural places as well as the issues which underpin education department staffing practices and policies.

This theory suggests that an experienced teacher holding a *challenge* viewpoint typically is focussed on the special qualities and attributes of teaching and living in a rural place. It is through these attributes of the place, and the people supporting the intrinsic motivation and interests of the teacher that they find personal as well as

job related satisfaction. Teachers holding this *challenge* perspective are potentially and effectively able to redress the current rural staffing shortages experienced in all Australian states and territories. In this chapter, the tree-change teacher has been identified as a person who holds this *challenge* belief system. The model argues that the on-going professional learning of these in-service teachers must be supported through creative and responsive policies that provide access to, and participation in professional development programs offered locally and from regional places. The findings from the case study provide corroboration for the importance of the availability and accessibility of professional development for rural teachers (e.g., Boylan and McSwan 1998, HREOC 2000, Roberts 2005). The tree-change teachers all valued and had participated in some form of professional development in the 12 month period prior to when the case study research was conducted. Incentives that are designed to support the professional learning needs of these rural teachers are essential to maintain a high quality teacher workforce in these rural places.

By way of contrast the *Deficit* viewpoint dwells on what the rural school and community do NOT have. As Ankrah-Dove (1982) stated 'Life is nasty, brutish and short. . . it is deficient in all the qualities which would attract teachers' (p. 13). Applying this *deficit* viewpoint to rural school staffing, two dominant traditions, practices and strategies have been identified.

(i) Compulsion. Compulsory appointment of teachers to rural and remote schools.
(ii) Incentives. Compensatory programs addressing the perceived hardships of teaching and living in a rural place including extra annual salary, cheap accommodation and extra financial packages for completing a longer than the minimum period of appointment, often 2–5 years, at the rural school. Other incentives include subsided travel to/from the rural place and the state's capital city, medical subsidies, faster promotional opportunities, and faster accrual of long service leave.

Such *deficit* viewpoint strategies focus on the imperative: 'getting a teacher in front of a class by whatever means'. The *deficit* viewpoint, more often than not, seeks a short term 'fix' that will solve the immediate staffing crisis for 1 or 2 years.

The policy implication for education employer organisations is clear: focus on the *Challenge* viewpoint and design and implement proactive recruitment strategies that target tree-change teachers. This recommendation is adopting the *challenge* viewpoint with its focus being clearly provided by the *rural lens*.

14.6.3 Focussing the Rural Lens on Rural Place

The concept that place is an essential factor that impacts on teacher recruitment and retention is a new and significant challenge for educational authorities. Place recognises the uniqueness, value and relevance that the local history, cultural value system, language nuances, social infrastructure, physical environment factors and

the economic realities have on shaping the local community in ways that define it as different to other places. From the case study, many of the tree-change teachers have visited their chosen rural location with some undertaking additional research about this place. All the tree-change teachers were aware of the benefits, advantages, challenges of their rural place as well as its weaknesses, disadvantages and deficits. Yet the tree-changer has made the conscious decision to seek relocation and is keen to become an integrated member of the chosen rural community. For educational employer organisations, the findings from the exploratory research reported in this chapter pose a fundamental question: how can the employer manage its human resources section in ways that can identify potential tree-change teachers for appointment to rural schools? Possible strategic practices that emerge from the data analysed in this chapter which can assist in identifying these tree-change teachers would include: (i) recruitment data that includes gathering biographical data on the teachers focussing on areas such as: (a) where the teacher grew up; (b) where they attended school; and (c) where they completed their pre-service teacher education course; and (ii) retention strategies including the development of creative support systems to facilitate easy and regular access to professional development programs. Such programs would include the provision of financial support for travel and accommodation expenses, and creating a pool of 'supply' teachers who can take over the classroom teaching program of the teacher attending the professional development program.

14.6.4 Rural Staffing Implications

Using a *rural lens* to examine staffing policies provides a strategy for employer organisations to reconsider their staffing practices and policies. Currently staffing policies and practices fall into four broad areas (Boylan 2005).

(i) *Rural scholarship programs.* These target rural prospective pre-service teacher education students through financial support provided by a scholarship.
(ii) *Tertiary rural education subjects.* The need to provide specific subjects that examine the conditions of living and teaching in rural places as a component of all pre-service teacher education programs (Boylan 2004).
(iii) *Rural teaching experience.* Closely allied to the tertiary institution based subjects addressing rural education is the absolutely essential requirement that students engage in a rural practice teaching experience.
(iv) *Adjustment, transition and induction*. The provision of induction and mentor programs to support the adjustment of the teacher to a rural place.

The first three strategies focus very much on the prospective or pre-service teacher and the new-to-teaching teacher. Only the fourth broad category of policies and practices has the potential to support and maintain the in-service tree-change teacher who is seeking the relocation to a rural location. For educational leaders at the regional/diocesan level and at the school level, policies and programs that

actively support the new-to-rural school teacher as part of the whole adjustment support package need to be well coordinated and focussed on the real needs of the relocating teacher.

The current case study research and the concept of a rural lens that focuses attention onto rural staffing policies indicate that additional policy development in at least the following areas is needed.

(i) Programs to promote rural teaching appointments to metropolitan teachers.
(ii) Policies to support experienced teachers in deciding to seek a rural relocation.
(iii) Improved access to professional development opportunities for tree-change teachers.

The overarching purpose of such additional policies and practices is to secure and support the experienced teacher during the relocation period and in the continuing contributions these tree-change teachers make to the provision of quality education in their rural schools.

14.7 Conclusion

In other chapters in this book (e.g., Chapters 1, 12 and 13) rural out-migration has been identified as one of the major demographic changes occurring in rural Australia. Longitudinal census data portrays a demography for rural regions in which the smaller communities, towns and villages are decreasing often as the large rural regional cities increase. Through the discussion in the earlier chapters of this book, the sea-change, tree-change and vine-change phenomena have been identified as potential sources to reduce the historical population loss in smaller rural places.

This exploratory study has focussed on a group of teachers, known as tree-change teachers, about whom very little prior research has been conducted. As a group, these experienced teachers are in high demand for rural and remote locations where schools are often staffed with many young, beginning teachers. For policy makers in education departments the challenge is how to design and implement new, innovative recruitment strategies to attract and support these predominantly urban-based tree-change teachers to a rural location. This policy challenge is emphasised by the data reported in this chapter that found that three in four tree-change teachers ($N = 18$, 75%) did not have any rural teaching experience before they transferred to a rural school. One significant finding from this work was that the perceived improvement in the teachers' quality of lifestyle and work life was a key reason for the tree-change. By focussing on this issue, policy makers can design targeted recruitment strategies that emphasise the range of benefits as well as drawing upon the high levels of accessibility and availability of professional development opportunities and the ready accessibility to consultancy services reported by these tree-change teachers to overcome the often perceived lack of professional support in rural areas.

Integration and acceptance into the rural school and the rural community are key findings from this study. The tree-change teachers reported that they were well

accepted by their peers and the community. The two significant positives of living in a rural area are the quality of lifestyle and the people with whom the participants share their lives. The professionally based positives associated with teaching in a rural school are the students who are predominantly easier to teach with fewer discipline problems and an eagerness to learn which makes teaching a much more enjoyable and satisfying task. Again, these findings offer suggestions to policy makers on what elements should be included in the design of the recruitment strategy for rural schools and as part of the school-based induction and mentor programs during the first year at the rural school.

The community infrastructure in these rural locations is well established. All tree-change teachers reported that there were lots of schools – both primary and secondary – available, be they government, catholic, independent or private schools. Sporting facilities of various descriptions were also available although it was noted that if they wanted to participate in a competitive team, they needed to travel out of their area to compete. Many outdoor recreational facilities were named. Some mentioned clubs and pubs as both venues for their social and recreational activities as well as a venue where live theatre or movies entertainment were accessible.

However, this study identified a number of negatives also. Education policy makers need to consider these negatives in the design of an effective rural schools recruitment strategy that focuses on increasing the likelihood of potential tree-change teachers becoming substantive tree-change teachers. The negatives included the difficulty of adjusting to rural life when there is the lack of services and amenities, the higher cost of living, feelings of isolation and separation from family and friends, greater travel distances, higher petrol prices, high workplace demands on administrative responsibilities and experiencing the 'goldfish in the bowl' syndrome.

In summary, a profile of the tree-change teacher is one who has spent a long time in the teaching service, has reasonable access to resources and professional development, is easily accepted by fellow teachers and the community and who chooses to relocates for the better quality of lifestyle and easier teaching.

Through adopting the rural lens as a focus for staffing rural schools, strategies, practices and policies that target potential tree-change teachers are critical. Policy development in at least three broad areas have been identified: (i) staffing policies and strategies that can generate and identify potential tree-change teachers; (ii) human resource policies aligned with support programs to assist with relocation, induction and mentorship program; and (iii) professional development policies and programs that provide creative and innovative strategies to ensure the tree-change teacher can easily and readily participate in appropriate professional development programs.

One of the major messages to emerge from this study was that life is what you make it. If the teacher is prepared to get involved with the local community and the activities that the community can offer, then acceptance will follow and feelings of isolation will be minimised. Most of the responses can be paraphrased by the adage: 'what you put into life is what you get out of it'.

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Chapter 15
Fly-In Fly-Out: The Challenges of Transient Populations in Rural Landscapes

Fiona Haslam McKenzie

Fiona Haslam McKenzie

F. Haslam McKenzie (✉)
Housing and Urban Research Institute of Western Australia, Curtin University of Technology, Perth, WA, Australia
e-mail: f.mckenzie@curtin.edu.au

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Abstract Australia has experienced a prolonged economic boom and Western Australia in particular has benefited from the growing Indian and Chinese economies and their demand for mineral resources. The renewed mining fervour in Western Australia has had far reaching impacts in rural regions. Some communities are overwhelmed by a new population connected with mining, bringing with it a range of social and economic stresses and strains that small communities, in particular, are struggling to cope with. In other communities, particularly those in remote areas where housing and infrastructure are not able to meet the demands of burgeoning industry, fly-in fly-out (FIFO) labour forces increasingly underpin a wide variety of industry sectors. The scale of the FIFO work force is not easy to ascertain as the Australian Census does not specifically capture this information and the fluidity of the workforce makes it difficult for local authorities to calculate the working population and its demands. With such peripatetic populations, regional authorities struggle to maintain a sense of community and infrastructure without a rate-paying resident population, while local resources are stretched and often unable to cope with the increased FIFO population using them. This chapter will discuss the population changes that are occurring in rural, regional and remote Western Australia and the opportunities and challenges these changes present.

Keywords Transient labour force · Mining boom · Western Australia · Fly-in fly-out · Remote communities

Abbreviations

DIDO	Drive-in Drive-out
FBT	Fringe Benefits Tax
FIFO	Fly-in Fly-out
GSP	Gross State Product
LDC	Long Distance Commuting
WA	Western Australia

15.1 Introduction

The Western Australian economy has experienced phenomenal growth on the back of unprecedented demand for resources by the developing Chinese and Indian economies. The Australian mining and energy sector has been important to the Australian economy since colonial times and has been particularly important for the development of the Western Australian economy since the 1960s. Gold and tin discoveries were responsible for significant Western Australian colonial regional economic development with many towns and communities established around mining activity. By the end of the twentieth century, Western Australia was one of the most productive and diversified mineral regions in the world with about 50 different minerals in commercial production (Storey 2001). Since the 1970s, mining has consolidated its position as the major generator of export income for Western Australia,

currently comprising approximately 70% of total exports revenue (Department of Local Government and Regional Development 2007a, Department of Treasury and Finance 2009).

The majority of mining activities are significant distances from the State's capital city, Perth, and other established communities. Figure 15.1 shows the distribution of the major mineral and petroleum activity centres in the State.

As noted by Maxwell (2001b), the geographical dispersion of new mineral discoveries has been widespread with major mining activity occurring in the far northern regions of the Pilbara and Kimberley, the Goldfields-Esperance region in the south and east, increasing exploration and mining operations in the Central Midwest regions and moderate mining activity in the South West of Western Australia (Fig. 15.2).

Until very recently, mining was not a dominant industry in the Midwest and South West regions where agricultural production has always predominated. However, with increased returns from mining and diminishing profit margins from agriculture, traditional agricultural communities have been challenged by land-use changes which, as will be discussed further in this chapter, have confronted long-term residents and the governance structures of some communities as mining has overtaken agriculture. Equally diverse is the range of minerals and resources being mined in large quantities, including gold and iron ore, lead, nickel, diamonds, oil and gas.

Since the 1970s, the Western Australian economy has traditionally had a strong and growing minerals sector, solid property and business services, construction and manufacturing sectors, and an ongoing dependence on agricultural production. Until the global downturn in late 2008, the mining and energy sector had experienced sustained growth since 2003 and as a result Western Australia, the nation's most productive and diversified mineral region, experienced boom economic conditions. According to the Australian Bureau of Statistics (2007b, 2008d, 2008c) the Western Australian economy has doubled in size over the past 16 years, with Gross State Product (GSP) in chain volume terms rising 107% between 1990 and 2006. The contribution of mining to GSP has doubled (15–30%) to $53.4 billion (Au) in production value, while the sectors of property and business services (9–11%) and construction (8%) have remained fairly steady contributors.

The heightened economic activity in the State has impacted on Western Australia's population and local communities (Australian Bureau of Statistics 2007a, 2008a). There have been changes to patterns of migration and internal mobility, (the rate of interstate immigration is currently higher than it has been for more than 100 years (Australian Bureau of Statistics 2008a)), as well as family and household composition. For the year to March 2008, Western Australia experienced the highest population growth in the nation; 2.6% which equates to 48,600 people in a 1-year period compared a national growth rate of 1.6%. The majority of the State's population (74%) resides in the capital city, Perth, and the substantial population increases in recent years have created challenges for State and local governments in the areas of planning, service delivery and infrastructure needs. With the resources boom, not surprisingly, the Western Australian unemployment

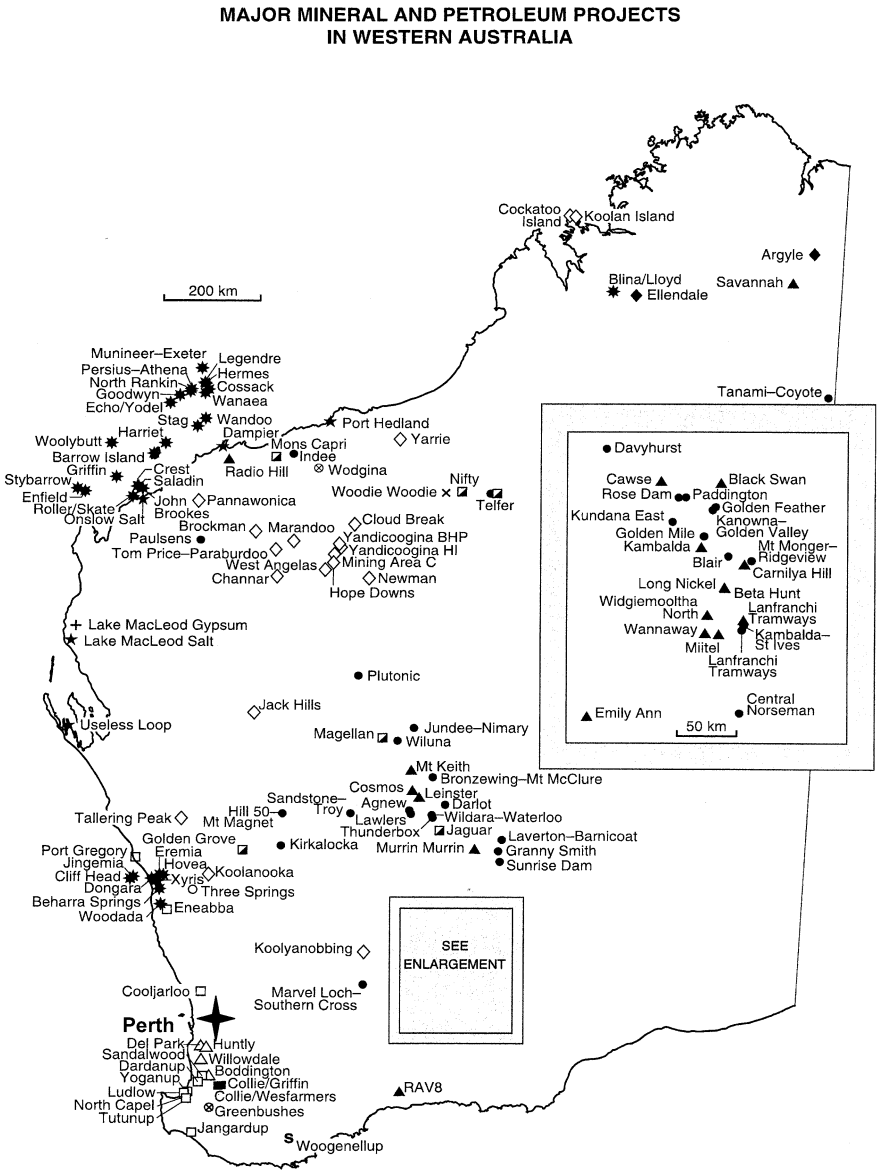

Fig. 15.1 Location of Western Australia's capital – Perth, and active resource developments. Source: Western Australian Department of Mines and Petroleum. (Reproduced with permission)

rate dropped and there has been a high demand for labour at all skill and experience levels. The Australian Bureau of Statistics (2007d, p. 3) reports that 'many of the new jobs created by the resources boom are full-time, male positions, in regional mining areas and Perth'. While the mining industry has been at the forefront of the

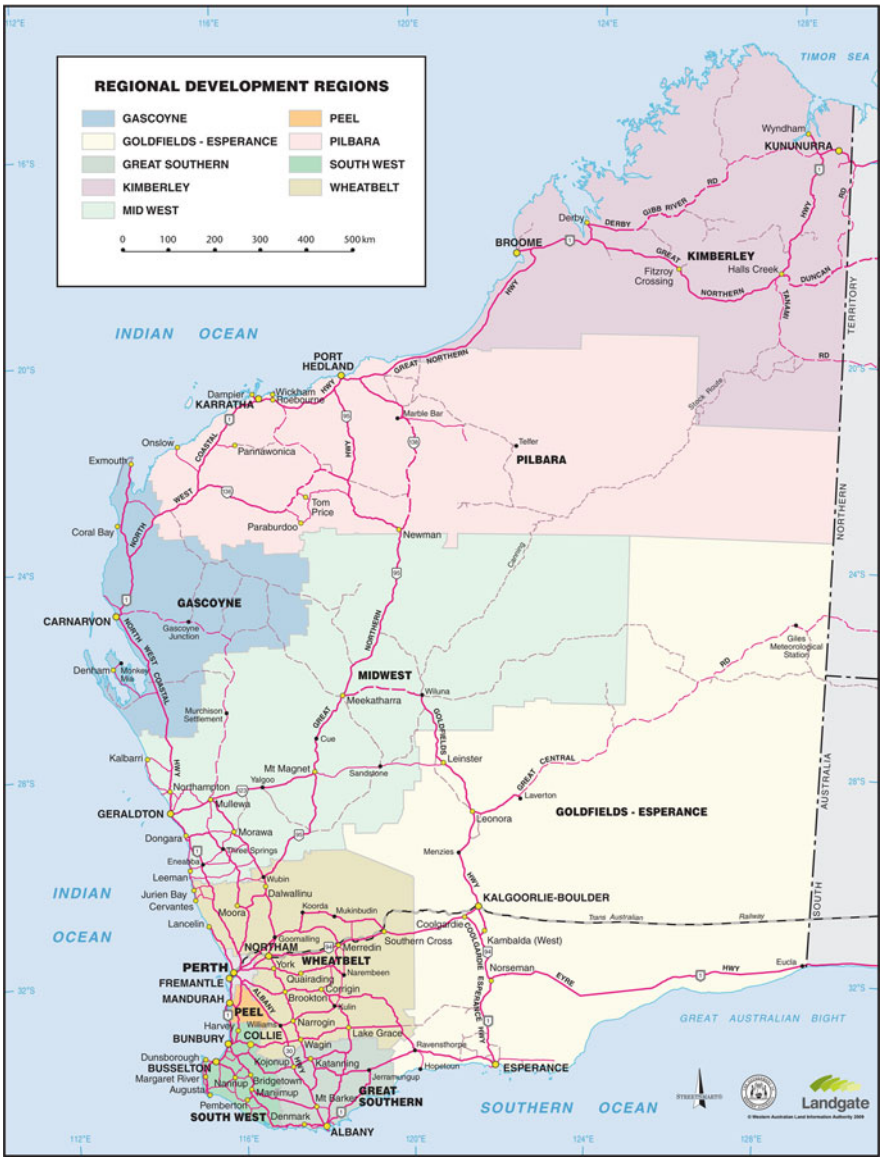

Fig. 15.2 Western Australian regional development regions. Reproduced with permission from Landgate, Government of Western Australia

resources boom and has seen job creation soar, most of the new positions created have been Perth based as administrative and fly-in fly-out (FIFO) positions have increased. Over the decade 1996–2006, direct employment in the mining industry grew 105% in Perth, but only 29% in regional Western Australia (Australian Bureau of Statistics 2007d).

This chapter will examine the impact of long distance work commuting and FIFO work-styles on Western Australian regional economies and the social fabric of non-metropolitan communities in particular. Until now, this type of demographic change and its effect, particularly on small communities such as rural areas, has been overlooked. The impact has been no less marked than other types of demographic change in rural places such as counter-urbanisation and population decline, but as explained in this chapter, the changes bring a different set of challenges to those encountered before. The next section will describe the nature of FIFO work followed by a discussion of the economic and social drivers for its proliferation in Western Australia. Inevitably, such fundamental changes to the way people live and work will present both opportunities and challenges to individuals, their families and to local communities. These changes have been particularly significant in small rural communities with small populations. The provision of infrastructure and the management of people and resources in frenetic economic boom conditions have tested policy makers and local governance structures. These challenges will be discussed and the inevitable opportunities that arise from such circumstances will also be considered.

15.2 Fly-In Fly-Out and Long Distance Work Commuters

Fly-in fly-out (FIFO) work practices developed 'in the Gulf of Mexico's off-shore oil sector where the establishment of permanent communities was not possible', according to Storey (2001, p. 135). The practice has been widely adopted throughout the world, particularly in mining areas which are fairly remote such as the Scottish and Norwegian oil fields, the Canadian mineral sands region, Africa and remote and regional areas of Australia. Price (2008b, p. 5) defines the FIFO work-style as 'encompassing all those who travel to work, stay a pre-determined number of days ("roster") then return to a home location for a set break time'. Storey (2001) adds that FIFO is also referred to as Long Distance Commuting (LDC) and that the commute distance often varies and is not necessarily restricted to flying, but can also be vehicle based, or in some cases, vessel based. Critically, work commuters live separately from their home communities while at work and are usually separate from their family and friends unless they too work in the same location. The employer provides food and accommodation close to the mine site and the work rosters are usually compressed work weeks (where workers work longer shifts, compressing their standard work week into fewer days, enabling them to have more leisure time off). Accommodation and site facilities have seen a dramatic improvement over the last 10 years with the focus now on comfort and amenity to enhance physical and emotional wellbeing of workers. Standard facilities on site include en suite rooms, extensive recreation amenities, landscaping and high quality and healthy food offerings (Chamber of Minerals and Energy of WA 2008). In addition, wet and dry messes are common, thus making socialising and general living standards as amenable as possible in a work environment.

By the 1980s, FIFO and compressed work rosters were well-established in Western Australia although not the norm. A 1991 survey (Department of Mines 1991 cited in Storey 2001) established that there were 26 commute-based mine sites in the State, employing approximately 7,000 employees. The majority of FIFO mining industry employees were accommodated in established or purpose built mining towns and communities. By 2007, about 45% of the Western Australian directly employed mining workforce (28,000 employees) were FIFO workers (Parker 2008). In Western Australia, Perth is the major FIFO exit hub with about 2,000 regional flights departing Perth Airport every month and as the resource boom ramped up, there were flights from regional centres including Geraldton, Busselton, Broome, Bunbury and Albany and other capital cities, Sydney, Melbourne and Brisbane direct to mining towns (Fig. 15.3). In addition, but to a lesser extent, FIFO workers commute from some centrally based regional centres in a mining area (such as Port Hedland or Karratha in the Pilbara region), and fly to remote mining camps further out. During 2006 and 2007, aviation within the State of Western Australia increased by 47% (Chamber of Minerals and Energy of WA 2008).

Importantly, FIFO work-styles are not limited to the mining and resource industries. As the Western Australian resources boom developed in scale, and labour with particular skills or experience in a variety of trades and professions became more and more difficult to secure in fulltime positions, FIFO became increasingly common in a variety of areas including the construction, home maintenance trades, medical, ancillary and management sectors.

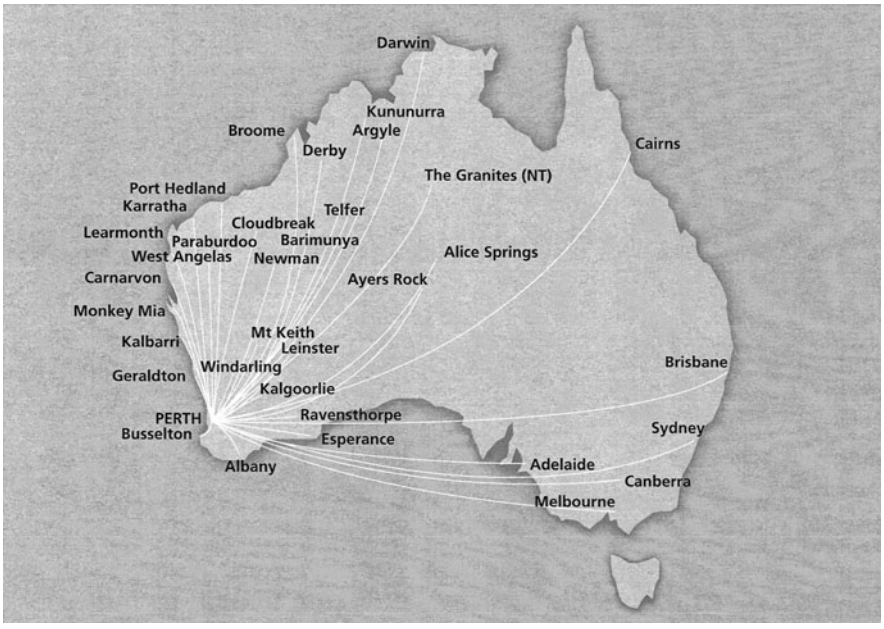

Fig. 15.3 FIFO flight paths. Source: Westralia Airports Corporation, 2009, reproduced with permission

15.3 Economic Reasons for FIFO

Until the 1970s, mining companies had considerable involvement in mining communities when entire towns were built and maintained by companies. For a variety of economic reasons, company towns have either disappeared as the resource has run out (towns such as Goldsworthy and Mt Whaleback no longer exist in Western Australia), or been 'normalised', meaning they are no longer 'company towns' and there are no restrictions on who lives there, with the local government taking over governance. In the traditional mining town, the company was usually the main provider of infrastructure, including housing, roads and community facilities. This is still the case in some remote communities (for example, Weipa, Jabiru and Roxby Downs elsewhere in Australia, and some Pilbara communities such as Pannawonica in Western Australia), but the traditional 'closed' mining town is largely a thing of the past in Australia. Companies are no longer willing to construct entire purpose-built towns, because experience has shown that they are expensive to build and maintain and even more expensive to decommission. In addition, the philosophies of neo-liberalism and free market mechanisms have guided governments since the late-1970s, with a central aim being the efficient allocation of resources, including government services and infrastructure. Government investment in small towns and communities has consequently been significantly curtailed with almost no government financial support for new town development (Storey 2001). The exceptions to this rule are the communities of Ravensthorpe and Hopetoun on the southern coast of Western Australia, which will be discussed in more detail later in this chapter. State governments have been reluctant to invest in resource towns and mine camps, presuming that to do so, is to meet the needs of an industry sector that can, seemingly, afford to provide its own resources including housing. Arguing that they are paying substantial royalties to government, companies publicly resist calls to provide infrastructure and services that they see as being the responsibility of government or other sectors of society. Essentially then, a company will now only establish a residentially based operation where there is already a pre-existing community nearby with at least basic services, and the location is considered 'liveable', a notion that will be discussed more fully later in this chapter. FIFO is the preferred means of managing the construction phase of projects because of the scale and temporary nature of the workforce and the difficulty of sourcing skilled construction workers locally, especially in remote communities.

In the current economic environment, there is a willingness to develop mineral deposits with a shorter mine life, but the short life of the mine makes it difficult to justify the capital outlays required to build anything more than a temporary mine camp (Storey and Shrimpton 1991). In addition, the regulatory environmental and planning requirements for a new townsite are extremely expensive and frustratingly time consuming.

There are considerable costs associated with fringe benefits tax (FBT), a Commonwealth tax introduced in 1986, which is levied on non-salary type benefits provided to employees such as low-cost on-site accommodation, subsidised power and other similar incentives. Further, the tax, paid by the employer, not the

employee, is only applied to 'permanent' residents at a mine site, not commuting employees. Now with FBT, new development prospects with shorter mine lives in remote locations means that it makes even less financial sense to invest in permanent infrastructure. The relative efficiencies, flexibility and low costs of air travel and enhanced communications make FIFO a more attractive business option. In effect, as noted by Houghton (1993, p. 282), 'large scale capital outlays on urban infrastructure are replaced by transport costs' which are distributed across the life and productivity levels of the project.

As identified earlier, the resources boom sparked an overall labour shortage and the demand for labour with specific resource industry skills is not restricted to Australia; it is a global shortage (Lowry et al. 2006, Penney and Copeland 2008). Price (2008b) has also suggested that the growth in FIFO may be partly attributable to an overall trend in changing work-styles; away from the standard office-based 9–5 job to more casualised work arrangements. This trend coincides with a significant decrease in union representation and a shift, during the Howard Liberal Party governments, to individualised employee work agreements, thus enabling employers and employees optimum flexibility (Heiler and Pickersgill 2001). There are significant productivity benefits for the companies too. The Western Australian Chamber of Minerals and Energy (2007) reported that about 80% of the industry utilised 12 hour shifts in 2006 and about 48% of the resource workforce work 84 hours or more per week. Certainly, long distance commuting is a viable operating system and there is a large workforce for whom FIFO is an acceptable work practice.

A further reason for the proliferation of FIFO work arrangements is the relatively cheap and flexible transport options provided by airlines and air charter companies (Storey 2001). As demand has escalated for FIFO work arrangements, there have been increased air travel efficiencies from economies of scale and some of these efficiencies and airline operations are extended to the broader community.

15.4 Social Reasons for FIFO

As discussed earlier, the growth in the FIFO work-style has been exponential over the last decade. While for some mine sites there is no option but a FIFO work arrangement, not all Western Australian mine sites are isolated from a town (albeit some are very small settlements), but when given the choice, a large proportion of employees choose the FIFO option over the residential. The reasons for this are numerous.

Over the past two decades, in line with neoliberal public policy principles, Australian Commonwealth and State government policies have centralised and regionalised many services and remote communities and discouraged the dependence of individuals and communities on State support. There has been minimal government investment in critical components of social and economic infrastructure such as hospitals, schools, roads, railways, ports, and essential service utilities and this has been particularly evident in small and remote communities (Tonts

and Haslam McKenzie 2005). Consequently, employees and their families are less keen to relocate to remote locations where meaningful jobs for both adult partners and comprehensive health, education and child care facilities are not available (Pattenden 2005, Price 2008a, Haslam McKenzie et al. 2009). Increasingly, resource and mining industry workers choose FIFO commute arrangements and their families locate where the infrastructure and services are better supported.

Further, as the resources boom increased in scale, demand for housing and accommodation intensified and was exacerbated by a shortage of available land suitable for housing driving house and land prices to unprecedented levels (Australian Bureau of Statistics 2008b). In addition, housing in many mining communities, especially that which was purpose built in the 1970s, is ageing and very dated in design. Since the 1970s and early 1980s, there has been limited subsequent capital expenditure by mining companies on their housing stock; generally only care and maintenance has been expended. The problem of affordability has been a function of strong demand and limited supply, aggravated by planning and bureaucratic decision-making delays (Haslam McKenzie et al. 2009). The lack of affordable accommodation for those on low to middle incomes meant that this sector of the labour force was usually squeezed out and the public and private sectors struggled to attract and retain staff. Consequently, essential and ancillary services suffered. The Census (Australian Bureau of Statistics 2007c) also shows that in those rural, regional and remote communities where housing prices have rivalled capital city prices such as is the case in the Pilbara, there is a dearth of people past retirement age because the cost of living is prohibitive without a high paying income. Long standing residents leave, taking with them considerable commitment to community (Senate Select Committee on Housing Affordability in Australia 2008), and the gap is often filled by FIFO workers. Turnover of FIFO staff is highly variable (Beach et al. 2003) and the high rate of labour force churn is linked, in part, to the strength of the local economy and labour shortages, resulting in competition for labour amongst mine-sites/companies (Tonts 2010). Because of their compressed work schedules and where they live while on site, many FIFO workers do not develop a sense of place and have limited sense of connection to the mining community. The liveability of the affected communities is compromised as people move elsewhere where they have access to more affordable housing and a wider array of services. Since housing has such a significant impact on the distribution of wealth, housing characteristics and tenure types also affect the welfare of occupants (Haslam McKenzie et al. 2009). New development is stymied by the lack of a locally resident workforce and lack of accommodation for construction and other workers from outside the community (Johnson 2009). Cumulatively, the increased costs, particularly in communities where there is heightened mining activity, has caused the cost of living to escalate (Department of Local Government and Regional Development 2007b). The Regional Prices Index (Department of Local Government and Regional Development 2007b) has clearly shown that the cost of living in the Pilbara region is the highest in the State and far exceeds that of the capital city, Perth. While there are housing, general affordability and infrastructure issues in the mining and surrounding towns which are not being addressed, the potential to facilitate long

term economic diversification is limited and thus, the opportunity to commute long distances from established, better resourced communities to mine sites is appealing.

Twelve hour shifts in the mining and resources industries are the norm and there is almost no time for leisure when workers are on site. Long travelling times to work and domestic obligations eat into recovery time. FIFO arrangements are no less intense, but workers stay in employer-provided or subsidised accommodation with close proximity to the mine site with meals and recreational services provided. The concentrated work schedules on extended shifts puts considerable physical and mental strain on workers and the furlough (or scheduled time off) is important recovery time.

Finally, due to the intensity of the boom and the general shortage of skilled labour, salaries and wages in the mining and resource industries are generous. FIFO work and living arrangements mean that employees have minimal living costs and the opportunity to save. From a regional economic development perspective, the 'marginal propensity to consume within the region' (Maxwell 2001b, p. 9) means that there are considerable income leakages (Johnson 2009) which will be dealt with in the next section.

FIFO workers based in rural areas choose to take the work for a variety of reasons. A common reason is that mining sector wages are much higher than rural-based work, but a permanent move away from the rural community is usually not countenanced. FIFO is viewed as a compromise; 'home' is still in the rural community, but work is where the money is, and over the last 5 years that has, increasingly, been in the mining sector, often located far away from rural areas.

15.5 Impacts of an Increased FIFO Workforce

The mining and resource industries' increasing reliance on FIFO is controversial, particularly in Western Australia, where one politician described it as 'the cancer of the bush' (Bowler 2003), inferring that it destroyed the functionality of communities. A major criticism is that as more mining employees choose FIFO over residential options, the populations of the towns diminish, reducing local area impacts (Maxwell 2001a) and potentially compromising government support and threatening community sustainability (Maxwell 2001b, Storey 2001). In addition, there is evidence that FIFO results in rural regions missing out on the economic benefits of mining: the so-called 'fly-over' effect (Houghton 1993, Maxwell 2001b, Storey 2001). Few, if any, mining companies source large scale supplies in the region, or have local procurement policies of any kind. Even where companies have a local procurement policy, many regional economies simply do not have the capacity or a sufficiently diversified economy to supply large scale mining operations, except for minor supply goods. All resource companies have head offices outside of the region and the skilled workforce is usually recruited elsewhere so there is minimum investment by the large companies locally (Storey 2001). So, while support businesses perform services in the region, payment is made to an office elsewhere such as in the Perth Metropolitan Area with the commensurate flow-on benefits.

The Pilbara region for example is often described as a 'hollow economy' meaning that while there is significant economic activity in the region, these funds, most particularly when there is a high proportion of FIFO workers, tend to flow out of the region either immediately or shortly after they are incurred (Acil Tasman 2006) through FIFO salary and wages. In fact, backward or upstream linkages associated with the supply of inputs to resource extraction companies has nothing to do with FIFO work arrangements and everything to do with government, corporate and commercial decisions (Freudenburg and Frickel 1994, Pick et al. 2008), which in many cases have overlooked the regional and local opportunity costs. That noted, the 'hollow economy' syndrome has tended to occur at the micro level. The savings and investment pattern of residents and workers of the Pilbara region show that many have investments outside of the region (Johnson 2009). Acil Tasman (2006, p. 56) found there was a 'save to leave' trend in the Pilbara where people either saved funds in order to leave the region or invested funds outside of the region in anticipation of their departure. Inevitably, wages paid to FIFO workers living elsewhere flow outside of the region and thus, local investment and micro-economic benefits in the *host* community are compromised at the local level.

A number of studies (Houghton 1993, Secretariat for the Standing Committee on Regional Development 2004, Watts 2004, Chamber of Minerals and Energy Western Australia 2005, Gallegos 2005) have been undertaken to assess the impact of FIFO on personal and community wellbeing. Undoubtedly there is a range of personal and corporate advantages (see next section) associated with FIFO, but there are also some disadvantages depending upon the situation, the people involved and the interconnected relationships across a range of communities. As noted by Sibbel et al. (2006), the personal impacts of FIFO work arrangements are dependent on company policies and practices and the individual's coping and support mechanisms. Inevitably, when examining the impact of FIFO, more than one community will be impacted and at least two – the community where the FIFO worker lives when he or she is not working, (the *resident* community), and the *host* community, the community where that person works (Houghton 1993).

FIFO workers have varying rosters meaning that the time back in the home community will vary with each worker. There is evidence to show that the absence of workers from a small community, such as rural communities, does have drawbacks (Tonts et al. 2008). Small rural and remote communities struggle to retain a viable population that will underpin the local businesses, community organisations including sporting teams, volunteer and service organisations, and services such as fire and ambulance officers, sporting coaches and administrators when their most able bodied residents, usually young men (Tonts 2010), are away from the community for large periods of time. The rural community of Ravensthorpe was transformed from a broadacre agricultural economy to one dominated by mining after BHP Billiton announced plans to open a large nickel mine in 2002. Not only did the local population more than double with both resident miners and FIFO workers, but employment for local residents also changed as people were lured to high paying jobs associated with the mine. The local farmers struggled to hire labour for shearing teams and the problem became so acute that some farmers reduced their flocks or focused

exclusively on cropping. This scenario changed very quickly when the mine ceased operation as discussed later, but by then, local employment patterns and services had changed considerably. Maintaining a stable population base and retaining staff in these communities is a paramount concern. As noted by Tonts (2010), 'recent evidence suggests that the chronic shortage of labour in both the mining industry and the wider Western Australian (and national) economy has contributed to growing levels of intra- and inter-spatial competition for workers' (Bureau of Transport and Regional Economics 2006, Minerals Council of Australia (with Chamber of Minerals and Energy) 2006, State Training Board 2007). Inevitably, shifts in activity patterns in one community will affect the economic, environmental and social performance of another (Zandvliet et al. 2008). Attracting the most able cohorts of the population away to FIFO or drive-in/drive-out (DIDO) jobs in the resource industries and communities has the potential to undermine local productivity, profitability and/or the quality of service delivery. Inevitably, there are impacts on the social networks of the town and community (Storey and Jones 2003). It also has the potential to constrain local and regional economic growth which, in the long run, can leave areas lagging the rest of the State or nation on a range of social and economic indicators (Tonts et al. 2008).

FIFO workers returning to the resident community with inflated pay packets and increased spending money can also have detrimental impacts when the money is spent on alcohol and drugs or sets up resentment and conflict with those in the community who do not have the same spending capacity (Lambert 2001).

The impact of FIFO on relationships and families is well documented and there is a substantial body of evidence that FIFO can have a disruptive impact on personal and family arrangements, which some people and families manage better than others (Sibbel 2001, Secretariat for the Standing Committee on Regional Development 2004, Watts 2004, Gallegos 2005). FIFO workers have varying rosters meaning that the time back in the home community will vary with each worker. FIFO arrangements are intense – blocks of work time followed by blocks of time with family and/or friends. The family left at home continue their normal lifestyle patterns often at some disadvantage due to an adult being absent. The FIFO worker can often experience loneliness, homesickness and a sense that they are 'missing out'. The incidence of relationship and family break-ups for FIFO families is higher than for the average population which has social and economic costs for the community and the individuals concerned (Beach 1999). While a family break-up is a deeply personal issue, when it occurs to a family in a rural environment, very rarely do the family members stay in the rural community. They move away to access family and government agency support, thus having a detrimental impact on the broader rural community and its demographic profile. Many companies are cognisant of ripple effects of family breakdown and provide employee assistance programs with counselling services available to employees and their families to limit employee turnover and family breakdown (Chamber of Minerals and Energy of WA 2008).

Another significant concern, especially for local government and local Chambers of Commerce, is the use of services and infrastructure by FIFO workers. FIFO employees do not contribute directly to local government rates and thus local

infrastructure. The reason for this, as identified by the Australian Bureau of Statistics (2008a), is that FIFO workers usually report their 'usual' address as their home address (where their partner and children live), but not the 'actual' or usual place of residence where they have or intend to spend 6 months or more, as required on the Census form. Therefore, some of these employees may not be counted according to their usual place of residence due to the respondent not interpreting the question correctly. This has significant implications for local government and the distribution of Commonwealth grants and means that local governments with mining and high FIFO activity are providing infrastructure and services for which they are not given resources commensurate with the resident population. *Host* communities, and certainly those in small rural communities, generally believe that FIFO workers do not contribute to local community organisations, participate in community building activities such as sporting groups or volunteering, and take from the community with minimum return.

Further, particularly in the southern half of the State, land uses in most of the communities have been dominated by agricultural activities until the recent opening of large scale mines. Small towns with relatively stable populations, such as Boddington in the Peel region and Ravensthorpe and Hopetoun on the South Coast, have felt the impact of a large number of 'strangers' moving into the town *en masse.* As noted by Zandvliet et al. (2008, p. 1469) 'the social homogeneity among residential populations is greater than the heterogeneity among mobile populations' and local residents in these communities have found the transient population challenging because many of the newcomers do not value the town and community the same way as the long-term residents. This has put unplanned and unresourced pressure on the community leaders, most particularly the local government authority required to manage community development. Some residents valued the economic opportunities a new mine and FIFO workforce represented, but others put a higher value on other less tangible things such as knowing everyone when they go shopping or not having to queue at the bank. One of the arguments posed against FIFO workers is that they essentially 'sit outside' the residential community and do not positively contribute to the functioning of the town.

15.6 Opportunities Derived from Workforce Mobility

At the same time, FIFO has advantages for many individuals and their families who would rather not live in remote mining communities. The choice of where to live is often critical in the decision to accept a job and the option of FIFO plays a role in attracting employees (Chamber of Minerals and Energy of WA 2008, Tonts 2010). Usually, the employment options for the 'trailing spouse' in remote communities are very limited: an important consideration given the shift to dual career families. The higher quality education resources in the larger population centres are another major reason why families often prefer to live in these centres. This is a particularly important consideration once children reach secondary school age. Other attributes which make living elsewhere more attractive include the greater diversity of employment

opportunities available for young people once they finish school, more recreational and social activities, connections to other family members, and the ability to have a social life that is disconnected from the workplace. Further, if the trend was to reverse and there were more employees demanding residential jobs then the impost on the public purse for expensive public investment, such as educational and medical facilities, would be huge and unlikely to be met, at least in the short to medium terms.

As noted in the previous section, the concerns for *host* communities suffering from the effects of the 'fly-over' effect and the hollow economy syndrome can have benefits for the *resident* community. The significant funds derived in the *host* communities flow to other regions of Western Australia thus enabling regional development albeit in other regions. This is particularly the case for businesses with head offices or places of work in regional areas and employees who either have investments in regional Western Australia or whose home base is in a regional area. As shown by economic modelling conducted by Maxwell (2001b) and Acil Tasman (2006, Acil Tasman et al. 2008), the greater the share of local purchases the greater the direct and indirect economic and social impact on the local economy and community. If it was feasible for large resource companies to increase their local purchasing activities, there would be considerable impetus for economic diversification in both *host* communities and *resident* communities. Work undertaken by economists (Acil Tasman et al. 2008, Johnson 2009) indicates that the presence of a FIFO workforce accommodated in or close to town generates a significant economic benefit to that town even if the expenditure is limited to small grocery, cigarette, alcohol, takeaway and news agency purchases. The life of a particular FIFO 'camp' site has significant potential impact on local business decisions for investing in expanded and/or additional services. A key determinant is accessibility for FIFO workers to shops and services consequently, walking distance is important because of the lack of public transport and the likelihood that many FIFO workers will not have access to private cars while in camp.

In a State as large and diverse as Western Australia whose economy is nonetheless dominated by primary resource production, it is inevitable that while there have been boom economic conditions and very low levels of unemployment in the mining and resource sectors, some of Western Australia's southern regions were not faring as well. For example, persistent drought and declining returns to agriculture negatively impacted many rural communities while narrow economies tend to limit employment opportunities. As a result, some areas of regional Western Australia were experiencing comparatively high levels of unemployment. Regional FIFO practices have been an important source of income and assisted in providing work opportunities for people in regional areas while allowing these workers to maintain their regional base (Hogan and Berry 2000, Tonts et al. 2008). In doing so, the economic sustainability of regional areas is boosted through lower unemployment levels, employment diversification and the injection of incomes back into the regional economy (Wilson 2004). Economic modelling (Acil Tasman 2006, Acil Tasman et al. 2008) clearly shows the benefit to agricultural-based regions and communities from the repatriation of incomes earned by FIFO employees. In addition,

the distribution of Commonwealth funds according to the principle of horizontal fiscal equity (based on the premise that each State is entitled to receive a share of general revenue funding from the Commonwealth which would enable it to provide government services at standards that are not appreciably different from those of the other States without having to impose taxes and charges at levels appreciably higher than those of the other States (The Australian Government Treasury 1998, p. 18)), is an important mechanism for sharing the benefits of the mining and resource sectors across all communities (Hogan and Berry 2000), not least the small, agricultural based communities which have struggled to remain viable. The use of long distance commuting has also influenced the pattern of coastal regional economic development with people, including families, moving to coastal communities, thus building local economies and attracting infrastructure investment, while at least one member of the family commutes long distance to work (Hogan and Berry 2000, Maxwell 2001a, Salt 2006). Mandurah, 100 km south of Perth, claims a growing proportion of FIFO workers since the 2001 Census.

From a corporate perspective, there are human resource management advantages from utilising FIFO work patterns. Gillies et al. (1997) reported that their research indicated mining operators were able to attract a higher quality work force and the incidence of absenteeism was lower with FIFO workers than town-based mining operations. Further, an onsite work force enabled management to more easily control the shift start-times, and further maximize productivity through the use of individualised and decentralised bargaining in exchange for higher remuneration and high levels of contract employment (Heiler and Pickersgill 2001).

There are environmental advantages associated with FIFO work arrangements. Tightly contained, high density accommodation reduces land demand and limits environmental impacts (Johnson 2009). The provision of housing families in some of the hotter regions of Western Australia, such as the Pilbara, has a very high carbon cost. However, FIFO does have some greenhouse implications, which, until now, have been overlooked. For example, the additional carbon cost of flying to and from the mining activity area. Gillies et al. (1997) found that mining companies believed that it was easier to obtain environmental approvals for their project due to reduced environmental disturbance associated with not constructing a town to service the mine and that the carbon cost of FIFO is relatively short-lived, depending upon the mine life. They also found that Aboriginal decision makers were more willing to approve projects that did not involve town sites because Aboriginal sacred sites and ‘country’ were less likely to be disturbed by tourists and random visitors, thus minimizing management of sites.

15.7 Long Term Sustainability

As inevitably happens, booms are followed by downturns and by the end of 2008 a world-wide recession loomed. As noted at the beginning of this chapter, the raison d’etre of many communities, especially small communities in Western Australia, is mining. Inevitably, they are highly vulnerable to the inevitable boom and bust cycles

because of the mining and resource sectors' exposure to international markets and fluctuations in demand and supply. The traditional boom/bust cycle of the minerals and energy sector influences investor confidence and entrepreneurial activities in the region. Consequently, regions with a high dependence on mining are likely to experience uneven employment patterns and limited long-term investment by the private sector. As the most recent boom has shown, when commodity prices are on the rise, the skilled and experienced labour market is highly competitive, there is an almost insatiable demand for infrastructure investment and services and accommodation and other ancillary services are put under extreme pressure. Conversely when commodity prices fall, housing markets and labour demand react quickly in a negative direction. The impact of contracting local employment opportunities from mining downturns can cause considerable economic and social upheaval, especially in communities where there are few alternative employment prospects as has been evidenced in Ravensthorpe and Hopetoun with the closure of the nickel mine. The smaller the region the more dependent its regional economy is on external factors (Amcoff and Westholm 2007).

In early 2009, BHP Billiton announced it would be mothballing its newly opened $2 billion (Au) nickel mine midway between Hopetoun on the southern coast of Western Australia and Ravensthorpe, 50 km inland, due to falling international nickel prices. In 2002, the company made an undertaking to employ a residential workforce and worked with the government and community to build up infrastructure and services in the small, remote towns, which had, prior to the nickel mine, serviced marginal broadacre agriculture. The State government had committed to provide significant infrastructure including power and sewage upgrades to the small towns with a combined population of 1,400 residents and the construction of housing and a new school in the small town of Hopetoun, in anticipation of a mine with a 25 year mine life which was purported to provide 2,100 jobs. Consequently, when the closure announcement was made less than one year after the mine was commissioned there was State-wide public outrage that there had been such a 'waste' of public monies in expensive infrastructure and the private sector had been hoodwinked into investing in new housing and small business development in the towns. The contentious issue of FIFO was debated in the press and there was a general consensus that a FIFO workforce arrangement might have been a more prescient decision, especially for a commodity such as nickel, the price of which on international markets is notoriously volatile. BHP Billiton has been pressured to redeploy their nickel employees elsewhere in the State in other mining operations and enable them to fly-in, fly-out from Hopetoun, thus ensuring there is a resident population for the small businesses and the school that have been established there and preserving the housing market at an acceptable level. The company claims this is not an economically viable strategy even though BHP Billiton is heavily reliant on a FIFO workforce in the Pilbara. The BHP Billiton decision has reinforced to government and mining and resource industry management the economic advantages of FIFO, not to mention the cost of goodwill associated with the social fallout of mine closures and market downturns.

There has been similar debate regarding the sustainability of towns during a resource boom when there is a huge demand for labour. If a majority of the FIFO workers had been resident in Pilbara communities for example, the towns could not have coped with the additional population and infrastructure and services required. Under such intense pressure the towns' services would have struggled due to an inundation of people without adequate supporting infrastructure. There would have been a series of health, education and housing crises that Government would have had to respond to or alternatively, resource extraction, transport and export would have been considerably curtailed with commensurate reductions in export income and royalties to Government.

The arguments presented by Storey and others (Houghton 1993, Maxwell 2001b, Storey 2001) that regional centres have 'not only failed to capture many of the benefits of resource development within their regions, but have sometimes experienced additional cost burdens resulting from the need to provide services for transient workers and operators with little or no return on investment' (Storey 2001, p. 146) are relevant. If government and industry are committed to the use of FIFO labour arrangements and to enhancing the sustainability of regional economies, then strategies and policies need to be developed to ensure governments and resource companies co-ordinate development efforts (Pick et al. 2008) and hence, strengthen regional centres. This is preferable to regional centres being depleted, and may enable them to capture regional benefits as FIFO hubs.

Data collection agencies, most particularly the Australian Bureau of Statistics, need to modify the manner by which they collect information about where people work and where they live so that accurate information is collected that properly reflects the high rates of in- and out-migration and the use of services and infrastructure by transient labour. As noted by Amcoff and Westhom (2007), a challenging and potentially expensive regional population problem is the forecasting for small (in population terms) regions because of the unevenness in space and time of the presence and volume of people. Nonetheless, accurately tracking population movements and settlement trends facilitates planning and appropriate public and private investment for the future, thus avoiding the housing and service bottlenecks, not only in regional centres, observed in the most recent boom. The risk of over-optimism, especially during a prolonged boom period as has been the recent experience, can be avoided if data collection is consistent.

15.8 Conclusion

FIFO work arrangements have escalated in Australia over the last 10 years. The vast majority of FIFO workers work in regional areas but usually claim to live in urban or peri-urban settings (Australian Bureau of Statistics 2008b, 2008a). The rapid change in work-styles has inevitably had an impact on communities and businesses in a variety of regional and remote locations.

Economic reasons and pragmatism appear to have been important motivators for the mining and resource sectors to establish and then expand their FIFO work-style operations. Many ore-bodies in Australia have a fairly limited mine life and the

reality of this limitation, associated with the high cost of infrastructure in remote areas and the cyclical vagaries of international metal prices necessitates against the establishment of any substantial residential communities for these operations (Gillies et al. 1991). A further disincentive to establishment of townships with subsidised low rental housing in remote areas has been the introduction of fringe benefits taxation as a cost to the employer.

At the same time, the boom economic conditions have put extraordinary pressure on a highly sought after skilled labour force. Workers in the sector choose to commute to work places in often remote communities for both economic and social reasons; a well paid job while at the same time retaining family and friendship ties in their residential communities, taking advantage of facilities and opportunities there in the furlough period which are not available in remote and small communities. The mining and resource industry employees who choose to commute instead of relocate distribute the socio-economic costs and benefits of the super-cycles across numerous communities, regions and even States.

The trend to transient work-styles has impacted on rural communities as fit, often relatively young people seek high wages in the resource industries away from their home communities. It is this cohort which is the most valued in small rural communities for their volunteerism, contribution to local business and participation on sporting teams. In small, relatively impoverished communities, the fat pay packets can create problems, not only around envy, but also associated with increased drug and alcohol use. In communities such as the southern coastal rural community of Ravensthorpe, the lure of a local nickel mine undermined important local businesses such as shearing contractors, to the point that farmers reduced their flocks because they could not be assured of a reliable shearing team. Until now, rural community leaders have been challenged by people leaving permanently, but the FIFO workforce brings new dilemmas. The local authority must provide for a population cohort who is resident for only part of the time, few of whom can contribute when they are resident in the community as they are recovering from a heavy workload and catching up with their personal responsibilities.

This chapter has explored some of the local impacts caused by global economic influences and the challenges associated with a peripatetic workforce. It is likely that FIFO work arrangements are an established response to relatively short mine-lives and volatile labour requirements and global market movements. Managing the economic and social implications of a FIFO workforce and extracting the benefits are an ongoing challenge for resource companies, governments and communities.

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Chapter 16
Demographic Change in Rural Australia: Future Opportunities and Challenges

Gary W. Luck, Rosemary Black, and Digby Race

Digby Race

G.W. Luck (✉)
Institute for Land, Water and Society, Charles Sturt University, Albury, NSW, Australia
e-mail: galuck@csu.edu.au

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Abstract In this chapter, we synthesise the main findings from the previous chapters in the book to highlight the key issues related to demographic change in rural Australia. We focus on the two major patterns of population growth and population decline in rural landscapes, but also explore the complexities underlying these general patterns. Demographic change, in all its forms, poses major challenges for rural land management requiring innovative and far-sighted planning strategies that aim to promote socially, economically and ecologically sustainable rural communities. The national and international policy arena is punctuated by various strategies designed to encourage desirable land-holder actions (e.g., environmental stewardship payments), but it is unclear how widely applicable or effective these strategies are likely to be. At the end of the chapter, we list ten key areas where we believe future attention should be focussed to ensure we have the most crucial information needed to guide the development of healthy, vibrant and sustainable rural communities.

Keywords Demographic change · Future landscapes · Population decline · Population growth · Rural land management

16.1 Introduction

This chapter brings together the key findings from the previous chapters and highlights the future challenges and opportunities for rural landscapes raised by demographic change. Policy makers must be cognisant of these issues if they are to successfully build socially, economically and ecologically sustainable rural communities. We also identify where information is needed to guide future research on the implications of demographic change and better inform policy decisions.

In many chapters of this book, the major demographic changes occurring in rural Australia are characterised simply as either population growth or decline, driven primarily by in-migration or out-migration, respectively. Yet, almost every chapter either alludes to the fact or explicitly acknowledges that demographic change is much more complex than these generalised trends. Attempting to identify generality is crucial to our understanding of real-world patterns and processes, and our ability to predict likely outcomes across diverse contexts. It was important to emphasise the broad patterns of population growth and population decline in our assessment of demographic change in rural landscapes, and we re-visit those broad patterns here to explore future directions for rural communities. However, we also highlight the often under-stated complexities of these relationships to demonstrate where and when generalised patterns may not hold, and what implications this has for landscape management.

The collection of national-level census data at regular intervals makes it relatively easy to quantify the movement of people across landscapes and to categorise migrants into particular demographic groups. It is substantially more complex to determine why people move or choose to live in a given location. This information is crucial to effective planning and management of rural communities. The in-depth

sociological research presented in certain chapters of this book (e.g., Chapters 3, 4, 12 and 14) is a vital first step to discovering the underlying reasons for the settlement decisions made by people. Much more work in this area is required if we are to determine the varying capacity and aspirations of settlers, and the implications these have for building sustainable rural communities.

16.2 Growing Rural Communities – Trends and Complications

The sea-change/tree-change phenomenon dominates the discussion in this book that deals with population growth in rural districts. Undoubtedly these patterns are real, but it seems they may have been over-emphasised by the media and some commentators, especially in recent decades (see Chapter 4). Even just a cursory exploration of the demographic literature shows fluctuating trends of population growth and decline in rural areas over the last 100+ years. It remains to be seen if the current attraction to rural Australia by sea- or tree-changers has longevity or is just a short-term trend in a longer cycle of demographic variability. Regardless of this, the dominant trend in Australia, and indeed in much of the world, is still one of increasing urbanisation and attraction to major metropolitan centres.

The longevity of countryside attraction may reflect the degree to which this phenomenon is driven by people at or close to retirement looking for a lifestyle change (in some cases a 'down-shifting' designed to reduce the pace of life and supposedly limit stress levels). The importance of 'baby-boomers' (those born between 1946 and 1964) to the sea/tree-change phenomenon dominates the discussion of this issue by some media commentators and demographers (Chapter 4), as this large cohort of people approaches retirement. This means more people who might be considering a lifestyle change and a move to rural areas. If baby-boomers are fuelling the sea/tree-change phenomenon, demographic realities suggest it will grow in magnitude for at least the next 10–20 years with the aging of Australia's population. This possibility has implications for planning and managing services in rural communities, particularly health care (see Chapter 13), old-age care and retirement housing.

Yet, this book demonstrates that sea/tree-changers are a diverse group and not easily classified as simply 'retirees'. Much more comprehensive demographic and sociological research is required to examine differences in age and lifestyle cohorts among metropolitan and non-metropolitan districts. This needs to tease apart the impacts of in-migration and aging of the resident population on any skew occurring in the age pyramids of rural communities. In the future, it will be interesting to determine if lifestyle changers that have moved to rural areas as they approach retirement remain there in the latter stages of their life when easy access to health and support services becomes critical. Indications suggest, as people grow old, they are likely to move closer to major population centres that provide the necessary services. Hence, the influence of retirees on the sea/tree-change phenomenon may peak within the next 20 years as the pool of baby-boomers decreases over time and those that made the change return to metropolitan regions to ensure ready access to the support services required in old age.

In-migration to rural areas is only driven in part by a counterurbanisation trend (i.e., people leaving the city for rural areas) and the more complex reality is that in-migration is a factor of city-country shifts, movements between rural locations and from more remote districts to major regional centres, and the settlement of migrants from outside Australia (see Chapter 11). Underlying these trends is the relative importance of the 'push' and 'pull' factors that influence people's choices on where to live. Comprehensive research on this is critical for effective planning and management of future rural landscapes (see below). It is clear that the natural amenity values of rural landscapes play an important role in attracting settlers to some districts (see Chapters 2, 3 and 5). These include aesthetically pleasing landscape characteristics such as forest cover, large water bodies and varied topography (e.g., mountains) and other environmental aspects such as a mild climate.

However, many landscapes with high amenity value remain sparsely populated. It is clear that the combination of natural and built amenities (especially ready access to transport networks) is vital to attracting settlers. This is demonstrated in Chapter 3, where tree-change settlers commented on the importance of landscape, climate, recreational opportunities and other lifestyle factors in influencing their choice of residence, in conjunction with easy access to an international airport. A planning issue raised by this result is how much sea/tree-changers might demand of their built environment if certain destinations do not currently provide the desired services. For example, increasing pressure to improve transport networks is likely to ensue for popular rural destinations that currently lack in this area.

In addition to the pull factors associated with the characteristics of rural districts, are the often under-stated, but no less important push factors that reflect the undesired qualities of, particularly, metropolitan areas, encouraging people to seek a different [better] lifestyle. This is clearly demonstrated in Chapter 4, where tree-changers commented on the stress of city living as a key driver of their move to rural Australia. This stress reflected a range of circumstances common to urban areas including traffic congestion, noise, crime, excessive work demands, and high-density living. A confronting result from the research presented in Chapter 4 was that tree-changers did not completely escape stress after moving to the country, but instead merely replaced city stresses with country stresses, as people experienced a lack of access to health and education services, fewer employment opportunities and changed work conditions (e.g., reduced salary), and a reduction in the conveniences and socio-cultural diversity of Australia's large cities.

Understanding the interactions between the push and pull factors that drive settlement decisions is crucial for planners and policy makers wishing to build and maintain healthy, satisfied and sustainable rural communities. In rural districts, matching perception with reality is also important for community satisfaction – especially among new residents (although, it is unlikely local governments wishing to attract settlers will be completely forthright in describing the potentially undesirable characteristics of their rural districts). The planning challenges facing growing rural communities are complex and varied and are complicated by the increasing diversity of residents, changing land use, and adjacency to major metropolitan locations (see Chapters 3, 6, 7, 8 and 9).

New residents to rural areas may bring with them a different set of values and attitudes toward rural land management and this may be reflected in their on-ground actions and interactions with the established community. Moreover, rural communities must learn to accommodate the needs of a populace with increasing cultural diversity and establish programs that promote inter-cultural harmony (see Chapter 11 for further discussion). While this raises substantial challenges, it also offers major opportunities to build vibrant rural communities.

Chapter 8 describes a range of options open to planners wishing to manage the impacts of demographic change (particularly population growth) in rural areas. These are categorised as either regulatory (e.g., land-use zoning, building restrictions or land acquisition) or voluntary (e.g., tax incentives, purchase or transfer of development rights, or environmental stewardship payments). The most appropriate strategies to implement will depend on the characteristics of property owners and how this might change over time (Chapter 7), and the decision-making processes of landholders that underpin land management actions (Chapter 10). This is complicated by the increasingly diverse array of landholders with different objectives and motivations.

At a broad scale, one key planning outcome must be the maintenance of the amenity value of rural landscapes and ensuring that local ecosystems are able to function appropriately, are resistance to future environmental change, and can support a rich biodiversity. This will take considered strategic planning and assessment, and well-informed strategies to build stronger links between landholders and nature (e.g., conservation covenants, payments for environmental services, and co-ordinated land care activities across neighbourhoods; see Chapters 3 and 5). In particular, greater recognition must be given to the diverse values of rural land (e.g., the capacity to provide ecosystem services; see Chapter 5 for further discussion), and incentive schemes that reward desirable land management need to be broadened and focus on co-ordinated action among adjacent landholders. These are best implemented by local governments, regional management bodies (e.g., catchment management authorities) or State government departments with regional offices.

Chapter 6 provides an excellent international example of strategic planning and management of a rural landscape under extreme pressure from urban development owing to its adjacency to a major metropolitan centre. This example has important lessons for the management of developing amenity landscapes that are often located close to major cities or large regional centres. The most crucial insights revolve around building strong links between urban and rural communities, positive interaction between residential and agricultural landholders (e.g., agro-tourism and educational activities), government and community support for desirable management actions (e.g., organic farming and integrated pest management), respect for the right to farm, and community and business support through the purchase of locally grown produce.

In sum, while the challenges of managing rural landscapes under development pressure are substantial, a clear understanding of the predominant trends, the underlying drivers of these trends, and the motivations and aspirations of rural communities is fundamental to meeting these challenges. This must be coupled with

long-term strategic planning that mixes foresight and innovation, and appropriately values all aspects of rural landscapes and rewards desirable land-holder actions.

16.3 The Decline of Australia's Outback Population

Population decline in rural landscapes raises different and familiar challenges for socio-economic and environmental management. The different challenges include maintaining community cohesion and services in rural settlements, and supporting a shrinking labour force that is central to undertaking land management activities. The familiar challenges include ensuring that local ecosystems function in a desirable manner despite potential major changes in land management (e.g., lack of control of agricultural pests such as the red fox (*Vulpes vulpes*) and European rabbit (*Oryctolagus cuniculus*) that can have a major adverse impact on native flora and fauna; see Chapter 5).

Like population growth in rural Australia, the decline of rural communities has occurred throughout Australia's European history. It is part of the larger, fluctuating, and spatio-temporally variable trend of demographic change in rural landscapes. In Australia, remoteness is one of the key factors leading to population decline with some inland regions isolated from large population centres experiencing negative growth over the past decades (see Chapter 1). It is yet to be determined how much long-term climate change (e.g., higher temperatures, less rainfall and increasing frequency of droughts in inland Australia) might influence this result, but we predict a growing number of 'climate refugees' in the coming decades.

As for the development of amenity landscapes, we lack comprehensive information about the key factors that lead to population decline in rural districts. We have only touched on the issue in this book, but even a cursory examination shows that an array of complex and interacting factors can lead to rural decline, especially for districts reliant on agriculture and pastoralism as their mainstay (which covers much of rural Australia). These include competition in global markets, increasing marginality of production, unreliable and diminishing water availability, and a lack of employment and educational opportunities for young people and a declining motivation among this group to continue family-run farms (see Chapter 12).

Some rural communities can find themselves trapped in a 'vortex' of decline, whereby the loss of residents can lead to the withdrawal of critical services (e.g. health care; see Chapter 13), which in turn leads to more people leaving the community. This represents a dire situation for those remaining in the communities and can have adverse consequences for particular demographic groups that are unable or unwilling to move (e.g., Indigenous Australians with a strong connection to 'country'; see Chapter 13 for further discussion).

Innovative employment strategies such as the fly-in fly-out workforce used by some mining operations could potentially bolster rural towns near mining centres, but this employment approach does not always yield benefits to surrounding rural

communities since many workers live great distances from the workplace, and the cyclical influx of temporary workers can place a great strain on the infrastructure of rural towns that have only a small resident population that is required to provide financial (e.g., through paying rates) and social (e.g., labour) support for these amenities (see Chapter 15).

Because of the financial and logistical difficulties of supporting remote rural communities, policy makers may be tempted to apply a kind of 'community triage' whereby support for unsustainable communities (in a socio-economic sense) is withdrawn and residents are encouraged (e.g., provided with financial incentives) to migrate to larger or more sustainable towns. While this might be an attractive option for some residents, especially those that would be willing to move if financial assistance was available and support was given for settling into a new location, it is unlikely to suit, for example, Indigenous Australians with very strong connections to their local landscapes.

From a social justice perspective, it is not a desirable policy decision to 'walk away' from declining rural communities. It may also be undesirable from a land management perspective (see below). Managing for the future of these communities raises extreme challenges. The persistence of declining communities will require substantial and ongoing government and community support through ensuring appropriate access to critical services such as health and education, and maintaining paid employment and other work options (e.g., volunteer work). Facilitating this access will require some innovative strategic planning. This should focus on some of the following: improving transport networks (e.g. air and rail links) so that key services can be delivered to remote communities on a regular basis; taking full advantage of the latest technology (e.g., video-conferencing links to major metropolitan centres to allow real-time access to education or health specialists); and creating new work opportunities that reflect the needs of the changing rural landscape (discussed further below).

For those communities that are within commuting distance of major population centres (e.g., the wheat and sheep belts of south western and south eastern Australia), urban-rural partnerships may help to minimise the negative impacts of decline (see Chapter 5). These would encourage greater involvement of urban residents in rural land management through promotion of farm stays, agro-tourism, and volunteer or paid work on rural lands (e.g., government schemes for the unemployed), and building stronger ties between producers and consumers through expanding farmers markets in regional and metropolitan centres.

One crucial issue of which we have a very limited understanding in Australia is the environmental consequences of rural land abandonment. This is discussed in detail in Chapter 5, with the key point being that abandoned rural lands are likely to undergo a successional change in vegetation that is unlikely to approximate the ecological state occurring prior to land abandonment. Also, we have practically no knowledge of how fauna communities will respond to this change in land use. The most fundamental issue is developing a set of clear objectives that articulate the desirable trajectories for abandoned rural lands, and monitoring the outcomes of changing land use.

Meeting the challenges and maximising the opportunities that emanate from rural land abandonment will require dedicated and appropriately trained land managers. In declining rural communities with few employment options, linking new land management requirements with willing local residents may be an avenue to arrest the decline of local communities and ensure the necessary monitoring and management – perhaps creating a new Australian outback. This will require partnerships between government, non-government (e.g., conservation) and education organisations, and could follow similar principles as the Indigenous ranger scheme employed in various regions of Australia.

A challenge will be the funding of such schemes, but innovative approaches may overcome this hurdle. These could include the following: managing rural lands for conservation benefits – funded by both government and non-government organisations; taking advantage of emerging markets in ecosystem services such as carbon storage – funded by industries looking for carbon credits or offsets; or developing new industries based on products (e.g., food) from native flora and fauna – funded by consumers. The challenges of managing declining rural communities and their changing landscapes are immense, but as mentioned above, completely abandoning these communities and the landscapes that support them is not an option.

16.4 Managing Future Rural Landscapes – What Do We Need to Know?

Below we list ten key issues that we believe need to be explored further to gain a better insight into the most appropriate planning and management strategies to be employed in building vibrant and sustainable rural landscapes.

1. What are the likely future trajectories of demographic change in rural Australia? Through linking current knowledge of demographic change (at national and local levels) with landscape and socio-economic characteristics, we need to develop predictive models of possible future change for specific localities. For example, which regions are likely to experience substantial growth or decline in the near future? While we can't predict every possible outcome (e.g., the discovery of a valuable resource), chance events and realistic variability can be factored into predictive models to give a general indication of potential change.
2. Why do people move? This question is fundamental to understanding the underlying reasons for both the growth and decline of rural regions, and for identifying the strengths and weaknesses of our rural districts. It is also crucial to developing appropriate management of rural communities to ensure future sustainability.
3. What are the implications of demographic change for current residents? This book has largely focussed on those people who have moved to or from rural districts, and only touched on the implications of this movement for the long-term residents of these districts (e.g., Chapters 13 and 15). This information is

vital for understanding the effects on, for example, social cohesion and intercultural relations.

4. How will demographic change impact on rural nature? Environmental researchers and managers are generally well versed on the impacts of population growth and development in rural landscapes, but we know virtually nothing about the environmental implications of rural land abandonment, particularly in Australia.
5. What large-scale, low-cost agricultural 'tools' can be used to restore and maintain the native ecosystems of sparsely populated rural landscapes (e.g., can we use low intensity grazing by livestock to manage vegetation structure and composition in native grasslands to promote flora and fauna diversity or the protection of key species)? Can we revitalise native ecosystems in rural landscapes after conventional agricultural ceases?
6. Who will be the new 'farmers' to manage the rural landscapes of the future? What skills, training and technology will they need? What social environment will they desire?
7. What are the most appropriate planning actions in particular circumstances? Various planning tools are available that aim to manage rural land development while maintaining the natural values of landscapes, but it is unclear which tools are most appropriate in given contexts. We are only scratching the surface in our development of planning strategies for declining rural communities.
8. How do we build stronger links between urban and rural Australia? Most of the Australian population lives in major metropolitan centres largely divorced from the issues affecting rural Australia. These centres are the hubs of economic and political power, and urban populations have substantial influence on the decisions of policy makers. The rural-urban divide is keenly felt by some rural landholders, who perceive urban dwellers as disinterested or even worse, unsupportive of rural land management. The future viability of some rural communities, particularly those in decline, will require a greater appreciation and support of rural issues by urban dwellers developed through stronger rural-urban ties (see above).
9. What do we want from the rural landscapes of the future? In short, we need a nation-wide vision for rural Australia that is underpinned by specific and obtainable objectives designed to ensure the resilience and well-being of human communities and the ecosystems that support them.
10. What can we learn from the overseas experience? For example, how well might the European concept of multi-functional landscapes translate into the Australian context?

Rural Australia has always held a special place in the Australian psyche fed by romantic notions of noble pioneers forging a living from an untamed wilderness. More recently, our perceptions have been influenced by stories of struggling farmers battling drought and landscape decline. This book demonstrates that the realities of rural Australia are much more complex and ever changing. Yet distinct patterns emerge from these complexities and it is clear that we are not dealing

with a collection of unique events. This offers hope for local governments and land management agencies wanting to implement planning strategies that promote sustainable rural communities. However, Australian society lacks a collective vision of the form and role rural Australia must take in the future, and how this sits within our broader national objectives. Our society also, generally, lacks the motivation to ensure the persistence of healthy rural landscapes, reflecting the increasingly urban-centric nature of Australia's population. The future of rural Australia rests squarely on formulating a clear vision of its role in Australia's development that has wide-ranging support among our rural and urban populations, and cements the crucial importance of sustainable rural communities and landscapes to Australia's prosperity.

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