

A new national University in regional Australia  
FEASIBILITY STUDY

Needs Analysis

July 2009

prepared by

## Contents

---

|  |    |
|--|----|
| Acknowledgements   | 1  |
| EXECUTIVE SUMMARY  | 2  |
| Background to this project   | 9  |
| 1 The role and impact of higher education and universities in regional areas   | 12 |
| 1.1 Regionalisation of higher education in Australia   | 13 |
| 1.2 Functions and impacts of regional higher education   | 14 |
| 1.3 Impact on the local economy  | 24 |
| 1.4 Social, cultural and environmental impacts   | 27 |
| 1.5 Conclusions  | 30 |
| 2 Current patterns of provision of higher education in and for regional Australia                                    | 33 |
| 2.1 What do we mean by 'regional Australia' in this context?   | 33 |
| 2.2 Educational characteristics of regional Australia and regional Australians                                       | 35 |
| 2.3 Higher education students from regional areas and other students of regional universities and campuses           | 45 |
| 2.4 Aboriginal and Torres Strait Islander students   | 56 |
| 2.5 International students of regional universities  | 59 |
| 2.6 Factors influencing take up and completion of higher education by students from regional areas: previous studies | 60 |
| 2.7 Summary  | 63 |
| 3 Current and emerging needs for higher education in regional Australia  | 64 |
| 3.1 The demographics of regional Australia   | 64 |
| 3.2 Indigenous population  | 72 |
| 3.3 Low Socio-economic status  | 75 |
| 3.4 Impact of government policy, technological and industry change   | 78 |
| 3.5 Summary  | 81 |
| 3.6 Is current regional provision meeting labour market needs?   | 82 |
| 3.7 Future labour demand in regional Australia   | 92 |
| 3.8 Summary  | 96 |

|      |  |     |
|------|--|-----|
| 4    | Current and emerging needs for higher education in Australia's region of the world           | 97  |
| 4.1  | Higher education demand and supply in South, East and South-East Asia, and the South Pacific | 97  |
| 4.2  | Internationalising Regional Workforces   | 99  |
| 4.3  | A focus on expertise in distance education for remote communities                            | 99  |
| 4.4  | Summary  | 102 |
| 5    | Research and knowledge transfer  | 104 |
| 5.1  | Background   | 104 |
| 5.2  | Regional university R&D investment   | 104 |
| 5.3  | Research and teaching  | 109 |
| 5.4  | Fostering research of regional relevance   | 113 |
| 5.5  | The importance of scale in research  | 117 |
| 5.6  | Approaches to growth   | 121 |
| 5.7  | Summary  | 126 |
| 6    | The sustainability of current approaches to higher education provision in regional Australia | 128 |
| 6.1  | Introduction   | 128 |
| 6.2  | The wider concept of 'sustainability' for regional universities                              | 128 |
| 6.3  | Financial Performance  | 131 |
| 6.4  | Broadening provision and the sustainability of regionally-based universities                 | 146 |
| 6.5  | Impact of external developments  | 147 |
| 6.6  | Opportunities for enhancing long term sustainability   | 149 |
| 6.7  | Summary  | 151 |
| 7    | Impact of new developments in course design and delivery                                     | 152 |
| 7.1  | Introduction   | 152 |
| 7.2  | Developments in distance and flexible education  | 152 |
| 7.3  | Student choices, preferences and expectations  | 156 |
| 7.4  | An expanded course profile   | 160 |
| 7.5  | New and emerging technologies  | 161 |
| 7.6  | Opportunities for innovation   | 167 |
| 7.7  | Competition  | 169 |
| 7.8  | A national resource centre   | 170 |
| 7.9  | Issues for the next stage of the Feasibility Study   | 172 |
| 7.10 | Summary  | 173 |

|     |   |     |
|-----|---|-----|
| 8   | Overview of needs, opportunities, and constraints | 175 |
| 8.1 | Needs and opportunities                           | 175 |
| 8.2 | Constraints and issues                            | 177 |

## Acknowledgements

The Project Team for this study comprised:

|                 |   |
|-----------------|---|
| Thomas Barlow   | (Barlow Advisory)                             |
| Daniel Edwards  | (Australian Council for Educational Research) |
| Conor King      | (PhillipsKPA)                                 |
| Deborah Lampard | (PhillipsKPA)                                 |
| John Levine     | (PhillipsKPA)                                 |
| Craig McInnis   | (PhillipsKPA)                                 |
| Roger Peacock   | (Ralliance P/L)                               |
| David Phillips  | (PhillipsKPA)                                 |

Additional research support was provided by Zahra Aziz and Michael Noonan (Research Officers, PhillipsKPA).

## EXECUTIVE SUMMARY

### Background

The Bradley Review recommended:

*That the Australian Government commission a study to examine the feasibility of a new national university for regional areas and, if the study indicates that a new national regional university is feasible, the Australian Government provide appropriate funding for its establishment and operation. (Recommendation 17)*

On 10 March 2009, the Deputy Prime Minister, The Honourable Julia Gillard, MP, announced that the Government would grant \$2 million to Charles Sturt University and Southern Cross University to undertake such a feasibility study.

The study was designed to be conducted in three stages: (1) needs analysis, (2) modelling, and (3) implementation. This document is the report of the Needs Analysis. It is intended to inform judgements about the case for a new approach to higher education in regional Australia.

In earlier correspondence with the Universities, the Minister had emphasised that the study should include “consideration and development of options other than a merger into one body”. Some initial work was undertaken to identify a range of possible models, including models for a new national university in regional Australia (NURA), that could merit more detailed examination. The outcome of this work is contained in the Addendum to this report.

### The role and impact of regional higher education

There is clear evidence that regional universities and campuses play a significant role in advancing and sustaining the economic, cultural and social well-being of the communities they serve. They make a substantial contribution to regional economies in terms of direct and indirect benefits and their collective contribution to the national economy is significant.

A summary of studies of the economic impacts of regional universities concluded that: ‘There are few if any government activities that would be able to better universities in delivering a positive impact to a regional economy’.<sup>1</sup>

A 2007 OECD study of regional engagement of higher education focused on the need for national investment in innovation systems at regional levels. The final report concluded that:

*...with the parallel processes of globalisation and localisation, the local availability of knowledge and skills is becoming increasingly important. OECD countries are thus putting considerable emphasis on meeting regional development goals, by nurturing the unique assets and circumstances of each region, particularly in developing*

---

<sup>1</sup> Centre for International Economics Canberra & Sydney 1997, Assessing the economic contribution of regional universities, prepared for Review of Higher Education Financing and Policy. P35  
[www.dest.gov.au/archive/highered/hereview/mediareleases/mrherc4-97.htm](http://www.dest.gov.au/archive/highered/hereview/mediareleases/mrherc4-97.htm)

*knowledge-based industries. As key sources of knowledge and innovation, higher education institutions (HEIs) can be central to this process.<sup>2</sup>*

A key theme emerging from this project is that the needs for and benefits of higher education in regional Australia should be assessed not only in educational terms but also in terms of its broader role in regional development. Policy and funding strategies should reflect this broader role. An issue here for Australia is that the contribution of universities to regional development is not well recognised and coordinated across Government agencies.

### **Current patterns of provision**

Current levels of education attainment and participation are relatively low in most regions - university attainment rates in regional areas are only just more than half the levels in the capital cities. Young regional Australians (15-24) are about half as likely as those in metropolitan areas to be attending university. In contrast attainment and participation rates in vocational education and training (VET) are much more evenly distributed between regional and metropolitan areas.

A high proportion of students with a regional address enrol at a metropolitan campus (referred to in this study as regional 'leavers'). Across Australia there were 57,427 regional 'leavers' in 2006, 41% of all regional students. In contrast only 8% of metropolitan students (46,821) were 'leavers', i.e. enrolled at a regional campus.

A key difference between regional 'stayers' and 'leavers' is the choice of field of study. Regional 'leavers' are significantly more likely to be studying architecture and building, engineering and related technologies, and sciences. These three fields are not provided or have only a relatively limited presence at regional universities.

A number of studies show the complex range of factors that influence the educational choices of regional people. Most important is the perceived value of a higher education when compared with immediate employment or the more directly applicable skills. Proximity to a local university campus appears to have a significant impact on the aspiration to participate in higher education in rural and regional Australia. The availability of courses that meet the needs and aspirations of students appears to be a stronger factor than distance from an educational facility in choice of university.

Important issues for the development of the NURA concept include the significance of developing a comprehensive course profile in order to retain regional students, and the essential role that regional universities can play in raising the levels of aspiration for higher education in regional communities.

---

<sup>2</sup> OECD 2007, *Higher education and regions: globally competitive, locally engaged*, p.11.  
[http://www.oecd.org/document/33/0,3343,en\\_2649\\_35961291\\_39378401\\_1\\_1\\_1\\_1,00.html#ES](http://www.oecd.org/document/33/0,3343,en_2649_35961291_39378401_1_1_1_1,00.html#ES)

### **Needs for higher education in regional Australia**

While recent and projected population growth is generally lower in regional areas than in the capital cities, demographic change is unlikely to result in a decline in aggregate domestic demand for higher education across the regional areas of most States, with the exception of Tasmania and possibly South Australia. Within this aggregate picture there is significant variation in the patterns of population growth and decline between regions, with substantial growth in demand likely in parts of Western Australia, Queensland and New South Wales (especially coastal regions).

The outlook for the Indigenous population is quite different. Compared with the nation as a whole, the Indigenous population is much younger, and growing much faster. It is also much more concentrated in the areas served by regional universities. Similarly, while the socio-economic profile of regional areas varies markedly around the country, 68.4% of all people living in disadvantaged areas (ranked in the lowest three SES deciles) reside outside of the capital cities.

The demographic and economic outlook for any region may be influenced significantly by government policy, including the funding and location of universities, and by technological and industry change. The early evidence, both from Australia and other countries, is that the new information and communications technologies also have the potential to support more decentralised economic and population growth.

There have been persistent shortages of professionals in certain occupations across most States and Territories and especially in areas of regional Australia. The most recent assessments (mainly from 2008) identify skill shortages outside of metropolitan areas in at least four mainland states for 16 groups of managerial and professional occupations, including engineers, architects, accountants, health professionals, dentists, pharmacists, and veterinarians.

Employment demand for graduates in regional areas is generally projected to rise quite strongly, albeit not quite as strongly as in metropolitan areas.

### **Higher education for Australia's region of the world**

The demand for higher education in the Asia Pacific region remains high and is expected to grow.

The formation of a higher visibility, national regional university with a comprehensive course profile would improve international student recruitment outcomes. However, we are cautious about the extent to which this could produce a major increase in market share in the face of competition from metropolitan universities on-shore and increasing international competition off-shore.

The expertise, programs and technologies developed by a NURA for the Australian context could be adapted for skills and professional development for remote communities internationally.



## **Research and knowledge transfer**

Regional Australia accounts for approximately 40% of Australia's population yet significantly less than 20% of Australian investment in university R&D. While concentration of research activity in the cities makes sense in States with very widely dispersed populations outside of the capitals (WA, SA and the NT), it is less clearly justified in the case of the eastern States.

The main challenges faced by regional universities in research relate to scale: even the scale of several regional universities combined is modest by national and international standards. A key issue therefore is how regional institutions can grow the scale of their research – either individually or as a group.

Under existing arrangements, the scope for regional institutions to attract additional research investment is fairly constrained. The starting base is low - there is no non-metropolitan regional institution that accounts for more than 1% of total national university R&D expenditures - and the research funding streams are highly competitive.

Possible approaches to growth, all of which would be facilitated by the formation of a NURA, include the following.

- Build scale through consolidation of research teams and the synergies that would flow from integration of two or more regional universities.
  - There are some evident areas of synergy in research between CSU and SCU.
- Introduce a program like the US Experimental Program to Stimulate Competitive Research (EPSCoR), which provides seed funding or catalytic funding to regional institutions with the direct objective of making them more competitive for R&D funding.
- Create a concerted program to develop significant research infrastructure to be shared by regional universities and State and federal government research agencies.
- Form of strategic relationships in research and research training with major research intensive universities.

## **Financial sustainability**

In general, regional universities face greater challenges than larger metropolitan universities in generating a sustainable financial return that enables them to invest in infrastructure and innovation. Regional universities tend to have less diverse revenue profiles and face significant diseconomies of scale on smaller campuses.

There is also evidence of additional costs faced by regional universities in relation to their relatively high proportions of part time, Indigenous and low SES students, as well as their unfunded community engagement activities.

The changes announced in the Budget will bring some financial benefits but also some increased risks from increased competition for students flowing from the introduction of student demand driven funding from 2012. The financial benefits of the Budget changes will be limited and will not flow immediately. The increases to research funding will be concentrated in the research intensive universities.

Overall, we believe that there would be benefits in terms of enhanced financial sustainability flowing from some form of integration of regional universities. It would create opportunities to better leverage size, share resources, increase capacity to broaden areas of teaching and research and increase competitiveness as the sector moves towards a more demand driven system. However there are constraints on the extent of the potential benefits arising from the wide geographic dispersion of the constituent parts.

### **Developments in course design and delivery**

The vision for a NURA includes a distinctive mission to enhance Australia's distance and digital education capacity.

To achieve this vision, a NURA would need to be at the cutting edge of developments in distance and flexible education. A groundbreaking national regional university would require not only a significant investment of funds but also a visionary program of major initiatives to enhance forms of learning directed primarily at regional students and their communities. The new and emerging developments in information and communications technologies (ICTs) have the potential to support major transformations in distance education delivery to regional Australia and beyond. This represents an opportunity for a national regional university to attract major funds to reassert Australia's standing as a leader in the field.

The new and emerging technologies provide an opportunity but they also magnify the potential for competition. Indeed, almost all Australian universities are endeavouring to raise their capacity and capability in flexible learning with some major metropolitan universities making significant investments to establish market leadership positions.

There is potential for a NURA to take a lead nationally through the development of a centre to promote engagement with new forms of learning. The scope of such a centre could include world-class research into regional distance and digital delivery, strategic advice to governments and universities, and the development of innovative approaches to the use of ICTs in new forms of teaching and learning.

### **Needs, opportunities and constraints**

In short, the needs for change in regional higher education relate to:

- access, participation and attainment;
- regional labour force requirements; and
- the sustainability of regional universities, especially small campuses.

The opportunities for change in regional higher education relate to:

- the potential to use higher education policy as a much more active agent for regional development in Australia;
- the targets of the Australian Government to boost higher education attainment rates and higher education participation rates for students from low SES backgrounds;
- the projected growth in demand for higher education globally and in Australia's region;
- the roll out of broadband in regional areas and the increasing use of new information and communications technologies;
- more efficient and effective use of infrastructure through collaboration and collocation with other educational providers and related users on regional campuses; and,
- the potential for some form of collaboration or integration of regional universities to deliver benefits through:
  - increased scope and depth of programs;
  - consolidation of expertise and investment in distance and digital delivery, including the development of systems and program content;
  - shared use of facilities to support research activities and opportunities for joint supervision of research students;
  - increased opportunities to share resources to deliver a range of support functions more cost effectively.

If, and only if, substantial new funding were to be available, we believe that there is also an opportunity to go further and create a new national regional university in some form that could operate at a higher level of scale, efficiency and impact. Such an entity could be marked as follows.

- Clarity of mission and strategy
  - to be a leading provider of higher education teaching and research with national and international reach and impact, and a special mission to contribute to the social and economic development of Australia's regional areas.
- A comprehensive course profile offered through a highly flexible mix of on- and off-campus learning and new forms of learning supported by advances in ICT applications.
- Increased student numbers and demand, providing for an increase in the scale and sustainability of individual programs and campuses.
- Leading edge cross-campus communications and levels of connectedness between staff, students and communities.

- A quantum step forward in research depth and scale.
- Organisational innovation including more intensive utilisation of physical infrastructure, reduced duplication and fragmentation of services and expertise.
- Enhanced pathways to higher education for people in regional areas, especially Indigenous and low SES students.
- Groundbreaking business partnerships with large communications providers.
- Centres of excellence for remote community education and for the promotion of new forms of learning.

However, it must be recognised with clarity that there are major obstacles to change and significant constraints on the extent to which these opportunities can be realised. The obstacles and constraints relate to:

- the competitive nature of higher education industry and the independent status of universities;
  - limits on and competing priorities for public funding;
  - resistance to special funding arrangements, especially in research;
  - federal issues of Commonwealth and State responsibilities and ownership of universities;
  - geography – the tyranny of distance across very widely dispersed campuses; and,
  - weaknesses in student demand and the demographic outlook in some regional areas.
-

## Background to this project

### The Review of Australian Higher Education

The Review of Australian Higher Education (the Bradley Review) identified a number of “challenges around provision of higher education in regional and remote areas of Australia” (p109). The challenges highlighted by the Review included:

- Projected static or declining populations of 15 to 24 year olds outside of capital cities in every State and Territory other than Queensland over the next 10 to 20 years
- Higher costs and diseconomies of scale for non-metropolitan universities associated with:
  - the geographical dispersion of people within their catchments,
  - higher proportions of indigenous students and students from low SES backgrounds,
  - small student numbers in programs, and
  - flexible modes of delivery required to meet student needs.
- Funding arrangements that universities argue are inadequate to cover the additional costs of running regional campuses and which bear little relationship to the actual costs
- Uneven patterns of regional provision with a number of universities operating in some regional towns while in others there is no physical university presence.

The Review Panel was also conscious that these challenges could be compounded by certain elements of the key policy reforms it was recommending. For example, while not specifically identifying regional universities, the Review observed that as a consequence of its recommendations on the accreditation of universities, some institutions:

*... may need to undertake significant internal restructuring to ensure a better match between their teaching and research profiles across fields of study, or consider mergers with other institutions to retain (university) status (p127).*

Similarly, the Review acknowledged that its proposed introduction of a demand-driven funding system:

*... could see a shift of students and funding toward those institutions that wish to grow and that can attract increased numbers of students. This is precisely what is intended... (p156).*

The Review Panel did not develop detailed proposals to address the challenges for regional higher education, observing that “the question of an appropriate approach to regional provision in the future (is) one of the most difficult issues it has had to consider” (p110).

The Review however did note one specific suggestion that had been put forward to the Minister by the Vice-Chancellors of Charles Sturt University (CSU) and Southern Cross University (SCU):

*This is the establishment of a new national university, created through a merger of some existing regional universities and, perhaps, consolidation of some regional campuses of metropolitan universities. This new, consolidated university would be charged with a mission to offer accessible, high-quality education in the regions. Internationally-recognised expertise in delivery of education to regional areas and isolated communities could be concentrated in such a university and it could be given a charter to address regional provision nationally. Funding could be negotiated in recognition of the costs involved in the delivery of such a mission. (p113)*

The Review Panel stated that it “believes a university such as this, together with better use of existing facilities and expertise in regional areas, would provide a viable solution to the current and emerging problems it sees in regional provision” (p113). Accordingly, the Review recommended:

*That the Australian Government commission a study to examine the feasibility of a new national university for regional areas and, if the study indicates that a new national regional university is feasible, the Australian Government provide appropriate funding for its establishment and operation. (Recommendation 17)*

### **The feasibility study**

On 10 March 2009, the Deputy Prime Minister, The Honourable Julia Gillard, MP, announced that the Government would grant \$2 million to Charles Sturt University and Southern Cross University to undertake such a feasibility study. The purpose of the study was summarised as follows in the application to the Diversity and Structural Adjustment Fund:

*The Feasibility Study will explore various models for bringing together national expertise in distance and digital delivery through the integration of existing regional higher education providers, including the requirements, benefits and impact of forming a new national University:*

- *to improve sustainability, quality and effectiveness of the provision of University courses and research in non-metropolitan Australia;*
- *to strengthen distance education to improve participation and labour force outcomes nationally and regionally; and*
- *to strengthen global competitiveness in distance education, including for the benefit of the Asia-Pacific.*

This breadth of scope means that the study is not a narrow, conventional feasibility study which seeks to establish whether a single, well-specified proposal is feasible or not. In this instance there is a prior stage required to analyse the complex range of issues that need to be addressed and then to identify models that might justify more detailed feasibility assessment.

Thus the study is designed to be conducted in three stages: (1) needs analysis, (2) modelling, and (3) implementation.

## **The Needs Analysis**

The scope of the Needs Analysis was agreed at a joint meeting of the Councils of CSU and SCU held in Bathurst on 27 April, 2009. The scoping document presented to the Councils identified that the Needs Analysis should include:

1. The role and impact of higher education and universities in regional areas;
2. Current patterns of provision of higher education in regional Australia;
3. Current and emerging needs for higher education in regional Australia;
4. Current and emerging needs for higher education in Australia's region of the world;
5. Research and knowledge transfer;
6. The sustainability of current approaches to higher education provision in regional Australia;
7. The impact of new developments in course design and delivery; and
8. Possible models for higher education in regional Australia.

On 1 May, 2009, PhillipsKPA was commissioned to undertake the Needs Analysis with an initial reporting date of 19 June 2009.

This document is the final report of the Needs Analysis. It covers the first seven points identified in the scoping document. The outcome of work on point eight is contained in the Addendum to this report.

## **Consultation**

In the seven weeks allocated for the study members of the consultancy team and the Steering Committee conducted quite an extensive series of consultations with staff, students and other stakeholders. Specifically, Malcolm Marshall and Mark Burdack, Co-Directors of the Feasibility Study, travelled to each campus of CSU and SCU for a series of briefings with staff and students and to seek input across a number of themes relating to the Study. Feedback from those meetings has been summarised and is available on the Study website [www.nura.edu.au](http://www.nura.edu.au). This feedback is reflected where relevant in this report.

Members of the consultancy team also consulted directly with current and former senior staff of CSU and SCU, senior staff of other relevant universities, and government representatives. Face to face and telephone interviews were conducted with the Vice-Chancellors of: CSU and SCU (including the incoming Vice-Chancellor), University of the Sunshine Coast, University of Canberra, the Australian National University, La Trobe, Central Queensland University, University of South Australia, University of New England, and the University of Ballarat. A meeting was also held with the Chairman and CEO of Open Universities Australia.

# 1 The role and impact of higher education and universities in regional areas

---

The 2009-10 Ministerial Budget Statement on Education, Employment and Workplace Relations notes that 'Regional universities and campuses play a significant role in the economic and social fabric of their communities.' It also identifies a 'fair deal for Australia's regions' as a priority:

*Sustainable higher education provision that is responsive to the specific needs of regional Australia is essential to Australia's social and economic prosperity. Students who study in regional areas are much more likely to stay in those areas, providing a vital skilled workforce in the regions. Institutions have a critical role to play in local communities and economies...<sup>3</sup>*

The case for a National University in Regional Australia (NURA) depends in the first instance on confirming the accuracy and significance of these sentiments. What does the evidence show about the role played by higher education and universities in regional areas? What does the evidence show about the significance of regionally based provision in meeting regional needs? What factors make a difference to the impact of regional universities on their regions?

Much of what follows in this section restates some familiar arguments and revisits the available supporting evidence. The credibility of the claims for an enhanced role for regional universities, or even just a 'fair deal', rests firmly on the extent to which they play a critical role in sustaining their local communities and economies. Systematic and independent evidence is needed to support the claims.

Identifying the factors that directly link sustainable higher education provision to national social and economic prosperity is relatively straightforward although not entirely quantifiable. The argument then needs to go to another level to consider those aspects that could be strengthened significantly by a university with a national mission and profile, the form it should take, and the critical mass and reach required to advance and sustain regional development.

This section examines the available evidence concerning the role played by higher education and by universities in regional areas, specifically:

- Impacts on the economic, cultural and social life of the regions;
- The significance of regionally-based higher education;
- The knowledge economy and human capital development; and
- The broader benefits of higher education in the regions.

---

<sup>3</sup> Gillard, J 2009, Budget 2009-10 Ministerial statement on education, employment and workplace relations, Jobs, productivity and fairness - a foundation for recovery, Canberra, p. 64.  
[www.budget.gov.au/2009-10/content/ministerial\\_statements/deewr/download/ms\\_deewr.pdf](http://www.budget.gov.au/2009-10/content/ministerial_statements/deewr/download/ms_deewr.pdf)



## 1.1 *Regionalisation of higher education in Australia*

The provision of higher education to regional Australia was expanded dramatically in the early 1990s. Many of the current regional universities were the product of amalgamations or extensions of campuses outside the main campus location. In the 1990s almost 70 new campuses were established in Australia. By 1999 there were 150 campuses in the Australian higher education sector. Of these, 99 were located in capital cities and 48 in non-metropolitan areas. 25 of the 99 metropolitan centres were the main campuses of the universities and the remaining 74 were subordinate or branch campuses. 10 of the 48 campuses in regional areas were main university campuses and 38 were secondary campuses of metropolitan or regional universities. Of the 48 campuses in regional areas 20 were part of a metropolitan-based administration:<sup>4</sup>

*By the end of the decade, most universities had undertaken some form of regionalisation, with many stating their main reason being to enhance university access opportunities in non-metropolitan regions. As a result there was a reasonably high probability that even small centres of population would be within 50 kilometres of a university campus.<sup>5</sup>*

In 1999 approximately 11 per cent of students under 20 years old moved from their local area to enrol in university. Of those based in metropolitan areas who moved, 70 per cent lived within 10 kilometres of a university campus. For more than 90 per cent the closest campus was less than 50 kilometres away. In contrast, of those who moved from their non-metropolitan base, just 15.6 per cent lived within 10 kilometres of a university campus while for 40 per cent the nearest campus was more than 50 kilometres away. During that period universities focused primarily on locating new campuses where population growth would ensure viability for them with the assumption that they would add value to the regional development. While it was argued at the time that a regional catchment population needed to be in the order of 150,000 to 200,000 to ensure campus viability, only a few regions in Australia had concentrations of population of that size. Some universities used distance education to extend their market share supported by the new technologies or created a network of campuses supported by a central back office.

In many cases this meant that these universities were running two parallel student bodies: on-campus students with a traditional undergraduate experience, and distance education students primarily working in isolation from one another although some had varying levels of interaction with fellow students and teaching staff through residential schools.<sup>6</sup>

---

<sup>4</sup> Department of Education, Science and Training (DEST) 2003, *National Report on Higher Education in Australia (2001)*, Canberra, p. 171.  
[http://www.dest.gov.au/sectors/higher\\_education/publications\\_resources/summaries\\_brochures/national\\_report\\_on\\_higher\\_education\\_in\\_australia\\_2001\\_splitpdf.htm](http://www.dest.gov.au/sectors/higher_education/publications_resources/summaries_brochures/national_report_on_higher_education_in_australia_2001_splitpdf.htm)

<sup>5</sup> Garlick in DEST 2003, p. 173.

<sup>6</sup> DEST 2003, p. 174.

As the Bradley Review observed, the patterns of regional provision are haphazard:

*In some regional towns a number of universities operate while in others there is no provision. This suggests that the pattern of regional provision is based on history and local political considerations rather than a rigorous process of analysis of need and development of a sustainable and cost-effective service in response.<sup>7</sup>*

The Review argued that the cost of regional provision is close to unsustainable, and that more flexible approaches with fewer permanent campuses and more higher education service points should be established. While the Review suggests that providers in regional and remote areas should build partnerships with local communities, providers in other sectors of education, businesses and industry, this seems largely directed at making more efficient use of facilities and resources and does not touch upon the potential of regional universities to play a broader and more dynamic part in regional transformation.

## **1.2 Functions and impacts of regional higher education**

A 2007 OECD study of regional engagement of higher education focused on the need for national investment in innovation systems at regional levels to enable countries to be competitive in the globalising knowledge economy. The final report concluded that:

*...with the parallel processes of globalisation and localisation, the local availability of knowledge and skills is becoming increasingly important. OECD countries are thus putting considerable emphasis on meeting regional development goals, by nurturing the unique assets and circumstances of each region, particularly in developing knowledge-based industries. As key sources of knowledge and innovation, higher education institutions (HEIs) can be central to this process.<sup>8</sup>*

Government policies promoting higher education regional engagement have had a common goal: to transform each HEI into an engine for growth primarily by enhancing the role of tertiary education within regional innovation systems and enhancing the participation of HEIs in cluster type initiatives:

*HEIs can also potentially play a key role in bringing global players into a local context in order to attract inward investment. Whether it is the University Jaume I in Valencia in Spain helping to transform the traditional SME-based ceramic tile industry to a global leader, or the University of Sunderland in the UK participating in an alliance that helps to make Nissan's new car plant the*

---

<sup>7</sup> Bradley D, (Chair) 2008, Review of Australian Higher Education, Full Report, Commonwealth of Australia, p. 110.

<sup>8</sup> OECD 2007, *Higher education and regions: globally competitive, locally engaged*, p.11.  
[http://www.oecd.org/document/33/0,3343,en\\_2649\\_35961291\\_39378401\\_1\\_1\\_1\\_1,00.html#ES](http://www.oecd.org/document/33/0,3343,en_2649_35961291_39378401_1_1_1_1,00.html#ES)

*most productive in Europe, higher education is starting to realise the pivotal part it can play.*<sup>9</sup>

Regional engagement of higher education refers to a number of dimensions, including:

- Knowledge creation in the region through research and its exploitation via technology transfer (spin out companies, intellectual property rights and consultancy);
- Human capital formation and knowledge transfer (localisation of learning process by work-based learning, graduate employment in the region, continuing education, professional development and lifelong learning activities); and,
- Cultural and community development contributing to the milieu, social cohesion and sustainable development on which innovation in the region depends.<sup>10</sup>

Regional universities can also play a key role in joining up a wide range of national and state policies at the regional level. In their research, teaching and community service they act as a focal point for policies concerned with, for example, regional infrastructure, agriculture, science and technology, industry, education and skills, health, culture and sport, environmental sustainability and social inclusion.<sup>11</sup>

### **1.2.1 Benefits of regional partnerships**

The OECD report summarised the potential benefits in the partnerships between the regions and higher education institutions from the perspectives of both stakeholders. For the regions, the primary benefits of the HEIs are their potential contribution to a region's comparative advantage in knowledge-based industries and to its human capital base, local economy, and the social and cultural life of the community. From that perspective, regional universities are:

- Major businesses generating tax and other revenues;
- Global gateways in terms of marketing and attracting inward investment in the private sector;
- Generators of new businesses and sources of advice and expertise for multiple purposes including support for existing businesses;
- Enhancers of local human capital through graduate retention and professional updating of the existing workforce and lifelong learning including distance and e-learning; and,

---

<sup>9</sup> OECD 2007, p. 15.

<sup>10</sup> OECD 2007, p. 22.

<sup>11</sup> OECD 2007, p. 17.

- Providers of infrastructure, content and audience for local cultural, sporting and recreational programs.<sup>12</sup>

From the perspective of HEIs, the local area has the potential to bring business to institutions in a variety of forms, including student enrolments, income from research, consultancy and training, and an environment in which the HEIs can thrive, helping institutions to attract and retain staff and students.<sup>13</sup> Local connectedness appears to be a potential advantage for the universities:

*While the technology, knowledge and research outputs of higher education institutions are available not only regionally, but also nationally and globally, physical proximity remains important in HEI-industry relationships. For example, a patenting decay effect has been identified whereby beyond fifty miles of home base, the citations of academic papers decline sharply, suggesting strong interaction among patenting entrepreneurs and regionally based academics.<sup>14</sup>*

### **1.2.2 The knowledge economy and human capital**

The Review of Australian Higher Education Discussion Paper identifies a core function of higher education as the development of high-level knowledge and skills. It emphasises the increasing importance of higher education to the nation given that national prosperity must be built on a competitive, knowledge-based global economy. Moreover, it notes that higher education is the 'site for the production and transmission of new knowledge and for new applications for knowledge.'<sup>15</sup>

In its response to the Discussion Paper, Charles Sturt University put the view that the 'capacity to operate across sub-national, national and international levels is critical to generating multi-directional knowledge.' In support, CSU cited the views of the Productivity Commission report in relation to health services reform:

*...(rural) areas have been an 'incubator' for developing and testing new models of care and extended scopes of practice. Many such innovations have the potential to provide the basis for system-wide changes in health workforce arrangements in coming years.<sup>16</sup>*

This example is used to illustrate the important 'knowledge flows' that engage regional communities and students in a broader knowledge economy. Staff and students who participated in the preliminary consultation process for the Feasibility Study likewise saw regional Australia as the 'heart of innovation', and regional universities as the 'natural incubators of innovation'. It was felt that research

---

<sup>12</sup> OECD 2007, p. 30.

<sup>13</sup> OECD 2007, p. 12.

<sup>14</sup> OECD 2007, p. 120.

<sup>15</sup> Review of Australian Higher Education 2008, *Discussion Paper*, Commonwealth of Australia.

<sup>16</sup> Charles Sturt University 2008, Submission to the Review of Australian Higher Education, p. 3.

conducted in regional areas helped to solve local problems, which could also resonate across Australia and internationally:

*Researchers based in a region drive innovation and assist the region to problem-solve. Regional challenges like the Murray Darling issue need to be dealt with close to the action.*

The 2001 OECD Report, *Cities and Regions in the New Learning Economy*, differentiated two dimensions of the knowledge economy:

- *Individual learning* concerned with the acquisition of knowledge and skills by individuals through formal and informal education and training; and,
- *Organisational learning* focused on innovation and exchange of information within and between firms, universities, research institutes, economic development agencies, etc.

While both types of learning are important to regional/State economic performance, what really matters is the use made of individual skills in firms through organisational learning. The innovation potential of a region and its capacity to play a part in the knowledge economy is limited primarily by the lack of professional and skilled workers. The role of higher education in the regions is critical in this respect:

*A knowledge-based or learning economy requires a larger number of graduates and an employment orientation in teaching. It also requires the provision of lifelong learning opportunities for a wide variety of traditional and non-traditional learners.<sup>17</sup>*

### **1.2.3 Impact on educational aspirations and participation**

There is growing evidence to confirm the importance of the physical presence of higher education institutions in regional areas as a factor in raising educational aspirations of the community leading to increased higher education participation. Universities do this most obviously by providing courses and programs. They have a potentially significant impact on first generation students and their families by making access and participation less daunting and more affordable.

An interesting case study in Australia is the University of the Sunshine Coast which was established relatively recently in an area which had previously had little university presence. In mid 1990s the then Nambour campus of Queensland University of Technology attracted few applications (180 at most) for programs offered in business and education. The demand was so modest that the Vice-Chancellor decided on disengagement in 1995.

Once the University of the Sunshine Coast opened in 1996 total preferences leapt to 3,000 and the University admitted 600 students in its first year. First preferences since that time have continued to climb:

---

<sup>17</sup> OECD 2001, *Cities and Regions in the New Learning Economy*, p. 21. [http://miha.ef.uni-lj.si/\\_dokumenti3plus2/191029/OECD\\_New\\_Learning\\_Economy\\_2001.pdf](http://miha.ef.uni-lj.si/_dokumenti3plus2/191029/OECD_New_Learning_Economy_2001.pdf)

1996: 591

2001: 1283 (117% increase over 5 years)

2006: 1708 (33% increase over 5 years)

2009: 1760

The percentage of the Sunshine Coast population aged 15 - 24 enrolled at a university or other tertiary institution has risen from 4.1% in 1996 to 9.2% in 2006.

The link between University presence, aspirations and higher education participation is demonstrated by the 2004 analysis of participation rates undertaken by Charles Sturt University. The analysis, using data from the Department of Education, Science and Training National Statistics Collection, found that total participation in higher education for students aged 15 years and above increased with proximity to a major regional University campus<sup>18</sup>:

| <b>Regional Location</b>          | <b>Campuses</b>   | <b>Percentage</b> |
|-----------------------------------|---|-------------------|
| Orange                            | Charles Sturt University                                | 3.50%             |
| Northern Tablelands<br>(Armidale) | University of New England                               | 3.40%             |
| Albury                            | Charles Sturt University                                | 3.30%             |
|                                   | La Trobe University                                     |                   |
| Bathurst                          | Charles Sturt University                                | 3.20%             |
| Wagga Wagga                       | Charles Sturt University                                | 3.20%             |
| North Coast                       | Southern Cross University                               | 2.90%             |
| Dubbo                             | Charles Sturt University (small campus)                 | 2.90%             |
| Goulburn                          | Charles Sturt University (small campus - policing only) | 2.90%             |
| Cowra/Parkes/Forbes               | No campus   | 2.50%             |
| South Coast/Snowy Mountains       | No campus   | 2.30%             |
| Far West                          | No campus   | 2.10%             |

The study suggests that the scale of the campus (perhaps reflecting the breadth of offerings at a campus) also has an impact on participation, with participation rates in smaller regional or single purpose campus locations lower than in centres with major campuses offering a broad range of courses.

---

<sup>18</sup> Charles Sturt University, 2004, Participation Rates 2004 - Participation in Higher Education at the CSU, State and Australia wide level for regions across NSW, ACT and Victoria downloaded from [http://www.csu.edu.au/division/plandev/publications/docs/participation\\_rates.pdf](http://www.csu.edu.au/division/plandev/publications/docs/participation_rates.pdf)

The indirect impact of regional universities on local educational aspirations includes the more subtle influence they have on the career and life plans of students and their families. The most important factors influencing the low participation rates of low socio-economic rural students are community and family attitudes towards the relevance and advantages of university education.

The indirect impact of regional higher education extends to schools. Partnerships between universities and schools, particularly where they involve the earlier formative years, have a significant effect on the general level of aspirations of students to pursue higher education, and on the encouragement provided by teachers and peers. The more physically distant teachers and students are from a university campus the less likely they are to have opportunities to engage with the idea of participating in higher education. When universities and other tertiary providers engage directly with schools the impact can, as one study of rural student aspirations found, be very powerful:

*...in regions where this has happened, focus group students spoke about the positive way in which their dreams had been supported. The presence of TAFE colleges and nearby university campuses – the investment in career markets and expositions – the dedication demonstrated particularly by regional universities in mentoring ‘out-of-town’ students and students from the bush, all featured as strategies that sustained students in their quest to broaden their visions and pursue their ambitions.<sup>19</sup>*

Like all universities, regional providers also offer extension programs of varying kinds to broaden and sustain the lifelong learning experiences of their communities. In doing so they indirectly raise the general level of cultural capital and aspirations. These activities include ongoing events such as continuing education, summer schools and public lectures.

#### **1.2.4 Attracting and retaining talent**

In broad terms, higher education can contribute to human capital development in the regional Australia through:

- Educating a wider range of individuals in the local area;
- Ensuring that they are employable when they leave education;
- Helping local employers by responding to new skills requirements;
- Ensuring that employees go on learning by supporting continuous professional development; and,
- Helping attract and retain talent from outside.<sup>20</sup>

---

<sup>19</sup> Alloway, N, Gilbert, P, Gilbert, R & Muspratt, S 2004, *Factors impacting on student aspirations and expectations in regional Australia*, DEEWR, Canberra, p. 252.  
[http://www.dest.gov.au/sectors/higher\\_education/publications\\_resources/indexes/by\\_series/evaluations\\_investigations\\_program/](http://www.dest.gov.au/sectors/higher_education/publications_resources/indexes/by_series/evaluations_investigations_program/)

<sup>20</sup> OECD 2007, p. 15.



Importantly, when regional universities supply educated people to the region, they increase the region's capacity for generation and absorption of knowledge and innovation. In retaining graduates in the region, higher education institutions can provide crucial human capital inputs for regional and local labour markets. A better-educated regional labour force—particularly the development of a specialized pool of professionals in a region – contributes to attracting industry to the region. The OECD reports examples of countries that have designed policies for attracting various types of talent, for example students, researchers, IT specialists, research scientists. The policies include tax incentives (tax holidays), repatriation schemes and improving the attractiveness of academic careers.<sup>21</sup>

Higher education also plays an indirect role in attracting and retaining a more skilled and professional population to regional cities:

*Having a strong and active university campus in regional cities increases the cities' "liveability". A person's decision to move to a regional location (for work, residence or investment) is determined by a number of factors including provision of suitable services. These certainly include access to a viable university campus.<sup>22</sup>*

Attracting and retaining talent is a particular challenge facing many regions. Regional universities have long highlighted their potential to retain graduates in the professions in rural areas, primarily students from non-metropolitan locations but also in some fields substantial numbers from metropolitan areas who take positions in the country on graduation.

A 2006 study by the Western Research Institute looked at the retention of graduate students of Charles Sturt University in regional areas. The study used a Graduate Destination Survey of 7,483 graduate students matched to original enrolment data held by the University. The study found:

- 73% percent of all on-campus graduate students from Charles Sturt University with a regional home location took up initial employment in a regional location;
- 84% of on-campus education graduate students with a regional home location took up initial employment in a regional location;
- 82% of on-campus health graduates with a regional home location took up initial employment in a regional location;
- 76% of on-campus agriculture and environment graduate students with a regional home location took up initial employment in a regional location;

---

<sup>21</sup> OECD 2007, p. 158.

[http://www.oecd.org/document/33/0,3343,en\\_2649\\_35961291\\_39378401\\_1\\_1\\_1\\_1,00.html#ES](http://www.oecd.org/document/33/0,3343,en_2649_35961291_39378401_1_1_1_1,00.html#ES)

<sup>22</sup> Warrnambool City Council, 2008, Submission to the review of Australian higher education, Submission no. 256, p. 9.

<http://www.deewr.gov.au/HigherEducation/Review/Pages/Submissions.aspx>



- the percentage of regional graduate students initially employed in a regional location showed a statistically significant upward trend since 1995 increasing at an average rate of 1.3% per year;
- a large proportion of graduate students find their first employment in their original home location – for example, 62% of students originating from Albury found their first employment in Albury, 59% of students from Wagga Wagga were initially employed in Wagga Wagga, 56% of students from Bathurst were initially employed in Bathurst and 50% of students from Dubbo were initially employed in Dubbo.<sup>23</sup>

A widely cited study of pharmacy graduates at CSU demonstrates that the availability of rural employees in the field related strongly to their training being based in rural areas:

*Whereas around three graduates per year traditionally crossed the Great Divide, the availability of Charles Sturt University (CSU) (pharmacy) graduates from 2000 transformed the availability of graduates in rural areas significantly... overall, around two-thirds of graduates of rural origin obtain, and remain in, rural employment for extended periods. Those with metropolitan backgrounds are more likely to return to the metropolis and only about 15% gain rural employment.<sup>24</sup>*

### 1.2.5 Training and retaining medical practitioners

Much of the evidence supporting the view that students who ‘train in the bush remain in the bush’ comes from the health professions in countries like Australia with widely dispersed populations and a severe shortage of health practitioners. A review of international studies<sup>25</sup> lists four key observations from medical school initiatives in the 1980s designed to attract rural doctors:

- Students of rural origin are more likely to return to rural areas to practise medicine;
- Recent medical graduates trained in rural areas are more likely to choose rural practice;
- Family medicine (general practice) is the key discipline of rural health care; and

---

<sup>23</sup> Western Research Institute, 2006, The Destination of On-Campus Graduates of Charles Sturt University 2006 Update downloaded from [http://www.csu.edu.au/division/plandev/publications/docs/final\\_graduate\\_destinations\\_report\\_2006.pdf](http://www.csu.edu.au/division/plandev/publications/docs/final_graduate_destinations_report_2006.pdf)

<sup>24</sup> Pratley, J 2008, ‘Workforce planning in agriculture: agricultural education and capacity building at the crossroads’, *Farm Policy Journal, Australian Farm Institute*, vol. 5, no. 3, August Quarter.

<sup>25</sup> Dunbabin, J & Levitt, L 2003, ‘Rural origin and rural medical exposure: their impact on the rural and remote medical workforce in Australia’, *The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy*, Deakin University, p. 2.  
[www.rrh.org.au/publishedarticles/article\\_print\\_212.pdf](http://www.rrh.org.au/publishedarticles/article_print_212.pdf)

- Recent medical graduates are likely to be practising close to where they train.

The Australian data show some consistent patterns:

- A 1970 study found that 66% of graduates with rural backgrounds had become rural doctors in comparison to 16% of doctors without rural backgrounds.
- A 1990 study of graduates from the University of Newcastle medical school between 1982 and 1988 found that those living in a rural area before enrolling in medical school were 2.5 times more likely to be working in a rural location than those who lived in an urban area.
- A South Australian study in 2000 found that rural GPs were more likely to report having grown up in the country than were urban GPs (37% compared with 27%, respectively).

The factors that appear to influence these outcomes include:

- Growing up in the country;
- Having received primary and secondary education in a rural area; and,
- Having a life partner who grew up in a rural area.

An investigation of the shortage of physicians in rural areas in Canada makes some comparisons with the United States and Australia.<sup>26</sup> The data from 2004 shows that:

- 9.4% of physicians were located in rural areas of Canada while 21.4% of the population resided in rural areas, (with similar figures for the United States and Australia).
- On average each year far greater numbers of rural physicians move to urban areas (368) than urban physicians move to rural areas (241).

There are mixed views as to the impact of clinical rural placements on graduate positions. While a study of rural initiatives at James Cook University found that rural clinical attachments do not appear to influence the regional practice choice of undergraduates, the Canadian study found that regional higher education plays an important role in recruiting and retaining rural physicians. The Ontario study found that, in addition to being from a rural area, undergraduate rural medical education and postgraduate rural training were independently associated with practising in a rural location.

### **1.2.6 Training and retaining accountants**

A study into factors affecting the long-term demand for, and supply of, professional accounting services in rural and regional Australia is currently being researched by

---

<sup>26</sup>Rourke, J 2008, 'Increasing the number of rural physicians', *Canadian Medical Association Journal*, 29 January, vol. 178, no. 3, pp. 322-325. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2211345>

academics from Deakin University, RMIT and Melbourne University in partnership with CPA Australia.<sup>27</sup> In developing policy options, it argues that the accounting profession should consider policies developed by the medical profession to address shortages in rural and regional areas. Some preliminary observations have been made from the initial stages of the research conducted to date, including:

- A number of secondary colleges no longer offer accounting through to year 12, which has been counter-productive for rural and regional firms.
- To assist in addressing staff shortages, many accounting firms are offering internships, cadetships and scholarships to students studying at universities within the region.
- Many staff have completed their tertiary studies at universities or university campuses within the region, or in off-campus mode. This highlights the importance of regional universities and off-campus studies for the health of the accounting profession in rural and regional areas.
- A majority of the staff tend to have originally grown up within the region. They have often moved away for reasons of study and/or experience, but then return to the region.
- The major challenge to accountants in rural and regional areas is the shortage of professional staff. This means accounting staff spend more time on compliance requirements and as a consequence have less time for proactive and value-adding services.
- While there are viable accounting practices in smaller towns, there is a trend towards a greater concentration of firms in the larger regional centres. The major problems for practices in smaller towns are those of staffing and business succession.
- Accountants effectively comply with their continuing professional development requirements, but it is more difficult and costly for them in comparison to those in capital city based firms.

The preliminary findings highlight the shortage of accounting staff faced by regional accounting practices, and that a big part of the solution is to get regional students to study accounting in regional areas so that they then go on to employment in those areas. The regional accounting practices 'are essential for the economic health of the regions' and the role played by regional university campuses is central to sustaining the local economy.

This finding is echoed in the 2008 CSU Graduate Destination Survey of Accountants. The survey found that CSU graduates remain prominent in regional accountancy positions in the years following graduation. Eighty-four percent of CSU educated respondents had remained employed in regional areas since

---

<sup>27</sup> Ferguson, C, Cooper, B, Wines, G & Jackling, B 2009, *Accounting services in rural and regional Australia*. [http://www.cpaaustralia.com.au/cps/rde/xchg/SID-3F57FECB-E45B9E75/cpa/hs.xsl/1017\\_31566\\_ENA\\_HTML.htm](http://www.cpaaustralia.com.au/cps/rde/xchg/SID-3F57FECB-E45B9E75/cpa/hs.xsl/1017_31566_ENA_HTML.htm)

graduation, while the remaining 16% had gained experience in a capital city before returning to work in a regional area. Furthermore, there was a strong preference to remain employed in regional and rural areas in the short, medium and long terms<sup>28</sup>.

A Warrnambool City Council submission to the Bradley review supports the view that there is a shortage of accounting graduates in the region and that local study options make a difference:

*Sinclair Wilson – the largest accounting firm in Warrnambool – describes how over 40 graduates from the Warrnambool B Com have been employed in their business. Partners have frequently stated that if the university campus was not present, they would be far less likely to be able to fill vacancies as readily.... the local university campus has actually boosted the local human capital pool by having graduates remain in the region, even though many were not originally from the south-west.*<sup>29</sup>

### **1.3 Impact on the local economy**

The OECD review of regional engagement of higher education emphasises the importance of balance in the economic roles of higher education:

*The recognition that higher education can play a key role in development is now a fundamental underpinning of most economic development strategies, both at international, national and regional level. It is becoming recognised that the two perspectives – the national/ international and the regional/local – can be complementary, reinforcing one another. The issue is often more a question of balance than of substitution.*<sup>30</sup>

Most studies of the economic impact of Australian regional universities have focused on the direct and indirect effects on the local economy. A summary of these studies commissioned for the West Review by the Centre for International Economics concluded that: 'There are few if any government activities that would be able to better universities in delivering a positive impact to a regional economy in terms of tangibles.'<sup>31</sup> The paper makes the further point that universities have a significant advantage in terms of non-tangibles 'due to the type of physical infrastructure they provide and the variety of human resources associated with institutions of higher education.'

Elaborating on these findings, Garlick suggests that while the impact of the tangible benefits is likely to be overstated due to the modelling technique used, 'such studies

---

<sup>28</sup> Western Research Institute, 2008, Charles Sturt University Graduate Destination Survey of Accountants

<sup>29</sup> Warrnambool City Council, 2008, p. 8.

<sup>30</sup> OECD 2007, p. 20.

<sup>31</sup> Centre for International Economics Canberra & Sydney 1997, Assessing the economic contribution of regional universities, prepared for Review of Higher Education Financing and Policy. P35  
[www.dest.gov.au/archive/highered/hereview/mediareleases/mrherc4-97.htm](http://www.dest.gov.au/archive/highered/hereview/mediareleases/mrherc4-97.htm)

understate considerably the flow-on effects of universities by not taking into account many of the spillover benefits to the regional economy that result from the university.<sup>32</sup>

The results of the studies vary in magnitude in part because they use different models for analysis. Nonetheless the message is essentially the same: the presence of a university has both a direct and indirect positive and large impact on the local economy. The direct or primary effects refer to the income earned and attracted by universities and the impact that has on demand for regional goods and services. The income includes financial contributions from the Government, fees from students, research and consulting funds. Universities, staff and students spend most of their income employing local people, and purchasing goods and services from local providers.

Indirect or secondary impacts refer to the expenditure that stimulates other economic activities in the region. A further round of economic activity in the region is generated by that stimulus.

The most recent of the impact studies, from Central Queensland University (CQU), focuses on the Rockhampton regional area.<sup>33</sup> The 2008 study found that the modelling demonstrates a substantial contribution with the following impacts:

- Total economic output and expenditure of \$334.25m
- Total employment effects of 3,017 jobs
- Total employment income of \$163.63m

The authors suggest that these economic impacts are likely to be an underestimate of the contribution.

A Southern Cross University study examined the economic impact of the three main regional campuses on their immediate regions. The estimation of the economic impact of each campus on their respective region is based on the application of a regional input-output matrix which models the industry sectors of each region and the way these sectors interact to form the whole regional economy. It found, for example, that the Lismore campus is responsible for a regional value of output of \$233.6m.<sup>34</sup> This is equivalent to 10 per cent of the total value of output of the Lismore region as a whole. In addition, the campus is responsible for an estimated 2106 jobs, equivalent to 9 per cent of the total number of jobs within the region.

---

<sup>32</sup> Garlick, S 1998, *Creative associations in special places: enhancing the partnership role of universities in building competitive regional economies*, EIP Report No. 98/ 4, April 1998, DEETYA.

<sup>33</sup> Rolfe, J, Cui, W & Sidiropoulos, L 2008, Economic impact analysis of Central Queensland University, Paper presented at the 52nd annual conference of the Australian Agricultural and Resource Economics Society, Canberra, February.

<sup>34</sup> Fuller, D & Wilde S 2006, *The economic value of Southern Cross University campuses to their regional campuses: a campus-based input-output analysis*, p. 3. <http://www.cedar.net.au/publications.htm>

The smaller Coffs Harbour Campus is estimated to be responsible for \$28.9m value of regional output, or 1 per cent of the value of output of the region as a whole, while the Tweed campus is estimated to be responsible for 126 jobs within the region. The study concludes that:

*Each SCU Campus offers their region educational and career development opportunities which may not otherwise be readily available. However, these campuses are also a significant employer in their own right and, via the economic activity which they generate, a substantial current contributor to the region's value of output and employment across a range of industry sectors.<sup>35</sup>*

A related study looked at the economic impact of the Coffs Harbour Education Campus (CHEC) a partnership of SCU, the North Coast Institute of TAFE and the Coffs Harbour Senior College – three educational sectors brought together on one site. In this case the combined impact of the group on the total value of output of the region is estimated at \$69m, which represents 1.8 per cent of the region's total output. The major local industry sectors benefiting from the CHEC campus are education (\$30.3m), retail (\$8.8m), and manufacturing (\$5.3m). Property and business services, accommodation, cafes and restaurants also experienced notable impacts. In addition:

*...while the direct employment of 450 staff is, in itself, a significant contributor to the regional economy, when the effect of multipliers is taken into account, the total number of regional jobs linked to the location of CHEC is estimated at 763. This figure represents approximately 2.7 per cent of the region's jobs and demonstrates that a significant proportion of the employment in the region is linked to CHEC's operations.<sup>36</sup>*

A 2005 study for Charles Sturt University<sup>37</sup> found that expenditure by CSU and its non-local and international students contributes \$264 million in gross regional product, \$164 million in household income and over 3,100 full-time equivalent jobs in the regions surrounding the CSU campuses at Wagga Wagga, Bathurst, Albury and Dubbo when flow on effects are taken into account. Of this, \$223 million in gross regional product is the result of CSU expenditure and \$42 million is from international and non-local student expenditure.

The study noted that these estimates were very conservative in that a base case was deducted from the impact of CSU's operational expenditure; local student expenditure was excluded from the impact of student expenditures; and marginal coefficients were used to estimate flow-on effects eliminating the overestimation of flow-on effects that usually occurs in the standard linear model. The study also took no account of the educational, research, social and cultural benefits CSU campuses bring to their regions.

---

<sup>35</sup> Fuller, D & Wilde S 2006, p. 34.

<sup>36</sup> Fuller, D, Sutton, T, Mason, S & Wilde, SJ 2007, 'The impact of the Coffs Harbour Education Campus on the Coffs Coast regional economy', *Journal of Economic & Social Policy*, vol. 11, no. 1, pp. 89-107.

<sup>37</sup> Western Research Institute 2005, Economic Impact of Charles Sturt University

The University of Ballarat reports that a 2007 survey conducted by the Western Research Institute on the economic impact of the University concluded that it:

*...generates 3,150 jobs in central and western Victoria. It contributes in excess of \$511 million annually to the western Victorian economy. It provides \$295 million in value adding and \$150 million in household income. It is Ballarat's major regional employer, economic driver, infrastructure developer and telecommunications leader. The University directly contributes \$500 million and 2,900 FTE jobs annually to the Ballarat economy - or 10.5 per cent of Ballarat's economy, 11.8 per cent of household income, and 8.5 per cent of employment.<sup>38</sup>*

## **1.4 Social, cultural and environmental impacts**

Higher education does more than prepare people for the workplace, it has a profound and lifelong impact on people's understanding of the world, their core values, and their capacity to participate in society. It also has an immediate and sustained impact on the quality of life of local communities and regions:

*Social, cultural and environmental developments have demonstrable if indirect economic as well as intrinsic benefits. They offer benefits underpinning and stabilising economic growth, as well as direct benefits in terms of community health and welfare, social cohesion, a diverse cultural and community life, and a clean, healthy, sustainable and self-renewing natural and man-made environment with robust and serviceable institutions including higher education institutions themselves.<sup>39</sup>*

### **1.4.1 Wider benefits of an educated community**

To appreciate the full contribution of regional universities beyond the economic impact it is useful to restate the broader benefits of higher education for graduates and their communities.<sup>40</sup> Research from the UK shows that the benefits of a degree go well beyond the significant financial rewards that graduates receive over a lifetime. The other benefits include the following:

- Graduates enjoy higher quality jobs than non-graduates with greater flexibility and autonomy in their work.

---

<sup>38</sup> University of Ballarat 2009, *Submission to the Inquiry into the impact of the global financial crisis on regional Australia*, Submission no. 77, p. 5.  
<http://www.aph.gov.au/House/committee/itrdlg/financialcrisis/subs.htm>

<sup>39</sup> OECD 2007, p. 166.

<sup>40</sup> Wilberforce, M 2005, *Beyond the financial benefits of a degree*, Centre for Research on the Wider Benefits of Learning, Institute of Education. DFES. London.  
[http://www.prospects.ac.uk/cms/ShowPage/Home\\_page/Labour\\_market\\_information/Graduate\\_Market\\_Trends/Beyond\\_the\\_financial\\_benefits\\_of\\_a\\_degree\\_Autumn\\_05\\_/p1eXeLcmm](http://www.prospects.ac.uk/cms/ShowPage/Home_page/Labour_market_information/Graduate_Market_Trends/Beyond_the_financial_benefits_of_a_degree_Autumn_05_/p1eXeLcmm)



- Graduates are more likely to be in high-level positions using their university-acquired skills, and also have greater promotion prospects.
- Graduates enjoy better health outcomes, by being less likely to smoke, more likely to exercise, and less prone to depression.
- Graduates' children also benefit from the educational success of their parents: graduates tend to have a greater involvement with their child's education.
- Graduates are more influential in the community, by being active citizens who are more likely to vote and participate in voluntary activities.
- Graduates are more positive in their attitudes towards diversity and equal opportunities, such as on race and gender equality issues.
- Graduates, with their higher levels of skill, are a source of wider innovation and economic growth.

At the local level, and for the regions in general, the benefits of a highly educated population are found in a more civil, harmonious and productive society. The staff and students of regional universities typically bring greater diversity to the communities they serve and act as a counter to the costs of social and cultural exclusion. The impact of cultural impoverishment of insular communities with limited opportunities can be calculated in the breakdown of law and order and the costs of law enforcement, lack of earning power of the under-educated and unemployed, the cost of health services and welfare benefits.

The positive intergenerational effects of higher numbers of graduates have a compounding and cumulative impact on communities to create benign cycles of higher aspirations and success. For example, graduate families (defined as families where at least one parent is educated to degree level) are more engaged with their child's education, they are more involved with schoolwork, more often read to the child at night when they were younger, and more regularly attend school parent evenings.

There are also additional spillovers to the wider economy of the region and to the quality and productivity of regional industry.

*Employers benefit from graduates through a more productive and healthy workforce, but also there is some evidence that highly-skilled workers more quickly adapt to new tasks and technologies, and are themselves a direct source of innovation. Further, there is compelling evidence to show how education investment results in higher economic growth rates for the economy as a whole.<sup>41</sup>*

---

<sup>41</sup> Wilberforce, M 2005.



### 1.4.2 Impact on environmental sustainability

The OECD review draws attention to the potential contribution of higher education institutions to environmental sustainability in their regions. They do this in many ways, for example by:

- Generating human capital in the region through their learning and further education programs in areas of sustainable development;
- Acting as a source of expertise through research, consultancy and demonstration;
- Playing a brokerage role in bringing together diverse regional actors and elements of capacity to the sustainability process;
- Demonstrating good practice through on-campus management and development activities, strategic planning, building design, waste minimisation and water and energy efficiency practice, responsible purchasing programs and pursuing good citizen type initiatives like a “green campus”;
- Offering recognition and reward incentives for staff to be involved in sustainable development leadership groups in the regional community.<sup>42</sup>

### 1.4.3 Impact on the cultural and social life of regional communities

The cultural, social and recreational infrastructure that regional universities bring to the local community make a highly significant contribution to the general well-being of the local population. Culture as an agent of development takes three forms:

- Culture as an end in itself, enhancing the quality of life;
- Indirect economic benefit in attracting and retaining the creative classes which drive the knowledge society; and,
- Direct contribution to the creative industries through enterprise formation, growth, productivity and employment.<sup>43</sup>

Higher education institutions see their cultural contribution as a central element of their role. They lead and contribute to the development of the fine arts, music and theatre, provide library services, and attract artists, writers and performers to enrich the life of the community.

The City of Warrnambool submission to the Higher Education Review gives an indication of the university infrastructure that makes a difference to the regional life:

*... the regional campus of Deakin operates at Warrnambool (and) provides sporting and cultural opportunities that might otherwise be unavailable to the*

---

<sup>42</sup> OECD 2007, p. 173.

<sup>43</sup> OECD 2007, p. 121.

*community. The campus has a 9 hole golf course that is well patronized by the public, a fitness centre that especially encourages over 55s, a community membership scheme for its library and U3A members can audit university classes free of charge.<sup>44</sup>*

While it is the core business of all public universities to provide service to the community, the contribution of regional universities is highly visible given the smaller communities in which they are located. Service takes diverse forms, and includes professional contributions of direct and indirect benefit to the public, and to the professions:

*Some fields of study, especially medical, social work and teacher training, lend themselves to student activities which make a contribution to the social good, sometimes voluntarily or pro bono, sometimes as part of work placements. This may include direct provision of medical and clinical facilities and services; other examples can be found as in law, with legal aid to those in need and poverty.<sup>45</sup>*

As local citizens, university staff and students often play significant civic and voluntary roles sometimes with talents that are less common in the community and hence they are able to make a relatively distinct contribution. Staff and students serve in local government, take responsibility for leading and participating in community associations, and build links to national and international organizations. In regional communities, students and staff are often critical to the cultural, sporting and recreational life of the community in terms of sheer numbers. Without their involvement, many of the local sports teams, recreation clubs and associations would not survive.

## **1.5 Conclusions**

There is clear evidence that regional universities and campuses play a significant role in advancing and sustaining the economic, cultural and social well-being of the communities they serve. They make a substantial contribution to regional economies in terms of direct and indirect benefits and their collective contribution to the national economy is significant.

Regional universities are directly responsible for attracting and retaining talented professionals who add specialist skills and expertise to the human capital of the community. The campuses also add exceptional value to the cultural and social life of their communities through their leadership, participation and the access to infrastructure and facilities they provide.

In concentrating on the direct impacts of regional campuses on the community, particularly the contribution to the local economy, there is perhaps a tendency to understate the wider benefits of higher education to regional communities. The long-term effects of increasing the number of university graduates living and working in the regions brings the benefits of a larger stock of skills and knowledge

---

<sup>44</sup> Warrnambool City Council 2008, Submission to the National Review of Higher Education, p. 9.

<sup>45</sup> OECD 2007, p. 166.

and the competitive edge for the regions that goes with that human capital. It is also clear that the quality of life of a community and the individual is markedly improved as the number of people with university qualifications increases.

A key issue here for Australia is that the contribution of universities to regional development is not well recognised and coordinated across Government agencies. It is noteworthy that the submission by the Department of Infrastructure, Transport, Regional Development and Local Government to the 2009 Committee of Inquiry into the impact of the global financial crisis on regional Australia, makes no reference to the role of higher education in the regions. At the Commonwealth level there is relatively little interaction between the portfolios responsible for higher education and for regional development. There is almost no interaction between the Commonwealth education portfolio and the agencies responsible for regional development in the State and Territories. A more coordinated approach is necessary if the vital broader role of higher education in regional development is to be recognised and properly reflected in policy and funding decisions.

This is in line with a Business Higher Education Round Table task force on the role of universities in the regions that recommended 'a whole-of-government approach between all levels of government and the universities in the regions in the strategic provision and sharing of major regional infrastructure.'<sup>46</sup>

The OECD report on higher education and the regions suggested the need for greater co-ordination between regional higher education institutions to achieve the goals of global competitiveness and local engagement. This would contribute to:

- Critical mass: given increasing inter-regional competition, dialogue between higher education institutions allows for the identification of regional strengths – not necessarily congruent with particular institutional educational strengths – which could be used for talent attraction.
- Multiple pathways: in regions with low levels of educational attainment, the presence of multiple institutions with well-co-ordinated transfer routes and accreditation allows non-traditional students the easiest access to the most appropriate forms of higher education.
- Shared learning: collaboration between higher education institutions could facilitate best-practise sharing and development of supportive regional higher education system to address particular human capital problems.
- Problem solving: where there are identified omissions in higher education provision, partnerships between higher education institutions could work to fill gaps in provision and to better meet the needs of regional stakeholders.
- The development of coherent voice for higher education institutions.<sup>47</sup>

---

<sup>46</sup> Business Higher Education Roundtable, 2000 *The role of universities in the regions*.

<sup>47</sup> OECD 2007, p. 162.

This has particular relevance for the NURA concept. Connecting regional communities with the global knowledge economy, and directing research and development opportunities to address regional issues and challenges, gives regional universities a potentially pivotal role in the management of the parallel processes of globalisation and localisation.

A key question concerns the extent to which there is a need for a national university with a specific mission and appropriate profile to advance and sustain the contribution of the regions to Australia's social and economic prosperity. What could it do better than is currently done by the existing providers? Given the long history of ambivalence and difficulty in establishing a national policy to advance the regional development role of regional universities, it is timely to explore further the possibilities for a new approach to higher education in and for regional Australia.

## 2 Current patterns of provision of higher education in and for regional Australia

---

The drive to explore a new approach to provision of higher education in regional Australia is based in the evidence that people from regional Australia are less likely to have higher education qualifications, less likely to enrol in university, and more likely to move in order to access higher education.

This chapter analyses the provision of higher education in regional Australia and for regional Australians using recent data sets including the 2006 census and the higher education collections of the Department of Education, Employment and Workplace Relations and recent literature on regional access to higher and vocational education.

The chapter has the following sections:

- 2.1 sets out how we have defined 'regional Australia' for the purposes of the analysis;
- 2.2 uses the 2006 and earlier censuses to set out the educational characteristics of regional Australia and regional Australians. It includes comparison of the take up of higher education and vocational education and training;
- 2.3 analyses the characteristics of higher education students to identify the similarities and differences of:
  - students from regional areas enrolled at a regional university or regional campus;
  - students from regional areas enrolled at a metropolitan university or campus;
  - students from metropolitan areas enrolled at a regional university or regional campus; and
  - students from metropolitan areas enrolled at a metropolitan university or campus
- 2.4 and 2.5 look specifically at Indigenous and international students respectively
- 2.6 provides an overview of past studies of post-school participation in education and training by people from regional Australia to identify the factors influencing or constraining participation.

### 2.1 *What do we mean by 'regional Australia' in this context?*

For the purposes of this chapter we have set a wide boundary for the potential areas which a National University in Regional Australia (NURA) could encompass. This allows a broad examination of the potential for the concept while permitting more detailed examination of sub-sets where useful.

People define themselves by their sense of belonging to a particular region, with its origins in history, its commerce and industry, and its local geographic and social features. These community-based identities are very important in considering institutional arrangements, but they do not necessarily match the regional definitions employed as the basis for the statistical analysis. We have therefore used standard ABS units of regional analysis in this report.

The principal unit of analysis used is the ABS Statistical Division (SD). Each State has one SD that covers its major metropolitan area (eg Sydney). Most of the remaining SDs are clearly regional but a small set cover large non-capital, metropolitan areas plus some surrounding rural districts.

We have analysed data at two levels.

Firstly, to analyse the 2006 census data, we have compared the metropolitan capital of each State and Territory to the rest of the State and Territory. This provides a broad guide to the differences in population size, age, and education participation and attainment.

Secondly, to analyse the data on current university students, we have defined metropolitan as:

- the five large State capital Statistical Divisions of Sydney, Melbourne, Brisbane, Perth and Adelaide;
- Canberra and other ACT;
- Hobart; and
- four other Statistical Divisions containing major urban centres of 100,000 or more whose educational contexts are not directly relevant to the NURA concept.

The non-capital Statistical Divisions excluded for this purpose are: Hunter, containing Newcastle; Illawarra, containing Wollongong; Barwon, containing Geelong; and the Gold Coast.

We have retained in the regional analysis the major urban centres of Cairns, Townsville and Toowoomba. We have also retained the Sunshine Coast, which is a mix of urban spread and rural communities. All urban centres less than 100,000 have been included. Those with 50,000 or more people in 2006 include Ballarat, Bendigo, Bathurst-Orange, Burnie-Devonport, Bundaberg, Launceston, Portland, and Bunbury. These provincial cities are major centres serving surrounding rural populations: they host the main campus of a university, and/or campuses of universities from outside the region.

Darwin is the capital of the Northern Territory. Its residents and politics emphasise both its status as the capital of a significant part of Australia and the position of the Northern Territory as a whole as a region with challenges of distance and under-development. It therefore seems reasonable to consider it as part of regional Australia for this population based analysis.

Based on this definition there are nine regionally-based universities across Australia, plus the Batchelor Institute of Indigenous Tertiary Education: Charles Sturt University, Southern Cross University, University of New England, University of Ballarat, Central Queensland University, James Cook University, University of Southern Queensland, University of the Sunshine Coast, and Charles Darwin University.

These universities are the primary providers of university-level higher education for students from regional Australia. 81% of all students enrolled at regional universities and campuses in 2006 were enrolled at these regionally-based universities. Metropolitan based universities contribute the other 19% of university-level higher education from regional Australia.

Open Universities Australia (OUA) is an option for regionally based Australians to access higher education. Data from OUA indicate that 80% of its students live in major cities with the remaining 20%, or over 5500 people in 2006, spread across the regional cities and towns and remote locations.

## **2.2 *Educational characteristics of regional Australia and regional Australians***

### **2.2.1 Education attainment**

The 2006 census provides information on the educational attainment of the population. Data on the proportion of the population whose highest qualification is either a bachelor degree or above or a VET qualification are set out at Table 2.1. The data are presented by age group and divided by capital city and regions. Note that someone with qualifications in both sectors will usually be listed against a bachelor degree as the higher qualification, thus the VET levels are understated.

The data across the age groups shows the growth that has occurred in recent years in the proportion of people with a university qualification. For example, 19.1% of people aged 40-49 have a bachelor degree or higher qualification, compared with 27% of those aged from 25-29. There is a major difference however between the capitals and the regions, with university attainment in regional areas (9.9% across all age groups) only just more than half the levels in the capital cities (18.8%). In contrast, VET attainment is quite constant at around 30% across the age groups and is similar between the regions and the capitals.

The pattern is reflected at the State level. NSW and Victoria have higher levels of university attainment in both the capitals and the regions than other States. Qld has less divergence between capital and region, with university attainment levels in the regions close to that of Victoria and NSW, although the Brisbane level of attainment is lower than Sydney and Melbourne.

Table 2.1 Percentage of age groups whose highest qualification is either a degree or a post school certificate or diploma, 2006

| Statistical Division (SD) by Age 5 Year Age Groups (AGEP) and Non-School Qualification: Level of Education (QALLP) |                          |                             |            |             |             |   |             |             |             |             |             |             |             | Persons, Place of Usual Residence |             |             |             |             |             |
|--|--------------------------|-----------------------------|------------|-------------|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|
| ABS Census 2006  |                          |                             |            |             |             |   |             |             |             |             |             |             |             |                                   |             |             |             |             |             |
|  |                          | B: Bachelor Degree or Above |            |             |             | D: Diploma, advanced Diploma or Certificate |             |             |             |             |             |             |             |                                   |             |             |             |             |             |
| Age  | Non-School Qualification | 15-19 years                 |            | 20-24 years |             | 25-29 years                                 |             | 30-34 years |             | 35-39 years |             | 40-44 years |             | 45-49 years                       |             | 50+         |             | Total       |             |
|  |                          | B                           | D          | B           | D           | B   | D           | B           | D           | B           | D           | B           | D           | B                                 | D           | B           | D           | B           | D           |
| State  | SD                       | %                           | %          | %           | %           | %   | %           | %           | %           | %           | %           | %           | %           | %                                 | %           | %           | %           | %           | %           |
| NSW  | Sydney                   | 0.2                         | 4.8        | 16.6        | 23.1        | 32.7  | 25.5        | 32.1        | 27.8        | 28.2        | 27.8        | 25.2        | 27.9        | 24.0                              | 26.7        | 14.4        | 21.6        | 20.0        | 23.0        |
|  | Region                   | 0.1                         | 5.9        | 7.7         | 29.7        | 16.5  | 34.0        | 16.8        | 35.0        | 15.0        | 33.9        | 12.7        | 34.4        | 14.2                              | 33.2        | 8.7         | 22.9        | 10.3        | 26.3        |
|  | <b>Total NSW</b>         | <b>0.1</b>                  | <b>5.2</b> | <b>13.8</b> | <b>25.1</b> | <b>28.1</b>                                 | <b>27.9</b> | <b>27.5</b> | <b>29.9</b> | <b>23.9</b> | <b>29.8</b> | <b>20.8</b> | <b>30.2</b> | <b>20.3</b>                       | <b>29.2</b> | <b>12.0</b> | <b>22.1</b> | <b>16.5</b> | <b>24.2</b> |
| VIC  | Melbourne                | 0.2                         | 4.4        | 17.1        | 22.5        | 35.3  | 25.0        | 32.4        | 26.3        | 27.3        | 26.4        | 24.0        | 26.4        | 23.3                              | 25.9        | 13.5        | 20.2        | 19.6        | 21.8        |
|  | Region                   | 0.0                         | 6.0        | 8.8         | 31.7        | 18.1  | 34.4        | 17.4        | 33.3        | 14.7        | 32.1        | 13.1        | 31.3        | 14.6                              | 30.4        | 8.6         | 20.9        | 10.5        | 24.8        |
|  | <b>Total VIC</b>         | <b>0.1</b>                  | <b>4.9</b> | <b>15.3</b> | <b>24.5</b> | <b>31.8</b>                                 | <b>26.9</b> | <b>29.1</b> | <b>27.8</b> | <b>24.3</b> | <b>27.8</b> | <b>21.2</b> | <b>27.7</b> | <b>20.9</b>                       | <b>27.1</b> | <b>12.0</b> | <b>20.4</b> | <b>17.2</b> | <b>22.6</b> |
| QLD  | Brisbane                 | 0.2                         | 6.4        | 15.5        | 23.7        | 28.0  | 27.2        | 27.2        | 28.1        | 24.2        | 27.7        | 21.3        | 28.5        | 20.6                              | 28.5        | 12.5        | 22.6        | 17.1        | 23.8        |
|  | Region                   | 0.1                         | 7.2        | 9.0         | 27.5        | 16.0  | 31.0        | 15.5        | 31.9        | 13.7        | 30.8        | 11.9        | 30.5        | 12.2                              | 30.3        | 7.7         | 22.1        | 9.8         | 25.1        |
|  | <b>Total QLD</b>         | <b>0.1</b>                  | <b>6.8</b> | <b>12.3</b> | <b>25.5</b> | <b>22.0</b>                                 | <b>29.1</b> | <b>21.1</b> | <b>30.1</b> | <b>18.6</b> | <b>29.3</b> | <b>16.1</b> | <b>29.6</b> | <b>15.9</b>                       | <b>29.5</b> | <b>9.7</b>  | <b>22.3</b> | <b>13.1</b> | <b>24.5</b> |
| SA   | Adelaide                 | 0.1                         | 5.5        | 14.1        | 23.3        | 26.0  | 28.6        | 24.1        | 29.1        | 19.9        | 29.6        | 18.2        | 28.4        | 18.7                              | 28.7        | 11.6        | 22.2        | 14.9        | 23.8        |
|  | Region                   | 0.0                         | 5.8        | 6.8         | 29.2        | 13.3  | 31.1        | 12.8        | 31.7        | 9.9         | 29.6        | 8.5         | 29.1        | 9.2                               | 29.0        | 6.2         | 19.9        | 7.5         | 23.5        |
|  | <b>Total SA</b>          | <b>0.1</b>                  | <b>5.6</b> | <b>12.6</b> | <b>24.5</b> | <b>23.2</b>                                 | <b>29.2</b> | <b>21.3</b> | <b>29.8</b> | <b>17.2</b> | <b>29.6</b> | <b>15.5</b> | <b>28.6</b> | <b>16.1</b>                       | <b>28.8</b> | <b>10.1</b> | <b>21.6</b> | <b>13.0</b> | <b>23.7</b> |
| WA   | Perth                    | 0.1                         | 7.1        | 14.3        | 24.8        | 26.5  | 28.2        | 25.9        | 28.9        | 23.4        | 28.7        | 20.6        | 30.6        | 20.3                              | 30.5        | 12.8        | 24.1        | 16.5        | 25.0        |
|  | Region                   | 0.1                         | 8.1        | 7.0         | 29.0        | 13.4  | 30.4        | 14.0        | 30.1        | 12.1        | 29.1        | 10.1        | 30.1        | 9.9                               | 30.5        | 6.8         | 22.1        | 8.5         | 25.0        |
|  | <b>Total WA</b>          | <b>0.1</b>                  | <b>7.3</b> | <b>12.8</b> | <b>25.7</b> | <b>23.4</b>                                 | <b>28.7</b> | <b>22.9</b> | <b>29.2</b> | <b>20.4</b> | <b>28.8</b> | <b>17.8</b> | <b>30.5</b> | <b>17.5</b>                       | <b>30.5</b> | <b>11.2</b> | <b>23.6</b> | <b>14.4</b> | <b>25.0</b> |
| TAS  | Hobart                   | 0.1                         | 5.3        | 12.9        | 23.9        | 24.2  | 28.5        | 23.9        | 28.2        | 21.7        | 28.3        | 20.3        | 28.7        | 21.0                              | 27.9        | 13.5        | 21.7        | 15.8        | 23.2        |
|  | Region                   | 0.1                         | 6.2        | 7.9         | 28.3        | 13.7  | 30.8        | 12.9        | 31.0        | 11.9        | 29.9        | 11.0        | 30.0        | 12.7                              | 29.8        | 7.8         | 21.1        | 9.0         | 24.1        |
|  | <b>Total TAS</b>         | <b>0.1</b>                  | <b>5.8</b> | <b>10.3</b> | <b>26.2</b> | <b>18.4</b>                                 | <b>29.7</b> | <b>17.7</b> | <b>29.8</b> | <b>16.0</b> | <b>29.3</b> | <b>14.9</b> | <b>29.4</b> | <b>16.2</b>                       | <b>29.0</b> | <b>10.1</b> | <b>21.3</b> | <b>11.9</b> | <b>23.7</b> |
| NT   | Darwin                   | 0.1                         | 6.5        | 8.5         | 25.9        | 19.5  | 29.9        | 19.6        | 31.2        | 17.6        | 31.8        | 17.4        | 31.2        | 18.0                              | 28.7        | 15.1        | 24.5        | 14.9        | 26.3        |
|  | Region                   | 0.1                         | 4.8        | 4.0         | 16.0        | 10.6  | 19.1        | 11.7        | 20.8        | 11.8        | 21.8        | 11.8        | 23.6        | 12.1                              | 23.7        | 10.2        | 20.3        | 9.1         | 18.8        |
|  | <b>Total NT</b>          | <b>0.1</b>                  | <b>5.7</b> | <b>6.3</b>  | <b>21.2</b> | <b>15.5</b>                                 | <b>25.0</b> | <b>16.1</b> | <b>26.6</b> | <b>15.1</b> | <b>27.5</b> | <b>15.1</b> | <b>28.0</b> | <b>15.5</b>                       | <b>26.6</b> | <b>13.1</b> | <b>22.8</b> | <b>12.4</b> | <b>23.1</b> |
| ACT  | Canberra                 | 0.1                         | 4.6        | 19.8        | 19.8        | 41.4  | 23.7        | 39.9        | 25.8        | 38.6        | 24.6        | 36.6        | 25.0        | 38.7                              | 24.7        | 28.6        | 22.3        | 30.0        | 21.6        |
|  | Region                   | 0.0                         | 10.6       | 24.8        | 18.6        | 44.2  | 20.4        | 46.7        | 21.7        | 31.3        | 18.8        | 25.8        | 22.7        | 37.1                              | 22.6        | 17.6        | 26.4        | 27.8        | 20.5        |
|  | <b>Total ACT</b>         | <b>0.1</b>                  | <b>4.6</b> | <b>19.9</b> | <b>19.8</b> | <b>41.4</b>                                 | <b>23.7</b> | <b>39.9</b> | <b>25.8</b> | <b>38.6</b> | <b>24.6</b> | <b>36.5</b> | <b>25.0</b> | <b>38.7</b>                       | <b>24.7</b> | <b>28.6</b> | <b>22.3</b> | <b>30.0</b> | <b>21.6</b> |
| Other  | Other Territories        | 0.0                         | 4.2        | 12.2        | 21.1        | 16.7  | 33.3        | 17.1        | 25.0        | 21.6        | 27.1        | 8.5         | 31.6        | 12.5                              | 28.1        | 5.1         | 17.0        | 10.4        | 22.6        |
|  | <b>Total Other</b>       | <b>0.0</b>                  | <b>4.2</b> | <b>11.3</b> | <b>19.5</b> | <b>15.7</b>                                 | <b>31.4</b> | <b>17.1</b> | <b>25.0</b> | <b>21.3</b> | <b>28.2</b> | <b>8.5</b>  | <b>31.6</b> | <b>12.5</b>                       | <b>28.1</b> | <b>5.6</b>  | <b>16.9</b> | <b>10.4</b> | <b>22.4</b> |
| AUST.  | Capital Cities           | 0.2                         | 5.3        | 16.1        | 23.2        | 31.6  | 26.2        | 30.2        | 27.6        | 26.3        | 27.6        | 23.4        | 27.9        | 22.7                              | 27.3        | 13.7        | 21.7        | 18.8        | 23.0        |
|  | Regions                  | 0.1                         | 6.4        | 8.2         | 28.9        | 16.0  | 32.3        | 15.8        | 32.8        | 13.9        | 31.6        | 12.0        | 31.7        | 13.0                              | 31.2        | 8.1         | 22.0        | 9.9         | 25.3        |
|  | <b>Total</b>             | <b>0.1</b>                  | <b>5.7</b> | <b>13.7</b> | <b>24.9</b> | <b>27.0</b>                                 | <b>28.0</b> | <b>25.6</b> | <b>29.2</b> | <b>22.1</b> | <b>29.0</b> | <b>19.3</b> | <b>29.2</b> | <b>19.1</b>                       | <b>28.7</b> | <b>11.5</b> | <b>21.8</b> | <b>15.6</b> | <b>23.8</b> |
| Ratio regions to capitals  |                          | <b>0.4</b>                  | <b>1.2</b> | <b>0.5</b>  | <b>1.2</b>  | <b>0.5</b>                                  | <b>1.2</b>  | <b>0.5</b>  | <b>1.2</b>  | <b>0.5</b>  | <b>1.1</b>  | <b>0.5</b>  | <b>1.1</b>  | <b>0.6</b>                        | <b>1.1</b>  | <b>0.6</b>  | <b>1.0</b>  | <b>0.5</b>  | <b>1.1</b>  |



### **2.2.2 Participation in tertiary education by students from regional Australia**

The 2006 census confirms previous studies which show that participation rates in higher education are substantially lower in regional areas than in the capital cities. This contrasts with participation in TAFE which is more evenly distributed.<sup>48</sup>

Data on the proportion of the population enrolled at either a higher education institution or a vocational education and training institution are set out at Table 2.2. The data are presented by age group, divided by capital city and regions.

The census data show a considerable gap between regional and metropolitan areas in the proportion of higher education students in the population. Young regional Australians (15-24) are about half as likely as those in metropolitan areas to be attending university. The participation gap narrows with older age groups. In the 35-39 age group, regional residents are 75% as likely to be attending university as their metropolitan counterparts. This outcome contrasts with VET where participation levels for young regional residents are 90% of the levels of metropolitan residents, and for those aged 30-34 VET participation in regional areas is higher than for metropolitan residents.

NSW has a more evenly distributed level of university participation than other states: in the 20-24 age group regional residents in NSW are two-thirds as likely to attend university as metropolitan residents. VET participation is higher in regional NSW than in Sydney across all age groups. Victoria has high levels of city based university participation but low to average regional participation. SA and WA have very low higher education participation rates among younger age groups in regional areas. This is likely to reflect the fact that younger people in regional areas of those States have few options other than moving to the city if they wish to attend university.

---

<sup>48</sup> LSAY Briefing No 5, Jan 2002 *Rural and urban differences in Australian education* shows that completion of year 12 and enrolment in higher education is less common for non metropolitan students but that enrolment in TAFE is about the same or better

Table 2.2 Percentage of age groups enrolled in either TAFE or Higher Education, 2006

| Statistical Division (SD) by Sex (SEXP), Age 5 Year Age Groups (AGEP) and Type of Educational Institution Attending (TYPP) |                    | Percentages: Persons, Place of Usual Residence |             |             |             |             |             |             |            |             |            |             |            |             |            |            |            |            |            |
|--|--------------------|--|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|------------|------------|------------|------------|
| Age  | Institution        | 15-19 years                                    |             | 20-24 years |             | 25-29 years |             | 30-34 years |            | 35-39 years |            | 40-44 years |            | 45-49 years |            | 50+        |            | Total      |            |
| State  | SD                 | %  | %           | %           | %           | %           | %           | %           | %          | %           | %          | %           | %          | %           | %          | %          | %          | %          | %          |
| NSW  | Sydney             | 9.0  | 11.9        | 8.5         | 25.2        | 4.2         | 9.1         | 3.0         | 4.8        | 2.6         | 3.2        | 2.3         | 2.3        | 1.9         | 1.7        | 0.7        | 0.5        | 3.1        | 5.4        |
|  | Region             | 9.7  | 5.6         | 9.0         | 16.8        | 4.4         | 6.3         | 3.4         | 3.8        | 3.2         | 2.9        | 2.9         | 2.1        | 2.4         | 1.6        | 0.8        | 0.4        | 3.1        | 3.1        |
|  | <b>Total NSW</b>   | <b>9.3</b>                                     | <b>9.5</b>  | <b>8.6</b>  | <b>22.6</b> | <b>4.2</b>  | <b>8.3</b>  | <b>3.1</b>  | <b>4.5</b> | <b>2.8</b>  | <b>3.1</b> | <b>2.5</b>  | <b>2.2</b> | <b>2.1</b>  | <b>1.7</b> | <b>0.7</b> | <b>0.5</b> | <b>3.1</b> | <b>4.6</b> |
| VIC  | Melbourne          | 8.4  | 13.2        | 8.3         | 28.6        | 3.6         | 9.5         | 2.4         | 4.9        | 2.0         | 3.2        | 1.8         | 2.3        | 1.4         | 1.7        | 0.4        | 0.5        | 2.6        | 5.9        |
|  | Region             | 7.2  | 5.2         | 7.8         | 14.1        | 3.6         | 4.5         | 2.8         | 2.9        | 2.5         | 2.5        | 2.2         | 2.0        | 1.9         | 1.6        | 0.5        | 0.4        | 2.4        | 2.6        |
|  | <b>Total VIC</b>   | <b>8.0</b>                                     | <b>11.0</b> | <b>8.2</b>  | <b>25.5</b> | <b>3.6</b>  | <b>8.5</b>  | <b>2.5</b>  | <b>4.5</b> | <b>2.1</b>  | <b>3.0</b> | <b>1.9</b>  | <b>2.2</b> | <b>1.5</b>  | <b>1.7</b> | <b>0.5</b> | <b>0.5</b> | <b>2.6</b> | <b>5.0</b> |
| QLD  | Brisbane           | 6.1  | 15.2        | 5.7         | 24.0        | 3.3         | 9.8         | 2.6         | 5.4        | 2.2         | 3.9        | 2.0         | 2.9        | 1.6         | 2.1        | 0.5        | 0.6        | 2.4        | 6.1        |
|  | Region             | 5.5  | 7.3         | 5.2         | 12.3        | 3.1         | 5.3         | 2.6         | 3.7        | 2.3         | 2.9        | 2.0         | 2.3        | 1.6         | 1.7        | 0.5        | 0.4        | 2.1        | 3.1        |
|  | <b>Total QLD</b>   | <b>5.8</b>                                     | <b>11.0</b> | <b>5.5</b>  | <b>18.2</b> | <b>3.2</b>  | <b>7.5</b>  | <b>2.6</b>  | <b>4.5</b> | <b>2.2</b>  | <b>3.4</b> | <b>2.0</b>  | <b>2.6</b> | <b>1.6</b>  | <b>1.9</b> | <b>0.5</b> | <b>0.5</b> | <b>2.2</b> | <b>4.4</b> |
| SA   | Adelaide           | 6.5  | 12.1        | 7.3         | 25.2        | 4.4         | 9.7         | 3.3         | 5.4        | 3.0         | 3.8        | 2.6         | 2.9        | 2.0         | 2.2        | 0.6        | 0.6        | 2.7        | 5.4        |
|  | Region             | 6.5  | 2.5         | 7.2         | 5.5         | 3.8         | 2.7         | 3.3         | 2.3        | 3.4         | 1.8        | 3.0         | 1.5        | 2.2         | 1.3        | 0.7        | 0.3        | 2.5        | 1.4        |
|  | <b>Total SA</b>    | <b>6.5</b>                                     | <b>9.6</b>  | <b>7.3</b>  | <b>21.2</b> | <b>4.3</b>  | <b>8.1</b>  | <b>3.3</b>  | <b>4.7</b> | <b>3.1</b>  | <b>3.2</b> | <b>2.7</b>  | <b>2.5</b> | <b>2.1</b>  | <b>1.9</b> | <b>0.6</b> | <b>0.5</b> | <b>2.7</b> | <b>4.4</b> |
| WA   | Perth              | 9.4  | 14.4        | 6.0         | 23.8        | 3.6         | 9.0         | 2.7         | 5.2        | 2.2         | 3.7        | 2.0         | 3.0        | 1.5         | 2.2        | 0.5        | 0.6        | 2.7        | 5.8        |
|  | Region             | 9.1  | 2.2         | 5.3         | 4.7         | 2.8         | 2.7         | 2.6         | 2.5        | 2.4         | 2.1        | 2.2         | 1.6        | 1.6         | 1.1        | 0.7        | 0.3        | 2.4        | 1.5        |
|  | <b>Total WA</b>    | <b>9.3</b>                                     | <b>11.5</b> | <b>5.9</b>  | <b>19.8</b> | <b>3.4</b>  | <b>7.5</b>  | <b>2.7</b>  | <b>4.5</b> | <b>2.3</b>  | <b>3.3</b> | <b>2.0</b>  | <b>2.6</b> | <b>1.6</b>  | <b>1.9</b> | <b>0.5</b> | <b>0.5</b> | <b>2.6</b> | <b>4.7</b> |
| TAS  | Hobart             | 11.9   | 8.7         | 6.5         | 25.5        | 4.4         | 9.3         | 3.5         | 5.5        | 3.3         | 4.3        | 2.9         | 3.1        | 2.2         | 2.3        | 0.7        | 0.7        | 3.2        | 5.2        |
|  | Region             | 13.5   | 4.4         | 6.7         | 13.0        | 3.9         | 5.1         | 3.7         | 3.4        | 3.4         | 2.8        | 3.1         | 2.1        | 2.6         | 1.7        | 0.8        | 0.4        | 3.3        | 2.6        |
|  | <b>Total TAS</b>   | <b>12.8</b>                                    | <b>6.3</b>  | <b>6.6</b>  | <b>19.0</b> | <b>4.1</b>  | <b>7.0</b>  | <b>3.6</b>  | <b>4.3</b> | <b>3.4</b>  | <b>3.4</b> | <b>3.1</b>  | <b>2.5</b> | <b>2.4</b>  | <b>1.9</b> | <b>0.7</b> | <b>0.5</b> | <b>3.3</b> | <b>3.7</b> |
| NT   | Darwin             | 3.8  | 6.6         | 3.6         | 11.4        | 1.7         | 8.0         | 1.4         | 6.5        | 1.5         | 6.2        | 1.1         | 4.7        | 0.9         | 4.3        | 0.4        | 1.7        | 1.5        | 5.3        |
|  | Region             | 2.6  | 1.2         | 2.3         | 2.3         | 1.7         | 3.4         | 1.5         | 3.4        | 1.2         | 3.1        | 1.5         | 2.6        | 1.7         | 2.2        | 0.7        | 1.1        | 1.5        | 2.3        |
|  | <b>Total NT</b>    | <b>3.2</b>                                     | <b>4.0</b>  | <b>3.0</b>  | <b>7.1</b>  | <b>1.7</b>  | <b>5.9</b>  | <b>1.4</b>  | <b>5.1</b> | <b>1.3</b>  | <b>4.9</b> | <b>1.3</b>  | <b>3.9</b> | <b>1.2</b>  | <b>3.4</b> | <b>0.5</b> | <b>1.4</b> | <b>1.5</b> | <b>4.0</b> |
| ACT  | Canberra           | 8.0  | 13.6        | 8.1         | 31.8        | 4.4         | 14.4        | 3.4         | 8.9        | 3.0         | 6.5        | 2.4         | 4.9        | 2.1         | 3.9        | 0.8        | 1.3        | 3.3        | 8.7        |
|  | Region             | 13.5   | 10.1        | 0.0         | 26.2        | 3.6         | 15.2        | 8.6         | 3.2        | 0.0         | 8.3        | 4.5         | 0.0        | 0.0         | 4.8        | 0.0        | 2.0        | 3.3        | 9.9        |
|  | <b>Total ACT</b>   | <b>8.0</b>                                     | <b>13.6</b> | <b>8.0</b>  | <b>31.8</b> | <b>4.4</b>  | <b>14.4</b> | <b>3.4</b>  | <b>8.9</b> | <b>3.0</b>  | <b>6.5</b> | <b>2.4</b>  | <b>4.8</b> | <b>2.1</b>  | <b>3.9</b> | <b>0.8</b> | <b>1.3</b> | <b>3.3</b> | <b>8.7</b> |
| OTHER  | Other Territories  | 6.6  | 3.3         | 5.7         | 0.0         | 2.2         | 4.4         | 2.0         | 2.0        | 1.5         | 1.5        | 1.4         | 0.0        | 1.6         | 1.6        | 0.5        | 0.5        | 2.0        | 1.3        |
|  | <b>Total Other</b> | <b>6.6</b>                                     | <b>3.3</b>  | <b>5.2</b>  | <b>0.0</b>  | <b>2.1</b>  | <b>4.2</b>  | <b>2.0</b>  | <b>2.0</b> | <b>1.5</b>  | <b>1.5</b> | <b>1.4</b>  | <b>0.0</b> | <b>1.6</b>  | <b>1.6</b> | <b>0.5</b> | <b>0.5</b> | <b>1.9</b> | <b>1.2</b> |
| AUST.  | Capital Cities     | 8.2  | 13.0        | 7.6         | 25.9        | 3.8         | 9.5         | 2.8         | 5.2        | 2.4         | 3.5        | 2.1         | 2.6        | 1.7         | 2.0        | 0.6        | 0.6        | 2.8        | 5.8        |
|  | Regions            | 7.8  | 5.5         | 7.0         | 13.1        | 3.6         | 5.1         | 2.9         | 3.4        | 2.7         | 2.7        | 2.5         | 2.1        | 2.0         | 1.6        | 0.6        | 0.4        | 2.6        | 2.8        |
|  | <b>Total</b>       | <b>8.1</b>                                     | <b>10.3</b> | <b>7.4</b>  | <b>22.0</b> | <b>3.8</b>  | <b>8.2</b>  | <b>2.8</b>  | <b>4.6</b> | <b>2.5</b>  | <b>3.3</b> | <b>2.2</b>  | <b>2.4</b> | <b>1.8</b>  | <b>1.8</b> | <b>0.6</b> | <b>0.5</b> | <b>2.7</b> | <b>4.7</b> |
| Ratio regions to capitals  |                    | <b>1.0</b>                                     | <b>0.4</b>  | <b>0.9</b>  | <b>0.5</b>  | <b>0.9</b>  | <b>0.5</b>  | <b>1.1</b>  | <b>0.7</b> | <b>1.2</b>  | <b>0.8</b> | <b>1.2</b>  | <b>0.8</b> | <b>1.2</b>  | <b>0.8</b> | <b>1.1</b> | <b>0.7</b> | <b>0.9</b> | <b>0.9</b> |

The census data of course records the home address at the time the census is taken. Students who have moved from a region to access education will therefore be recorded as city residents. This can exaggerate the apparent participation differences between metropolitan and regional areas (while highlighting the need for many people to move to a city to access higher education).

A further set of data, from the Longitudinal Survey of Australian Youth (LSAY), allows for a more detailed examination of student movements. LSAY identifies representative samples of young people in year 9 and later in year 10, and tracks them over the following decade until the age of 25.

LSAY Report 50, Movement of non-metropolitan youth towards the cities<sup>49</sup> uses the 1995 cohort (completing year 12 in 1998) to track movement to the city and return based on recorded annual addresses. It shows that by 2004 movement to the city had steadily reduced the proportion of the cohort remaining in non-metropolitan areas to 74% of its original size. It also shows the extent of multiple movements with a consistent 10% to 20% of those in the city returning to a region each year.

University entry stands out as a key driver for those young people who decide to move to the city, but the majority of younger regional people attending university retain a non-metropolitan address. As the cohort ages, those in their early 20s who remain at university, or who entered university later, are more evenly divided between a regional and a metropolitan residence. Young people, especially women, also move to the city for work. For this group, the significant factors related to leaving are high levels of numeracy and literacy in year 9, educated parents, and the extent of remoteness (the more remote the more likely they are to leave). Levels of life satisfaction, income and other social factors are not distinctive across those who stayed in a region, those who left, and those who left and returned.

There is less apparent need to move to the city to access VET. Fewer regional students leave their regions to pursue VET qualifications and in the long term young people from the regions who gain trade skills tend to remain based in non-metropolitan areas. This pattern is likely to reflect a number of factors, including the wider geographic distribution of VET campuses and differences in the occupational structures and qualification requirements in regional and metropolitan areas.

Another way of looking at the movement of students from regional to metropolitan areas is to compare data from two consecutive census collections. The 2006 census data allow us to analyse individuals by their home location at the previous census in 2001. This approach was also taken by the then Department of Education, Training and Youth Affairs (DETYA) in 1999 using the 1996 census data<sup>50</sup>. We have used this approach for students aged 18-20 to

---

<sup>49</sup> Hillman K, Rothman S, 2007, LSAY 50, *Movement of Non-metropolitan youth towards the cities*, January 2007

<sup>50</sup> Stevenson S; Evans C; Maclachlan M; Karmel T and Blaker R 1999 *Access: effect of campus proximity and socio-economic status on university participation rates in regions* DEST 2001; *Regional Participation in Higher Education and the Distribution of Higher Education Resources across Regions* DETYA 1999

compare their place of residence in 2006 with their residence in 2001 when they were aged 13-15 and presumably living at the family home.

Tables 2.3(a) and (b) show the university and VET participation rates for 18-20 year olds in 2006 based on their usual residence in 2001<sup>51</sup>. For Australia overall, participation in university was substantially higher for those who lived in the capitals (31%) than in the regions (20%). The differences were evident in all States and Territories. Again, these data show less difference between regional and capital city areas in VET participation rates.

**Table 2.3(a) Education participation of 18-20 yr olds, 2006 by home location in 2001, NSW and Vic**

| <i>Usual residence 2001</i> | <i>VET students</i> | <i>HE students</i> | <i>Total 18-20 year olds</i> | <i>VET Participation Rate</i> | <i>HE Participation Rate</i> |
|-----------------------------|---------------------|--------------------|------------------------------|-------------------------------|------------------------------|
| <b>New South Wales</b>      |                     |                    |                              |                               |                              |
| <b>Sydney</b>               | <b>22,984</b>       | <b>42,954</b>      | <b>132,419</b>               | <b>17%</b>                    | <b>32%</b>                   |
| Hunter SD                   | 3,811               | 4,031              | 20,326                       | 19%                           | 20%                          |
| Illawarra SD                | 2,750               | 2,744              | 13,573                       | 20%                           | 20%                          |
| Richmond Tweed SD           | 890                 | 1,029              | 6,380                        | 14%                           | 16%                          |
| Mid North Coast SD          | 1,475               | 1,764              | 9,423                        | 16%                           | 19%                          |
| Northern SD NSW             | 828                 | 1,088              | 5,896                        | 14%                           | 18%                          |
| North Western SD            | 541                 | 709                | 4,072                        | 13%                           | 17%                          |
| Central West SD NSW         | 1,028               | 1,233              | 6,363                        | 16%                           | 19%                          |
| South Eastern SD NSW        | 984                 | 894                | 5,929                        | 17%                           | 15%                          |
| Murrumbidgee SD             | 851                 | 844                | 5,143                        | 17%                           | 16%                          |
| Murray SD                   | 548                 | 472                | 3,073                        | 18%                           | 15%                          |
| Far West SD                 | 88                  | 58                 | 653                          | 13%                           | 9%                           |
| <i>Balance of NSW Total</i> | <i>13,794</i>       | <i>14,866</i>      | <i>80,831</i>                | <i>17%</i>                    | <i>18%</i>                   |
| <b>Total NSW 2006</b>       | <b>40,576</b>       | <b>67,125</b>      | <b>255,590</b>               | <b>16%</b>                    | <b>26%</b>                   |
| <b>Victoria</b>             |                     |                    |                              |                               |                              |
| <b>Melbourne</b>            | <b>19,567</b>       | <b>37,393</b>      | <b>115,869</b>               | <b>17%</b>                    | <b>32%</b>                   |
| Barwon SD                   | 1,372               | 2,322              | 9,188                        | 15%                           | 25%                          |
| Western District SD         | 486                 | 755                | 3,640                        | 13%                           | 21%                          |
| Central Highlands SD        | 624                 | 1,290              | 5,250                        | 12%                           | 25%                          |
| Wimmera SD                  | 243                 | 398                | 1,806                        | 13%                           | 22%                          |
| Mallee SD                   | 383                 | 598                | 3,038                        | 13%                           | 20%                          |
| Loddon SD                   | 775                 | 1,481              | 6,353                        | 12%                           | 23%                          |
| Goulburn SD                 | 1,066               | 1,381              | 7,099                        | 15%                           | 19%                          |
| Ovens Murray SD             | 553                 | 693                | 3,458                        | 16%                           | 20%                          |
| East Gippsland SD           | 456                 | 570                | 2,930                        | 16%                           | 19%                          |
| Gippsland SD                | 1,010               | 1,169              | 6,160                        | 16%                           | 19%                          |
| <i>Balance of Vic Total</i> | <i>6,968</i>        | <i>10,657</i>      | <i>48,922</i>                | <i>14%</i>                    | <i>22%</i>                   |
| <b>Total Vic 2006</b>       | <b>30,289</b>       | <b>59,000</b>      | <b>201,241</b>               | <b>15%</b>                    | <b>29%</b>                   |

<sup>51</sup> The data set tracks within State movement closely but does not distinguish the 2001 SD of residence for people who moved interstate other than for those who moved to the ACT.

**Table 2.3(b) Education participation of 18-20 yr olds, 2006 by home location in 2001, rest of Australia**

| <i>Usual residence 2001</i>          | <i>VET students</i> | <i>HE students</i> | <i>Total 18-20 year olds</i> | <i>VET Participation Rate</i> | <i>HE Participation Rate</i> |
|--------------------------------------|---------------------|--------------------|------------------------------|-------------------------------|------------------------------|
| <b>Queensland</b>                    |                     |                    |                              |                               |                              |
| <b>Brisbane</b>                      | <b>6,117</b>        | <b>17,413</b>      | <b>56,537</b>                | <b>11%</b>                    | <b>31%</b>                   |
| Gold Coast SD                        | 1,370               | 3,215              | 12,665                       | 11%                           | 25%                          |
| Sunshine Coast SD                    | 890                 | 2,002              | 8,302                        | 11%                           | 24%                          |
| West Moreton SD                      | 248                 | 496                | 2,474                        | 10%                           | 20%                          |
| Wide Bay Burnett SD                  | 828                 | 1,767              | 8,288                        | 10%                           | 21%                          |
| Darling Downs SD                     | 706                 | 2,026              | 7,793                        | 9%                            | 26%                          |
| South West SD QLD                    | 67                  | 176                | 846                          | 8%                            | 21%                          |
| Fitzroy SD                           | 618                 | 1,466              | 6,804                        | 9%                            | 22%                          |
| Central West SD QLD                  | 39                  | 66                 | 418                          | 9%                            | 16%                          |
| Mackay SD                            | 464                 | 1,034              | 4,944                        | 9%                            | 21%                          |
| Northern SD QLD                      | 540                 | 1,670              | 6,434                        | 8%                            | 26%                          |
| Far North SD                         | 520                 | 1,525              | 7,060                        | 7%                            | 22%                          |
| North West SD                        | 69                  | 131                | 1,065                        | 6%                            | 12%                          |
| <b>Total Qld 2006</b>                | <b>14,743</b>       | <b>39,484</b>      | <b>157,452</b>               | <b>9%</b>                     | <b>25%</b>                   |
| <b>South Australia</b>               |                     |                    |                              |                               |                              |
| <b>Adelaide</b>                      | <b>4,537</b>        | <b>10,170</b>      | <b>36,065</b>                | <b>13%</b>                    | <b>28%</b>                   |
| Outer Adelaide SD                    | 573                 | 862                | 4,362                        | 13%                           | 20%                          |
| Yorke and Lower North SD             | 242                 | 267                | 1,576                        | 15%                           | 17%                          |
| Murray Lands SD                      | 298                 | 437                | 2,367                        | 13%                           | 18%                          |
| South East SD                        | 302                 | 332                | 2,226                        | 14%                           | 15%                          |
| Eyre SD                              | 130                 | 232                | 1,197                        | 11%                           | 19%                          |
| Northern SD SA                       | 372                 | 370                | 2,773                        | 13%                           | 13%                          |
| <b>Total SA 2006</b>                 | <b>7,174</b>        | <b>15,174</b>      | <b>60,207</b>                | <b>12%</b>                    | <b>25%</b>                   |
| <b>Western Australia</b>             |                     |                    |                              |                               |                              |
| <b>Perth</b>                         | <b>6,836</b>        | <b>15,145</b>      | <b>49,328</b>                | <b>14%</b>                    | <b>31%</b>                   |
| South West SD WA                     | 1,053               | 1,361              | 7,315                        | 14%                           | 19%                          |
| Lower Great Southern SD              | 295                 | 378                | 2,089                        | 14%                           | 18%                          |
| Upper Great Southern SD              | 96                  | 160                | 698                          | 14%                           | 23%                          |
| Midlands SD                          | 250                 | 287                | 1,832                        | 14%                           | 16%                          |
| South Eastern SD WA                  | 206                 | 229                | 1,707                        | 12%                           | 13%                          |
| Central SD                           | 242                 | 314                | 2,038                        | 12%                           | 15%                          |
| Pilbara SD                           | 180                 | 133                | 1,228                        | 15%                           | 11%                          |
| Kimberley SD                         | 72                  | 55                 | 972                          | 7%                            | 6%                           |
| <b>Total WA 2006</b>                 | <b>10,421</b>       | <b>21,465</b>      | <b>82,669</b>                | <b>13%</b>                    | <b>26%</b>                   |
| <b>Tasmania</b>                      |                     |                    |                              |                               |                              |
| <b>Greater Hobart</b>                | <b>937</b>          | <b>1,519</b>       | <b>6,718</b>                 | <b>14%</b>                    | <b>23%</b>                   |
| Southern SD                          | 187                 | 143                | 1,140                        | 16%                           | 13%                          |
| Northern SD TAS                      | 583                 | 764                | 4,255                        | 14%                           | 18%                          |
| Mersey Lyell SD                      | 540                 | 538                | 3,654                        | 15%                           | 15%                          |
| <i>Balance of Tas Total</i>          | <i>1,310</i>        | <i>1,445</i>       | <i>9,049</i>                 | <i>14%</i>                    | <i>16%</i>                   |
| <b>Total Tas 2006</b>                | <b>2,469</b>        | <b>3,510</b>       | <b>18,404</b>                | <b>13%</b>                    | <b>19%</b>                   |
| <b>Northern Territory</b>            |                     |                    |                              |                               |                              |
| <b>Darwin Total</b>                  | <b>205</b>          | <b>494</b>         | <b>2,498</b>                 | <b>8%</b>                     | <b>20%</b>                   |
| <i>Northern Territory Balance SD</i> | <i>114</i>          | <i>75</i>          | <i>3,196</i>                 | <i>4%</i>                     | <i>2%</i>                    |
| <b>Total NT 2006</b>                 | <b>407</b>          | <b>732</b>         | <b>8,321</b>                 | <b>5%</b>                     | <b>9%</b>                    |
| <b>ACT</b>                           |                     |                    |                              |                               |                              |
| <b>Canberra Total</b>                | <b>1,613</b>        | <b>2,648</b>       | <b>9,829</b>                 | <b>16%</b>                    | <b>27%</b>                   |
| NSW remainder (ACT 06)               | 291                 | 884                | 1,932                        | 15%                           | 46%                          |
| <b>Total ACT 2006</b>                | <b>2,140</b>        | <b>5,462</b>       | <b>15,485</b>                | <b>14%</b>                    | <b>35%</b>                   |
| <b>Australia Capitals</b>            | <b>62,796</b>       | <b>127,736</b>     | <b>409,263</b>               | <b>15%</b>                    | <b>31%</b>                   |
| <b>Australia Regions</b>             | <b>32,856</b>       | <b>48,040</b>      | <b>241,477</b>               | <b>14%</b>                    | <b>20%</b>                   |
| <b>Australia</b>                     | <b>108,219</b>      | <b>211,952</b>     | <b>799,369</b>               | <b>14%</b>                    | <b>27%</b>                   |

This same analysis is illustrated in the maps of Australia shown in Figures 2.1 and 2.2 which show the participation rates by Statistical Division for higher education and TAFE respectively. They highlight the greater range of participation rates between city and region for higher education in contrast to the more evenly distributed participation in TAFE.

**Figure 2.1 University participation rates of 18 to 20 year olds in 2006 by home location in 2001**

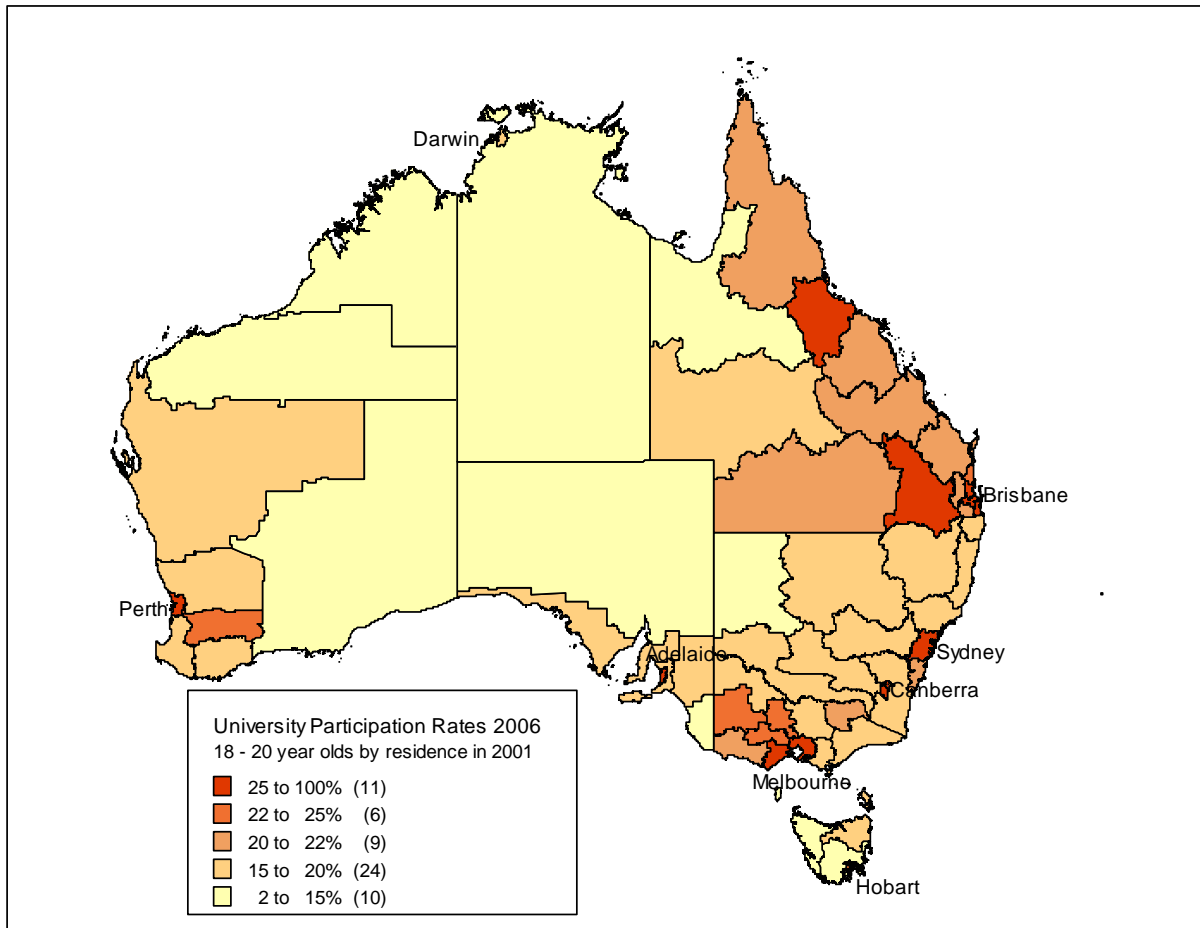
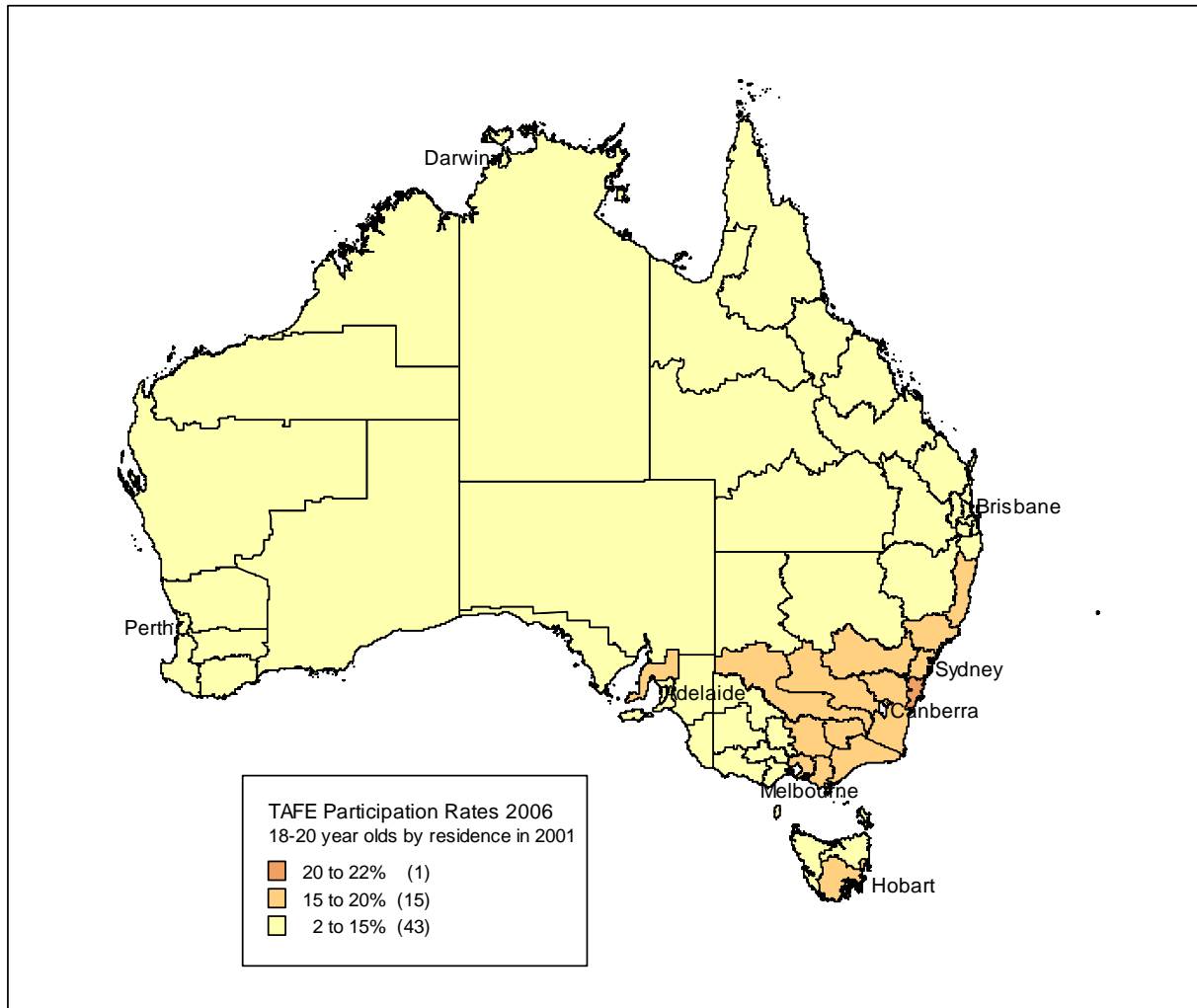


Figure 2.2 TAFE participation of 18-20 yr olds, 2006 by home location in 2001



We have used the data from the two censuses to look at the extent of movement between region and city or the reverse. It shows a much higher degree of movement for students who lived in regional areas than for those who lived in metropolitan areas.

Table 2.4 shows that 98% of the metropolitan residents in 2001 who were higher education students in 2006 were still living in metropolitan areas. In contrast 69% of regional residents in 2001 who were higher education students in 2006 were still in regional locations.

**Table 2.4 Movement of university students aged 18-20 in 2006 (per cent of 2001 cohort aged 13 - 15)**

| <b>Area of residence of persons aged 18 - 20 enrolled at university in 2006 compared with their area of residence in 2001 (% of group in 2001)</b> |                                  |                 |                         |              |
|--|----------------------------------|-----------------|-------------------------|--------------|
|  | <i>Area of Residence in 2006</i> |                 |                         |              |
| <i>Area of Residence in 2001</i>   | <i>Metropolitan</i>              | <i>Regional</i> | <i>No usual address</i> | <i>Total</i> |
|  | <i>%</i>                         | <i>%</i>        | <i>%</i>                | <i>%</i>     |
| <i>Metropolitan (within home state)</i>  | <b>97.7</b>                      | 2.3             | 0                       | 100          |
| <i>Regional (within home state)</i>  | 31.1                             | <b>68.8</b>     | 0.1                     | 100          |
| <i>Interstate</i>  | 74.1                             | 25.5            | 0.3                     | 100          |
| <i>Overseas</i>  | 92.8                             | 6.8             | 0.4                     | 100          |
| <i>Undefined or NA</i>   | 80.9                             | 18.3            | 0.8                     | 100          |
| <i>Total</i>   | 80.7                             | 19.2            | 0.1                     | 100          |

Table 2.5 gives the numbers behind these percentages. It shows that there were 2,907 university students aged 18 - 20 of metropolitan origin in 2001 who had moved within their State to regional areas in 2006. In the opposite direction, 14,921 students of regional origin in 2001 had moved to metropolitan areas within their State. A further 10,334 students had moved interstate, 74% of whom were in metropolitan regions in 2006.

**Table 2.5 Movement of university students aged 18-20 in 2006 (per cent of 2001 cohort aged 13 - 15)**

| <b>Area of residence of persons aged 18 - 20 enrolled at university in 2006 compared with their area of residence in 2001</b> |                                  |                 |                         |              |
|---|----------------------------------|-----------------|-------------------------|--------------|
| <b>Count</b>  | <i>Area of Residence in 2006</i> |                 |                         |              |
| <i>Area of Residence in 2001</i>  | <i>Metropolitan</i>              | <i>Regional</i> | <i>No usual address</i> | <i>Total</i> |
| <i>Metropolitan (within home state)</i>   | 124,772                          | 2,907           | 57                      | 127,736      |
| <i>Regional (within home state)</i>   | 14,921                           | 33,054          | 65                      | 48,040       |
| <i>Interstate</i>   | 7,661                            | 2,638           | 35                      | 10,334       |
| <i>Overseas</i>   | 20,930                           | 1,536           | 85                      | 22,551       |
| <i>Undefined or NA</i>  | 2,664                            | 601             | 26                      | 3,291        |
| <i>Total</i>  | 170,948                          | 40,736          | 268                     | 211,952      |

Comparable data for those enrolled at TAFE in 2006 and for those employed, but not in any formal education, show similarly high levels of retention in metropolitan areas of people of metropolitan origin. However, regional 13 - 15 year olds in 2001 who were attending TAFE or working in 2006 were much more likely than university students to still be in a region (90% and 91% respectively compared with 69%).

The picture from all data sources therefore is very clear:

- Young people from regional areas move away to metropolitan regions, especially the capital cities, in substantial numbers to attend university
- There is much less movement in the other direction



- There is much less movement away from the regions by students in the VET sector or in employment.

### 2.3 *Higher education students from regional areas and other students of regional universities and campuses*

This section examines in detail the nature of the higher education taken by students from regional areas, and the nature of the students enrolled in regional universities and regional campuses of other universities. The analysis is based on 2006 higher education collection statistics, the most recent data available at the time of writing for the level of analysis required.

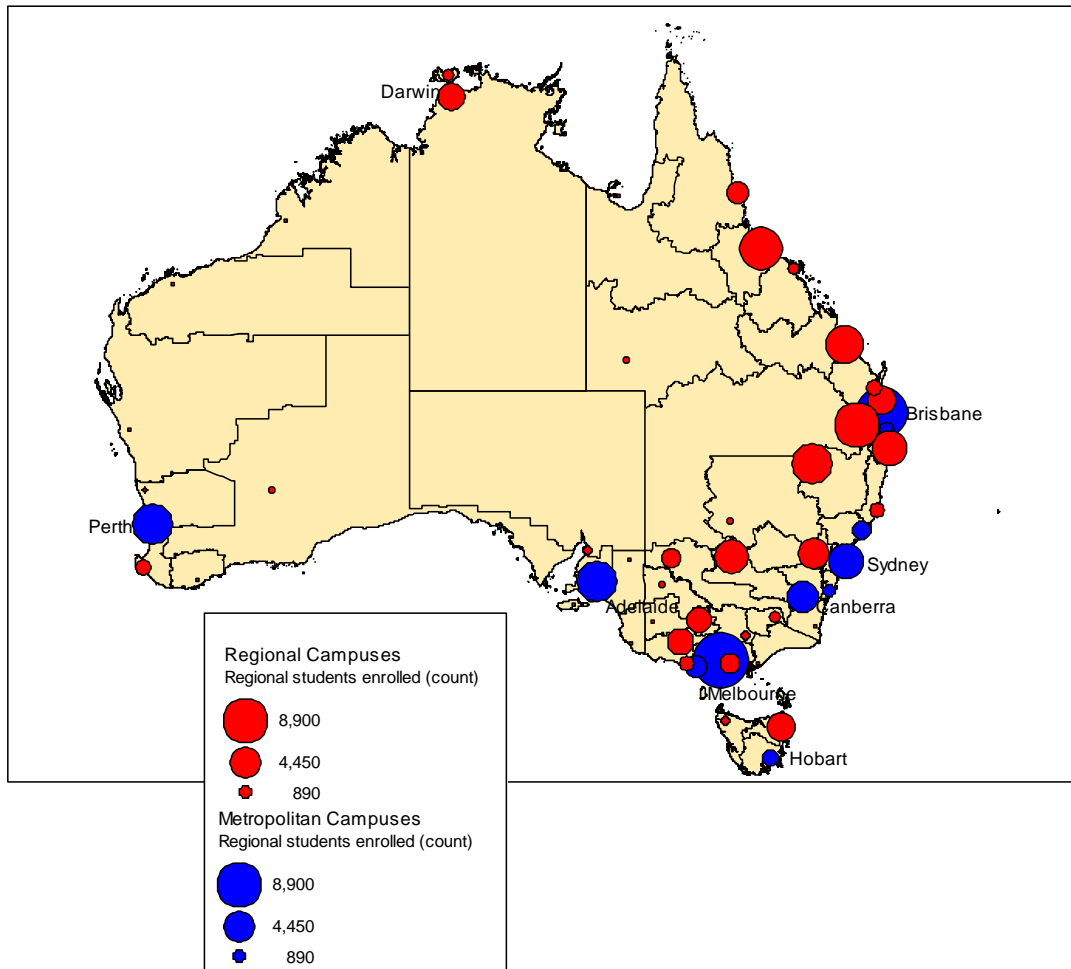
For this analysis we have divided students into four groups:

- regional 'stayers': students with regional addresses enrolled with regional universities, or with regional campuses of metropolitan universities (12% of domestic students in 2006);
- regional 'leavers': regional students enrolled at a metropolitan campus, (8% of domestic students in 2006). This is based on students' self identified home address. It will not catch all students who have moved from a region to enrol in a city university but focuses on those who continue to regard a regional address as home;
- metropolitan 'leavers': non-regional students enrolled with regional universities or regional campuses of metropolitan universities (7% of domestic students in 2006). These students show the capacity of regional higher education institutions and campuses to attract students from the cities; and
- metropolitan 'stayers': the remaining 74% of domestic students in 2006 who were non-regional students enrolled at a metropolitan campus. This group provides a basis of comparison to identify the distinct elements of regional students' higher education and of the provision of regional universities.

(Note: In this section the more refined definition of 'region' is used excluding the four non-capital major urban Statistical Divisions as discussed section 2.1.)

Figure 2.3 maps the distribution of regional students around Australia by Statistical District of their campus of enrolment, showing those enrolled in regional areas (regional 'stayers' - in red) and those enrolled at metropolitan areas (regional 'leavers' - in blue). (Note: the dots indicate the number of students enrolled at campuses in each Statistical District. There may be more than one campus in a District. The dots do not necessarily show the location of any particular campus.)

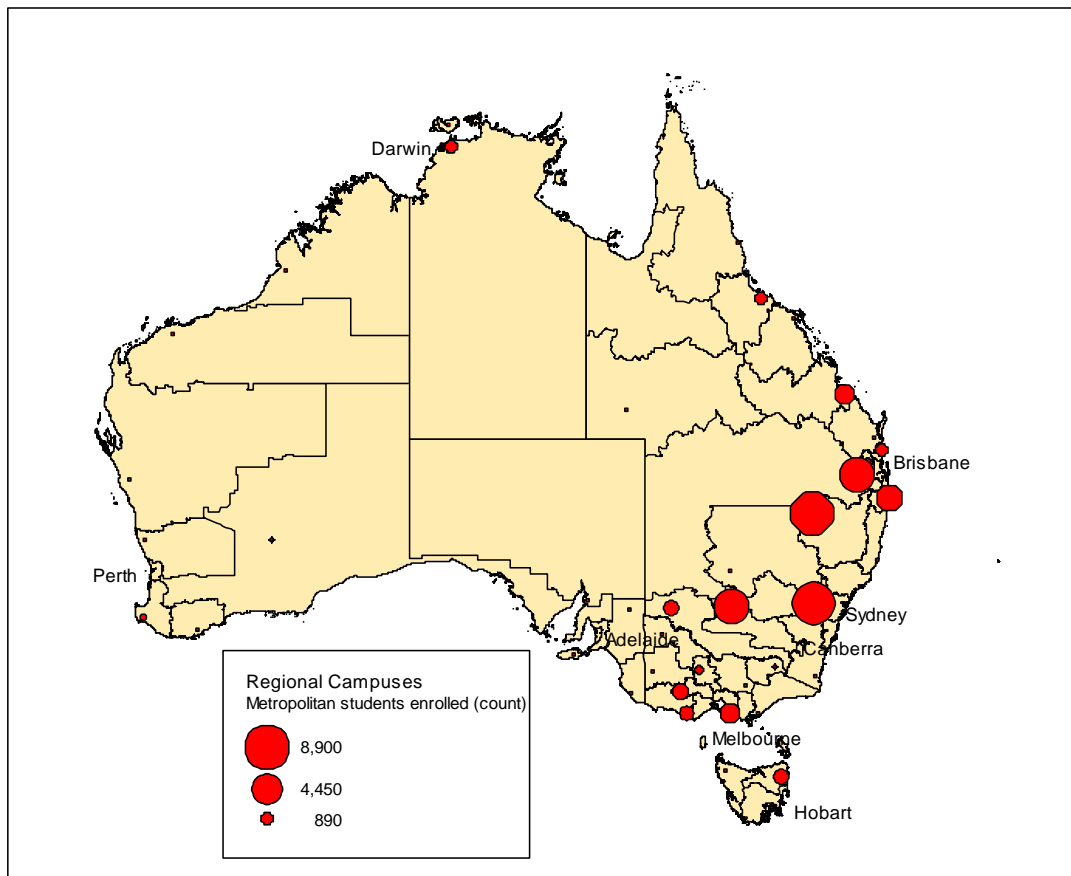
**Figure 2.3 University attendance by students with a Regional postcode as their home postcode, by Statistical District of university campus of enrolment, 2006**



Source: DEEWR Higher Education Statistics Collection, 2006

Figure 2.4 below highlights the distribution of those metropolitan students who choose to enrol at a regional campus (the metropolitan 'leavers'). It shows the concentrations of these students at the major regionally based universities in the eastern States.

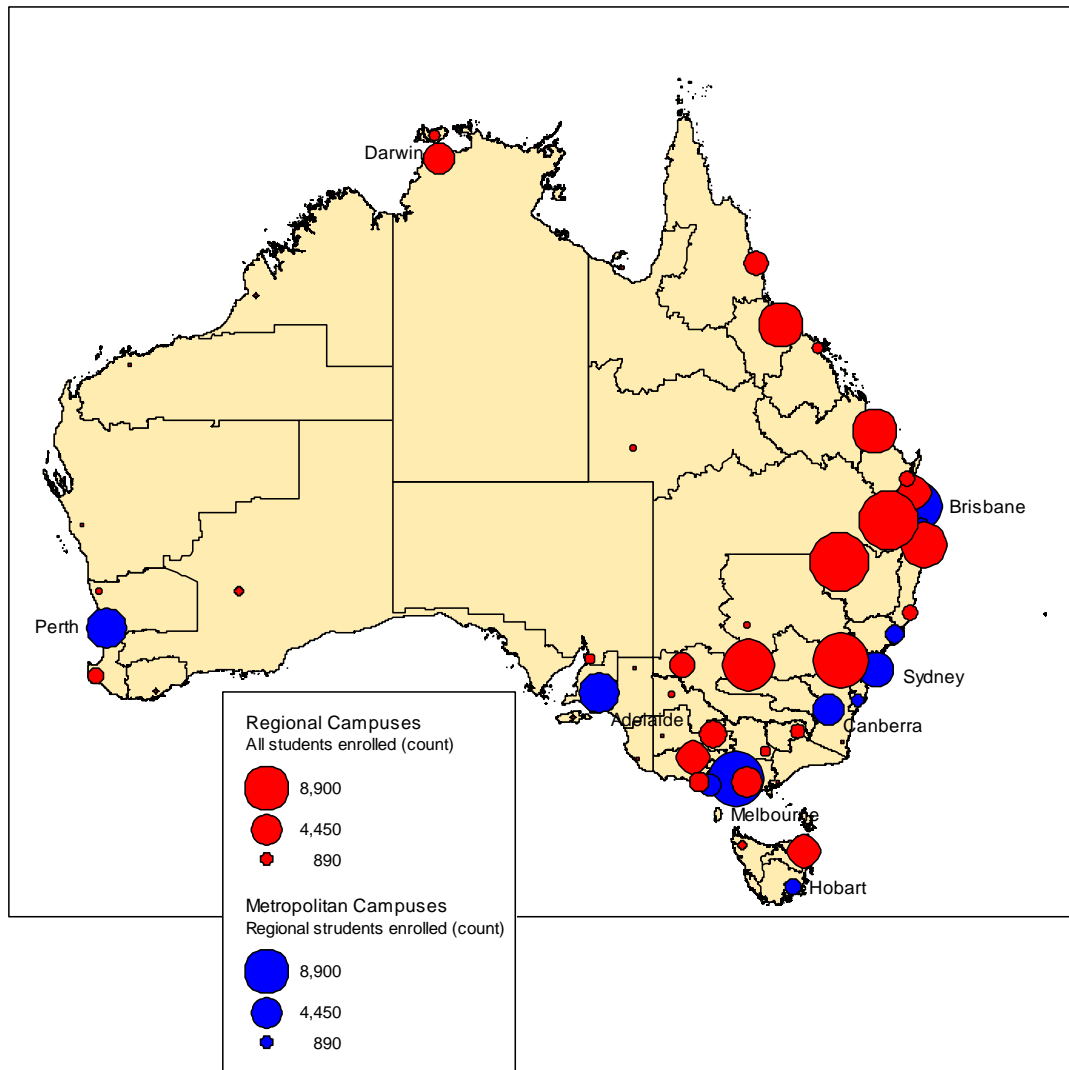
**Figure 2.4 Students with a Metropolitan home postcode who are enrolled at a regional university campus, by Statistical District of campus of enrolment, 2006**



Source: DEEWR Higher Education Statistics Collection, 2006

Finally, Figure 2.5 combines this information to show the distribution of all students enrolled in regional campuses (regional 'stayers' and metropolitan 'leavers', plus regional students enrolled in metropolitan campuses (regional 'leavers').

**Figure 2.9 University attendance by students at regional campuses (all students) and students with a Regional postcode as their home postcode enrolled at metropolitan campuses, by Statistical District of university campus of enrolment, 2006**



Source: DEEWR Higher Education Statistics Collection, 2006

The following sub-sections analyse these groups of students by location, age, sex, field of study, mode of study (internal, external, multi-mode), full or part time status, level of qualification studied, SES status, and Indigenous status.

Data by State and Territory have also been included where relevant.

### 2.3.1 Location of campus

Table 2.5 confirms the previous analyses. It shows that a high proportion of regional students are 'leavers', i.e. enrolled at a metropolitan campus. The proportions range between 24% in NSW and 91% in SA (100% in the ACT). Across Australia there were 57,427 regional 'leavers' in 2006, 41% of all regional students.

In contrast only 8% of metropolitan students (46,821) were 'leavers', i.e. enrolled at a regional campus. The largest numbers of metropolitan students enrolled at regional campuses were in NSW (27,216) and Queensland (10,493).

**Table 2. 5 Location of regional and metropolitan students' institution, 2006**

| <i>State of Institution</i> | <i>Regional students</i>                         |  | <i>Metropolitan students</i>                     |  |
|-----------------------------|--|--|--|--|
|                             | <i>"Stayers" (enrolled at a regional campus)</i> | <i>"Leavers" (enrolled at a metropolitan campus)</i> | <i>"Leavers" (enrolled at a regional campus)</i> | <i>"Stayers" (enrolled at a metropolitan campus)</i> |
| NSW                         | 26,201   | 8,409  | 27,216   | 168,568  |
| VIC                         | 11,256   | 15,315   | 5,549  | 139,011  |
| QLD                         | 33,569   | 12,555   | 10,493   | 81,151   |
| SA                          | 723  | 7,283  | 168  | 42,060   |
| WA                          | 2,132  | 7,299  | 613  | 61,900   |
| TAS                         | 4,404  | 1,553  | 1,281  | 6,943  |
| ACT                         | 3  | 4,502  | 1  | 17,080   |
| Multi-State                 | 375  | 1,446  | 144  | 11,677   |
| <b>Australia</b>            | <b>82,890</b>                                    | <b>57,427</b>  | <b>46,821</b>                                    | <b>529,342</b>                                       |
|                             | Proportion of regional students                  |  | Proportion of metropolitan students              |  |
| NSW                         | 76%  | 24%  | 14%  | 86%  |
| VIC                         | 42%  | 58%  | 4%   | 96%  |
| QLD                         | 73%  | 27%  | 11%  | 89%  |
| SA                          | 9%   | 91%  | 0%   | 100%   |
| WA                          | 23%  | 77%  | 1%   | 99%  |
| TAS                         | 74%  | 26%  | 16%  | 84%  |
| ACT                         | 0%   | 100%   | 0%   | 100%   |
| Multi-State                 | 21%  | 79%  | 1%   | 99%  |
| <b>Australia</b>            | <b>59%</b>                                       | <b>41%</b>   | <b>8%</b>  | <b>92%</b>   |

### 2.3.2 Age

Table 2.6 shows that 45% of regional students under 25 are enrolled in metropolitan campuses. In sharp contrast, only 4% of metropolitan students under 25 are 'leavers', with 96% enrolled at metropolitan campuses. A higher proportion of older metropolitan students are leavers, with 14% of the 25 to 39 and 40 and over groups enrolled at a regional campus, reflecting the higher number of employed persons studying part time and via distance in these older age groups, but this proportion of 'leavers' is still much lower than among older regional students (33% of 25 to 39 year olds and 38% of those aged 40 and over).

**Table 2.6 Age of regional and metropolitan students, 2006**

|                     | <i>Regional students</i>                              |  | <i>Metropolitan students</i>                          |  |
|---------------------|---|--|---|--|
|                     | <i>"Stayers"<br/>(enrolled at a regional campus)</i>  | <i>"Leavers"<br/>(enrolled at a metropolitan campus)</i> | <i>"Leavers"<br/>(enrolled at a regional campus)</i>  | <i>"Stayers"<br/>(enrolled at a metropolitan campus)</i> |
| <b>Under 25</b>     | 43,465  | 36,163   | 15,662  | 335,957  |
| <b>25 to 39</b>     | 24,773  | 12,288   | 21,593  | 136,153  |
| <b>40 and above</b> | 14,652  | 8,976  | 9,566   | 57,232   |
| <b>Total</b>        | <b>82,890</b>   | <b>57,427</b>  | <b>46,821</b>   | <b>529,342</b>   |
|                     | Proportion of regional students                       |  | Proportion of metropolitan students                   |  |
| <b>Under 25</b>     | 31%   | 26%  | 3%  | 58%  |
| <b>25 to 39</b>     | 18%   | 9%   | 4%  | 24%  |
| <b>40 and above</b> | 10%   | 6%   | 2%  | 10%  |
| <b>Total</b>        | 59%   | 41%  | 8%  | 92%  |
|                     | Proportion of stayers and leavers in each age bracket |  | Proportion of leavers and stayers in each age bracket |  |
| <b>Under 25</b>     | 55%   | 45%  | 4%  | 96%  |
| <b>25 to 39</b>     | 67%   | 33%  | 14%   | 86%  |
| <b>40 and above</b> | 62%   | 38%  | 14%   | 86%  |
| <b>Total</b>        | 59%   | 41%  | 8%  | 92%  |

### 2.3.3 Sex

A substantially higher proportion of regional students enrolled at regional campuses (regional 'stayers') are women (64%) than men (36%). Conversely, a higher proportion of regional men than women enrol at metropolitan campuses. This is likely to be linked to choice of field of study (see 2.3.4 below). There is relatively little difference between metropolitan men and women in the proportion of stayers and leavers (See table 2.7).

**Table 2.7 Sex of regional and metropolitan students, 2006**

|               | <i>Regional students</i>                         |  | <i>Metropolitan students</i>                     |  |
|---------------|--|--|--|--|
|               | <i>"Stayers" (enrolled at a regional campus)</i> | <i>"Leavers" (enrolled at a metropolitan campus)</i> | <i>"Leavers" (enrolled at a regional campus)</i> | <i>"Stayers" (enrolled at a metropolitan campus)</i> |
| <b>Female</b> | 53,008   | 34,093   | 26,975   | 297,881  |
| <b>Male</b>   | 29,882   | 23,334   | 19,846   | 231,461  |
| <b>Total</b>  | <b>82,890</b>                                    | <b>57,427</b>  | <b>46,821</b>                                    | <b>529,342</b>                                       |
|               | Proportion of regional students                  |  | Proportion of metropolitan students              |  |
| <b>Female</b> | 38%  | 24%  | 5%   | 52%  |
| <b>Male</b>   | 21%  | 17%  | 3%   | 40%  |
| <b>Total</b>  | 59%  | 41%  | 8%   | 92%  |
|               | Proportion of regional "stayers" of each sex     | Proportion of regional "leavers" of each sex         | Proportion of metropolitan "leavers" of each sex | Proportion of metropolitan "stayers" of each sex     |
| <b>Female</b> | 64%  | 59%  | 58%  | 56%  |
| <b>Male</b>   | 36%  | 41%  | 42%  | 44%  |
| <b>Total</b>  | 100%   | 100%   | 100%   | 100%   |

### 2.3.4 Broad field of study

Table 2.8 shows the very high proportion of regional students that 'leave' to enrol in certain fields of study at metropolitan campuses. The percentages are highest for architecture and building (62%), engineering (57%), and sciences (52%). These three fields are not provided or have only a very limited presence at regional universities. Notably there have been persistent skill shortages in these professions in regional Australia (see section 3.6)

Regional 'stayers' are much more likely to study:

- agriculture and environment (71% of regional students in the field enrol at regional campuses);
- education (70%);
- management and commerce (65%) and
- information technology (64%).

**Table 2.8 Broad field of study of regional and metropolitan students, 2006**

| Field of Study                                | Regional students                                     |  | Metropolitan students                                     |  |
|---|---|--|---|--|
|   | "Stayers"<br>(enrolled at a regional campus)          | "Leavers"<br>(enrolled at a metropolitan campus) | "Leavers"<br>(enrolled at a regional campus)              | "Stayers"<br>(enrolled at a metropolitan campus) |
| Natural & Physical Sciences                   | 4,550   | 4,938  | 2,000   | 43,379   |
| Information Technology                        | 2,240   | 1,237  | 1,468   | 19,609   |
| Engineering & Related Technologies            | 3,456   | 4,616  | 1,460   | 35,469   |
| Architecture & Building                       | 835   | 1,371  | 499   | 14,023   |
| Agriculture & Environmental & Related Studies | 3,933   | 1,627  | 1,895   | 6,948  |
| Health  | 14,067  | 10,257   | 4,991   | 70,837   |
| Education                                     | 17,232  | 7,418  | 6,935   | 53,795   |
| Management & Commerce                         | 14,204  | 7,502  | 11,901  | 108,768  |
| Society & Culture                             | 15,454  | 14,010   | 12,035  | 131,045  |
| Creative Arts                                 | 4,793   | 3,844  | 2,256   | 39,139   |
| Non-award course                              | 872   | 516  | 1,313   | 5,733  |
| <b>Total</b>                                  | <b>82,890</b>   | <b>57,427</b>                                    | <b>46,821</b>   | <b>529,342</b>                                   |
|   | Proportion of regional students in the field of study |  | Proportion of metropolitan students in the field of study |  |
| Natural & Physical Sciences                   | 48%   | 52%  | 4%  | 96%  |
| Information Technology                        | 64%   | 36%  | 7%  | 93%  |
| Engineering & Related Technologies            | 43%   | 57%  | 4%  | 96%  |
| Architecture & Building                       | 38%   | 62%  | 3%  | 97%  |
| Agriculture & Environmental & Related Studies | 71%   | 29%  | 21%   | 79%  |
| Health  | 58%   | 42%  | 7%  | 93%  |
| Education                                     | 70%   | 30%  | 11%   | 89%  |
| Management & Commerce                         | 65%   | 35%  | 10%   | 90%  |
| Society & Culture                             | 52%   | 48%  | 8%  | 92%  |
| Creative Arts                                 | 55%   | 45%  | 5%  | 95%  |
| Non-award course                              | 63%   | 37%  | 19%   | 81%  |
| <b>Total</b>                                  | <b>59%</b>  | <b>41%</b>                                       | <b>8%</b>   | <b>92%</b>                                       |

Data at State level confirm that the key factor is availability of courses. In SA and WA where the regional campuses offer restricted options, regional students enrol in health and education at metropolitan campuses in higher proportions than in other States. Engineering is offered at regional campuses in Queensland, Tasmania and WA and regional students in these States stay in regional areas to study engineering in higher proportions than in NSW where there is no regional engineering option.

Metropolitan students are most likely to enrol at a regional campus if they are studying agriculture and environmental and related studies, education, and management and commerce. The enrolments in management and commerce partly reflect the relatively large number of postgraduate coursework students studying by distance and digital education in this field.

It is important to note that the above analysis examines the impact of broad field of study and does not analyse variations within those fields. For example, while 58% of regional students overall undertake health studies at a regional institution, the substantial majority of regional students studying medicine would do so in a metropolitan area given the restricted availability of this course.



### 2.3.5 Mode of study

Even when regional students are enrolled at regional campuses, a relatively high proportion of them study externally or in mixed mode: 47% of regional 'stayers' are enrolled in these modes (31% external, 16% mixed mode). Only 53% of regional 'stayers' are studying internally. This indicates the difficulties of access confronting students in regional areas. In contrast, 87% of metropolitan students who 'stay' enrolled at metropolitan campuses study internally.

Regional students who 'leave' to enrol at a metropolitan university are more likely to be studying internally than their regional colleagues who 'stay' at regional campuses. 71% of regional 'leavers' study internally, reflecting the fact that most of them have enrolled at metropolitan campuses to take on-campus programs.

The majority of metropolitan 'leavers' on the other hand enrol at regional campuses externally - 72% of this group - and a further 7% study in mixed mode. Only 7% of the metropolitan 'leavers' study internally at a regional campus. (See Table 2.9)

**Table 2.9 Mode of study for regional and metropolitan students, 2006**

|                    | <i>Regional students</i>                               |  | <i>Metropolitan students</i>                               |  |
|--------------------|--|--|--|--|
|                    | <i>"Stayers" (enrolled at a regional campus)</i>       | <i>"Leavers" (enrolled at a metropolitan campus)</i>   | <i>"Leavers" (enrolled at a regional campus)</i>           | <i>"Stayers" (enrolled at a metropolitan campus)</i>       |
| <b>Internal</b>    | 44,175   | 40,785   | 10,083   | 458,816  |
| <b>External</b>    | 25,690   | 11,299   | 33,607   | 35,703   |
| <b>Multi-modal</b> | 13,025   | 5,343  | 3,131  | 34,823   |
| <b>Total</b>       | <b>82,890</b>  | <b>57,427</b>  | <b>46,821</b>  | <b>529,342</b>   |
|                    | Proportion of regional students                        |  | Proportion of metropolitan students                        |  |
| <b>Internal</b>    | 31%  | 29%  | 2%   | 80%  |
| <b>External</b>    | 18%  | 8%   | 6%   | 6%   |
| <b>Multi-modal</b> | 9%   | 4%   | 1%   | 6%   |
| <b>Total</b>       | 59%  | 41%  | 8%   | 92%  |
|                    | Proportion of regional "stayers" studying in each mode | Proportion of regional "leavers" studying in each mode | Proportion of metropolitan "leavers" studying in each mode | Proportion of metropolitan "stayers" studying in each mode |
| <b>Internal</b>    | 53%  | 71%  | 22%  | 87%  |
| <b>External</b>    | 31%  | 20%  | 72%  | 7%   |
| <b>Multi-modal</b> | 16%  | 9%   | 7%   | 7%   |
| <b>Total</b>       | 100%   | 100%   | 100%   | 100%   |

### 2.3.6 Full-time/part time

Table 2.10 shows that the full-time and part-time status of students in each group parallels the internal-external analysis.

Students enrolled at regional campuses are more likely to be studying part-time than students at metropolitan campuses. 41% of regional 'stayers' and 66% of metropolitan

'leavers' study part-time. This compares with 35% of regional 'leavers' and 34% of metropolitan 'stayers' who study part-time.

**Table 2.10 Full and part-time enrolment of regional and metropolitan students, 2006**

|                  | <i>Regional students</i>                               |  | <i>Metropolitan students</i>                               |  |
|------------------|--|--|--|--|
|                  | <i>"Stayers" (enrolled at a regional campus)</i>       | <i>"Leavers" (enrolled at a metropolitan campus)</i>   | <i>"Leavers" (enrolled at a regional campus)</i>           | <i>"Stayers" (enrolled at a metropolitan campus)</i>       |
| <b>Full time</b> | 49,147   | 37,597   | 16,083   | 351,106  |
| <b>Part time</b> | 33,743   | 19,830   | 30,738   | 178,236  |
| <b>Total</b>     | <b>82,890</b>  | <b>57,427</b>  | <b>46,821</b>  | <b>529,342</b>   |
|                  | Proportion of regional students                        |  | Proportion of metropolitan students                        |  |
| <b>Full time</b> | 35%  | 27%  | 3%   | 61%  |
| <b>Part time</b> | 24%  | 14%  | 5%   | 31%  |
| <b>Total</b>     | 59%  | 41%  | 8%   | 92%  |
|                  | Proportion of regional "stayers" studying in each mode | Proportion of regional "leavers" studying in each mode | Proportion of metropolitan "leavers" studying in each mode | Proportion of metropolitan "stayers" studying in each mode |
| <b>Full time</b> | 59%  | 65%  | 34%  | 66%  |
| <b>Part time</b> | 41%  | 35%  | 66%  | 34%  |
| <b>Total</b>     | 100%   | 100%   | 100%   | 100%   |

### 2.3.7 Level of course

Table 2.11 shows that there is considerable movement between regional and metropolitan campuses at different levels of study.

**Table 2.11 Level of course for regional and metropolitan students, 2006**

|                      | <i>Regional students</i>                                |   | <i>Metropolitan students</i>                                |   |
|----------------------|---|---|---|---|
|                      | <i>"Stayers" (enrolled at a regional campus)</i>        | <i>"Leavers" (enrolled at a metropolitan campus)</i>    | <i>"Leavers" (enrolled at a regional campus)</i>            | <i>"Stayers" (enrolled at a metropolitan campus)</i>        |
| <b>Research PG</b>   | 2,492   | 2,667   | 868   | 32,474  |
| <b>Coursework PG</b> | 9,429   | 11,961  | 11,410  | 96,833  |
| <b>Undergrad</b>     | 67,361  | 42,009  | 32,318  | 391,084   |
| <b>Other</b>         | 3,608   | 790   | 2,225   | 8,951   |
| <b>Total</b>         | <b>82,890</b>   | <b>57,427</b>   | <b>46,821</b>   | <b>529,342</b>  |
|                      | Proportion of regional students                         |   | Proportion of metropolitan students                         |   |
| <b>Research PG</b>   | 1.8%  | 1.9%  | 0.2%  | 5.6%  |
| <b>Coursework PG</b> | 6.7%  | 8.5%  | 2.0%  | 16.8%   |
| <b>Undergrad</b>     | 48.0%   | 29.9%   | 5.6%  | 67.9%   |
| <b>Other</b>         | 2.6%  | 0.6%  | 0.4%  | 1.6%  |
| <b>Total</b>         | 59.1%   | 40.9%   | 8.1%  | 91.9%   |
|                      | Proportion of regional "stayers" studying at each level | Proportion of regional "leavers" studying at each level | Proportion of metropolitan "leavers" studying at each level | Proportion of metropolitan "stayers" studying at each level |
| <b>Research PG</b>   | 3.0%  | 4.6%  | 1.9%  | 6.1%  |
| <b>Coursework PG</b> | 11.4%   | 20.8%   | 24.4%   | 18.3%   |
| <b>Undergrad</b>     | 81.3%   | 73.2%   | 69.0%   | 73.9%   |
| <b>Other</b>         | 4.4%  | 1.4%  | 4.8%  | 1.7%  |
| <b>Total</b>         | 100.0%  | 100.0%  | 100.0%  | 100.0%  |

Overall 1.9% of regional students (2,667 in 2006) 'leave' to pursue postgraduate research at a metropolitan campus and a further 8.5% (11,961) 'leave' to undertake postgraduate

coursework. Only 0.2% of metropolitan students (868 in 2006) 'leave' to do postgraduate research at a regional university. 2.0% (11,410) 'leave' to do postgraduate coursework at a regional university, largely through external study as noted above.

Correspondingly, a higher proportion of regional 'leavers' are enrolled at postgraduate level than is the case for regional 'stayers' (4.6% p/g research and 20.8% p/g coursework compared with 3.0% p/g research and 11.4% p/g coursework). Thus the regional 'stayers' are a predominantly undergraduate group.

The metropolitan 'leavers' have a major postgraduate coursework focus (24.4% of this group). They comprise more than half of the postgraduate coursework students enrolled at regional campuses and almost balance the number of regional 'leavers' enrolled for postgraduate coursework.

### 2.3.8 SES status

The ABS Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Advantage/Disadvantage (IRSAD) has been used for this analysis. This measure is described further in section 3.3 which examines the broader demography of regional Australia.

In Table 2.12 students from postcodes with the lowest 25 per cent of IRSAD scores have been classified as 'Low SES', the middle 50 per cent of the population are in 'Middle SES' postcodes and the top 25 per cent of the population are in 'High SES' postcodes.

**Table 2.12 Socio-economic status of university students, 2006**

|              | <i>Regional students</i>                              |   | <i>Metropolitan students</i>                              |   |
|--------------|---|---|---|---|
|              | <i>"Stayers" (enrolled at a regional campus)</i>      | <i>"Leavers" (enrolled at a metropolitan campus)</i>  | <i>"Leavers" (enrolled at a regional campus)</i>          | <i>"Stayers" (enrolled at a metropolitan campus)</i>      |
| Low SES      | 24,142  | 16,522  | 6,665   | 70,435  |
| Middle SES   | 55,495  | 36,116  | 22,134  | 219,705   |
| High SES     | 3,243   | 4,781   | 18,014  | 238,864   |
| <b>Total</b> | <b>82,880</b>   | <b>57,419</b>   | <b>46,813</b>   | <b>529,004</b>  |
|              | Proportion of regional students                       |   | Proportion of metropolitan students                       |   |
| Low SES      | 17%   | 12%   | 1%  | 12%   |
| Middle SES   | 40%   | 26%   | 4%  | 38%   |
| High SES     | 2%  | 3%  | 3%  | 41%   |
| <b>Total</b> | <b>59%</b>  | <b>41%</b>  | <b>8%</b>   | <b>92%</b>  |
|              | Proportion of regional "stayers" in each SES category | Proportion of regional "leavers" in each SES category | Proportion of metropolitan "leavers" in each SES category | Proportion of metropolitan "stayers" in each SES category |
| Low SES      | 29%   | 29%   | 14%   | 13%   |
| Middle SES   | 67%   | 63%   | 47%   | 42%   |
| High SES     | 4%  | 8%  | 38%   | 45%   |
| <b>Total</b> | <b>100%</b>   | <b>100%</b>   | <b>100%</b>   | <b>100%</b>   |

There are few high SES regional populations. The regional 'stayers' reflect this, with around two thirds (67%) of this group from the middle SES bands and 29% low-SES.

The regional 'leavers' have a somewhat higher SES profile than regional 'stayers'.

Metropolitan students overall have a higher SES profile than regional students, and metropolitan 'stayers' have a somewhat higher SES profile than metropolitan 'leavers'.

### 2.3.9 Overview

In 2006 41% of higher education students from regional areas, including 45% of younger regional students (under 25), enrolled at a metropolitan campus, compared with only 8% of students from metropolitan areas who enrolled at a regional campus. Regional men enrol at metropolitan campuses in higher proportions than regional women.

A key difference between regional 'stayers' and 'leavers' is the choice of field of study. Regional 'leavers' are significantly more likely to be studying architecture and building (62% of regional students in this field study enrol at metropolitan campuses), engineering and related technologies (57%), and sciences (52%). These three fields are not provided or have only a very limited presence at regional universities. Regional 'stayers' are much more likely to study agriculture and environment (71% of regional students in the field enrol at regional campuses), education (70%), management and commerce (65%) and information technology (64%).

The metropolitan 'leavers' are primarily an older group of external students concentrated in NSW and Queensland regional universities. Many are enrolled for postgraduate coursework qualifications.

The metropolitan 'stayers' are the largest group. They are younger, from higher SES areas, and more likely to be studying internally and full time.

## 2.4 *Aboriginal and Torres Strait Islander students*

In the 2006 Census, 7% of Indigenous people aged 15 years and over were reported to be attending university or a VET sector institution (including TAFE), compared with 8% of the non-Indigenous population<sup>52</sup>. Across all age groups, Indigenous people were more likely to be attending a VET institution than university.

Comparing attendance rates for Indigenous and non-Indigenous people by age group shows that:

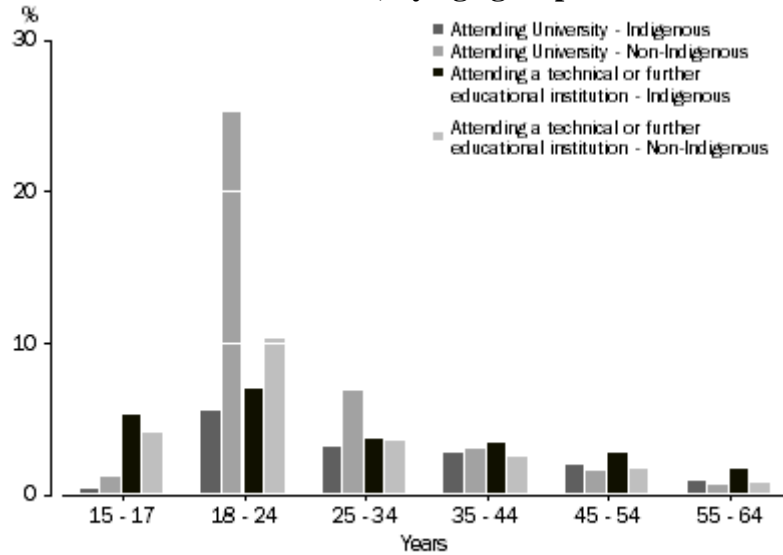
- In the 18-24 years age group, Indigenous people were less likely to be attending university or a VET institution than non-Indigenous people - significantly so for university attendance (6% of Indigenous people compared with 25% of non-Indigenous people in this age group).
- In the 25-34 years age group, the difference in university attendance rates between Indigenous and non-Indigenous people was less (3% of Indigenous people compared with 7% of non-Indigenous people). There was almost no difference in VET institution attendance rates between Indigenous and non-Indigenous people in this age group (both approximately 4%).
- In the age groups over 35 years, university and VET institution attendance rates were similar for Indigenous and non-Indigenous people, with Indigenous people slightly

---

<sup>52</sup> Data and Figures in this section are drawn from ABS Cat No. 4713.0 - Population Characteristics, Aboriginal and Torres Strait Islander Australians, 2006

more likely to be attending a technical or further educational institution or university.

**Figure 2.6 University and Technical or Further Educational Institution<sup>(a)</sup> attendance, by age group**

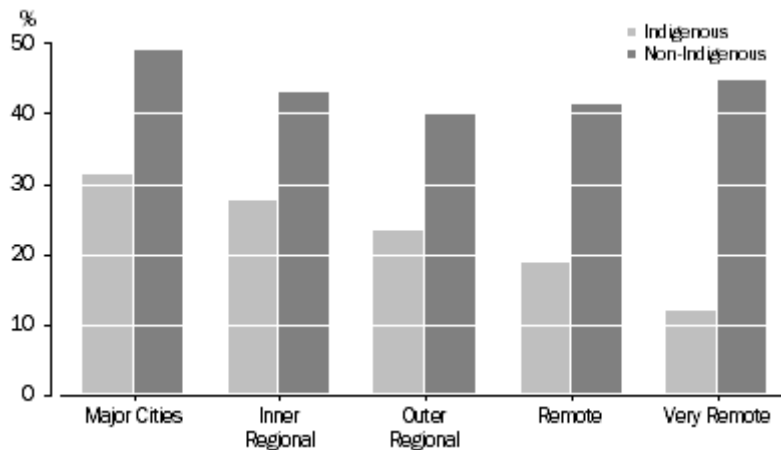


(a) Including TAFE colleges

In the 2006 Census, 25% of Indigenous people aged 15 years and over reported having a non-school qualification, an increase from 20% in 2001. Over the same period the proportion of non-Indigenous people with a non-school qualification also increased, from 42% to 47%.

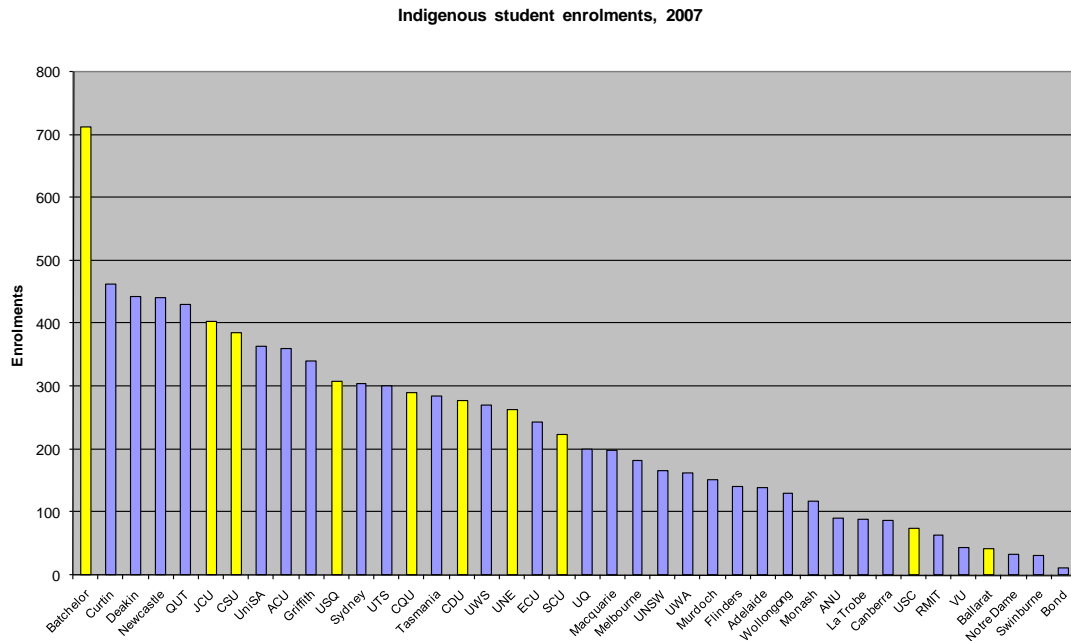
Indigenous people in non-remote areas were more likely to have a non-school qualification than Indigenous people in remote areas. In Major Cities, 31% of Indigenous people had a non-school qualification compared with 12% in Very Remote areas. The pattern for non-Indigenous people was quite different, with 49% and 45% of non-Indigenous people in Major Cities and Very Remote areas, respectively, having a non-school qualification.

**Figure 2.7 Has a non-school qualification by remoteness areas, Persons aged 15 years and over**



Indigenous higher education students are widely distributed across all of Australia's universities (see Figure 2.8). The nine regionally-based universities and Batchelor Institute are highlighted in yellow. In total these 10 institutions enrolled 2,982 Indigenous students in 2007, 32% of the total Indigenous higher education enrolments in that year.

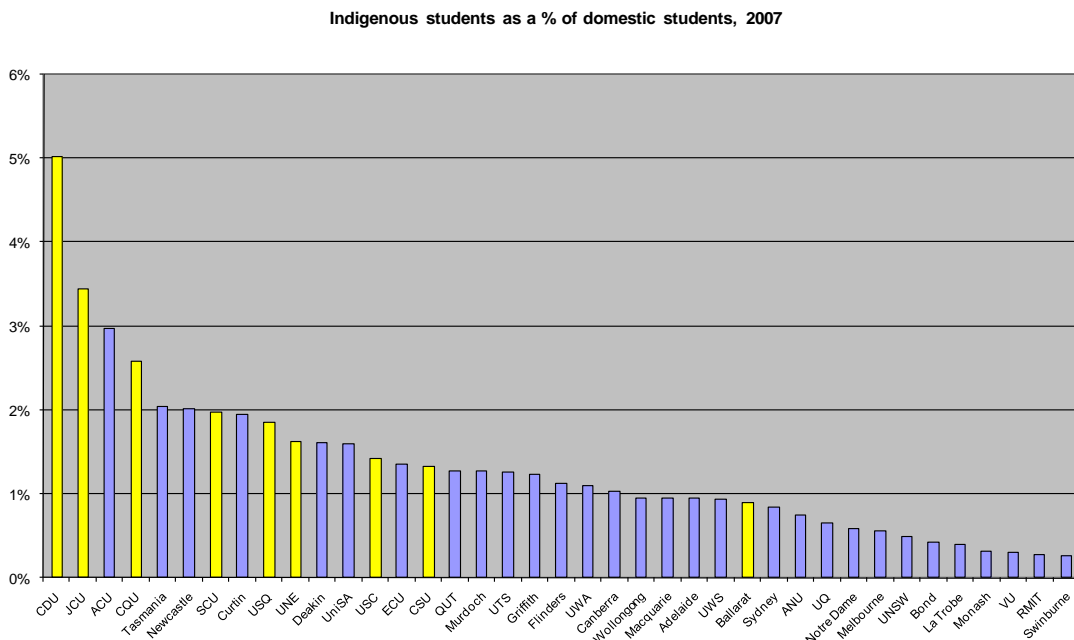
**Figure 2.8 Indigenous student enrolments in Australian universities 2007**



Source: DEEWR student statistics.

Indigenous students generally represent a higher proportion of total domestic student enrolments at regional universities (see Figure 2.9). Again, the nine regionally-based universities are highlighted in yellow. Batchelor Institute is excluded from this figure because almost all its students (98%) are indigenous.

**Figure 2.9 Indigenous students as a proportion of domestic students, Australian universities, 2007**



Source: DEEWR student statistics.

## 2.5 International students of regional universities

Currently, about 20% of students enrolled in Australian universities are international students. These students are relatively evenly dispersed across Australia’s States and Territories with the exception of the Northern Territory, in which only 4% of total students are from overseas. However, 91% of international students are enrolled in metropolitan campuses, including metropolitan campuses of regional universities.

The regionally-based universities attracted 18% of international students studying in Australian in 2006. However, over half of these students were enrolled in a metropolitan area, primarily as students of either Central Queensland University or the University of Ballarat, which together account for 50% of all overseas students at regionally-based universities. Overall, 90% of overseas students in 2006 were enrolled at campuses in metropolitan areas (see Table 2.13).

**Table 2.13 International Students studying at Australian Universities by Statistical Division**

| Statistical Division | Regionally-Based Universities |      | All other Universities |      | Total All Universities |      |
|----------------------|-------------------------------|------|------------------------|------|------------------------|------|
|                      | Overseas students             | %    | Overseas students      | %    | Overseas students      | %    |
| Metropolitan areas   | 17,591                        | 53%  | 146,034                | 99%  | 163,625                | 90%  |
| Regional areas       | 15,732                        | 47%  | 1,525                  | 1%   | 17,257                 | 10%  |
| Total                | 33,323                        | 100% | 147,559                | 100% | 180,882                | 100% |

International students studying at metropolitan universities with a major regional presence are rarely enrolled at a regional campus with only 1% of international students at these institutions located on regional campuses.

The low numbers of international students in regional areas is unlikely to be due to lack of willingness of the universities to enrol such students, given the focus all universities have given to international student recruitment over the past twenty years. The attraction of the major metropolitan areas for overseas students is clear.

This presents a challenge for the NURA concept, which is explored further in chapter 4.

## **2.6 *Factors influencing take up and completion of higher education by students from regional areas: previous studies***

To build on the outcomes of the data analysis it is useful to consider the various studies of the factors which influence the take-up of higher education by people from regional areas.

The 1999 DETYA study noted in section 2.2.2 examined participation rates by regions in metropolitan and non metropolitan areas against several variables:

- a compound measure 'access' to a university campus (based on distance from, and size of, campus)
- family resources, and
- family education.

It concluded that in metropolitan areas economic and education factors are very strong explainers of participation differences with access to a campus a relatively minor issue. In non-metropolitan areas access to a campus was a more important influence on participation in higher education, alongside family resources and education and other larger unexplained factor(s).

A thorough base for more recent studies is *Rural and Isolated School Students and their Higher Education Choices*<sup>53</sup>. Through a detailed questionnaire of 7000 high school students across three states and interviews with students from twenty rural schools the report provides a major assessment of the mind sets of rural students and characteristics that support or discourage take up of higher education.

The report's major theme is that the educational attainment of parents is a much more significant marker of higher education aspirations, take up and understanding than the effect of distance from a university campus.

The report does show effects of regionality when rural students are compared with urban students. Rural students had a greater focus on education and training leading to employment with less conviction that higher education provides this better compared with TAFE. Rural students were more concerned than urban students about the cost of university, primarily living costs, rather than the formal charges.

---

<sup>53</sup> James R, J Wyn, G Baldwin, G Hepworth, C McInnis, A Stephanou *Rural and Isolated School Students and their Higher Education Choices: A re-examination of student location, socioeconomic background, and educational advantage and disadvantage*, Higher Education Council, 1999



A University of Ballarat study *Everything is Harder* interviewed year 10 students from country and peri-metropolitan schools in Victoria along with their teachers and parents, parents of year 12 students, and recent year 12 students still in the local area. The intent was to assess understanding of, and interest in, post school education and training at the point when school students are beginning to develop their longer term plans and likely commitment to the later years of schooling. The study intentionally targeted those with a strong interest in university education and those with a strong interest not to pursue university education to understand the drivers of both<sup>54</sup>.

The report found considerable ignorance about post school education options across all groups interviewed. For the students wishing to go to university the focus was on Melbourne based universities, with a strong perception of the traditional standing of those universities and hence less interest in local university campuses where they are present. Parents largely supported this approach but they expressed more concern about the financial and social challenges of study in Melbourne. The students not wishing to enter university were focused on gaining a job to earn money, a perspective especially common among the boys. Knowledge of TAFE was not high but it was considered more useful than university.

The key factor distinguishing the two groups was their interest in and enjoyment of school, which was high for those looking to go on and gain university entry, and low for those who did not.

LSAY Briefing No 5, *Rural and urban differences in Australian education* summarises early LSAY reports to show that Year 9 achievement for numeracy and literacy of non-metropolitan children is slightly lower than but still comparable with that of city children, and that year 12 subject selection is similar in broad terms. Year 12 Tertiary Entrance scores are again lower but not with significance.

Roger G Jones, LSAY 26, *Education participation and outcomes by geographic location*, analyses impact of remoteness or regionality on year 9 numeracy and literacy, early school leavers, completion of year 12 and entry to university and VET. The main conclusion is that the locational element is a modest but nonetheless significant factor because the apparent differences between metropolitan and the non-metropolitan students are more to do with background characteristics, which include the year 9 achievement level, parental factors, and non English speaking backgrounds. However, the analysis does not consider the extent to which those background characteristics are connected to regional and remote living or how the two might interplay.

John Polesel, *Deferring a University Offer in Regional Victoria, (Interim report)*, July 2008 tracks what happens to regional Victorian school leavers from 2006 who deferred a university offer. The impetus was the much higher rate of deferral (16%) for regional students compared with metropolitan (6%). It is a half way report based on outcomes by 2008 with a further study due assessing the outcomes by mid 2009.

The interim report shows that 70% of deferrers did go to university in 2008 but there were also a range of other outcomes, with a further 12% in VET, with nearly all the remainder

---

<sup>54</sup> Golding B, C Barnett, M Brown, L Angus, J Harvey *Everything is harder: Participation in tertiary education of young people from rural and regional Victoria* March, 2007

employed. The likelihood of deferring and then of not taking up the university offer is stronger for those from low-SES backgrounds, while the likelihood of not taking up the offer was also greater for those with lower school level outcomes. Based on the responses of those surveyed, for the minority of students who were not studying in 2008, issues of finance and distance are the most important factors in the decision to defer and then not to take up an offer.

There are few discernable differences in higher education outcomes for people from regional backgrounds compared with other Australians once they enrol in higher education.

LSAY report 51 shows that, of its 1995 cohort who entered university in the three years after year 12, 66% of regional students (non-capital urban centres, population of 1000 or more) had completed by 2004. This was the same as the proportion of metropolitan students, and slightly ahead of rural students (centres with populations of less than 1000) with 64% completion. A more detailed break-down shows that the students from smaller provincial towns and other rural and remote areas were more likely to have completed university than those from capital cities (65%): students from larger provincial cities were the least likely to have completed (62%), and had a high level of withdrawals<sup>55</sup>.

There are also analyses of youth attitudes and the reasons for moving from a region to the city that provide a broader framework for understanding how younger people determine their futures. These analyses show the desire of many young people to embrace the changes that a move to the city can bring. Enrolling in higher education is thus in part a means to other ends. These analyses are important in assessing the potential of any new approach to higher education provision in regional areas, no matter how effective or well resourced, to prevent or substantially reduce the outflow of regional students<sup>56</sup>. The research suggests that movement from region to city should not be seen of itself as a problem, but that the primarily one-way flow and permanent loss of people from the regions is a major challenge.

The various studies bring out the complex range of factors that influence how regional people consider whether to take up tertiary education and training and, if they wish to, what they look for from a university.

The status of the university is important. The potential to raise the status of regional higher education from the perception of 'second best' through the creation of a 'national regional university' could enhance demand from potential students.

A number of studies have suggested that distance from educational facilities on its own is a minor factor in determining whether or not people from regional Australia seek higher education. However, as noted in section 1.2.3, the presence of a University campus in a particular town does positively correlate to higher levels of University participation and proximity to a major campus appears to have a significant impact on aspirations and higher education participation rates.

---

<sup>55</sup> Marks G 2007, *Completing University: Characteristics and Outcomes of Completing and Non-Completing Students*, LSAY Research Report 51, March 2007

<sup>M</sup> Gabriel, *Youth Migration and Social Advancement: How Young People Manage Emerging Differences between Themselves and their Hometown*, *Journal of Youth Studies*, Vol 9, No. 1, February 2006, pp333-46.

## 2.7 *Summary*

Current levels of education attainment and participation are relatively low in most regions - university attainment rates in regional areas are only just more than half the levels in the capital cities. Young regional Australians (15-24) are about half as likely as those in metropolitan areas to be attending university. In contrast attainment and participation rates in VET are much more evenly distributed between regional and metropolitan areas.

A high proportion of students with a regional address enrol at a metropolitan campus. Across Australia there were 57,427 regional 'leavers' in 2006, 41% of all regional students. In contrast only 8% of metropolitan students (46,821) were 'leavers', i.e. enrolled at a regional campus.

A key difference between regional 'stayers' and 'leavers' is the choice of field of study. Regional 'leavers' are significantly more likely to be studying architecture and building, engineering and related technologies, and sciences. These three fields are not provided or have only a very limited presence at regional universities.

Indigenous higher education students are widely distributed across all of Australia's universities but generally represent a higher proportion of total domestic student enrolments at regional universities.

International students are overwhelmingly concentrated at metropolitan areas: 91 percent of international students in 2006 were enrolled at metropolitan campuses, including metropolitan campuses of regional universities.

A number of studies have suggested that distance from educational facilities on its own is a minor factor in determining whether or not people from regional Australia seek higher education. However, the presence of a University campus in a does positively correlate to higher levels of University participation and proximity to a major campus appears to have a significant impact on aspirations and higher education participation rates.

Important issues for the development of the NURA concept include the significance of developing a comprehensive course profile in order to retain regional students, and the essential role that regional universities can play in raising the levels of aspiration for higher education and hence participation and attainment rates over time in regional communities.

## 3 Current and emerging needs for higher education in regional Australia

### 3.1 *The demographics of regional Australia*

#### 3.1.1 The distribution of Australia's population, 2006

The ABS estimates the Australian population in 2006 as 20.7 million<sup>57</sup>. Table 3.1 sets out the Australian population in 2006 by State and Territory, distinguishing capital city Statistical Divisions from the other Divisions of the State or Territory. It shows that 34% of the nation's regional population is in NSW, 30% in Queensland, 18% in Victoria and smaller populations in the other States and the Northern Territory. Overall, 36% of Australian people live in the regions with Tasmania, Queensland and Northern Territory having the highest proportions of population outside the capitals.

**Table 3.1 Australia's population 2006: capital and regions**

|                           | Capital    |                     | Region    |                     | Total      | Proportion of total living in regional areas |
|---------------------------|------------|---------------------|-----------|---------------------|------------|--|
|                           | No         | % of national total | No        | % of national total | No         |  |
| <b>New South Wales</b>    | 4,281,988  | 33%                 | 2,534,099 | 34%                 | 6,816,087  | 37%  |
| <b>Victoria</b>           | 3,743,015  | 28%                 | 1,383,525 | 18%                 | 5,126,540  | 27%  |
| <b>Queensland</b>         | 1,819,762  | 14%                 | 2,271,146 | 30%                 | 4,090,908  | 56%  |
| <b>South Australia</b>    | 1,145,812  | 9%                  | 422,076   | 6%                  | 1,567,888  | 27%  |
| <b>Western Australia</b>  | 1,518,748  | 12%                 | 540,633   | 7%                  | 2,059,381  | 26%  |
| <b>Tasmania</b>           | 205,481    | 2%                  | 284,470   | 4%                  | 489,951    | 58%  |
| <b>Northern Territory</b> | 114,362    | 1%                  | 96,265    | 1%                  | 210,627    | 46%  |
| <b>ACT</b>                | 334,119    | 3%                  | 0         | 0%                  | 334,119    | 0%   |
| <b>Australia</b>          | 13,163,287 | 100%                | 7,532,214 | 100%                | 20,697,880 | 36%  |

#### 3.1.2 Recent population change

There is a common misconception that the population in regional Australia is falling. This is not true in general, but there are very large variations between regions.

Table 3.2 shows the population growth for 19 regional and rural areas. These broad regions have been aggregated from ABS statistical divisions and exclude the regions containing the capital cities (except in the cases of Tasmania and the NT).

The table shows that only one of these 19 regional and rural areas, the north west of New South Wales, experienced net population decline between 2001-02 and 2007-08. Some areas, most notably Wide Bay (+17.7%), North Queensland (+14.7%), WA South (+13.4%) and Central Queensland (+11.8%), recorded strong population growth. 15 of the 19 regions experienced growth in excess of 5%.

<sup>57</sup> ABS A Picture of a Nation - 2070.0 2006 provides a useful overview.

**Table 3.2 Population growth by region, 2001-02 to 2007-08**

| Population growth by region, 2001-02 to 2007-08 (persons '000) |         |         |         |         |         |         |         |                           |       |
|--|---------|---------|---------|---------|---------|---------|---------|---------------------------|-------|
| Region   | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | change 2001-02 to 2007-08 |       |
|  |         |         |         |         |         |         |         | No.                       | %     |
| NSW North Coast  | 503.2   | 509.6   | 515.5   | 520.9   | 526.9   | 534.2   | 541.7   | 38.5                      | 7.7%  |
| NSW North West   | 323.8   | 321.5   | 319     | 318.4   | 319.4   | 320.1   | 321.1   | -2.7                      | -0.8% |
| NSW South Coast  | 600.5   | 606.6   | 610.6   | 616     | 622.1   | 629.1   | 635.7   | 35.2                      | 5.9%  |
| NSW South West   | 444     | 443.5   | 442.7   | 444.5   | 448.1   | 450.9   | 453.1   | 9.1                       | 2.0%  |
| Victoria Riverland & Mallee                                    | 141.6   | 140.8   | 140.6   | 141     | 141.9   | 143.3   | 144     | 2.4                       | 1.7%  |
| Central Victoria   | 310     | 312.4   | 315.1   | 318.4   | 322.5   | 327.4   | 332     | 22                        | 7.1%  |
| North East Victoria  | 288.5   | 290.7   | 292.6   | 295.3   | 298.5   | 302.4   | 305.9   | 17.4                      | 6.0%  |
| South West Victoria  | 358.4   | 360.9   | 364.1   | 367.9   | 372.2   | 378     | 383.4   | 25                        | 7.0%  |
| South East Victoria  | 240.6   | 241.3   | 243     | 245.4   | 248.4   | 252.4   | 256.1   | 15.5                      | 6.4%  |
| North Qld  | 596.4   | 606.9   | 617.5   | 633.2   | 650.2   | 666.8   | 684.2   | 87.8                      | 14.7% |
| Central Qld  | 203.1   | 206.2   | 210.4   | 213.9   | 218.7   | 223.3   | 227     | 23.9                      | 11.8% |
| Wide Bay Qld   | 236.2   | 241.8   | 248.6   | 256.1   | 264.1   | 271.3   | 278     | 41.8                      | 17.7% |
| South Qld  | 238.6   | 241.1   | 243.9   | 248.2   | 252.2   | 255     | 257.7   | 19.1                      | 8.0%  |
| SA East  | 248.4   | 251.7   | 255.3   | 259.6   | 262.7   | 266.2   | 269.6   | 21.2                      | 8.5%  |
| SA North   | 157.7   | 157.8   | 158     | 158.4   | 159.3   | 160.5   | 161.6   | 3.9                       | 2.5%  |
| WA North   | 188.7   | 189.4   | 189.2   | 190.5   | 192.7   | 197.4   | 201.7   | 13                        | 6.9%  |
| WA South   | 323.6   | 327.8   | 333.1   | 340.8   | 347.9   | 356.4   | 367     | 43.4                      | 13.4% |
| Tasmania   | 472.8   | 477.6   | 482.8   | 486.3   | 490     | 493.2   | 497.5   | 24.7                      | 5.2%  |
| NT   | 199.4   | 200     | 202.1   | 206.4   | 210.6   | 214.8   | 219.8   | 20.4                      | 10.2% |

Source: ANZ Regional and Rural Quarterly, June Quarter 2009

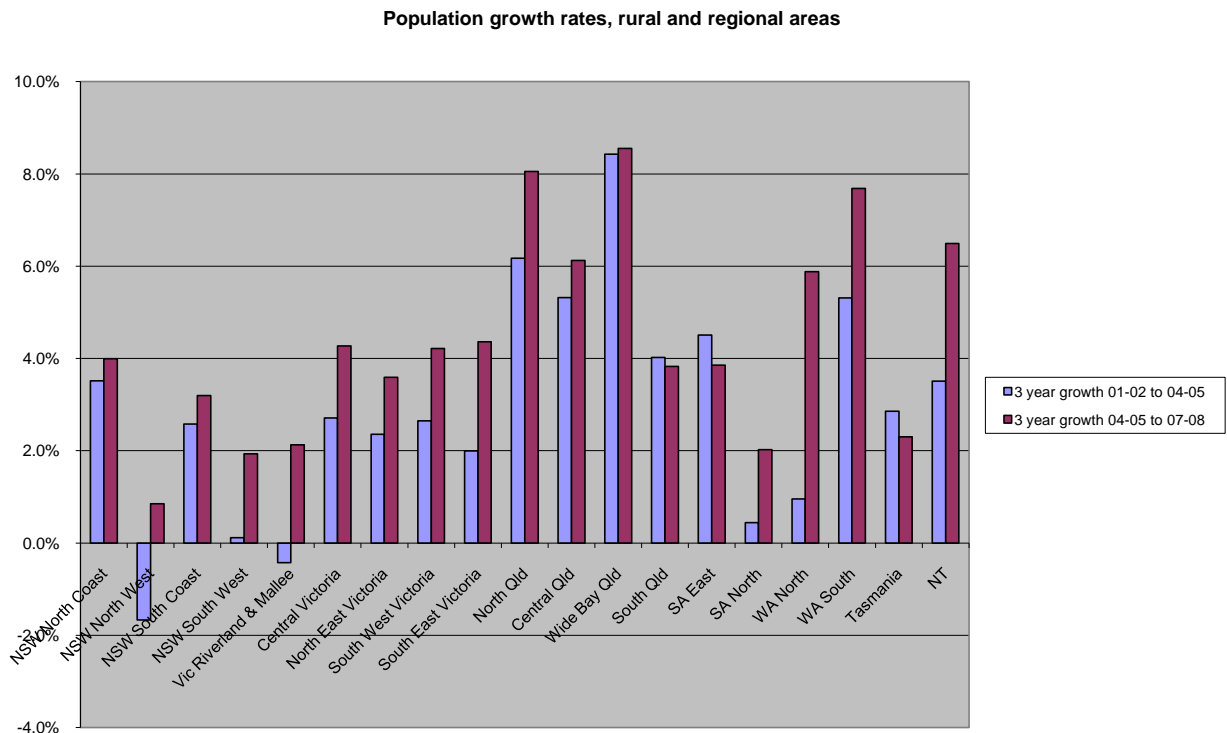
It is notable that across most of these regional and rural areas population growth was stronger in the most recent years. Indeed all of these areas show net population increase between 2004-05 and 2007-08 (see Table 3.3 and Figure 3.1).

**Table 3.3 Population growth rates by region**

| Population growth rates by region, 2001-02 to 2004-05 and 2004-05 to 2007-08 |                                  |                                  |
|--|----------------------------------|----------------------------------|
| Region   | 3 year growth 2001-02 to 2004-05 | 3 year growth 2004-05 to 2007-08 |
| NSW North Coast  | 3.5%                             | 4.0%                             |
| NSW North West   | -1.7%                            | 0.8%                             |
| NSW South Coast  | 2.6%                             | 3.2%                             |
| NSW South West   | 0.1%                             | 1.9%                             |
| Victoria Riverland & Mallee  | -0.4%                            | 2.1%                             |
| Central Victoria   | 2.7%                             | 4.3%                             |
| North East Victoria  | 2.4%                             | 3.6%                             |
| South West Victoria  | 2.7%                             | 4.2%                             |
| South East Victoria  | 2.0%                             | 4.4%                             |
| North Qld  | 6.2%                             | 8.1%                             |
| Central Qld  | 5.3%                             | 6.1%                             |
| Wide Bay Qld   | 8.4%                             | 8.6%                             |
| South Qld  | 4.0%                             | 3.8%                             |
| SA East  | 4.5%                             | 3.9%                             |
| SA North   | 0.4%                             | 2.0%                             |
| WA North   | 1.0%                             | 5.9%                             |
| WA South   | 5.3%                             | 7.7%                             |
| Tasmania   | 2.9%                             | 2.3%                             |
| NT   | 3.5%                             | 6.5%                             |

Source: ANZ Regional and Rural Quarterly, June Quarter 2009

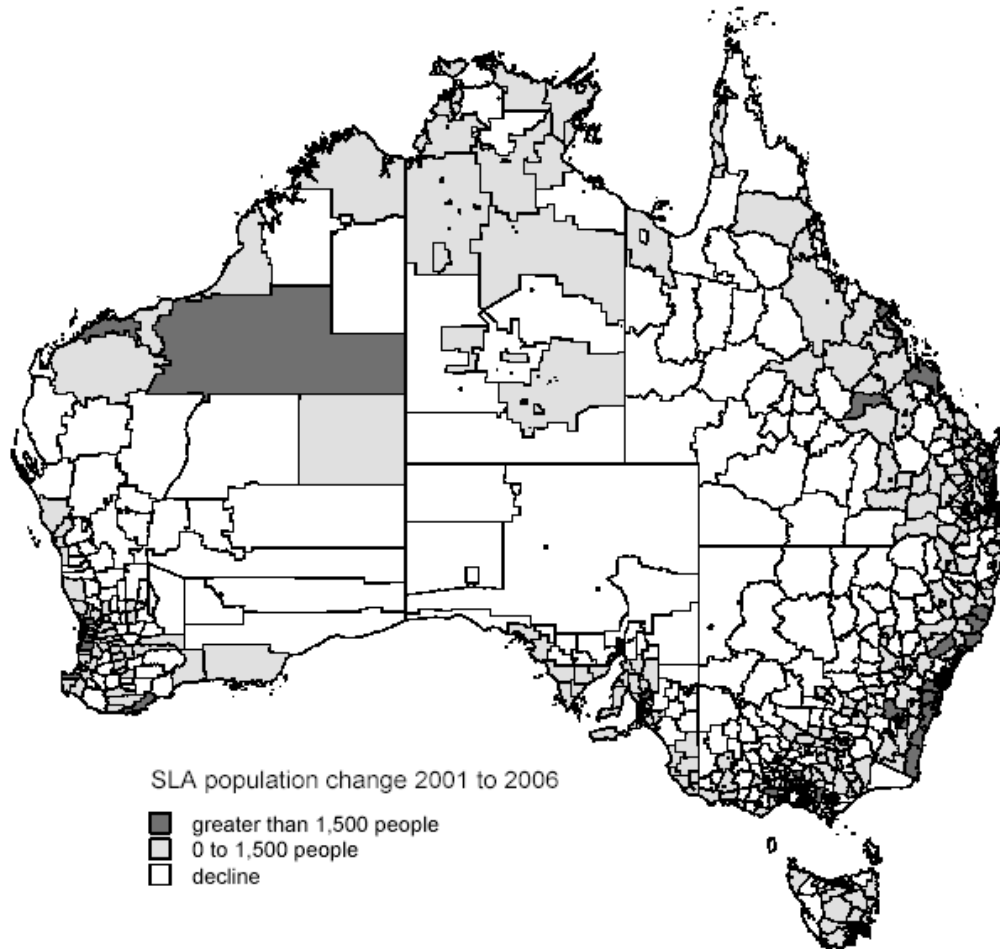
**Figure 3.1 Population growth rates by region, 3 year periods 2001-02 to 2007-08**



The strongest population growth in regional Australia in recent years has occurred in the coastal, ‘sea change’ areas; in some ‘tree change’ rural areas especially in and around regional centres; and in mining areas as a result of the resources boom prior to the global financial crisis. The proportion of the population living in urban areas (more than 1000 people) outside of the capital cities has grown to 30%, with the growth focussed at the larger non-capital cities, mostly along the coast. These areas have also grown at the expense of rural and remote areas (population centres of less than 1000) which in 2006 comprised 12% of the population.

Figure 3.2 provides an illustration of the variable levels of growth and their distribution across the country. The darker shading shows the statistical local areas (SLAs) with the strongest population growth between the census years of 2001 and 2006.

Figure 3.2 SLA population change 2001 to 2006

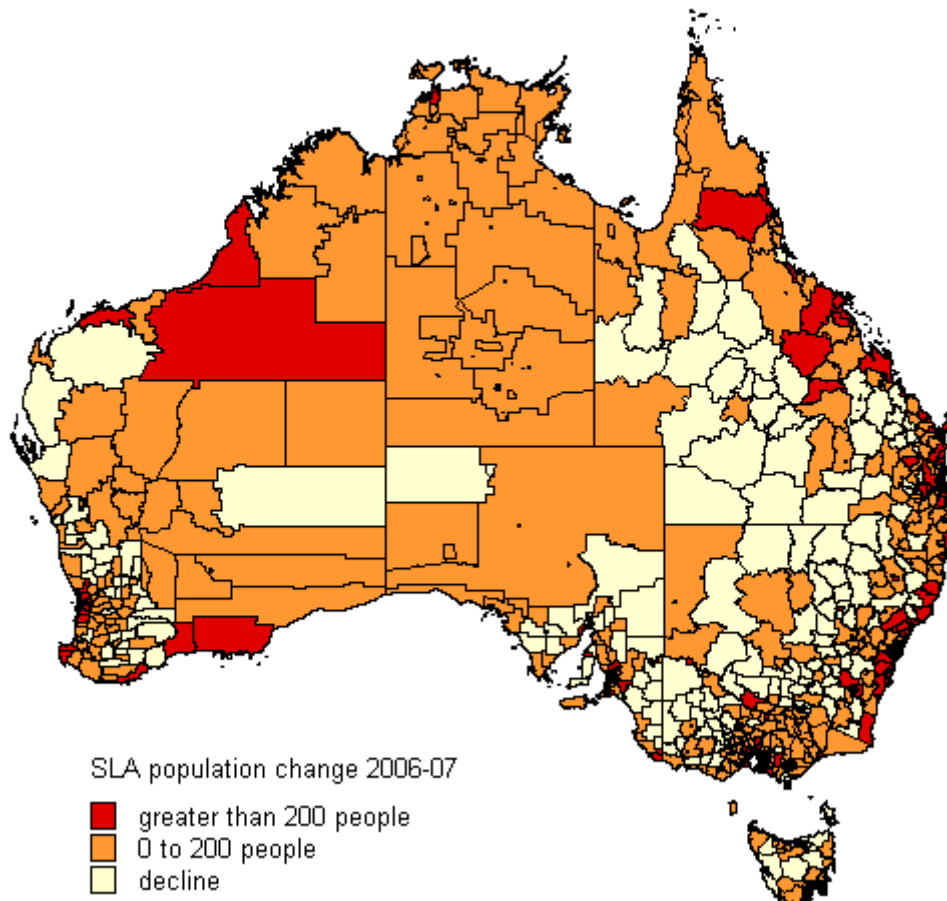


Source: ABS 2007, Hugo 2007

Figure 3.3 updates this picture for the most recent available data. It shows changes in the SLA population from 2006 to 2007 for Australia. Red coloured SLAs indicate population growth greater than 200 people whilst yellow coloured SLAs indicate a decline in population. In 2006-07, the areas with the largest or fastest population growth in each State and Territory again tended to be outer suburbs and inner areas of capital cities, but with some notable growth occurring in regional areas, especially but not exclusively in coastal regions.

Figure 3.3 SLA population change 2006 to 2007

### SLA POPULATION CHANGE, Australia - 2006-07



Source: ABS 2007

Comparison of the age structures of capital cities and regions shows that the regional population is slightly more likely to be young (up to 15) and old (66 plus) with hence proportionally fewer in the middle, working age, cohorts. Queensland is an exception with quite similar age structures in Brisbane and beyond Brisbane. The age distribution for the regions appears to reflect fewer employment opportunities and hence fewer working aged people.

The non-capital areas of Australia have a high rate of migration to and from other areas of Australia, with over 20% of the 2006 population having moved to its current location since the 2001 census. By contrast in the capital cities more of the movement is from within the same city. A high proportion of those moving into regional areas are students, they also tend to be more skilled than existing residents, younger and likely to be in higher income households. This is particular so for medium to larger size towns and cities with populations from 25,000.



### 3.1.3 Future population change

Under a heading 'Projected decline in student demand in some regional areas', the Higher Education Review (p109) focussed on the points that:

- aggregate growth in the 15 - 24 year old age group outside of capital cities is expected to be lower than the total growth for Australia in every state and territory other than Queensland; and
- the number of 15 - 24 year olds outside the state capitals is expected to decline in Victoria, South Australia, Western Australia and Tasmania.

Once again it is important to note that individual regions vary considerably in terms of expected change in the prime higher education population over the coming decades. This is an important point in assessing the future need for higher education provision in regional Australia.

The Higher Education Review report contained a table of demographic projections prepared by Access Economics. That table is reproduced below.

| Demographic projections by labour force dissemination region, 2008 to 2038<br>(Table 11, Review of Australian Higher Education) |                             |  |  |                                 |  |  |
|---|-----------------------------|--|--|---------------------------------|--|--|
|   | 2008<br>Population<br>(all) | Average<br>annual<br>growth to<br>2018 | Average<br>annual<br>growth to<br>2038 | 2008<br>Population<br>(15 - 24) | Average<br>annual<br>growth to<br>2018 | Average<br>annual<br>growth to<br>2038 |
| <b>New South Wales</b>  | <b>6964263</b>              | <b>1.1%</b>                            | <b>0.9%</b>                            | <b>950736</b>                   | <b>0.3%</b>                            | <b>0.4%</b>                            |
| <i>Sydney</i>   | 4386738                     | 1.2%                                   | 1.1%                                   | 618935                          | 0.4%                                   | 0.6%                                   |
| <i>Rest of New South Wales</i>  | 2577525                     | 0.9%                                   | 0.7%                                   | 331801                          | 0.1%                                   | 0.0%                                   |
| <b>Victoria</b>   | <b>5284622</b>              | <b>1.4%</b>                            | <b>1.2%</b>                            | <b>737955</b>                   | <b>0.4%</b>                            | <b>0.7%</b>                            |
| <i>Melbourne</i>  | 3870499                     | 1.6%                                   | 1.4%                                   | 555710                          | 0.6%                                   | 0.9%                                   |
| <i>Rest of Victoria</i>   | 1414123                     | 0.8%                                   | 0.6%                                   | 182245                          | -0.2%                                  | 0.0%                                   |
| <b>Queensland</b>   | <b>4273720</b>              | <b>2.1%</b>                            | <b>1.8%</b>                            | <b>602776</b>                   | <b>1.3%</b>                            | <b>1.3%</b>                            |
| <i>Brisbane</i>   | 1897248                     | 2.1%                                   | 1.8%                                   | 287088                          | 1.3%                                   | 1.4%                                   |
| <i>Rest of Queensland</i>   | 2376472                     | 2.1%                                   | 1.7%                                   | 315688                          | 1.3%                                   | 1.2%                                   |
| <b>South Australia</b>  | <b>1600445</b>              | <b>1.0%</b>                            | <b>0.8%</b>                            | <b>217609</b>                   | <b>0.0%</b>                            | <b>0.3%</b>                            |
| <i>Adelaide</i>   | 1169922                     | 1.0%                                   | 0.9%                                   | 167437                          | 0.1%                                   | 0.4%                                   |
| <i>Rest of South Australia</i>  | 430523                      | 0.9%                                   | 0.7%                                   | 50172                           | -0.6%                                  | -0.1%                                  |
| <b>Western Australia</b>  | <b>2152914</b>              | <b>2.0%</b>                            | <b>1.7%</b>                            | <b>307089</b>                   | <b>0.8%</b>                            | <b>1.1%</b>                            |
| <i>Perth</i>  | 1589672                     | 2.1%                                   | 1.8%                                   | 238363                          | 1.1%                                   | 1.3%                                   |
| <i>Rest of Western Australia</i>  | 563242                      | 1.6%                                   | 1.3%                                   | 68726                           | -0.2%                                  | 0.4%                                   |
| <b>Tasmania</b>   | <b>497747</b>               | <b>0.7%</b>                            | <b>0.5%</b>                            | <b>65523</b>                    | <b>-0.5%</b>                           | <b>-0.1%</b>                           |
| <i>Hobart</i>   | 209872                      | 0.9%                                   | 0.8%                                   | 29812                           | -0.5%                                  | 0.3%                                   |
| <i>Rest of Tasmania</i>   | 87875                       | 0.4%                                   | 0.2%                                   | 35711                           | -0.5%                                  | -0.4%                                  |
| <b>Northern Territory</b>   | <b>219543</b>               | <b>1.5%</b>                            | <b>1.4%</b>                            | <b>34388</b>                    | <b>0.5%</b>                            | <b>0.9%</b>                            |
| <i>Darwin</i>   | 120638                      | 1.9%                                   | 1.6%                                   | 17875                           | 0.7%                                   | 1.1%                                   |
| <i>Rest of Northern Territory</i>   | 98905                       | 1.1%                                   | 1.0%                                   | 16513                           | 0.3%                                   | 0.7%                                   |
| <b>Australian Capital Territory</b>   | <b>343806</b>               | <b>1.1%</b>                            | <b>1.0%</b>                            | <b>54374</b>                    | <b>-0.1%</b>                           | <b>0.4%</b>                            |
| <b>Australia</b>  | <b>21339473</b>             | <b>1.4%</b>                            | <b>1.2%</b>                            | <b>2970749</b>                  | <b>0.5%</b>                            | <b>0.7%</b>                            |

*Note: State/territory regions may not sum to total due to rounding*

*Source: Access Economics 2008*

The Access Economics analysis shows significant population growth of between 0.8% and 2.1% per annum in non-capital city areas of every State and Territory except Tasmania to 2018. The picture is similar for the period to 2038, with average annual growth rates of between 0.6% and 1.7% for non-capital city areas of every State and Territory except Tasmania. In Tasmania the regional population is still anticipated to grow, but by an average of 0.4% per annum to 2018 and 0.2% per annum to 2038.

For the 15 to 24 year old group, the projected growth rate nationally is much lower than for the total population, reflecting the ageing of the Australian population. Nonetheless, the numbers in this age group are expected to remain largely unchanged to 2038 in non-capital city areas of New South Wales and Victoria, with a decline in South Australia (average annual decline of 0.1%), modest growth in Western Australia (average annual growth of 0.4%) and significant growth in the Northern Territory (0.7% p.a.) and Queensland (1.2% p.a.). Again the only non-capital city region projected to experience substantial decline in the 15 to 24 year old population is in Tasmania (average annual decline of 0.4% to 2038).

We have looked in more detail at the outlook for population growth by age in Australia's regions. The ABS provides three projections of the Australian population. We have used Projection B, the middle projection, as the best base for considering potential changes in the population make up to 2025. This is the year used by the Australian Government in its recently announced attainment target. The Government's ambition is that by 2025, 40% of all 25 to 34 year olds will hold a qualification level at bachelor level or above. The Government estimates that achievement of this ambition will require 217,000 additional graduates by 2025. Table 3.4 sets out the changing age profile between 2006 and 2025 and the differences in the profiles between the capitals and the regions.

As the population grows to a projected 26.9 million in 2025 there is strong nation-wide population growth across all age groups but particularly among those aged over 55. The growth in the older population is common across capitals and regions, but is more pronounced in regional areas.

**Table 3.4 Australia's age distribution 2006 and 2025 by capital and region**

|                          | 2006       |           | 2025       |           |
|--------------------------|------------|-----------|------------|-----------|
|                          | Capitals   | Regions   | Capitals   | Regions   |
| Age                      |            |           |            |           |
| <b>0 - 15</b>            | 19%        | 22%       | 19%        | 19%       |
| <b>16 - 25</b>           | 15%        | 13%       | 13%        | 11%       |
| <b>26 - 35</b>           | 16%        | 12%       | 15%        | 12%       |
| <b>36 - 45</b>           | 15%        | 14%       | 14%        | 13%       |
| <b>46 - 55</b>           | 14%        | 14%       | 12%        | 12%       |
| <b>56 - 65</b>           | 10%        | 11%       | 11%        | 13%       |
| <b>66-100+</b>           | 12%        | 14%       | 16%        | 20%       |
| Total                    | 100%       | 100%      | 100%       | 100%      |
|                          | 12,947,169 | 7,532,214 | 17,399,419 | 9,514,342 |
| Growth from 2006 to 2025 |            |           | 34%        | 26%       |

By 2025:

- The total population in regional areas is projected to grow by 26% compared with 34% for the capital cities
- The proportion of the population under 15 will be the same in both capital city and regional areas (19%), unchanged for the cities but a decline of three percentage points in the regions.
- The prime higher education cohort will decline as a proportion of the population in both the capital city and regional areas.
- The proportion of the working age (16 to 55 year old) population will decline from 60% to 54% in the cities and from 54% to 48% in the regions
- The over 55 population will grow from 22% to 25% in the capitals and from 27% to 33% in the regions.

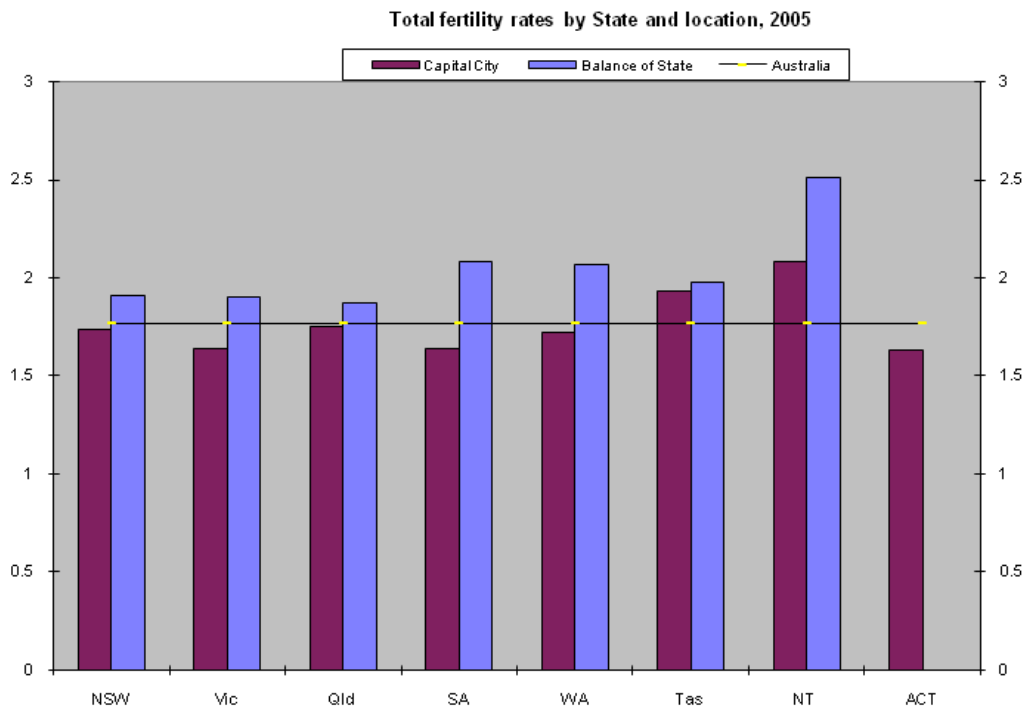
Once again however, it is important to consider the wide variations between States and individual regions in these patterns. For example:

- In NSW the regions overall are projected to experience little growth, with those aged to 15 projected to decline by 2%. The most positive growth is for the 26 to 35 age group (+8%). There are however strong regional differences.
- In Victoria the regions show little or no growth, other than for the 26 to 35 age group (+10%).
- In Qld, WA, and NT growth is strong in both the capital city and other regions. In Qld there is little difference across the State, in WA the non capital areas have lower, but still strong, growth.
- In SA and Tasmania the outlook is for little growth overall, with reductions in non-capital regions. Tasmania in particular is projected to have fewer people across all age groups outside of Hobart.
- The position in the Northern Territory is distinct with the large Indigenous population outside of Darwin. The aged population is proportionately smaller than elsewhere and the proportion of young people is higher.

An additional demographic factor worth noting for the longer term is the higher than average fertility rates in regional areas.

As shown in Figure 3.4, fertility rates are higher in regions outside of the capital cities in every State and Territory than they are in the capital cities or for Australia as a whole (although mortality rates are also higher in regional areas).

**Figure 3.4 Fertility rates by State and location**



Source: ABS 2006, Hugo 2007

### 3.2 *Indigenous population*

Of particular note in this context is the markedly different demographics of Australia's indigenous population<sup>58</sup>.

Relative to the nation as a whole, the Aboriginal and Torres Strait Islander population is much younger and growing much faster.

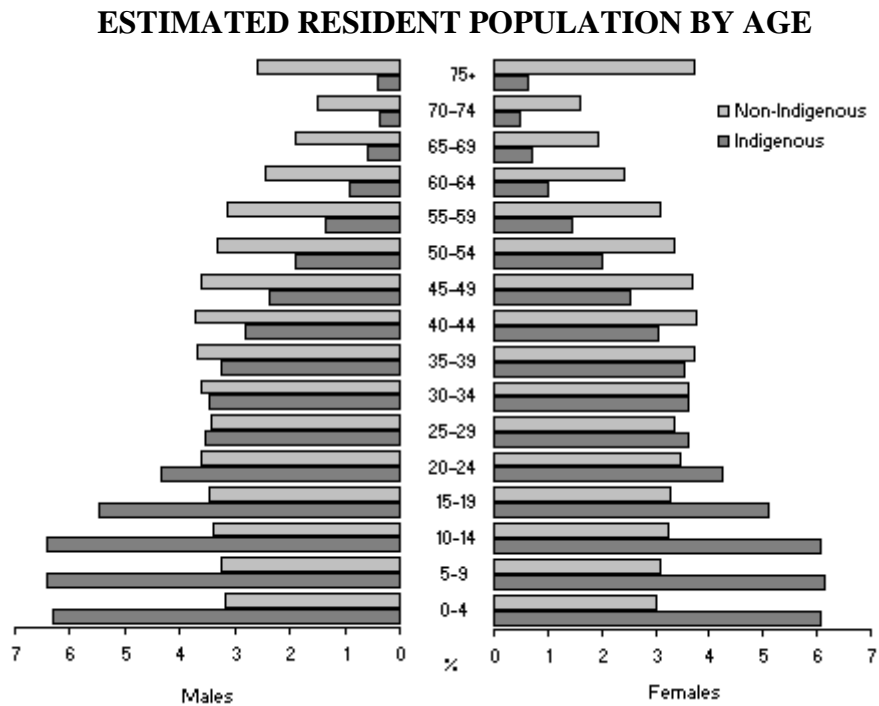
The number of people identified as being of Aboriginal and/or Torres Strait Islander origin in the 2006 Census was 455,028 representing 2.3% of the total Australian population. This was an increase of 11% since the 2001 Census, compared with an increase of 3.8% in the non-Indigenous population over the same period. Over the 20 years to 2006, the Census count of Indigenous people doubled from 227,593 in 1986. In 2006, half the Indigenous population was aged 21 years or less. In contrast, in the non-Indigenous population, half the population was aged 37 years or less.

---

<sup>58</sup> Data and Figures in this section are drawn from ABS Cat No. 4713.0 - Population Characteristics, Aboriginal and Torres Strait Islander Australians, 2006

Children aged under 15 years comprised 38% of the total Indigenous population (compared with 19% in the non-Indigenous population); people aged 15-24 years comprised 19% of the Indigenous population (compared with 14% in the non-Indigenous population) (see Figure 3.5).

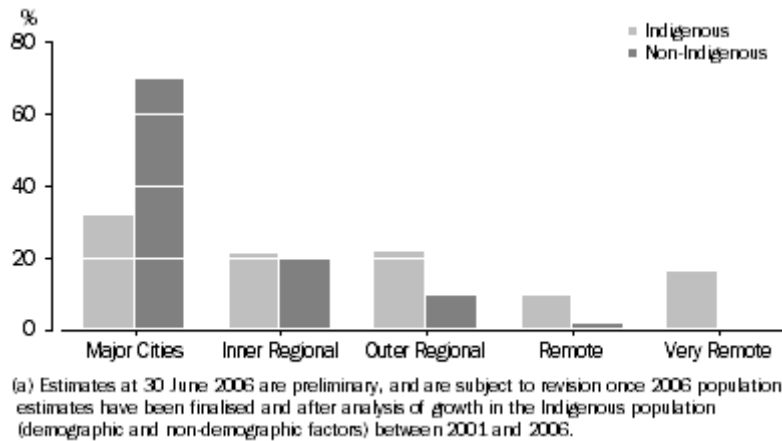
**Figure 3.5 Indigenous and Non-Indigenous populations by age, 2006**



These patterns are significant for regional higher education because of the relatively high proportion of Indigenous Australians living outside of the major cities. While more than one third of Indigenous people live in the capital cities, in 2006 22% of the Indigenous population lived in outer regional areas; 10% in remote areas and 16% in very remote areas. This contrasts with less than 2% of the non-Indigenous population that live in remote and very remote Australia (see Figure 3.6).

**Figure 3.6 Indigenous population distribution, 2006**

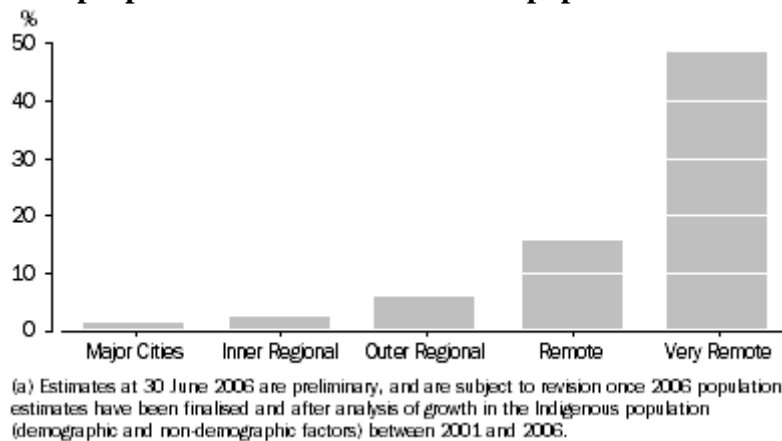
**ESTIMATED RESIDENT POPULATION <sup>(a)</sup> BY REMOTENESS AREAS**  
 30 June 2006



As a result of this difference in population distribution, the Indigenous proportion of the total population increased with geographic remoteness, from 1% of the total population living in major cities to 48% living in very remote areas (see figure 3.7).

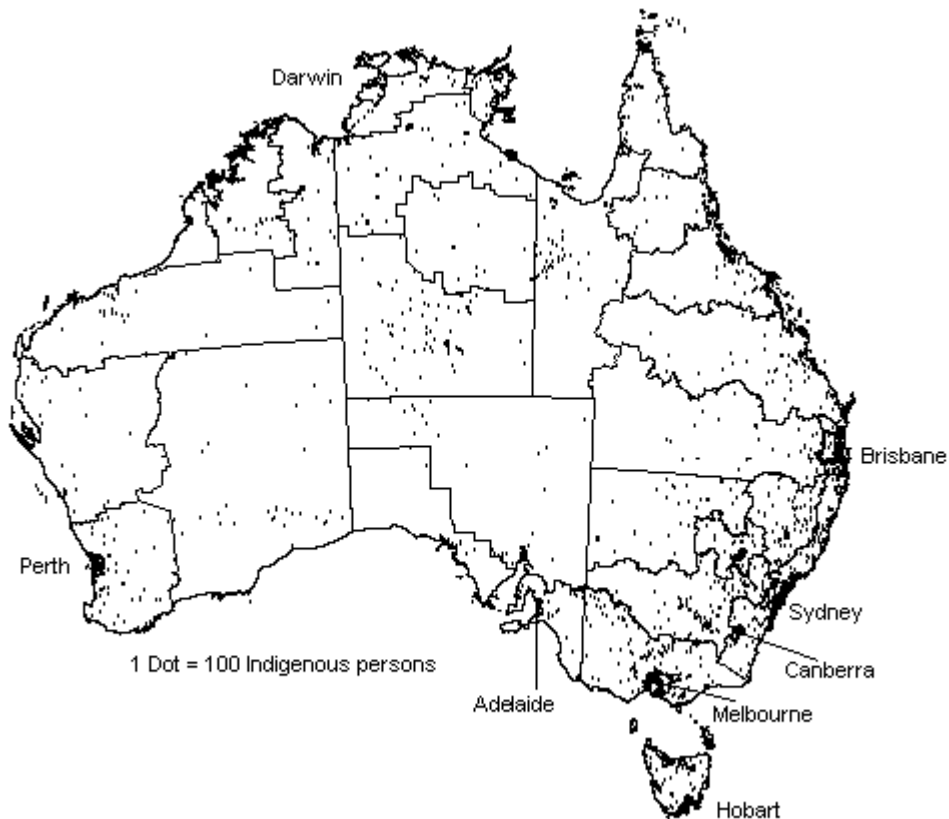
**Figure 3.7 Indigenous people as a proportion of the population, 2006**

**Indigenous proportion of estimated resident population <sup>(a)</sup> 30 June 2006**



The Indigenous population is widely spread over the States and Territories (see Figure 3.8). In 2006, the largest numbers lived in either New South Wales (29%) or Queensland (28%); 15% resided in Western Australia and 13% in the Northern Territory. The Northern Territory had the largest proportion (45%) of its Indigenous population living in Remote and Very Remote areas, with four-fifths (79%) of its Indigenous population living in these areas.

**Figure 3.8 Indigenous population distribution, 2006**



Source: ABS Cat No. 4713.0

This wide geographic dispersion of the Indigenous population presents special challenges for the provision of higher education opportunities. All universities strive to attract, support and retain indigenous students, but struggle with small numbers and the costs of maintaining special programs and services. Effective delivery to Indigenous students in more remote areas is even more difficult and expensive on a per student basis.

### **3.3 Low Socio-economic status**

The socio-economic profile of regional areas varies markedly around the country. The distribution of lower SES areas is of particular interest in the context of the Australian Government's goals for increased higher education participation by students from low SES backgrounds. The Government has set a target that by 2020, 20 per cent of higher education enrolments at the undergraduate level will be of people from a low SES background. Achievement of this target will require a particular focus on the provision of higher education in relatively disadvantaged areas around the country.

There are several different ways of measuring social disadvantage. The ABS has developed four Socio-Economic Indexes for Areas (SEIFA) which summarise a range of socio-economic variables associated with disadvantage. These indexes are a measure of relative disadvantage and relate to geographical areas. This makes the indexes useful for this study,

but it is important to stress that they apply to a geographic area and should not be presumed to apply to all individuals living within the area.

The Index of Relative Socio-Economic Advantage/Disadvantage (IRSAD) summarises variables that represent both advantage and disadvantage. For example, the index includes variables such as high income, low income, professional occupation, as well as people employed in unskilled occupations. Inclusion of both types of variables – indicators of advantage and disadvantage – in a single index, allows the index to be used as a measure of advantage and disadvantage in a continuum. Areas with a low index score can be categorised as relatively disadvantaged areas and areas with higher scores can be categorised as relatively advantaged areas.

It is possible to rank all statistical local areas (SLAs) according to their IRSAD score. This allows us to identify where the relatively disadvantaged areas are and how many people live in them. We can also aggregate to the statistical division (SD) level and identify the proportion of the population in the SD that lives in relatively disadvantaged areas. For the purposes of this analysis we have classified areas with IRSAD scores in the lowest three deciles in the country to be disadvantaged areas.<sup>59</sup> The results are summarised in the following three tables. Table 3.5 shows the population living in disadvantaged areas outside of the capital cities in 2006, by State. Overall, 68.4% of all people living in disadvantaged areas reside outside of the capital cities.

**Table 3.5 Population living in disadvantaged areas outside of capital cities**

| <b>Population living in disadvantaged areas (SLAs ranked in IRSDA deciles 1 - 3) outside of capital cities, 2006</b> |                |
|--|----------------|
| New South Wales  | 618346         |
| Victoria   | 438806         |
| Queensland   | 539753         |
| South Australia  | 259669         |
| Western Australia  | 106020         |
| Tasmania   | 239573         |
| Northern Territory   | 44250          |
| Australian Capital Territory   | 0              |
| <b>TOTAL outside of capital cities</b>   | <b>2246417</b> |
| <b>TOTAL</b>   | <b>3282744</b> |
| <b>% outside of capital cities</b>   | <b>68.4%</b>   |

Source: ABS Cat No 2033.0.55.001 - Socio-economic Indexes for Areas (SEIFA), Data only, 2006

Table 3.6 presents this information by statistical division. It shows that the largest concentrations of people living in disadvantaged areas are in the large capital cities.

---

<sup>59</sup> Note: This is a slightly broader definition than that used to classify higher education enrolments as low SES in section 2.3.8.



**Table 3.6 Population living in disadvantaged area by Statistical Division**

| Population living in disadvantaged areas, 2006 (sorted by population living in SLAs ranked in IRSDA deciles 1 - 3) |   |                                    |   |
|--|---|------------------------------------|---|
| Statistical Division (sorted by population living in SLAs ranked in IRSDA deciles 1 - 3)                           | Population living in SLAs ranked in IRSDA deciles 1 - 3 | Population in Statistical Division | Proportion of population in SD living in SLAs ranked in IRSDA deciles 1 - 3 |
| Statistical Division   |   |                                    |   |
| Melbourne  | 327070  | 3592593                            | 9%  |
| Sydney   | 235471  | 4119190                            | 6%  |
| Adelaide   | 221467  | 1105838                            | 20%   |
| Brisbane   | 180097  | 1763131                            | 10%   |
| Wide Bay-Burnett   | 176877  | 254660                             | 69%   |
| Mid-North Coast NSW  | 138572  | 284676                             | 49%   |
| Mersey-Lyell   | 105401  | 106129                             | 99%   |
| Northern Tas   | 101861  | 133931                             | 76%   |
| Darling Downs  | 94530   | 210168                             | 45%   |
| Far North Qld  | 93839   | 231052                             | 41%   |
| Northern NSW   | 86516   | 172395                             | 50%   |
| Hunter   | 83773   | 589239                             | 14%   |
| Central West NSW   | 75697   | 170898                             | 44%   |
| Mallee   | 71929   | 88599                              | 81%   |
| Northern SA  | 69942   | 75821                              | 92%   |
| Murray Lands   | 66802   | 66802                              | 100%  |
| Barwon   | 65773   | 259011                             | 25%   |
| Greater Hobart   | 64073   | 200525                             | 32%   |
| Goulburn   | 61270   | 195238                             | 31%   |
| Murrumbidgee   | 60478   | 147294                             | 41%   |
| Gippsland  | 57951   | 159472                             | 36%   |
| West Moreton   | 52988   | 68628                              | 77%   |
| Northern Qld   | 52521   | 196669                             | 27%   |
| North Western NSW  | 50786   | 111228                             | 46%   |
| Loddon   | 46574   | 168841                             | 28%   |
| Northern Territory - Bal   | 44250   | 83416                              | 53%   |
| East Gippsland   | 41706   | 80116                              | 52%   |
| South Eastern NSW  | 38233   | 197941                             | 19%   |
| South East SA  | 37707   | 62217                              | 61%   |
| Yorke and Lower North  | 35734   | 43878                              | 81%   |
| Murray   | 32421   | 110525                             | 29%   |
| Southern Tas   | 32311   | 34930                              | 93%   |
| Central WA   | 32070   | 57431                              | 56%   |
| Richmond-Tweed   | 30569   | 219328                             | 14%   |
| Wimmera  | 29946   | 48440                              | 62%   |
| Eyre   | 25917   | 33328                              | 78%   |
| South West WA  | 25887   | 207342                             | 12%   |
| Western District Vic   | 25225   | 98857                              | 26%   |
| Outer Adelaide   | 23567   | 123699                             | 19%   |
| Gold Coast   | 22275   | 482319                             | 5%  |
| Far West NSW   | 21301   | 22030                              | 97%   |
| Ovens-Murray   | 20620   | 92587                              | 22%   |
| Midlands WA  | 18723   | 50414                              | 37%   |
| Central Highlands  | 17812   | 142215                             | 13%   |
| Mackay   | 17786   | 150174                             | 12%   |
| Kimberley  | 16239   | 29297                              | 55%   |
| South West Qld   | 9199  | 28367                              | 32%   |
| North West Qld   | 7896  | 29853                              | 26%   |
| Fitzroy  | 7481  | 188404                             | 4%  |
| Darwin   | 7437  | 105563                             | 7%  |
| Lower Great Southern WA  | 4869  | 52594                              | 9%  |
| Upper Great Southern WA  | 4707  | 17714                              | 27%   |
| Central West Qld   | 4361  | 10851                              | 40%   |
| South Eastern WA   | 3525  | 51893                              | 7%  |
| Canberra   | 712   | 321224                             | 0%  |
| Illawarra  | 0   | 394213                             | 0%  |
| Sunshine Coast   | 0   | 276266                             | 0%  |
| Perth  | 0   | 1445077                            | 0%  |
| Pilbara  | 0   | 41001                              | 0%  |
| Australian Capital Territory - Bal   | 0   | 269                                | 0%  |

Source: ABS Cat No 2033.0.55.001 - Socio-economic Indexes for Areas (SEIFA), Data only, 2006

As highlighted in Table 3.7, people living in disadvantaged areas make up a much higher proportion of the population in regional areas. In 27 statistical divisions, over one third of the population live in disadvantaged areas. All of these SDs are in regional areas.

**Table 3.7 Proportion of population living in disadvantaged area by SD**

| Population living in disadvantaged areas, 2006 (sorted by proportion of population living in SLAs ranked in IRSAD deciles 1 - 3) |   |                                    |   |
|--|---|------------------------------------|---|
| Statistical Division   | Population living in SLAs ranked in IRSAD deciles 1 - 3 | Population in Statistical Division | Proportion of population in SD living in SLAs ranked in IRSAD deciles 1 - 3 |
| Murray Lands   | 66802   | 66802                              | 100%  |
| Mersey-Lyell   | 105401  | 106129                             | 99%   |
| Far West NSW   | 21301   | 22030                              | 97%   |
| Southern Tas   | 32311   | 34930                              | 93%   |
| Northern SA  | 69942   | 75821                              | 92%   |
| Yorke and Lower North  | 35734   | 43878                              | 81%   |
| Mallee   | 71929   | 88599                              | 81%   |
| Eyre   | 25917   | 33328                              | 78%   |
| West Moreton   | 52988   | 68628                              | 77%   |
| Northern Tas   | 101861  | 133931                             | 76%   |
| Wide Bay-Burnett   | 176877  | 254660                             | 69%   |
| Wimmera  | 29946   | 48440                              | 62%   |
| South East SA  | 37707   | 62217                              | 61%   |
| Central WA   | 32070   | 57431                              | 56%   |
| Kimberley  | 16239   | 29297                              | 55%   |
| Northern Territory - Bal   | 44250   | 83416                              | 53%   |
| East Gippsland   | 41706   | 80116                              | 52%   |
| Northern NSW   | 86516   | 172395                             | 50%   |
| Mid-North Coast NSW  | 138572  | 284676                             | 49%   |
| North Western NSW  | 50786   | 111228                             | 46%   |
| Darling Downs  | 94530   | 210168                             | 45%   |
| Central West NSW   | 75697   | 170898                             | 44%   |
| Murrumbidgee   | 60478   | 147294                             | 41%   |
| Far North Qld  | 93839   | 231052                             | 41%   |
| Central West Qld   | 4361  | 10851                              | 40%   |
| Midlands WA  | 18723   | 50414                              | 37%   |
| Gippsland  | 57951   | 159472                             | 36%   |
| South West Qld   | 9199  | 28367                              | 32%   |
| Greater Hobart   | 64073   | 200525                             | 32%   |
| Goulburn   | 61270   | 195238                             | 31%   |
| Murray   | 32421   | 110525                             | 29%   |
| Loddon   | 46574   | 168841                             | 28%   |
| Northern Qld   | 52521   | 196669                             | 27%   |
| Upper Great Southern WA  | 4707  | 17714                              | 27%   |
| North West Qld   | 7896  | 29853                              | 26%   |
| Western District Vic   | 25225   | 98857                              | 26%   |
| Barwon   | 65773   | 259011                             | 25%   |
| Ovens-Murray   | 20620   | 92587                              | 22%   |
| Adelaide   | 221467  | 1105838                            | 20%   |
| South Eastern NSW  | 38233   | 197941                             | 19%   |
| Outer Adelaide   | 23567   | 123699                             | 19%   |
| Hunter   | 83773   | 589239                             | 14%   |
| Richmond-Tweed   | 30569   | 219328                             | 14%   |
| Central Highlands  | 17812   | 142215                             | 13%   |
| South West WA  | 25887   | 207342                             | 12%   |
| Mackay   | 17786   | 150174                             | 12%   |
| Brisbane   | 180097  | 1763131                            | 10%   |
| Lower Great Southern WA  | 4869  | 52594                              | 9%  |
| Melbourne  | 327070  | 3592593                            | 9%  |
| Darwin   | 7437  | 105563                             | 7%  |
| South Eastern WA   | 3525  | 51893                              | 7%  |
| Sydney   | 235471  | 4119190                            | 6%  |
| Gold Coast   | 22275   | 482319                             | 5%  |
| Fitzroy  | 7481  | 188404                             | 4%  |
| Canberra   | 712   | 321224                             | 0%  |
| Illawarra  | 0   | 394213                             | 0%  |
| Sunshine Coast   | 0   | 276266                             | 0%  |
| Perth  | 0   | 1445077                            | 0%  |
| Pilbara  | 0   | 41001                              | 0%  |
| Australian Capital Territory - Bal   | 0   | 269                                | 0%  |

Source: ABS Cat No 2033.0.55.001 - Socio-economic Indexes for Areas (SEIFA), Data only, 2006

### 3.4 Impact of government policy, technological and industry change

It is worth noting here that some aspects of the variation in demographic patterns provide evidence of the influence that government policy, technological and industry change can have on regional development.

For example, the population in the Riverina and Central West of New South Wales has averaged modest growth of about 0.4% p.a. over the last decade, concentrated mainly in the major towns in the region. Of these, Wagga Wagga has had particularly strong recent growth (1.8% p.a. since 2006), building on the further development of CSU and the RAAF base. There is no doubt that the presence of the University has brought major economic benefits and has helped to attract and retain people and jobs despite the period of downturn in the rural industries, especially irrigated agriculture. This contrasts with the other towns in the region which have less diversified economic bases and have experienced net population decline, associated for example with the decline in rice production.

The recent investment of \$65.1 million by the Federal Government to establish a new dental and oral health program at CSU demonstrates the significant impact of government funding policies on regional communities. A study by the Western Research Institute estimated the impact of the new dental and oral health program on inland NSW when the program is fully operational.<sup>60</sup> It concluded that in the operational phase the program would generate \$12.3 million in gross regional product, \$8.27 million in household income and 227 full-time equivalent jobs when flow-on effects are taken into account. This is additional to the 906 jobs created in the construction phase and more than \$52 million in gross regional product and \$24.7 million in household income.

The new program has also attracted highly skilled professionals and academics from the United States, Singapore and New Zealand to live in inland NSW. Allied to the program, CSU is also establishing 5 new community dental clinics in major inland centres that will provide 30,000 patient consultations when fully operational helping to reduce the waiting times for dental services across inland areas. As part of the clinical experience program for students, CSU has entered into agreements with dental surgeons to conduct part of their practice at CSU campuses bringing new medical services to inland communities that were not previously available. These spillover effects contribute to the attractiveness of regional communities as places to live and work and provides the underpinning infrastructure that helps sustain and grow populations over time.

An unknown but potentially significant factor here is the impact of the roll out of broadband access to regional Australia. Already there is case study evidence of the economic benefits to regional areas of the development of the World Wide Web and the initial extensions of broadband capacity. With these developments, knowledge based industries and firms that are substantially location independent are able to operate effectively in regional areas, providing lifestyle benefits to their employees and potentially lower operating costs than locations in capital cities. Indeed, PhillipsKPA is an example of this type of business, with its administrative office in Melbourne but employees and small offices located in several regional areas. Existing businesses in regional areas are able to reach global markets and operate at larger scales and with greater efficiency than ever before. This includes not only enterprises in knowledge industries, such as regional universities, but also those in traditional sectors including agriculture and manufacturing.

---

<sup>60</sup> Western Research Institute Ltd, 2008, School of Dentistry and Oral Health Economic Impact Report downloaded from <http://news.csu.edu.au/director/latestnews/health/dentistry.cfm?itemID=147CAA62CEC74132AED7186512BD32BD&printtemplate=release>.

In a recent speech to the Australian Telecommunications Users Group Regional Communications Conference<sup>61</sup>, Senator the Hon Stephen Conroy observed that broadband access means that:

*Regional and rural companies can reach new trade partners and opportunities across the country or across the world. City-based employers can also use broadband to support a decentralised workforce spread throughout our regional areas.*

He noted the example of the Yorke Peninsula in South Australia:

*The Yorke Peninsula in South Australia is a case in point. The region has a population of just over 11,000 people with 35% employed primarily in agriculture. Population is decreasing.*

*In 2005, broadband arrived on the Yorke Peninsula. A study produced two years afterwards estimated that broadband was delivering \$9.4 million in benefits annually. Local businesses are collaborating and trading with partners in distant locations, while doctors are using broadband to transfer medical files and access records.*

This reflects findings by the European Union through a study of the impact of two regional broadband development programs in Cornwall (UK) and Piedmont (Italy):

*Both programmes focus on the adoption of value-added broadband services in companies and in public services. Four years after the start of the actnow programme, 10% additional yearly growth and 7% additional productivity increase per year in the business services sector can be observed in Cornwall as compared to the rest of the country. Two years after the start of the WI-PIE programme, the regional IT observatory recorded progress of 9% per year on average in the regional broadband-related economic indicators.<sup>62</sup>*

Similarly, a study in the United States examined economic growth in Lake County Florida, which had invested in an extensive fibre optic broadband network, compared to similar counties:

*Our econometric model indicates that Lake County has experienced a 100% increase – a doubling – in economic growth relative to its Florida peer counties since offering its municipally owned broadband network broadly to public and private entities ... Our findings are consistent with other analyses postulating that broadband infrastructure can be a significant contributor to economic growth.<sup>63</sup>*

---

<sup>61</sup> Conroy, S, 2009, Speech to the ATUG Regional Communications Conference, Australian War Memorial, 21 May 2009.

<sup>62</sup> European Commission, 2008, The Impact of Broadband on Growth and Productivity, downloaded from [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/benchmarking/broadband\\_impact\\_2008.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/broadband_impact_2008.pdf)

<sup>63</sup> Ford and Koutsky, 2005, Broadband and Economic Development: A Municipal Case Study from Florida, Applied Economic Studies downloaded from <https://wiki.internet2.edu/.../Seminoles+Co+broadband+study.pdf>

The full impact of these developments on regional demographics is as yet unknown. The early evidence, both from Australia and other countries, is that the new information and communications technologies have the potential to support more decentralised economic and population growth.

For example, there are well over one million Australians operating in excess of 850,000 home-based businesses (Australian Bureau of Statistics 2005). A recent study concludes that they are particularly important as key drivers of both economic and community sustainability in rural and regional areas.<sup>64</sup>

Localised home business operations:

- Provide an important part of social connectivity for people when consideration is given to people's preferences to be able to shop, socialise and transact close to where they live and work; and
- Are more likely than big business to encourage money to stay within local communities which potentially fosters a healthy local economy through wealth and further job creation.

### 3.5 *Summary*

In summary, while recent and projected population growth is generally lower in regional areas than in the capital cities, demographic change is unlikely to result in a decline in aggregate demand for higher education across the regional areas of most States, with the exception of Tasmania and possibly South Australia. Within this aggregate picture there is significant variation in the patterns of population growth and decline between regions, with substantial growth in demand likely in parts of Western Australia, Queensland and New South Wales (especially coastal regions).

The outlook for the Indigenous population is quite different. Compared with the nation as a whole, the Indigenous population is much younger, and growing much faster. It is also much more concentrated in the areas served by regional universities. In 2006 22% of the Indigenous population lived in outer regional areas; 10% in remote areas and 16% in very remote areas.

Similarly, while the socio-economic profile of regional areas varies markedly around the country, 68.4% of all people living in disadvantaged areas reside outside of the capital cities.

The demographic and economic outlook for any region may be influenced significantly by government policy, technological and industry change.

There are a number of implications in this analysis for the NURA concept:

- Demographic change does not present a case for a reduction in higher education provision across regional Australia as a whole. In fact there will be a need for significant growth in supply in some regional areas.

---

<sup>64</sup> Wang C, E Walker, J Redmond & J Breen 2008 'Home-based business: Australia's hidden economic engine', *Monash Business Review*, vol. 4, no. 2, July 2008.

- In particular there will be increased demand for higher education in coastal regions of New South Wales and Queensland.
- Limited population growth, especially in the prime higher education age groups, will constrain local demand for higher education from domestic students in north western and south western New South Wales, increasing the importance of success in distance/digital and international education for some universities and the need to attract domestic students from outside their immediate regions.
- Policy decisions in relation to higher education can influence demographic patterns in regional areas.
- Enhancement of regional higher education provision will be important to the achievement of the Government's targets for higher education attainment and participation by students from low SES backgrounds, as well as its broader objectives for social inclusion.

### **3.6      *Is current regional provision meeting labour market needs?***

The graduate workforce in regional Australia is educated in both regional and metropolitan institutions, but the evidence is clear that regional universities play an essential role in meeting the needs of regional labour markets. As set out in chapter 1, a high proportion of the graduates of regional universities remains and works in regional areas.

The evidence is also clear that there have been persistent shortages of professionals in certain occupations across most States and Territories and especially in areas of regional Australia.

DEEWR conducts regular surveys of employers nationally and in every State and Territory to assess the extent to which they are experiencing difficulty recruiting suitable staff in specific occupations. The Department also analyses occupational demand and supply, taking into account, among other factors, net migration and the output of university graduates. These surveys and analyses consider not only the extent of shortage or recruitment difficulty at a State level, but also whether there are particular issues evident in regional versus metropolitan areas.

The findings of the employer surveys and occupational analyses are summarised in State and Territory Skill Shortages Lists and in occupation-specific reports. At the summary level, DEEWR uses six codes in relation to each occupation as follows:

- S            state wide shortage
- M            metropolitan shortage
- R            regional shortage
- D            state wide recruitment difficulty
- M-D        metropolitan recruitment difficulty
- R-D        regional recruitment difficulty

*Skill shortages exist when employers are unable to fill or have considerable difficulty in filling vacancies for an occupation, or specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and reasonably accessible location.*

*Shortages are typically for specialised and experienced workers, and can coexist with relatively high unemployment overall or in the occupation. An occupation may be in shortage even though not all specialisations are in shortage. Occupations may be in shortage in particular geographical areas and not in others. Skill shortages generally involve skills that require a significant period of training and/or experience.*

*Recruitment difficulties may be due to characteristics of the industry, occupation or employer, such as: relatively low remuneration, poor working conditions, poor image of the industry, unsatisfactory working hours, location hard to commute to, inadequate recruitment or firm-specific and highly-specialised skill needs.*

We have compiled the most recent DEEWR assessments of managerial, professional and associate professional occupations showing some level of skill shortage or recruitment difficulty in any State or Territory. The results are shown in Table 3.8. Any occupation marked 'S' (state wide shortage), R (regional shortage) or R-D (regional recruitment difficulty) was experiencing some level of skill shortage in regional areas and/or across the relevant State or Territory at the time of the most recent DEEWR assessment.

The highlighted cells in the table also indicate where the assessments made particular mention of skill shortage or recruitment difficulty in regional areas. Thus, for example, there were state wide shortages of engineering managers in all States other than WA (where there were recruitment difficulties) and Tasmania. In New South Wales, DEEWR reported that shortages were particularly evident in regional areas.

**Table 3.8 Skill shortages in Australia** (Source: DEEWR)

**All States Skill Shortage List: Managers, Professionals and Associate Professionals**

Exc Information and Communications Technology

| ASCO                           | Occupation                         | NSW    | Vic | Qld | SA | WA  | Tas    | NT | ACT | Rating AUS. |
|--------------------------------|------------------------------------|--------|-----|-----|----|-----|--------|----|-----|-------------|
| <b>Managers</b>                |                                    |        |     |     |    |     |        |    |     |             |
| 122111                         | Engineering Manager                | S      | S   | S   | S  | D   |        | S  | S   |             |
| 122211                         | Production Manager (Manufacturing) | D      | S   | S   |    |     |        |    |     |             |
| 122213                         | Production Manager (Mining)        | D      |     | S   |    | S   |        |    |     |             |
| 129211                         | Director of Nursing                | S      |     | S   |    | D   | S      | S  |     |             |
| 129511                         | Child Care Co-ordinator            | S      |     | S   | S  | S   | R      | S  | S   |             |
| <b>Professionals</b>           |                                    |        |     |     |    |     |        |    |     |             |
| 211211                         | Geologist                          | S      | S   | S   |    | S   |        | S  |     |             |
| 211411                         | Environmental Research Scientist   |        |     |     |    |     |        |    |     | D           |
| 211419                         | Agricultural Scientist             | S      | S   | S   | S  |     |        | S  |     |             |
| 211421                         | Agricultural Adviser               | S      | S   | S   | S  |     |        | S  |     |             |
| 211511                         | Medical Scientist                  |        |     |     |    |     |        |    |     | D           |
| 212111                         | Architect                          | S      | M-D | S   | S  | S   | S      | S  |     | S           |
| 212113                         | Landscape Architect                |        |     |     |    |     |        |    |     | D           |
| 212211                         | Quantity Surveyor                  | M      |     | S   | S  | S   | S      | S  | S   | S           |
| 212313                         | Surveyor                           | S      |     | S   | S  | S   | S      | S  | S   | S           |
| 212411                         | Civil Engineer                     | S      | S   | S   | S  | S   | S      | S  | S   |             |
| 212511                         | Electrical Engineer                | S      | S   | S   | S  | S   | S      | S  | S   |             |
| 212513                         | Electronics Engineer               | S      |     | S   | S  | S   |        |    | S   | S           |
| 212611                         | Mechanical Engineer                | S      | S   | S   | S  | S   | S      | S  | S   |             |
| 212613                         | Production or Plant Engineer       | S      | S   | S   |    |     |        |    |     |             |
| 212711                         | Mining Engineer (exc Petroleum)    | S      | S   | S   |    | S   |        | S  |     |             |
| 212917                         | Chemical Engineer                  | S      |     | S   | D  | S   |        |    |     | S           |
| 221111                         | Accountant                         | M-D; R | R   | S   | S  | S   | S      | S  | S   |             |
| 221211                         | External Auditor                   | S      | S   | S   | S  | S   | S      | S  | S   |             |
| 2231                           | Information and Communications     |        |     |     |    |     |        |    |     |             |
| 229313                         | Statistician                       |        |     |     |    |     |        |    |     | D           |
| 229415                         | Quality Assurance Manager          | D      |     | S   | D  | D   |        |    |     |             |
| 232111                         | Nurse Manager                      | D      | S   | S   |    | S   | D      | S  | S   | S           |
| 232211                         | Nurse Educator                     | S      | D   | S   |    | S   | R-D    |    |     | S           |
| 232311                         | Registered Nurse                   | S      | S   | S   | S  | S   | S      | S  | S   |             |
| 232411                         | Registered Midwife                 | S      | S   | S   | S  | S   | S      | S  | S   |             |
| 232511                         | Registered Mental Health Nurse     | S      | S   | S   | S  | S   | R      | S  | S   |             |
| 238111                         | Dentist                            | S      |     | S   | S  | S   | S      | S  | S   | S           |
| 238113                         | Dental Specialist                  | S      |     | S   | S  | S   | S      | S  | S   | S           |
| 238211                         | Hospital Pharmacist                | S      |     | S   |    | S   | D      | S  | S   | S           |
| 238215                         | Retail Pharmacist                  | R      |     | S   |    | S   | D      | S  | S   | S           |
| 238311                         | Occupational Therapist             | M-D; R |     | S   | S  | S   | D      | S  | S   | S           |
| 238411                         | Optometrist                        |        |     |     |    |     |        |    |     | S           |
| 238511                         | Physiotherapist                    | S      | D   | S   | S  | S   | S      | S  | S   | S           |
| 238611                         | Speech Pathologist                 |        |     |     |    |     |        |    |     | S           |
| 238711                         | Chiropractor                       |        |     |     |    |     |        |    |     | D           |
| 238811                         | Podiatrist                         |        |     |     |    |     |        |    |     | S           |
| 239111                         | Medical Diagnostic Radiographer    | S      | S   | S   | S  | S   | S      | S  | S   | S           |
| 239113                         | Radiation Therapist                | D      |     | S   | S  |     |        |    |     |             |
| 239115                         | Nuclear Medicine Technologist      |        |     | S   |    | S   |        |    |     |             |
| 239117                         | Sonographer                        | S      | S   | S   | S  | S   | S      | S  | S   | S           |
| 239211                         | Veterinarian                       |        |     |     |    |     |        |    |     | R           |
| 241111                         | Pre-Primary School Teacher         | S      |     | S   |    |     | R      |    | D   |             |
| 241211                         | Primary School Teacher             |        |     | D   |    |     | R      |    |     |             |
| 241311                         | Secondary School Teacher           | D      | D   | S   | D  | D   | M-D; R | D  |     |             |
| 241411                         | Special Needs Teacher              | D      |     | S   |    | S   | S      | S  | D   |             |
| 242211                         | Vocational Education Teacher       |        |     |     |    |     |        |    |     | D           |
| 251111                         | Social Worker                      | S      | S   | S   |    | S   | R      | S  | S   |             |
| 251211                         | Welfare Worker                     | S      |     | S   |    | D   |        | D  | D   |             |
| 251311                         | Rehabilitation Counsellor          |        |     |     |    |     |        |    |     | D           |
| 251319                         | Student Counsellor                 | D      |     |     |    |     | S      | R  | D   |             |
| 251411                         | Clinical Psychologist              | S      | S   | S   | S  | R-D | S      | S  |     |             |
| 252113                         | Solicitor                          | M      |     | S   |    | S   | R      | D  |     |             |
| 252211                         | Economist                          |        |     | S   |    |     |        |    |     |             |
| 252311                         | Urban and Regional Planner         |        |     |     |    |     |        |    |     | S           |
| 254311                         | Occupational Health and Safety     | D      |     |     |    |     |        |    |     |             |
| 254313                         | Environmental Health Officer       | R      | D   | S   |    | D   | S      | S  |     | D           |
| <b>Associate Professionals</b> |                                    |        |     |     |    |     |        |    |     |             |
| 311217                         | Agricultural Technical Officer     |        |     | S   |    |     |        |    |     |             |
| 311213                         | Earth Science Technical Officer    |        |     |     |    |     |        | S  |     |             |
| 312111                         | Building Associate                 | S      | S   | S   | S  | S   |        | D  | S   |             |
| 312113                         | Architectural Associate            | S      | M-D | S   |    | S   | S      | S  | S   | S           |
| 312115                         | Surveying and Cartographic         |        |     |     | S  | S   | S      | S  |     | S           |
| 312211                         | Civil Engineering Associates       | S      | S   | S   | S  | S   | S      | S  | S   |             |
| 312311                         | Electrical Engineering Associates  | S      | S   | S   | S  | S   | S      | S  |     |             |
| 312411                         | Electronic Engineering Associates  | D      |     | S   | S  |     |        |    |     |             |
| 312511                         | Mechanical Engineering Associates  | S      | S   | S   |    |     |        | S  |     |             |
| 312915                         | Mine Deputy                        | D      |     | S   |    | S   |        |    |     |             |
| 332111                         | Restaurant and Catering Manager    |        |     |     |    |     |        |    |     | S           |
| 341111                         | Enrolled Nurse                     | S      |     | S   | D  | S   | D      |    | S   |             |
| 349215                         | Dental Technician                  | S      | S   | S   | S  | S   | S      | D  | S   |             |
| 399111                         | Primary Products Inspector         |        |     | S   |    |     |        |    |     |             |
| 632111                         | Hotel Service Supervisor           |        |     |     |    |     |        |    |     | S           |



The majority of the assessments were made in 2008, including all of the national ratings shown in the final column of the table. This means that they mostly pre-date the employment impacts of the global financial crisis (although they do include the impact of the drought on some regional areas). Two points are important in this context. First, skill shortages in many professions have been persistent, especially in regional areas, over a long period of time. While affected by the economic cycle, they are not simply a cyclical phenomenon and reflect longstanding mismatches in the supply of and demand for professional skills. It is likely that significant skill shortages would be evident even if new assessments were conducted now. Second, the Australian Government anticipates a relatively swift return to strong economic growth. If this transpires, then the types of skill shortages evident in 2008 will soon re-emerge even in occupations and regions currently adversely affected by the financial crisis.

There were skill shortages outside of metropolitan areas in at least 4 mainland states for the following managerial and professional occupations:

- Engineers (civil, electrical, electronic, mechanical, mining, engineering managers and engineering associates)
- Child care coordinators
- Geologists
- Agricultural scientists and advisers
- Architects
- Surveyors
- Accountants and auditors
- Nurses
- Dentists, dental specialists and dental technicians
- Pharmacists
- Health professionals
- Secondary school and special needs teachers
- Social workers
- Clinical psychologists
- Environmental health officers
- Veterinarians.

The existence of a skill shortage in any professional occupation in any region is not necessarily caused by an inadequate number of suitably qualified graduates generated from universities serving the region, although this is likely to be a major factor. Other possible factors may relate to the level of specialisation or experience required, or location, working conditions or remuneration issues that deter people from applying for advertised positions.

However there is evidence that the regional skill shortages in some key professions are indeed related to the absence of, or low numbers of graduates from, relevant programs at universities serving the regions. A selection of relevant case studies is presented below.

### 3.6.1 Engineering

The most recent DEEWR skill shortages list for New South Wales identifies state wide shortages for engineering managers, mining engineers and production or plant engineers (assessed June 2008); civil, electrical, and mechanical engineers (assessed March 2008); chemical engineers (assessed June 2007); and electronics engineers (assessed March 2007).

The NSW State Parliamentary Inquiry into Skill Shortages in Rural and Regional New South Wales noted similar shortages in 2006<sup>65</sup>. The Association of Consultant Engineers Australia identified the following areas of demand in its written submission to the Parliamentary Inquiry, based on a survey of member firms in 2005:

- Civil engineers – structural, mining, geotechnical, materials, petroleum, traffic and transport, water, construction project management, construction supervisory staff, and engineering managers.
- Mechanical – materials, mining, petroleum, hydraulics and fire, water, construction projects management, construction supervisory staff and engineering management.
- Electrical – materials, mining, petroleum, water, construction projects management, construction supervisory staff and engineering management.
- Chemical/Process – materials, petroleum, water, construction projects management, construction supervisory staff and engineering management.

The Association of Consultant Engineers Australia further indicated that the number of graduating engineers was insufficient to meet the demand for engineers. Similar views were expressed by the Association of Professional Engineers, Scientists and Managers, Australia, NSW Branch.

Shortages of engineers were noted specifically in evidence to the Inquiry from Regional Development Boards and Area Consultative Committees from the Far Western region, the Northern Rivers region and the Riverina.

In relation to the supply of graduate engineers in NSW, DEEWR occupational reports noted that:

- Completions of Bachelor degrees in electrical and electronics engineering in NSW fell to 460 persons in 2007, which was 28 per cent below the average for the previous five years.
- Supply from university completions in electrical and electronics engineering was projected to decline significantly in 2007 and 2008.
- Supply of mechanical engineers from university completions fell by 16 per cent in the five years to 2006.
- The supply of mining engineers from course completions at NSW universities fell by 42 per cent in the three years to 2005, to an average of 25 persons a year. Supply from university completions is expected to increase steadily over the three years to 2008 due to higher enrolments in recent years in response to the mining boom.

---

<sup>65</sup> (New South Wales Parliament Legislative Council, Standing Committee on State Development, Tony Catanzariti Chair, May 2006)

There is currently no professionally recognised engineering degree offered in NSW outside of Newcastle, Sydney, and Wollongong. UNE offers a 3 year bachelor of engineering technology, from which it is possible to articulate to a fourth year at the University of Southern Queensland and obtain a professional degree accredited by Engineers Australia.

### **3.6.2 Veterinarians**

In the national occupational analysis of veterinarians conducted in May 2007, DEWR noted that while employers in metropolitan areas filled over three quarters of their advertised vacancies, employers in regional areas filled slightly less than half of their vacancies:

*The recruitment difficulties experienced in mainly regional areas related to positions where a mix of large animal (bovine, equine) and small animal (canine) skills were required. ... Regional employers found that one quarter of their applicants were suited to filling their vacancies. ... Regional veterinarians commented that they needed more vets with large animal skills and that there needed to be incentives to move graduates to country areas.*

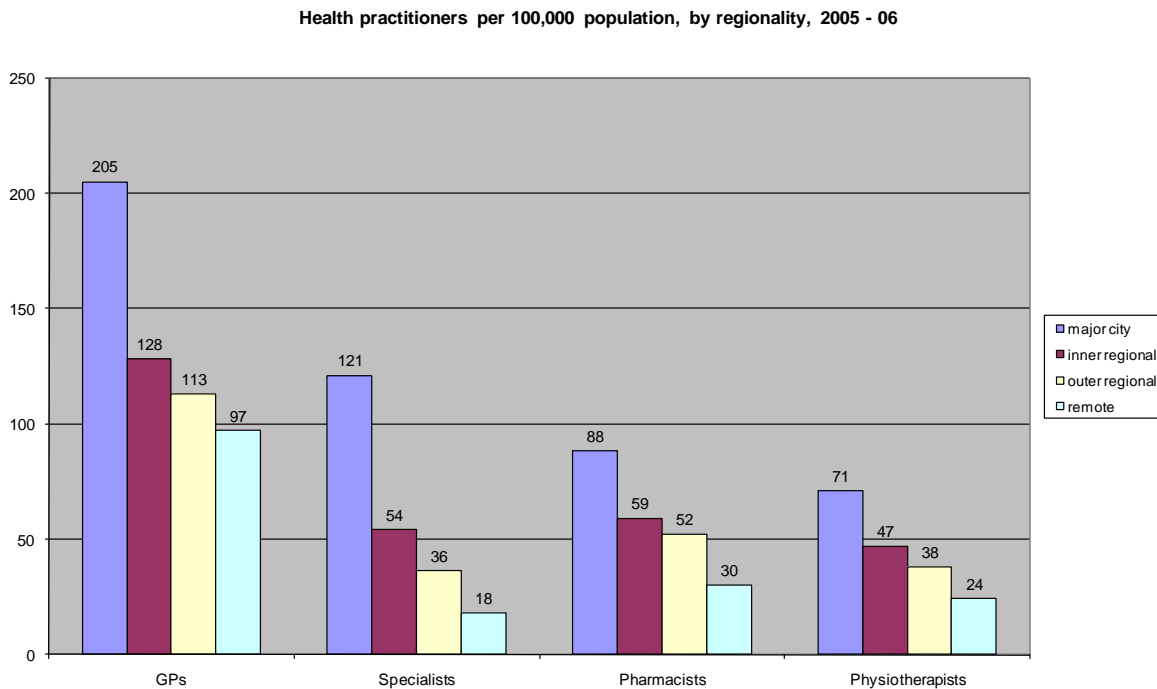
These types of concerns motivated the formation of the undergraduate courses in veterinary science at CSU. The veterinary science course commenced in 2005 with a vision to provide veterinarians for rural Australia. An animal science degree began in 2007, particularly to prepare graduates for careers in animal research but also to provide training for employment in a wide range of jobs working with animals. An equine science program was revised in 2006.

Each of these courses is offered at the Wagga Wagga campus of the University. The only other veterinary science degree offered in NSW is that provided by The University of Sydney. Access to veterinary science is therefore difficult for students from large parts of the State where livestock industries are important. Similarly, in Queensland veterinary science is offered only by the University of Queensland (from its Gatton campus from next year) and James Cook University.

### **3.6.3 Health professionals**

The current distribution of the health workforce across Australia does not match the population distribution. Figure 3.9 shows the differences in the ratios of health practitioners to population in major cities, inner regional, outer regional and remote (including very remote) regions of Australia.

**Figure 3.9 Health practitioners per 100,000 population by regionality, 2005-06**



Source: Department of Health and Ageing 2008, Australia 2020 Summit, Long Term Health Strategy, April 2008 (based on numbers of people employed not FTE)

Further and updated detail is provided in Table 3.7. Across every health occupation shown in the table there is a marked disparity in the number of practitioners in the major cities compared with regional areas.

**Table 3.7 Health practitioners per 100,000 population by regionality, 2006**

Persons employed in health occupations: number per 100,000 population, Remoteness Areas, 2006

| Occupation   | Major cities | Inner regional | Outer regional | Remote       | Very remote  | Australia    |
|--|--------------|----------------|----------------|--------------|--------------|--------------|
| Medical practitioners                                | 324          | 184            | 148            | 136          | 70           | 275          |
| Medical imaging workers                              | 58           | 40             | 28             | 15           | 5            | 51           |
| Dental workers                                       | 159          | 119            | 100            | 60           | 21           | 143          |
| Nursing workers                                      | 1,058        | 1,177          | 1,016          | 857          | 665          | 1,073        |
| Registered nurses                                    | 978          | 1,056          | 886            | 748          | 589          | 979          |
| Enrolled nurses                                      | 80           | 121            | 129            | 109          | 76           | 94           |
| Pharmacists  | 84           | 57             | 49             | 33           | 15           | 74           |
| Allied health workers                                | 354          | 256            | 201            | 161          | 64           | 315          |
| Complementary therapies                              | 82           | 82             | 62             | 40           | 11           | 79           |
| Aboriginal and Torres Strait Islander health workers | 1            | 4              | 10             | 50           | 190          | 5            |
| Other health workers                                 | 624          | 584            | 524            | 447          | 320          | 602          |
| Other health services managers                       | 32           | 33             | 28             | 28           | 18           | 31           |
| <b>Total health workers</b>                          | <b>2,777</b> | <b>2,536</b>   | <b>2,166</b>   | <b>1,827</b> | <b>1,379</b> | <b>2,649</b> |

Source: AIHW, ABS, Census of Population and Housing, 2006.

This is only partly explained by the location of major hospitals in the larger cities. The disparities are evident not only for hospital based specialists but also for community based

health workers such as those in pharmacy, allied health, dentistry and complementary therapies.

For example, in its most recent occupational reports, DEEWR notes as follows:

#### Occupational Therapists NSW (June 2007)

*Vacancies in regional NSW generally attracted fewer applicants than those in Sydney and a number of positions remained unfilled after several months of repeated advertising. Shortages were most evident in inland towns.*

Occupational Therapy is offered by CSU and has just been introduced by SCU.

#### Physiotherapists NSW (June 2007)

*Supply from completions of entry-level courses in NSW is only sufficient to meet annual wastage and modest employment growth. Net interstate and overseas immigration is therefore necessary to meet most of the increasing demand for physiotherapists. Shortages of experienced physiotherapists were evident in the private and public sector in Sydney and regional NSW. Positions based in inland towns were among the most difficult to fill.*

Physiotherapy is offered by CSU.

#### Optometrists (May 2007)

*On average, metropolitan employers successfully filled almost half of their vacancies while less than one fifth of regional vacancies were filled. Employers suggested a number of factors contribute to the shortage of optometrists, including an insufficient number of people studying optometry to meet current and future demand, training in optometry only being available in Queensland, New South Wales and Victoria, the entrance score for an optometry undergraduate degree being very high which restricts the number of students able to study, the unwillingness of new graduates to work outside metropolitan areas, and a preference by optometrists to work either part time or as locums.*

At present, optometry is only offered in NSW at the University of New South Wales, at Queensland at QUT and in Victoria at the University of Melbourne. None of these courses is offered through distance/digital delivery. There is no Optometry school in Western Australia, South Australia or the Northern Territory.

#### Dentists (June 2007)

*Advertisements for positions based in regional NSW attracted far fewer applicants (than those in Sydney) and a majority remained unfilled – in some cases even after several months of repeated advertising. Some shortages remained in the public sector, particularly for senior and specialist dentists and more generally in regional NSW.*

Dentistry is an interesting current case study because Griffith commenced a dental program in 2005 and three new regionally located dental schools were recently established, which will result in a substantial increase in the number of dentist graduates trained in Australia. In 2009 the first cohort of students will graduate from Griffith University (the first intake of students was in 2005). The three new dental schools, James Cook, Charles Sturt and La Trobe, are expected to graduate their first intakes by 2013–14.

These developments have been taken into account in the latest projections for supply and demand for dental services prepared by the Australian Institute of Health and Welfare's Dental Statistics and Research Unit<sup>66</sup>.

On the supply side, the annual number of Australian citizen dentist graduates from Australian universities is anticipated to more than double, increasing to approximately 500 graduates by 2014. The number of practising dentists is projected to increase by half (49.4%), to over 15,000, by 2020, and the number of dentists per 100,000 population is expected to increase by just over one-quarter (27.9%), to 63.2 dentists per 100,000, by 2020.

However, even this increase in labour supply falls short of the projected demand for total aggregate dental visits (under a 'medium' increase scenario), with an estimated approximate shortfall of 800 to 900 dental providers by the year 2020. Given the existing serious shortfall of qualified dental and oral health professionals in regional Australia, it is likely that further measures will be required in future to extend the benefits that will flow from the establishment of the three new regionally based schools.

### Medical practitioners

The shortage of health practitioners, especially medical practitioners, in regional and rural areas has been thoroughly examined in a range of studies and inquiries. For example, the NSW State Parliamentary Inquiry into Skill Shortages in Rural and Regional New South Wales focussed on the shortage of qualified health specialists in NSW, and in rural and regional NSW in particular<sup>67</sup>:

*In its written submission, Wagga Wagga City Council highlighted vacancies for health specialists in a number of key areas including rheumatology, nephrology, endocrinology, obstetrics/gynaecology, neurology, oncology, psychiatry and radiology.*

*Similar concerns about the lack of health specialists in regional areas were expressed by the New England North West RDB, Hay Shire Council and the Illawarra Division of General Practice.*

*The Committee also notes that it received a submission from Australian Hearing, which operates a network of hearing centres throughout Australia, of which 17 are in rural and regional NSW. Australian Hearing noted a critical shortage of audiology specialists in NSW, with 75% of vacancies falling in rural and regional areas. In addition, Hearing Australia estimated that 66% of future vacancies will fall in rural and regional locations.*

A number of policies and programs have been introduced to encourage the study of medicine by students from regional areas and practice in regional areas by medical graduates. New medical schools have been established in recent years at the ANU, the University of Notre Dame, Bond University, Griffith University, the University of Western Sydney, James Cook University, Wollongong University, Deakin University and (in a slightly different form) Macquarie University.

Notably, none of the new medical schools is headquartered in inland Australia, although the schools at James Cook, the ANU, Wollongong and Deakin all emphasise a regional role. The

---

<sup>66</sup> AIHW Dental Statistics and Research Unit Research Report No. 43 Dentist labour force projections, 2005 - 2020

<sup>67</sup> (New South Wales Parliament Legislative Council, Standing Committee on State Development, Tony Catanzariti Chair, May 2006)

Rural Clinical Schools program was introduced to address this gap. It is designed to encourage medical students to take up a career in rural practice by enabling them to undertake extended clinical training placements in rural locations. The program also seeks to develop rural medical training infrastructure, including new educational facilities and student accommodation, and to encourage health professionals to take up rural academic positions, often through joint funding arrangements with local area health services.

There are currently 14 Rural Clinical Schools across Australia, managed by 13 Universities. Each Rural Clinical School has multiple training locations:

- *The University of New South Wales Rural Clinical School:* Coffs Harbour, Port Macquarie, Kempsey, Wagga Wagga, Albury, Griffith, Leeton and surrounding regions.
- *The University of Sydney School of Rural Health:* Dubbo, Orange, Bathurst, Broken Hill and surrounding regions.
- *The University of Queensland Rural Clinical School:* Rockhampton, Toowoomba, Hervey Bay, Bundaberg and surrounding regions.
- *The Rural Clinical School of Western Australia:* Kalgoorlie, Esperance, Geraldton, Port Hedland, Broome, Albany, Karratha, Derby, Bunbury, Narrogin, Kununurra and surrounding regions.
- *Monash University School of Rural Health:* Traralgon, Moe, Sale, Bairnsdale, Mildura, Bendigo and surrounding regions.
- *The University of Melbourne Rural Clinical School:* Shepparton, Wangaratta, Echuca, Ballarat and surrounding regions.
- *University of Tasmania Rural Clinical School:* Burnie and the North West region.
- *The University of Adelaide Spencer Gulf Rural Health School:* Whyalla, Port Augusta, Port Pirie, Port Lincoln, Minlaton, Kadina, Clare and surrounding regions.
- *Flinders University Rural Clinical School:* The Riverland region of South Australia (Renmark), Mount Gambier and the Hills Mallee Fleurieu regions, Warnambool.
- *The Northern Territory Rural Clinical School (through Flinders University):* Alice Springs, Katherine, Gove and surrounding regions.
- *The Australian National University Rural Clinical School:* Cooma, Goulburn, Bega, Young, Batemans Bay and surrounding regions.
- *The University of Newcastle Rural Clinical School:* Tamworth, Armidale, Moree, Taree and surrounding regions.
- *James Cook University Rural Clinical School:* Mackay, Cairns, Atherton, Mt Isa, Thursday Island and surrounding regions.
- *University of Wollongong Rural Clinical School:* Nowra, Lismore, Leeton, Dubbo, Broken Hill, Bowral and surrounding regions.

Critics of the current approach to rural and regional medical education characterise it as 'rural medical outreach' operated mainly by metropolitan universities, with little evidence of improved retention of medical graduates in regional practice. It is notable that many of the rural clinical schools are in the same towns and cities as the major campuses of a number of

regional universities including CSU, SCU, UNE, CQU, and USQ. This draws attention to the possibility that a new National University in Regional Australia could develop a medical school, perhaps with more than one main site, and with a network of clinical training centres built from established rural clinical schools.

#### **3.6.4 Accountants**

Regional and state wide shortages of accountants were reported in all States and Territories in the most recent DEEWR surveys (February to April 2008). In New South Wales it was noted that Sydney employers generally had more success filling vacancies than did their regional counterparts (respectively 80 per cent filled compared with 58 per cent).

In section 1.2.6 we reported the preliminary findings of a study into factors affecting the long-term demand for, and supply of, professional accounting services in rural and regional Australia is currently being undertaken<sup>68</sup>. Key points of relevance here are that:

- The major challenge to accountants in rural and regional areas is the shortage of professional staff. Most firms would employ additional staff if they were available; and
- Many staff in regional accounting firms completed their tertiary studies at universities or university campuses within the region, or in off-campus mode.

The study authors observe that these factors highlight the importance of regional universities and off-campus studies for the health of the accounting profession in rural and regional areas.

Accountancy is offered by a large number of universities, but there appears to be a need for additional graduates in regional areas.

#### **3.6.5 Architects**

State wide shortages of architects were identified in a national survey of employers in January 2008.

Earlier State-specific studies (December 2006) identified particular recruitment difficulties in regional areas. In New South Wales, shortages were evident in inland towns. One regional employer was unable to fill a vacancy after more than two years of intermittent advertising. Employers noted that regional positions were often considered unattractive as the value of projects, and hence the remuneration offered to employees, was lower on average than in larger cities.

Architecture is not currently offered by any regional university other than Deakin at Geelong.

### **3.7 *Future labour demand in regional Australia***

As noted in section 3.1, the demographic outlook varies substantially across different parts of regional Australia. Employment demand for graduates in regional areas however is

---

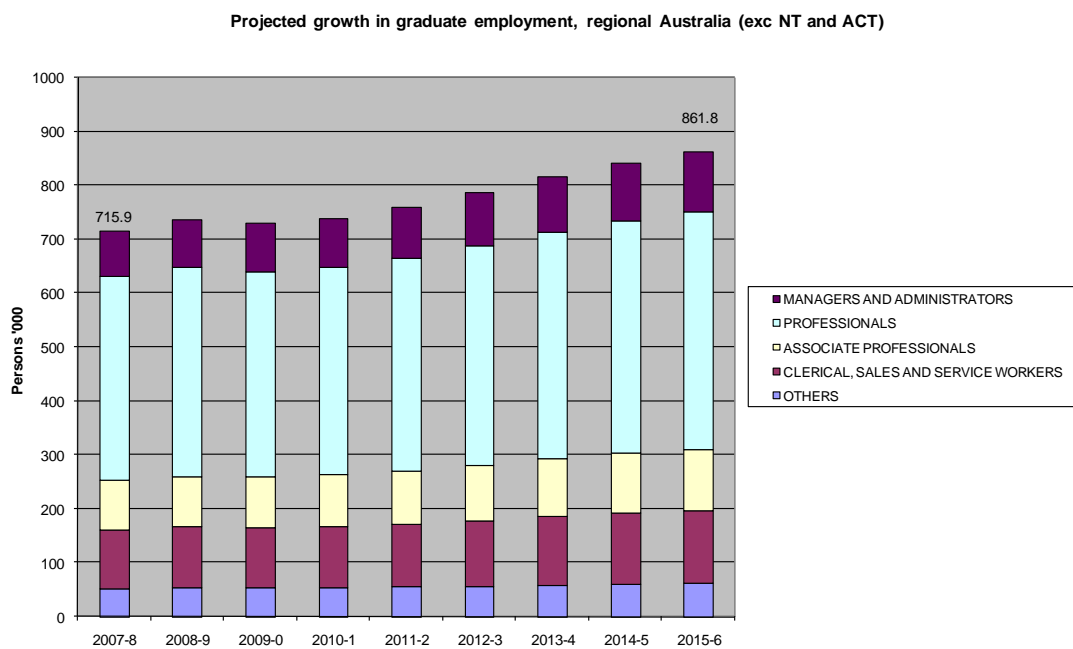
<sup>68</sup> The study is being conducted in partnership with CPA Australia by: Professor Colin Ferguson, University of Melbourne; Professor Barry Cooper, Deakin University; Associate Professor Graeme Wines, Deakin University; and Associate Professor Beverley Jackling, RMIT University



generally projected to rise quite strongly, albeit not quite as strongly as in metropolitan areas.

For the purposes of this project, PhillipsKPA commissioned the Centre of Policy Studies at Monash University to forecast employment for persons with a higher education qualification by occupation by region over the period 2007-08 to 2015-16 (see box). In total, graduate employment in the States outside of the capital cities is forecast to grow by 20%, from 716,000 to 862,000<sup>69</sup> (See figure 3.10). Graduate employment for Australia as a whole is projected to increase by 24%.

**Figure 3.10 Projected growth in graduate employment, regional areas 2007-08 to 2015-16**



Source: Centre of Policy Studies, Monash University

If we look specifically at employment of graduates in managerial, administrative and professional occupations, for which a university degree is typically required, Table 3.8 shows forecast growth of 19% in the States outside of the capital cities. The strongest forecast growth in terms of persons employed is for education professional (mainly school teachers), business and information professionals, and specialist managers. The strongest growth in proportional terms is for specialist managers, generalist managers and business and information professionals.

*Forecasting Labour Demand: the MONASH CGE Model*

*The demand for labour depends on many factors. It depends on the state of the macroeconomic health of the domestic economy and of the economies of trading partners. It depends on the amount of capital investment and on its allocation between industries. It depends on the pace of technical change and on changes in government policy. Moreover all these factors are interconnected. Developments in one industry (the introduction of computers in the service sector, for example) affect the demand for labour in other industries (in this case, in the manufacturing industry that produces computers). The*

<sup>69</sup> Note: These figures exclude the ACT and the Northern Territory for which regional forecasts are not provided.

MONASH forecasting system incorporates all these factors in a set of formal economy-wide forecasts for labour demand.

A MONASH forecast of the demand for labour proceeds in five stages. It begins with a macroeconomic scenario derived from the Five Year Business Outlook published by Access Economics. The forecasts reported here used the March quarter 2009 update. The second stage is to convert the forecasts for GDP and its components into forecasts of output and employment by industry. At the third stage, the national forecasts for output and employment are converted into regional forecasts. The regionalisation process takes account of:

- Differences in industrial structures,
- Region-specific industry effects, such as mine closures,
- Population movements,
- Expected expenditures by regional governments, and
- Local multipliers.

Regional forecasts are produced at two levels of aggregation, namely eight States and Territories and 56 Statistical Divisions.

At the fourth stage, the employment forecasts are converted from an industry basis to an occupational basis. At the final stage, the forecasts for employment by occupation in persons are used to determine the employment outlook for workers identified by age, sex, qualifications and hours worked per week.

Meagher, G A, Adams, P D, Horridge, J M, 2000, Applied General Equilibrium Modelling and Labour Market Forecasting, Centre of Policy Studies, Monash University

**Table 3.8 Employment of Managers, Administrators and Professionals with a higher educational qualification, Regional Australia excluding ACT & NT, '000 persons, 2007-8 to 2015-6**

| Occupation  | Graduate Employment |              | Increase           |            |
|---|---------------------|--------------|--------------------|------------|
|   | 2007 - 08           | 2015 - 16    | 2007-08 to 2015-26 |            |
|   | '000s               | '000s        | '000s              |            |
| Generalist Managers                                       | 17.9                | 23.7         | 5.8                | 32%        |
| Specialist Managers                                       | 50.2                | 68.1         | 17.8               | 35%        |
| Farmers and Farm Managers                                 | 16.3                | 19.5         | 3.2                | 20%        |
| Building and Engineering Professionals                    | 45.7                | 53.4         | 7.7                | 17%        |
| Business and Information Professionals                    | 59.8                | 79.2         | 19.4               | 32%        |
| Health Professionals                                      | 86.8                | 90.5         | 3.6                | 4%         |
| Education Professionals                                   | 130.4               | 151.1        | 20.7               | 16%        |
| Social, Arts and Misc Professionals                       | 56.2                | 66.0         | 9.8                | 17%        |
| <b>Total Managers, Administrators &amp; Professionals</b> | <b>463.4</b>        | <b>551.4</b> | <b>88.0</b>        | <b>19%</b> |

The relatively modest forecast growth for health professionals contains no assumption about any increase in the number of health professionals per head of population in regional areas, as might occur if there were to be expanded provision of relevant programs by regional universities. Given the significant shortage of health practitioners across a variety of occupations in regional Australia, and the Federal Government's stated commitment to addressing the gap in regional health service provision, it would be expected that there

would be significant growth in demand for rural health practitioners above that which is suggested above.

A further level of detail on these forecasts is shown in Table 3.9, which breaks the categories down to more specific occupations.

| Australia exc ACT, NT and State Capitals                   |   |               |               |               |               |               |               |               |               |                  |               |            |
|--|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|---------------|------------|
|  |   |               |               |               |               |               |               |               |               | Change           |               |            |
|  | 2007-8  | 2008-9        | 2009-0        | 2010-1        | 2011-2        | 2012-3        | 2013-4        | 2014-5        | 2015-6        | 2007-08 - 2015-6 | %             |            |
| <b>1 MANAGERS AND ADMINISTRATORS</b>                       |   |               |               |               |               |               |               |               |               |                  |               |            |
| <b>11 Generalist Managers</b>                              |   |               |               |               |               |               |               |               |               |                  |               |            |
| 111  | General Managers and Administrators           | 10.251        | 10.779        | 10.91         | 11.357        | 11.954        | 12.709        | 13.538        | 14.34         | 15.06            | 4.809         | 47%        |
| 119  | Miscellaneous Generalist Managers             | 7.635         | 7.897         | 7.632         | 7.68          | 7.747         | 8.045         | 8.346         | 8.55          | 8.598            | 0.963         | 13%        |
| <b>sub total Generalist Managers</b>                       |   | <b>17.886</b> | <b>18.676</b> | <b>18.542</b> | <b>19.037</b> | <b>19.701</b> | <b>20.754</b> | <b>21.884</b> | <b>22.89</b>  | <b>23.658</b>    | <b>5.772</b>  | <b>32%</b> |
| <b>12 Specialist Managers</b>                              |   |               |               |               |               |               |               |               |               |                  |               |            |
| 121  | Resource Managers                             | 10.621        | 11.089        | 11.13         | 11.525        | 12.048        | 12.723        | 13.444        | 14.116        | 14.706           | 4.085         | 38%        |
| 122  | Engineering Distribution and Process Managers | 11.516        | 12.308        | 12.333        | 12.778        | 13.361        | 14.2          | 15.095        | 15.887        | 16.558           | 5.042         | 44%        |
| 123  | Sales and Marketing Managers                  | 10.334        | 10.643        | 10.668        | 10.974        | 11.434        | 12.047        | 12.709        | 13.312        | 13.833           | 3.499         | 34%        |
| 129  | Miscellaneous Specialist Managers             | 17.777        | 18.5          | 18.475        | 18.878        | 19.608        | 20.517        | 21.407        | 22.216        | 22.967           | 5.19          | 29%        |
| <b>sub total Specialist Managers</b>                       |   | <b>50.248</b> | <b>52.54</b>  | <b>52.606</b> | <b>54.155</b> | <b>56.451</b> | <b>59.487</b> | <b>62.655</b> | <b>65.531</b> | <b>68.064</b>    | <b>17.816</b> | <b>35%</b> |
| <b>13 Farmers and Farm Managers</b>                        |   |               |               |               |               |               |               |               |               |                  |               |            |
| 131  | Farmers and Farm Managers                     | 16.312        | 18.169        | 18.864        | 18.249        | 18.596        | 18.683        | 19.368        | 19.723        | 19.543           | 3.231         | 20%        |
| <b>Sub total</b>   |   | <b>84.446</b> | <b>89.385</b> | <b>90.012</b> | <b>91.441</b> | <b>94.748</b> | <b>98.924</b> | <b>103.91</b> | <b>108.14</b> | <b>111.27</b>    | <b>26.819</b> | <b>32%</b> |
| <b>2 PROFESSIONALS</b>                                     |   |               |               |               |               |               |               |               |               |                  |               |            |
| <b>2.1 Science, Building and Engineering Professionals</b> |   |               |               |               |               |               |               |               |               |                  |               |            |
| 211  | Natural and Physical Science Professionals    | 20.797        | 21.611        | 21.158        | 21.407        | 22.134        | 23.147        | 24.11         | 24.977        | 25.749           | 4.952         | 24%        |
| 212  | Building and Engineering Professionals        | 24.939        | 26.003        | 25.377        | 25.406        | 25.758        | 26.402        | 26.847        | 27.255        | 27.661           | 2.722         | 11%        |
| <b>sub total Building and Engineering Professionals</b>    |   | <b>45.736</b> | <b>47.614</b> | <b>46.535</b> | <b>46.813</b> | <b>47.892</b> | <b>49.549</b> | <b>50.957</b> | <b>52.232</b> | <b>53.41</b>     | <b>7.674</b>  | <b>17%</b> |
| <b>22 Business and Information Professionals</b>           |   |               |               |               |               |               |               |               |               |                  |               |            |
| 221  | Accountants Auditors and Corporate Treasurers | 21.492        | 21.809        | 21.722        | 22.561        | 23.56         | 24.711        | 25.862        | 27.013        | 28.141           | 6.649         | 31%        |
| 222  | Sales Marketing and Advertising Professionals | 7.007         | 7.234         | 7.277         | 7.497         | 7.834         | 8.277         | 8.731         | 9.158         | 9.567            | 2.56          | 37%        |
| 223  | Computing Professionals                       | 11.016        | 11.416        | 11.436        | 11.655        | 12.066        | 12.643        | 13.157        | 13.623        | 14.11            | 3.094         | 28%        |
| 229  | Misc Bus and Info Professionals               | 20.287        | 21.051        | 21.076        | 21.753        | 22.71         | 23.888        | 25.094        | 26.254        | 27.365           | 7.078         | 35%        |
| <b>sub total Business and Information Professionals</b>    |   | <b>59.802</b> | <b>61.51</b>  | <b>61.511</b> | <b>63.466</b> | <b>66.17</b>  | <b>69.519</b> | <b>72.844</b> | <b>76.048</b> | <b>79.183</b>    | <b>19.381</b> | <b>32%</b> |
| <b>23 Health Professionals</b>                             |   |               |               |               |               |               |               |               |               |                  |               |            |
| 231  | Medical Practitioners                         | 14.416        | 14.818        | 14.62         | 14.657        | 14.98         | 15.324        | 15.758        | 16.13         | 16.478           | 2.062         | 14%        |
| 232  | Nursing Professionals                         | 47.868        | 48.542        | 47.113        | 46.379        | 46.539        | 46.696        | 47.199        | 47.523        | 47.798           | -0.07         | 0%         |
| 238  | Miscellaneous Health Professionals            | 24.542        | 24.963        | 24.412        | 24.302        | 24.633        | 24.991        | 25.495        | 25.874        | 26.186           | 1.644         | 7%         |
| <b>sub total Health Professionals</b>                      |   | <b>86.826</b> | <b>88.323</b> | <b>86.145</b> | <b>85.338</b> | <b>86.152</b> | <b>87.011</b> | <b>88.452</b> | <b>89.527</b> | <b>90.462</b>    | <b>3.636</b>  | <b>4%</b>  |
| <b>24 Education Professionals</b>                          |   |               |               |               |               |               |               |               |               |                  |               |            |
| 241  | School Teachers                               | 106.35        | 108.41        | 107           | 108.56        | 112.44        | 117.31        | 121.08        | 124.46        | 127.48           | 21.136        | 20%        |
| 242  | University and Vocational Education Teachers  | 18.223        | 18.034        | 17.316        | 17.145        | 17.315        | 17.609        | 17.715        | 17.749        | 17.721           | -0.502        | -3%        |
| 249  | Miscellaneous Education Professionals         | 5.838         | 5.855         | 5.667         | 5.617         | 5.675         | 5.773         | 5.834         | 5.858         | 5.857            | 0.019         | 0%         |
| <b>sub total Education Professionals</b>                   |   | <b>130.41</b> | <b>132.3</b>  | <b>129.99</b> | <b>131.33</b> | <b>135.43</b> | <b>140.69</b> | <b>144.63</b> | <b>148.06</b> | <b>151.06</b>    | <b>20.653</b> | <b>16%</b> |
| <b>25 Social, Arts and Misc Professionals</b>              |   |               |               |               |               |               |               |               |               |                  |               |            |
| 251  | Social Welfare Professionals                  | 24.739        | 25.413        | 25.144        | 25.359        | 26.019        | 26.705        | 27.525        | 28.237        | 28.886           | 4.147         | 17%        |
| 252  | Miscellaneous Social Professionals            | 10.617        | 10.698        | 10.672        | 11.015        | 11.506        | 12.07         | 12.642        | 13.231        | 13.839           | 3.222         | 30%        |
| 253  | Artists and Related Professionals             | 11.578        | 11.493        | 11.295        | 11.252        | 11.372        | 11.55         | 11.707        | 11.818        | 11.886           | 0.308         | 3%         |
| 254  | Miscellaneous Professionals                   | 9.23          | 9.576         | 9.434         | 9.597         | 9.9           | 10.229        | 10.665        | 11.049        | 11.367           | 2.137         | 23%        |
| <b>sub total Social, Arts and Misc Professionals</b>       |   | <b>56.164</b> | <b>57.18</b>  | <b>56.545</b> | <b>57.223</b> | <b>58.797</b> | <b>60.554</b> | <b>62.539</b> | <b>64.335</b> | <b>65.978</b>    | <b>9.814</b>  | <b>17%</b> |
| <b>Sub total PROFESSIONALS</b>                             |   | <b>378.94</b> | <b>386.93</b> | <b>380.72</b> | <b>384.17</b> | <b>394.44</b> | <b>407.32</b> | <b>419.42</b> | <b>430.2</b>  | <b>440.09</b>    | <b>61.158</b> | <b>16%</b> |
| <b>MANAGERS, ADMINISTRATORS AND PROFESSIONALS</b>          |   | <b>463.38</b> | <b>476.31</b> | <b>470.73</b> | <b>475.61</b> | <b>489.19</b> | <b>506.24</b> | <b>523.33</b> | <b>538.35</b> | <b>551.36</b>    | <b>87.977</b> | <b>19%</b> |

Key points of note include:

- The substantial forecast growth in employment of generalist and specialist managers
- Strong forecast growth for natural and physical science professionals and moderate growth for building and engineering professionals – areas in which there are limited courses offered by regional universities. Over half of regional students in these fields enrolled in metropolitan universities for their courses in 2006.
- Strong forecast growth for accountants and auditors, professions currently in shortage in regional areas
- Strong forecast growth for school teachers, for which there have been some recruitment difficulties in regional areas
- Moderate forecast growth for medical practitioners.

The full set of forecasts at the level of occupation and statistical division has been provided to the project Steering Committee in electronic form.

### 3.8 *Summary*

There have been persistent shortages of professionals in certain occupations across most States and Territories and especially in areas of regional Australia. The most recent assessments (mainly from 2008) identify skill shortages outside of metropolitan areas in at least 4 mainland states for a 16 groups of managerial and professional occupations, including engineers, architects, accountants, health professionals, dentists, pharmacists, and veterinarians.

More detailed analysis highlights particular issues for regional areas for each of these professions, linked in part to the absence or inadequate scale of relevant university courses in regional areas.

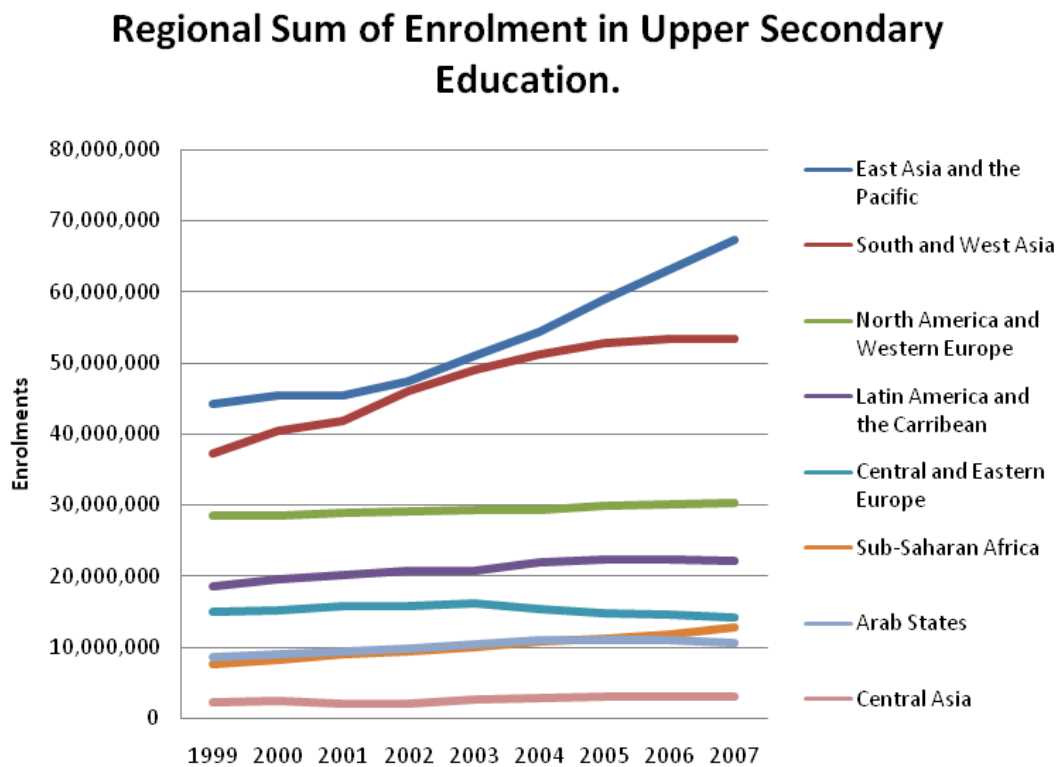
Employment demand for graduates in regional areas is generally projected to rise quite strongly, albeit not quite as strongly as in metropolitan areas. Substantial growth is forecast for generalist and specialist managers, natural and physical science professionals, accountants and auditors and school teachers. Moderate growth is forecast for building and engineering professionals. In several of these areas there are only limited courses currently offered by regional universities.

## 4 Current and emerging needs for higher education in Australia’s region of the world

### 4.1 Higher education demand and supply in South, East and South-East Asia, and the South Pacific

There are multiple indicators of increasing demand for higher education within our region. From 1999 to 2007, reported global Upper Secondary School enrolments increased by around 30% from 1.61 billion to 2.13 billion.<sup>70</sup> Notwithstanding demographic changes in Japan and Korea that have seen the beginning of a decline in school enrolments in those countries, the East Asia and Pacific region was the area of highest growth in that period, increasing upper secondary school enrolments by 44.2 million to 67.3 million (See Figure 4.1).

Figure 4.1 Enrolments in upper secondary school by world region, 1999 – 2007



This growth in secondary enrolments has driven the demand for tertiary education. In the same period, reported tertiary enrolments in the East Asia and Pacific doubled from 23 million to 46.4 million.<sup>71</sup> Despite pressures of the global financial crisis this demand for

<sup>70</sup> UNESCO Statistics 2009 Table 20A: Regional sum of enrolment by ISCED level <http://stats.uis.unesco.org/unesco/ReportFolders/ReportFolders> as at 12/6/09

<sup>71</sup> UNESCO 2009

tertiary education, including cross-border demand, has remained robust. Australian Education International (AEI) reports that first semester 2009 commencements of international students at Australian universities increased by 20% on 2008 first semester commencements.<sup>72</sup>

The demand for higher education, globally and in Australia's region, is projected to grow and be accelerated with the demands of global economic recovery. However, Australia's position as a lead provider of international education is being challenged by increasing competition for on-campus and online provision from in-region and international providers.

By the end of 2000, the Peoples Republic of China Ministry of Education (MOE) reported the total number of international students in China was 407,000.<sup>73</sup> Around 80,000 of these were at higher education institutions. More recent disaggregated and reliable figures are difficult to obtain, but MOE representatives at a joint China-Australia International Education Conference in Shanghai in October 2008 foreshadowed a planning target of 600,000 international students in Chinese tertiary institutions by 2010 and a doubling in the five years thereafter.

Japan and Korea have demographic changes that are producing excess capacity in many of their tertiary institutions. These institutions are also looking more actively for international markets with government support. Japan has a significant aid program and its relevant agencies are looking to leverage this educational capacity, including through significant investments in educational technologies, as part of its diplomatic and economic outreach.

The aspirations of other countries to be education exporters (such as Thailand, Vietnam, and Malaysia) and significant public investment in others to become regional education hubs (such as Singapore and the Gulf States) have been well rehearsed elsewhere. All of these have the prospect of diverting some demand from Australian providers, especially non-metropolitan institutions with lower international profiles.

Some governments (e.g. India), previously eschewing private investment in higher education delivery, now encourage such investment, including in partnership with public institutions. In addition there are private global education ventures making well-resourced bids for a share of the international higher education market. Amongst these, the large Laureate Education Inc<sup>74</sup> has an aggressive global institution acquisition program that now has a major push in Asia. Its focus is on health/medicine, hospitality, business and design programs.

While there is growing demand for higher education in the East Asia and Pacific region, the significant in-country public and private investment in higher education delivery will further dilute the opportunities to attract significant numbers of international students to regionally based campuses in Australia. The formation of a higher visibility, national regional university with a comprehensive course profile would improve international student recruitment outcomes. However, we are cautious about the extent to which this

---

<sup>72</sup> AEI International Students Statistics Higher Education Commencements 2003 to 2009: Year to Date,

<sup>73</sup> Ministry of Education People's Republic of China. <http://www.moe.edu.cn/english/international> as at 12/6/09

<sup>74</sup> Laureate Education Inc. <http://www.laureate-inc.com/> as at 12/6/09

could produce a major increase in market share in the face of competition from metropolitan universities on-shore and increasing international competition off-shore.

With the exception of a few programs, the benefits of recruiting international students may flow more from the enrichment international students bring to the on-campus educational and social experience of regional Australian students than from the net revenue to be gained.

## **4.2 *Internationalising Regional Workforces***

This benefit of 'international enrichment' is not insignificant for regional students. Rural and regional industry practices and culture in Australia are being influenced by increasing foreign investment, with trans-cultural challenges for governance, management practices and for workforce and community relations. China, for example, regarded as a primary driver of the global economy, is scheduled to take larger stakeholdings in many Australian primary industries and a more hands-on approach with suppliers through its sovereign funds and private investors.<sup>75</sup> Workforces and communities literate in the communication, social and governance preferences of large investor/owner cultures will enhance the prospect of those groups capturing the full benefits from the growth of international demand for resources and agricultural products, and from a greater capability to manage the alignment of their interests with the longer term economic and strategic interests of economies such as China.

A NURA that actively integrated its international student recruitment with an internationalised curriculum and international exchange experiences for Australian students could add significantly to the trans-cultural competence of Australian regional, rural and remote workforces. These 'internationalising' components could be made a feature of the program delivery to remote populations, enhancing the prospect and quality of their participation in work and social opportunities generated by international investment in regional Australia.

The expertise, programs and technologies developed for the Australian context could be adapted for skills and professional development for remote communities internationally. The principal clients for such expertise are likely to be governments and international corporations.

To be effective in this area NURA would need to create or have contractual access to an international business development capability, that would capture and adapt the distributed expertise, search for international opportunities for its application and market it to prospective clients.

## **4.3 *A focus on expertise in distance education for remote communities***

Despite significant recent advances in technology, teaching and learning support, distance education is still seen in most markets (particularly at the undergraduate level and in Asia) as a poor alternative to the on-campus experience. Nonetheless there has been an explosion

---

<sup>75</sup> Mining Journal 2009, China expected to raise investment in Australia <http://www.mining-journal.com/production-and-markets/>



in online programs available to students in the Asia Pacific region. These programs vary in the quality of their offerings.

The demand for online programs in the Asia Pacific reflects the Australian experience. Highest demand is for undergraduate IT & Business programs with increasing demand for postgraduate professional upgrading programs. National, in-region international providers are competing primarily for access to populations that can be most easily supported, mostly located in urban areas, with better connectivity and where economies of scale can be obtained in providing supplementary teaching/learning support on-the-ground.

As is the case with international student recruitment, these are areas in which Australian regional universities will have difficulty in establishing a market preference over metropolitan based Australian universities, or international distance education providers. The opportunities for regional Australian universities are likely to continue to be in programs where they have internationally recognised expertise and can leverage investments in research, on-campus teaching and learning into tailored distance delivery formats.

In short the distance/regional community higher education delivery space in the Asia Pacific region is well occupied by existing providers in Australia (including OUA), is a target for several regional open universities, existing traditional distance providers from the UK, US, and noticeably some Chinese institutions investing heavily in distance delivery technology and support services.

A major investment in new technologies, pedagogies and delivery mechanisms is required to deliver a major competitive advance.

This is an issue for all Australian universities engaged in international distance education, including regional higher education providers. For example, a recent report in the United Kingdom argued for new investment in the establishment of four centres of excellence in online learning and research to maintain the UK's global competitive advantage in this field (the UK currently has 12% of the international higher education market). The study argued for investment across a number of universities (rather than investing in a single distance education provider like Open Universities UK) recognising that flexible and blended forms of learning are now part of the functions of all universities.<sup>76</sup> The need for investment and research into online learning and pedagogies to maintain Australia's international competitive position is a broader national priority that has implications for both metropolitan and regional providers.

Just as in Australia, regional governments in other countries are seeking new and cost effective ways to increase tertiary education participation by lower SES groups. This includes rural, and other socially and geographically isolated populations. These populations often contain minority groups that are disadvantaged by language skills and limited contact with mainstream teaching and learning cultures.

Also as in Australia, regional governments, including those in reasonably developed economies, are seeking cost-effective ways of integrating education and workforce

---

<sup>76</sup> Cooke, 2008, Online Innovation in Higher Education, Department of Universities, Innovation and Skills, downloaded from [http://www.dius.gov.uk/higher\\_education/shape\\_and\\_structure/he\\_debate/~/\\_media/publications/O/online\\_innovation\\_in\\_he\\_131008](http://www.dius.gov.uk/higher_education/shape_and_structure/he_debate/~/_media/publications/O/online_innovation_in_he_131008).



development into broader social, economic development and community service delivery programs targeted at rural and remote populations, often located in border regions. There are potential synergies between the workforce development needs of Australian remote communities and remote international communities. Possible areas of common interest include border protection, bio-security, population health, public sector governance and community organisation management.

Internationally, the primary sources of funding for such programs are government budgets or international assistance programs. Provision to smaller states in the Pacific is significantly underwritten by Australian, New Zealand, Japanese, multilateral and increasingly PRC aid programs. Several regional universities have participated in such programs.

A strategic approach to raise the profile and credibility of NURA could be to try to engage Ausaid/DFAT/DEEWR to develop a centre of excellence focussed on the educational needs of remote communities internationally. This would complement and have strong synergies with the 'National Resource Centre' to promote engagement with new forms of learning proposed in the original NURA concept, and discussed in chapter 7. A centre of this kind could conduct applied multi-disciplinary research into:

- The development of distance education policies, strategies and programs that align with cultural/work-cycle parameters of target populations and other social development programs (e.g. health-sport /women's development/small business development/sustainable agriculture and energy/civil society programs);
- The development of pedagogies and learning support directed at remote communities that optimise existing and emerging technologies and are responsive to the cultural/social parameters of the target populations.

The centre could also be focused on:

- Training personnel in corresponding areas of policy development, program design and delivery and the application of technologies;
- Provision of ongoing advice/support to regional/remote delivery networks e.g. University of the South Pacific; and,
- National interaction with international distance delivery networks e.g. Commonwealth of Learning.

Even with a research-based market differentiator (tailored largely for international agency and public agency clients), a NURA would need to be geared to develop business processes to leverage this research, and aggressively pursue positioning as an international reference centre on education and training delivery to remote populations. As noted above, it would also need a co-ordinating international business development unit that could inform product development. The focus of marketing would be on national aid agencies, international NGO's and multilateral agencies, national education and workforce ministries and corporations conducting activities in remote locations (including in Australia).

There may also be opportunities beyond the Asia Pacific region to build a sustainable international role around policy development, program design (including workforce and systems and learning support services upgrades) and delivering higher education to remote populations. For example, the urgent and extensive need soon for higher education delivery in Zimbabwe, including to remote populations, is likely to be quickly and generously underwritten by international funding agencies.

Professor Simon Marginson's 2004<sup>77</sup> seminal critique of "English language global e-learning in the light of industry marketing strategies, the economics of online education, and the specifics of Asia-Pacific nations including unmet demand for education" remains highly pertinent to considerations of whether and how regional Australian universities might format and target their programs for online international delivery. He argues, inter alia, that "inadequate technological capacities, the need for innovations in pedagogical methods, the monocultural character of existing online curricula and the absence of linguistic plurality in online programs, and the asymmetries between foreign providers and local educational authorities and institutions in the Asia-Pacific nations" have resulted in commercial and educational failure of many e-learning ventures.

These factors are magnified in importance for delivery to remote communities in developing countries. In this regard, institutions like OUA, CSU and SCU have begun to assimilate into mainstream practices lessons learnt from the delivery of distance programs to disadvantaged learners in countries like Cambodia, East Timor, Mauritius and Papua New Guinea. A NURA with a research-based approach to the development of culturally aligned pedagogies supported by appropriate and sustainable technologies and linked to an international business development capability could be well placed to become an international leader in remote education research, policy and program development and program delivery.

However this is not a short term strategy; it presages an international personality for a NURA that will take time to craft.

#### **4.4**      *Summary*

The demand for higher education in the Asia Pacific region remains high and is expected to grow.

The formation of a higher visibility, national regional university with a comprehensive course profile would improve international student recruitment outcomes. However, we are cautious about the extent to which this could produce a major increase in market share in the face of competition from metropolitan universities on-shore and increasing international competition off-shore.

With the exception of a few programs, the benefits of recruiting international students may flow more from the enrichment international students bring to the on-campus educational and social experience of regional Australian students than from the net revenue to be gained.

A NURA that actively integrated its international student recruitment with an internationalised curriculum and international exchange experiences for Australian students could add significantly to the trans-cultural competence of Australian regional, rural and remote workforces. These 'internationalising' components could be made a feature of the program delivery to remote populations, enhancing the prospect and quality of their participation in work and social opportunities generated by international investment in regional Australia.

---

<sup>77</sup> Marginson S 2004: Don't Leave Me Hanging on the Anglophone: The Potential for Online Distance Higher Education in the Asia-Pacific Region, *Higher Education Quarterly*, 0951-5224 Volume 58, Nos. 2/3, April/July 2004, pp 74-113

The expertise, programs and technologies developed for the Australian context could be adapted for skills and professional development for remote communities internationally.

As a new institution, a NURA would need to quickly develop credibility and to position itself within a crowded international space for distance education. It would be assisted in doing so if it could demonstrate a strong applied research base for its offerings and if it was actively engaged in the national and international policy dialogue.

A strategic approach to raise the profile and credibility of NURA could be to try to engage Ausaid/DFAT/DEEWR to develop a centre of excellence focussed on the needs of remote communities internationally.

A NURA with a research-based approach to the development of culturally aligned pedagogies supported by appropriate and sustainable technologies and linked to an international business development capability could be well placed to become an international leader in remote education research, policy and program development and program delivery.

This is not a short term strategy.

## 5 Research and knowledge transfer

---

### 5.1 *Background*

Regional Australia, defined broadly to include all parts of the country outside of its six largest cities, accounts for approximately 40% of Australia's population yet significantly less than 20% of Australian investment in university research and development (R&D).<sup>78</sup> This apparent discrepancy by itself does not necessarily imply that regional universities are receiving inadequate research funding or that there is an urgent need for a national university servicing the needs of regional communities.

It is quite plausible, for example, that regional communities have only modest expectations of their higher education organisations and only minimal needs for their universities to perform R&D. It is possible that many of the benefits that can flow to communities where universities perform R&D may be already provided under existing arrangements both by existing regional universities and also by some of the larger metropolitan institutions.

It is equally plausible, though, that the disproportionately low share of Australian university R&D currently performed by regionally based institutions reflects: a lack of research-informed teaching in regional higher education settings; an insufficient investment in research of relevance to regional Australia; and a longstanding neglect of the reputational benefits that can accrue to regions where internationally significant investment is made in university research.

The following discussion takes the underlying discrepancy between population distribution and university R&D investment not as a conclusion but as a starting point. It assesses the need for a National University in Regional Australia from a university research and development perspective via several approaches:

- (a) by comparing the scale of investment in university research against broad demographic and economic data;
- (b) by contrasting the scale of investment in university research against the scale of associated educational activity at both the undergraduate and postgraduate level;
- (c) by delineating the patterns of R&D investment in regional universities by source of funds, type of investment, and field of expenditure; and
- (d) by assessing what impacts could be made by creating an institution (or consortium of institutions) with significant scale of research investment based in regional Australia.

The analysis concludes that there would be strong benefits from creating a National University in Regional Australia, but that realising these benefits would require substantial investment.

### 5.2 *Regional university R&D investment*

It is possible to derive an imperfect but useful indication of the scale of R&D investment occurring in Australia's regional universities using ABS R&D expenditure data and Higher Education Research Data Collection research income data.

---

<sup>78</sup> ABS data. See table 5.1.

Table 5.1 shows one way in which Australian geographic statistical divisions can be categorised, according to population density and the population of their largest city or town. This classification system designates the five largest Australian statistical divisions and Canberra (combined with Queanbeyan and the rest of the ACT) as ‘major cities’. It lists the Gold Coast, Hunter, Illawarra, Greater Hobart, Barwon, Darwin and the Sunshine Coast as ‘Regional Metropolitan’ areas. All other ABS statistical divisions are categorised as ‘Regional’.

**Table 5.1 – Categorisation of Regions and Universities**

|  | Major City<br>Statistical Divisions  | Regional Metropolitan<br>Statistical Divisions  | Regional<br>Statistical Divisions  |
|--|--|---|--|
| <b>Criteria for<br/>categorising<br/>statistical divisions</b> | (a) Largest city has a population greater than 1 million.<br><br>AND<br>(b) Overall population density is greater than 250 persons per km <sup>2</sup> . | (a) Largest city has a population less than 1 million and greater than 100,000.<br><br>AND<br>(b) Overall population density is greater than 20 persons per km <sup>2</sup> . | (a) Largest city has a population less than 100,000.<br><br>OR<br>(b) Overall population density is less than 20 persons per km <sup>2</sup> .   |
| <b>Examples of key<br/>cities or towns</b>                     | Sydney, Melbourne, Brisbane, Perth, Adelaide (Canberra)  | Gold Coast, Newcastle, Wollongong, Hobart, Geelong, Darwin (Sunshine Coast)   | Albury; Alice Springs; Ballarat; Bendigo; Bundaberg; Cairns; Coff's Harbour; Geraldton; Launceston; Mackay; Mildura; Rockhampton; Tamworth; Toowoomba; Townsville; Tweed Heads; Wagga Wagga  |
| <b>Universities</b>  | All other major metro universities   | Griffith University<br>Bond University<br>University of Newcastle<br>University of Wollongong<br>University of Tasmania<br>Deakin University<br>Charles Darwin University     | Charles Sturt University<br>Southern Cross University<br>UNE<br>University of Ballarat<br>Central Qld University<br>James Cook University<br>University Southern Qld<br>Aust. Maritime College<br>(Univ. of Sunshine Coast)<br>(La Trobe University) |

Notes: (i) Derived for Australian statistical divisions from ABS 3218.0 and ABS 5673.0. (ii) Categorisation of statistical divisions is based on (a) population, (b) population density, and (c) the largest town or city in each division. Exceptions to the categorisation criteria are shown in brackets. Canberra (which for this analysis includes Queanbeyan and the ACT) is designated as a major city as it is the national capital. Sunshine Coast is also categorised as ‘regional metropolitan’ as it has a population density and area very similar to that of Canberra and the ACT. (iii) Universities are categorised by statistical division of main campus. La Trobe is shown in brackets because it has several campuses in regional statistical divisions. The University of the Sunshine Coast is also shown in brackets because it has traditionally operated as a non-metropolitan regional university.

The categorisation used in this table is imperfect. Canberra, for example, would be categorised as a ‘regional metropolitan’ area based purely on its population and population density. Yet it seems somehow incongruous to think of the nation’s capital – and the centre of all national policy-making for Australian universities – as a regional entity. Likewise, the status of the Sunshine Coast is somewhat indeterminate. In past decades it would have been categorised unequivocally as ‘regional’. But its population density is on a par with that of Canberra and the ACT – and it is growing. Indeed, judging from its population density this

statistical division is arguably becoming more metropolitan than Barwon (which includes Geelong) or Darwin.

Table 5.2 uses the categorisation described in table 5.1 to show how the distribution of university R&D expenditure in Australia compares with that of population, wage and salary earners, wage and salary income, and land mass. For the purpose of this analysis, the Sunshine Coast statistical division is categorised as ‘regional metropolitan’ but the University of the Sunshine Coast is categorised as regional because of its historical and current focus. Likewise, Griffith University and La Trobe University have their R&D expenditures split evenly: Griffith University between the ‘major cities’ and ‘regional metropolitan’ category; and La Trobe University between the ‘major cities’ and the ‘regional’ category.

**Table 5.2 – University R&D expenditures and Australian statistical divisions, 2006**

|                                      | Major Cities |       | Regional Metropolitan |       | Regional |     |
|--------------------------------------|--------------|-------|-----------------------|-------|----------|-----|
| Population                           | 12.9 m       | 62%   | 2.4 m                 | 12%   | 5.4 m    | 26% |
| Wage & salary earners                | 5.4 m        | 66%   | 0.9 m                 | 11%   | 1.9 m    | 23% |
| Wage & salary income                 | \$240 bn     | 69%   | \$36 bn               | 10%   | \$71 bn  | 21% |
| Land area (km <sup>2</sup> )         | 37 k         | 0.50% | 56 k                  | 0.70% | 7.6 m    | 99% |
| University R&D                       | \$4.2 bn     | 85%   | \$490 m               | 10%   | \$280 m  | 6%  |
| <i>University R&amp;D per person</i> | \$324        |       | \$200                 |       | \$53     |     |

Notes: (i) Derived from ABS 3218.0, ABS 5673.0 and ABS 8111.0. (ii) Statistical divisions are categorised as in table 2.1. Population and associated data for Queanbeyan is merged with that for Canberra and ACT. Otherwise statistical divisions are those used by the ABS. (iii) Universities R&D expenditures are allocated according to the statistical division of their main campus with three exceptions. The University of Sunshine Coast is classified as ‘regional’; Griffith University is classified as 50% ‘major cities’ and 50% ‘regional metropolitan’ to reflect its dual presence in Brisbane and the Gold Coast; and La Trobe University is classified as 50% ‘major cities’ and 50% ‘regional’ to reflect its presence in Melbourne and in numerous regional centres. Other universities with multiple campuses – e.g. major city universities with regional research facilities or regional universities with city facilities are not accounted for in this analysis.

Obviously an analysis of this kind is imprecise. The arrangement described though intentionally (and heavily) over-estimates the university R&D expenditures in regional statistical divisions since the vast majority of La Trobe University’s R&D activity would be localised in Melbourne. A number of useful observations can be drawn from the data in this table.

- *Major Cities* – Unsurprisingly, the distribution of university R&D expenditure is heavily skewed towards major cities. Per capita university R&D expenditures in major cities are estimated at roughly six times the levels in non-metropolitan regional Australia. This reflects the location of Australia’s biggest and most research intensive universities.
- *Regional Metropolitan* – Perhaps unexpectedly, the larger regional cities and towns account for only a slightly lower share of national university research expenditures than their share of the national population. Per capita expenditures on university R&D are certainly lower than in the major cities, but they are at least on the same order of magnitude.

- *Regional* – Non-metropolitan regional areas by contrast account for 99% of Australia’s landmass, and 26% of its population but just 6% of its university R&D expenditures. Normalised for population, university R&D expenditures in these areas are clearly very low compared with other parts of Australia. University R&D per capita is actually one sixth the scale one finds in major cities.
- *Total Regional* – Combined, the ‘regional’ and ‘regional metropolitan’ statistical divisions were estimated to account for 38% of Australia’s population, but just less than 16% of Australian university R&D expenditure.

The disparity between Australia’s major cities and regional Australia in access to locally based university research capacity is not unexpected. Arguably it would be nonsensical to imagine that all people in Australia should have equal geographic proximity to university research. All over the world, metropolitan centres tend to host more universities, bigger universities and universities with more substantial research investment than is true in non-metropolitan areas. In general, the bigger the cities, the greater are the investments in university research.<sup>79</sup> One of the great attributes of cities – and one of the critical attributes of great cities – is their capacity for concentrating investment into institutions like universities.

It is clear too, if one breaks the analysis down by State, that there are plenty of regional populations across Australia with no access at all to local university R&D capability. In Western Australia, South Australia, Tasmania, and the Northern Territory, very little university R&D occurs outside of major cities or metropolitan centres. This may, in fact, be an efficient and effective way of providing research – especially if metropolitan centres are well equipped with higher education infrastructure and if they are easily accessible to service the research needs of their associated regions.

In South Australia and Western Australia, three quarters of the population, three quarters of the wage earners, and three quarters of the wage and salary income is concentrated in the State capitals. In these same two states, populations outside the capitals are not large in absolute terms and are fairly widely dispersed. Outside of the Adelaide and Greater Adelaide statistical divisions, for example, there are fewer than 300,000 people in SA. Outside of Perth and the South West (the statistical division centred around Bunbury) there are only around 300,000 people in WA. Under these circumstances, it may make sense for predominantly city universities to provide research for regional consumption.

Something similar no doubt can be argued for Tasmania and the Northern Territory. These are well defined regions with fairly small populations. The efficiencies of concentrating university R&D activity within one metropolitan university in each of these regions almost certainly outweigh the benefits that might be expected by trying to localise R&D activity across these regions.

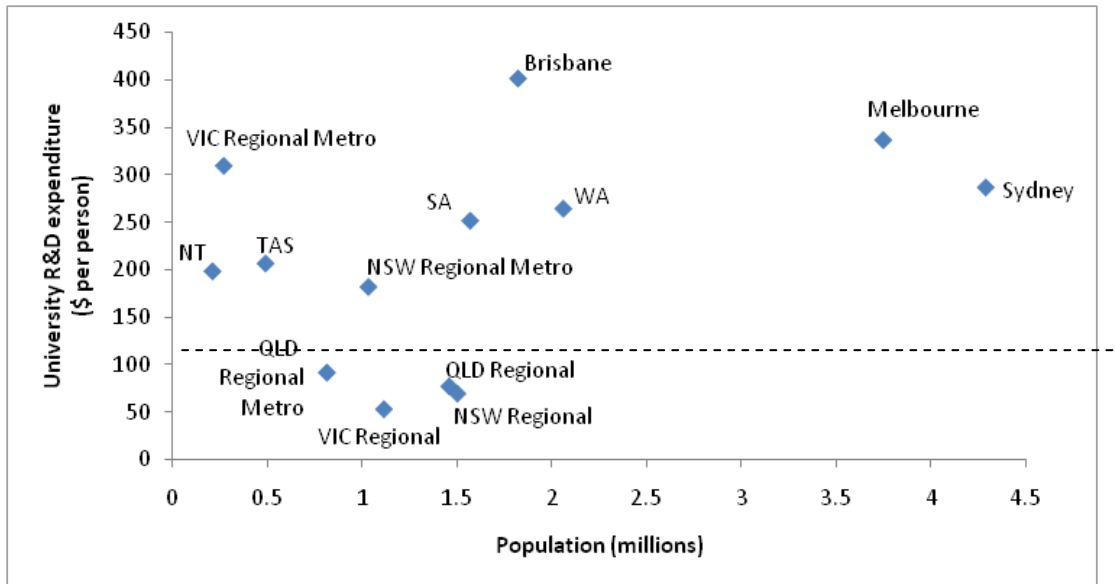
This leaves a question, though, about the more populous eastern States. How does the distribution of university R&D activity compare with the distribution of population there? Figure 5.3 assumes that the universities in Perth, Adelaide, Hobart, and Darwin will cater

---

<sup>79</sup> See Barlow 2009 *The Australian Miracle: An Innovative Nation Revisited* for a comparative analysis of scale of investment in university research across US and Australian cities.

for the research needs of regional Western Australia, South Australia, Tasmania, and the Northern Territory, and then it splits up the eastern States according to the criteria in tables 5.1 & 5.2.

**Figure 5.3 – University R&D expenditures per person by regional category, 2006**



Notes: (i) Derived from ABS 3218.0 and ABS 8111.0. (ii) Statistical divisions in the eastern states are categorised as in table 5.1. (iii) Universities R&D expenditures are allocated according to the statistical division of their main campus with three exceptions. The University of Sunshine Coast is classified as ‘regional’; Griffith University is classified as 50% ‘major cities’ and 50% ‘regional metropolitan’ to reflect its dual presence in Brisbane and the Gold Coast; and La Trobe University is classified as 50% ‘major cities’ and 50% ‘regional’ to reflect its presence in Melbourne and in numerous regional centres. Other universities with multiple campuses – e.g. major city universities with regional research facilities or regional universities with city facilities are not accounted for in this analysis.

Several comments should be made specific to each State in relation to the assumptions used to derive this figure and the conclusions that might be drawn from it.

**Victoria** – The Victorian data almost certainly over-estimate the research activity that city universities perform in regional areas. On the other hand, nearly 75% of Victorians live in Melbourne and nearly 80% of the State’s wage and salary income is paid to Melbourne residents. The size of the State also means that many non-metropolitan regional Victorians may feel that they have reasonable access to university research via their major city and metropolitan regional universities. Roughly 90% of the State’s population live within 200 kilometres of Melbourne. In this context the modest scale of regional university R&D activity is significant, but probably less significant than is true in NSW or Queensland.

**NSW** – A very different story can be told about NSW. Sydney and the regional metropolitan statistical divisions in this State do appear to have reasonably solid per capita expenditures in university R&D (at least compared with other parts of Australia). The same though cannot be said once one moves into regional areas. The regional statistical divisions in NSW account for a population three times that of Tasmania, yet they host university R&D



expenditures that are essentially equivalent – and the distance scales are much more significant in regional NSW than they are in Tasmania.

*Queensland (regional metropolitan)* – Compared with other States, Queensland’s investment in regional metropolitan university R&D is strikingly low. However, the Queensland data for regional metropolitan areas is skewed slightly by the rapidly changing demographic status of both the Sunshine Coast and the Gold Coast statistical divisions. In particular, reflecting historical investment patterns, there is currently only modest-scale university research activity in the Sunshine Coast. On the other hand, based on the assumptions used to derive this plot, the Gold Coast on its own attracts an estimated \$145 per person on university R&D – a figure that can only grow as Griffith University continues to expand its focus there. The experience from other States moreover would suggest that as the populations in both these two regional metropolitan areas grow, the appetite for university research investment in these areas will also expand accordingly.

*Queensland (regional)* – Investment in university research across regional Queensland is low, just as it is in regional NSW and Victoria. The regional statistical divisions in Queensland currently account for a population equivalent to that of the whole of SA, yet the per capita expenditures on university R&D in regional Queensland are only a fifth those in SA. As in regional NSW (and in contrast to WA, SA, and Victoria) there is an underlying challenge again relating to distance. It is difficult to see how a strong research base in Brisbane can be locally attuned to the needs of communities and businesses, say, in Mackay, 1000 km away. Moreover, with strong demographic pressure to increase investment in university research in Brisbane and in associated regional metropolitan areas foreshadowed in the years ahead, sustained investment in research across non-metropolitan regional Queensland may present a particular problem for the State.

Four million Australians then – roughly a fifth of Australia’s population – live in non-metropolitan regional Queensland, NSW, and Victoria. This group’s access to university research (or to a research-intensive university experience) is clearly constrained compared even with other, smaller regional population groups around Australia. In broad terms, this may provide some grounds for increasing investment in research at regional universities in eastern Australia. But in establishing whether Australia therefore needs a National University in Regional Australia or some other collaborative model across existing regional institutions, it is useful to study a range of more specific information about the institutions that currently service this distributed community.

### 5.3 *Research and teaching*

One of the major justifications for investing in research at universities relates to its impact on teaching activity. There is an extensive literature about the teaching-research nexus which is somewhat fraught. But a strong view about the importance of research in teaching is not necessary for the current analysis. In this section, we simply acknowledge the following:

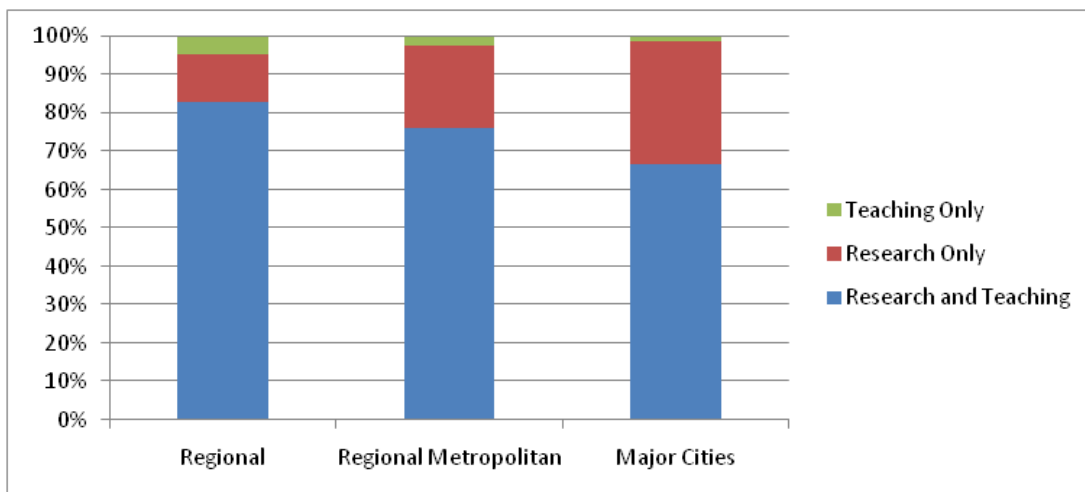
- that perceptions about research performance are important in underpinning institutional reputations more broadly;
- that research is, consequently, a factor in driving the quality of students and the quality of staff that institutions are able to attract to their teaching programs;

- that research activity can, in certain circumstances, act as an indicator of departmental or disciplinary vitality; and
- above all, that institutional capacity for training research students (which is an important and growing function of universities) is entirely dependent on the scale of an institution's research activity.

In the context of these points, it is worth making several observations about the provision of higher education to regional Australia.

To begin with, one claim that is often made by people working in regional universities is that regional institutions find it significantly more difficult than other institutions to attract prestigious research-only staff. This can be evidenced from relative success in ARC and NHMRC fellowship programs. But in a more generic sense it is also revealed by DEEWR staffing data.

**Figure 5.4 - Staffing profile in eastern state universities, by 'regionality'**

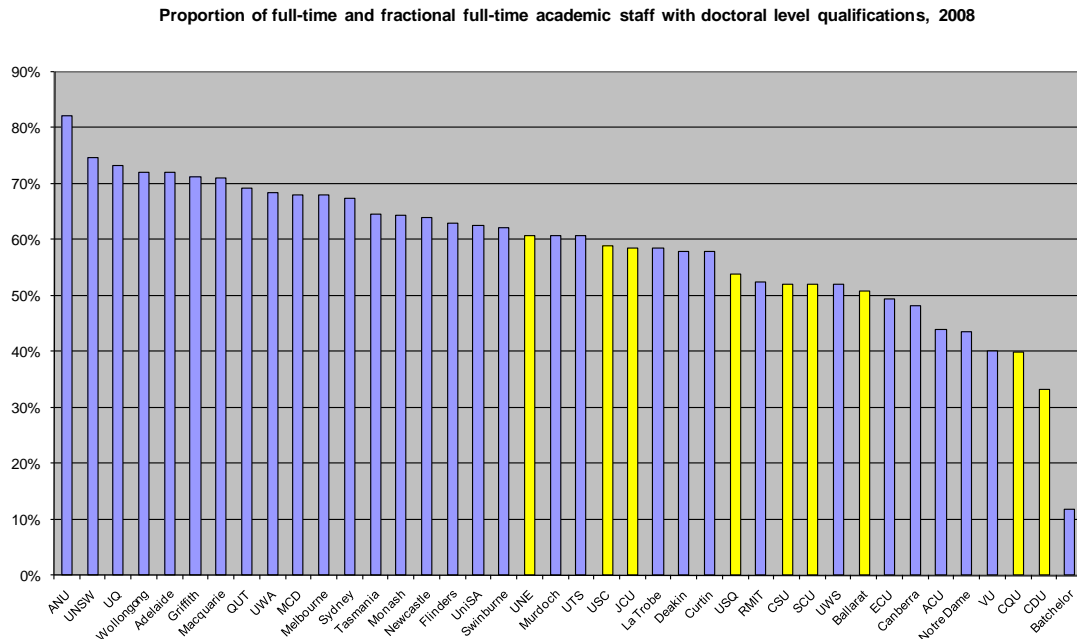


Note: Derived from DEST 2006 for Victorian, NSW, and Queensland institutions only. Regional institutions are defined as in tables 5.1 and 5.2, although La Trobe University's activity is now classified as 100% 'major cities'.

Figure 5.4 shows the regional distribution of academic staff between research-only, teaching-only, and research and teaching positions in the three large eastern states. Just 13% of academic staff members in regional universities were in research-only positions in 2006, compared with 22% of academic staff in regional metropolitan universities, and 32% of staff in major city universities. This is indicative of the particular challenge in attracting high-performing research staff to regional institutions. It is also reflective, however, of the lower research intensity at regional universities compared with metropolitan institutions.

These same factors are evident in the generally lower qualification levels of academic staff in regional universities compared with the more research intensive city universities. Figure 5.5 shows the proportion of academic staff in each Australian university with a doctorate. The nine regionally based universities are highlighted in yellow.

**Figure 5.5 – Proportion of academic staff with doctoral level qualifications, 2008**



Source: DEEWR Selected Higher Education Staff Statistics

Table 5.3 shows a range of key metrics that are informative in relation to the issue of the lower research intensity at regional institutions: (a) the estimated proportion of academic staff FTE spent doing R&D; (b) the proportion of total student load involved in higher degree by research programs; and (c) estimated expenditures on R&D as a proportion of total operating expenditures. Some of these measures should be viewed with caution. In particular, the accounting practices whereby institutions report R&D expenditures or academic FTE on R&D are very different (and much less rigorous) than those used to account for total academic FTE and total operating expenditures. Nonetheless, two interesting observations can be made from this data.

First, it can be noted that the combined regional universities in NSW, Queensland and Victoria appear to be roughly half as research intensive as the combined universities in Melbourne, Sydney and Brisbane – and significantly less research intensive also than the regional metropolitan universities. Second, it would seem that there is only modest provision of research training in the regional eastern-state universities compared with what is occurring in either the major cities or in the regional cities. The probable implications are: that teaching in regional institutions is currently less likely to be directly informed by research than is true in other parts of Australia; and that demand for or supply of research training opportunities is low compared with other parts of Australia.

**Table 5.3 – Measures of research intensity in eastern-state universities**

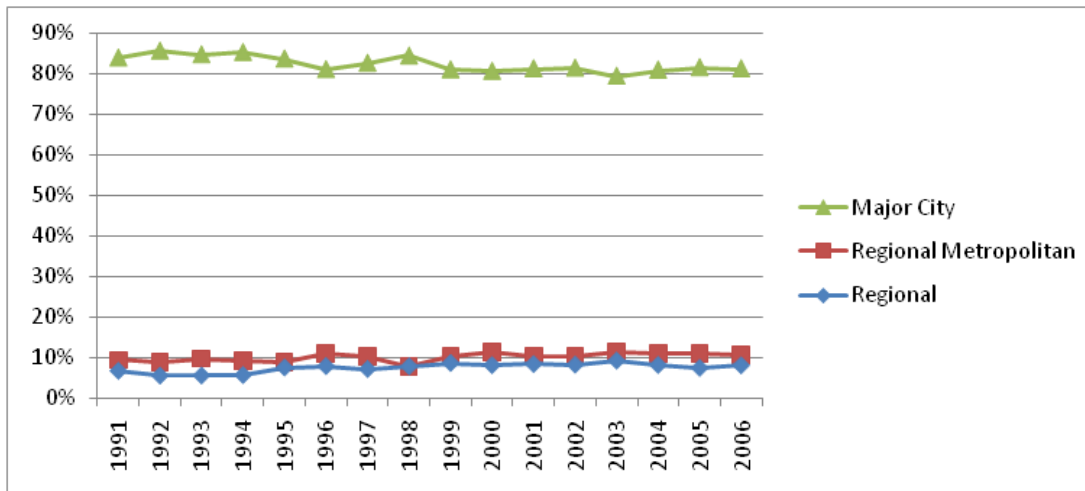
|  | Major Cities | Regional Metropolitan | Regional |
|--|--------------|-----------------------|----------|
| Academic FTE on R&D / Total Academic FTE         | 51%          | 38%                   | 27%      |
| Postgraduate by research / Total Student numbers | 6%           | 4%                    | 2%       |
| R&D expenditures / Total operating expenditures  | 40%          | 28%                   | 17%      |

Note: (i) Derived from DEST 2006, ABS 8111.0, and Barlow 2009. (ii) Accounting practices by which academic FTEs and operating expenditures are derived are more rigorous and more accurate than those by which academic FTE on R&D and by which R&D expenditures are derived. Nonetheless, the ratios do give reasonable estimations of relative research intensity.

With respect to this last point, it is possible to make some estimates of whether the problem in attracting higher degree by research students lies with a lack of student demand or with the lack of training opportunities. Between 1996 and 2006, the number of PhDs completing annually from regional universities in eastern Australia grew by 92% – implying good growth in underlying demand. However PhD completions from universities in the three major eastern cities also grew at a high rate (88%), so the total proportion of PhD completions from the major cities and from the regions have remained amazingly constant. (See Figure 5.6.)

Interestingly, since the early 1990s, the distribution of HERDC research income going to major city universities (87%), regional metropolitan universities (8%), and regional universities (5%) across NSW, Victoria, and Queensland has also remained essentially unchanged. In other words, once you aggregate institutions by region, it would appear that growth in PhD completions across each region has scaled perfectly in line with expanding research income. The implication is that growth in PhD numbers across eastern Australia has been driven most forcefully in recent years as a simple consequence of increased external investment in university research. This tells us that funding (or, more precisely, the ability to attract funding) rather than exogenous cultural factors, is most likely to be what currently differentiates the intensity of research training activity in regional Australia from that in the major cities.

**Figure 5.6 – Share of PhD completions, eastern state universities**



Note: Derived from UA 2008. Summarises data for NSW, Victorian, and Queensland universities only. As in previous tables, Griffith is counted as 50% ‘major city’ and 50% ‘regional metropolitan’.

This assessment is confirmed by the fact that research income per PhD completion in regional institutions is around half that in many major city universities. This fact reinforces the impression that the low scale of research and modest research profiles are currently the most significant limitations to the provision of research training and research-informed teaching in regional areas. It is certainly difficult to suggest from the data that an increase in research in regional universities would not stimulate a similar increase in demand for doctoral research training among regional populations.

The corollary of all this is that there would be benefits for regional communities – and for Australian more broadly – if regional institutions were able to find a mechanism to increase the scale of their research and to raise their research intensity. As we have seen, roughly 4 million Australians live in non-metropolitan regional parts of NSW, Victoria and Queensland. The regional universities that service this population in the most immediate sense are clearly less research intensive and less able to offer research training opportunities or research-informed teaching than is true in other parts of Australia.

An expansion in the scale of research in regional institutions would be necessary if regional institutions were to maximise their potential for building a research culture through education in these communities.

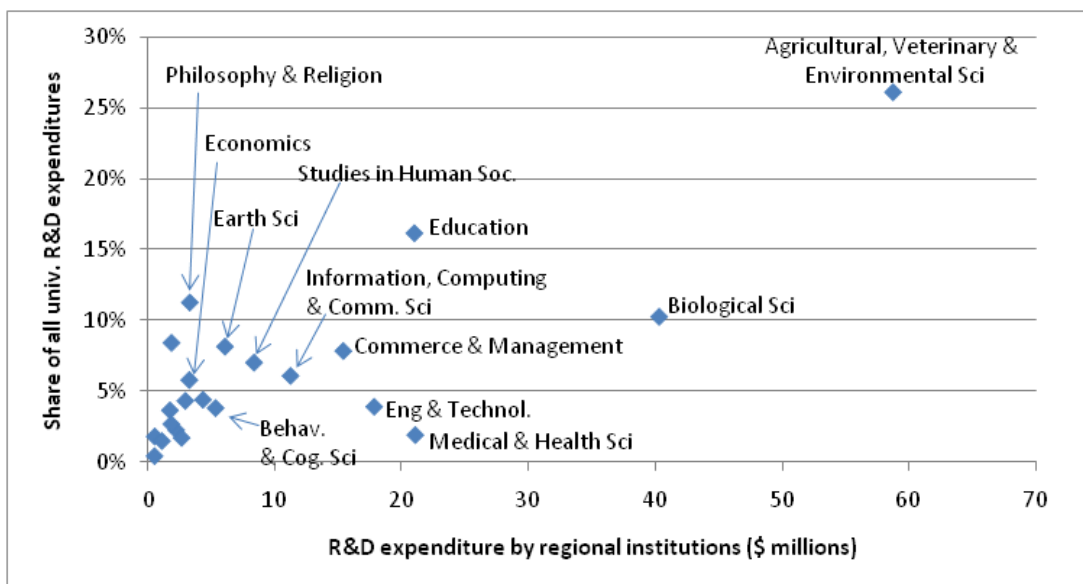
#### 5.4 *Fostering research of regional relevance*

Historically, regional Australia’s dominant industries – mining and agriculture – have been highly responsive to developments in research, and an important part of this responsiveness has been the existence of an adaptive and technically proficient workforce. The complexity of modern farming and mining technology, and the unchanging necessity for businesses in regional Australia to adapt new technological developments to quite specific local conditions are clearly important justifications for expanding the range of research and development skills within regional populations. Research-intensive education is obviously pivotal in this respect.

But there are other reasons for finding a mechanism to increase the scale and intensity of research in regional universities. One significant justification relates to the status that research confers on universities and on their associated regions – discussed further in section 5.5 below. Other justifications relate to: (i) the societal benefits, both direct and indirect, that are typically anticipated to flow from university research; and (ii) the likelihood that university research conducted in regional areas will be more relevant to the needs of regional communities than research performed in cities.

Figure 5.7 illustrates the combined research portfolio of universities in regional NSW, Victoria and Queensland across 22 major research fields. For each field, it plots absolute R&D expenditure in the combined regional universities against their share of R&D expenditures among all eastern state universities. To give an indication of where regional institutions are focused, it is worth noting that across all fields combined, the regional institutions accounted for just 6% of total university expenditures across the three states.

**Figure 5.7 – Research portfolio of eastern regional universities, 2006**



Notes: (i) Derived from ABS 8113.0 and Barlow 2009, based on 2-digit RFCD codes. (ii) Sums activity across all regionally based universities. Share shows regional expenditures as a proportion of combined state higher education research expenditure totals across NSW, Victoria and Queensland.

There are three significant comments that can be made about the distribution of research activity shown in Figure 5.7.

First, the focus on agricultural, veterinary and environment science is clearly significant – yet expenditures in this area are arguably still low, given its importance to regional communities and to the national economy.

The significance to the national economy is important to highlight. More than 60% of Australia’s export income is derived from commodities trade, while at the same time the nation is facing significant challenges in the areas of food security, biosecurity management, water security and climate change. Around 70% of Australia’s land mass is used for agriculture, while more than 60% of Australia’s continental water supply is applied to

agricultural production. To address these national challenges will require direct engagement between teaching, learning, research and practice with the communities of regional Australia.

Second, it is obvious in many fields, such as in health sciences and in information and communications sciences, that regional populations remain highly dependent upon researchers in metropolitan and city universities to perform research that is relevant to their needs.

Third, in some fields – notably in mathematics, physics, chemistry, and in several areas of the humanities – it is clear that there is very little research activity going on at all in regional institutions, implying a lack of breadth in both the research and teaching services offered to regional communities under current arrangements. Each of these points is discussed briefly below.

#### **5.4.1 Agricultural, Veterinary and Environmental Sciences**

Regional universities account for 26% of university research expenditures in agricultural, veterinary and environmental sciences across NSW, Victoria and Queensland. This is the main area of research focus for regionally based institutions, as one might expect. Yet it is striking that the regional share of university research in this field is only broadly comparable to associated population distribution: regional NSW, Victoria and Queensland accounts for 25% of the total combined population in these states.

This has considerable significance. Agricultural, veterinary and environmental sciences encompasses soil and water sciences, crop and pasture production, horticulture, animal production, veterinary sciences, forestry sciences, fisheries sciences, environmental sciences, and land, parks and agriculture management. Given the importance of agricultural sciences and environmental management to regional communities, and given that the vast bulk of research expenditures in this field are of direct relevance to regional communities and of very little direct relevance to communities in major cities, it is reasonable to ask why the proportion of regional research in this area is not higher.

Indeed, the implication here is that three quarters of the university research taking place across the eastern states in this area currently occurs within metropolitan centres or major cities. The separation that this implies between the conduct of research in universities and its beneficiaries within regional communities suggests that some of the spillovers that are typically anticipated from university research (such as knowledge transfer, flow of human capital, and commercialisation of IP) may be limited in some respects in this area in regional Australia.

#### **5.4.2 Other Fields with Specific Relevance to Regional Australia**

Of course metropolitan universities and universities in major cities can, should, and do provide research that is relevant to non-metropolitan regional needs. Several of the major city universities in Australia (e.g. UWA, the University of Adelaide, the ANU, and the University of Sydney) perform high-scale, high-quality crop and plant sciences research of relevance to country communities. Several of the major city universities likewise provide outstanding, high-scale research of relevance to the mining and resources sector (e.g. UQ, UWA, the University of South Australia, the University of Newcastle, and the University of Sydney).

Even though this may reduce the prospects for some regional spillover effects, it is possible that centralising such research in major cities still remains the best way to maximise its quality, particularly given the existing scale of regional institutions, their consequent reputational standing and the difficulties of attracting excellent research staff. But these are fields where research at least remains relevant to regional populations, wherever it may be performed, due to the intrinsic focus of the discipline. The same cannot be said, however, of other areas such as education, medical and health sciences, and information and communication sciences.

Much of the research that occurs in any university is neither city-oriented nor regionally oriented, since it deals with universal problems. But in fields like education, medicine, and information and communications science, there are specific regional problems and specific metropolitan problems that can be usefully addressed through university research. This raises questions about locational bias. As figure 4.1 shows, with 98% of university medical and health sciences research, and 94% of research in information, computing and communications sciences across the three eastern states occurring in major cities or in regional metropolitan areas, one can ask whether non-metropolitan issues are likely to receive an attention that is proportional to the scale of non-metropolitan regional populations.

The answer is not obvious. The existing distribution of university research in these fields may well be efficient. Medical research in particular is infrastructure-intensive and much of it is most appropriately conducted in association with hospitals. Moreover, while some aspects of health are regionally specific, most arguably are not. On the other hand, it is interesting that 15% of the education R&D expenditure across east-coast universities occurs in regional institutions. Are educational needs and educational research so much more regionally specific than community needs and research in medical and health sciences? This clearly is an issue that warrants consideration, and which may provide some justification for finding a mechanism to expand the research activities in selected fields across regional universities.

### **5.4.3 Gaps in research and teaching in key subjects**

Finally, figure 5.7 also shows several research fields where universities in regional Australia are collectively scarcely active at all. The trivial scale on which research in certain subjects (e.g. mathematics, physics, chemistry, law, and language and culture) is performed in regional universities is perhaps understandable, given the lack of regional specificity in at least some of these fields. Arguably physics in particular, which tends to be infrastructure intensive, is more appropriately supported in major metropolitan centres. On the other hand, the dearth of scaled-up mathematics research in regional universities may point to a gap in capacity for providing high-level mathematical training as part of regional university courses.

This is consistent with other evidence. One of the trends of Australian higher education over the past ten years has been a steady closure of mathematics departments in smaller institutions. This should be very concerning to populations in regional Australia, given the growing importance of mathematics for knowledge-intensive employment. Creating a larger institution or fostering institutional collaboration in regional Australia so as to facilitate effective scale may be the only way to ensure that there is meaningful university teaching



and research capability in mathematics (or in other sub-scale disciplines) within regional Australia.

Regional universities clearly perform a considerable amount of research that is relevant to regional communities. But, as with their research training activity, in most disciplines they are not performing research on a nationally significant scale, or even on a scale that is commensurate with regional populations. In some areas, such as mathematics, they hardly seem to be hosting much research at all.

The problem of low scale in specific research fields affords a potential case for amalgamating or promoting greater inter-institutional collaboration. But the issue is not straightforward. In the next section we quantify the scale problem and outline some of the challenges to overcoming it in a meaningful way.

## 5.5 *The importance of scale in research*

The benefits of increasing the scale of research in regional universities are fairly obvious. Several key points are listed below.

- a. *High scale makes hiring easier* – First, an institution’s research performance is driven largely by the calibre of researchers (and students) it is able to attract, and perceptions of status are extremely important in this respect. Since scale is closely correlated with prestige, an institution’s scale of research activity can impact on the quality of its research staff and the number of its research students.
- b. *High scale means higher impact* – Second, institutional scale enables the creation of research groups in specific fields that themselves have scale. This enables institutions to build visibility for their research which becomes self-reinforcing as staff, students, and granting bodies change their perceptions about what an institution can offer. Inevitably this feeds into the quality and impact of research an institution is able to support.
- c. *High scale means better research infrastructure* – Third, a similar argument can be made specifically about infrastructure. Institutional scale enables the development of major research infrastructure in areas of focus. As a consequence, research conducted at higher scale tends to be more infrastructure-intensive, whereas smaller institutions tend to favour less infrastructure-intensive research, which may in some situations limit the impact and the quality of their research they are able to offer.
- d. *High scale enables greater diversity of research* – Fourth, distortions in government funding provision inevitably favour some disciplines over others. The experience in Australia over the past decade is that only the larger institutions have been able to preserve significant research activity in certain subjects – notably mathematics. Institutional scale appears to enable efficiencies in internal subsidisation within institutions. Scale is critical for institutions seeking to offer a diverse research profile.

The benefits of institutional scale in research are compounded by two additional factors in Australia. One is the mechanism by which research block grants are awarded. Since these funds are allocated (quite appropriately) in proportion to success in attracting research income, the institutions with larger scale research activity tend to attract not only more research income but also more block grant research funding than institutions with small scale research activity. The model is fair and reasonable, in the sense that it seeks to channel

resources in proportion to organisational scale and performance. But institutions that are lacking in research capacity to begin with tend to have very limited opportunities for building up strategic research capacity using federal resources. This is arguably a particular problem for regional Australia, due to the fragmentation of funding across multiple small research scale institutions.

The second feature that is quite significant in Australia is the mounting role played by international research rankings in influencing community perceptions as well as the attitudes of international students. Research standing (and by association scale of research) is one of the major determinants of a university's prestige. By implication, research scale is an important factor in determining the extent to which universities foster community pride and afford local regions with the broad reputational benefits that are associated with higher education. In this respect, the low scale of research in regional institutions may be a contributor to the low rates of enrolment by international students on regional campuses.

Unfortunately, the challenge in overcoming this effect is not trivial. A study by Thomas Barlow, soon to be published in Australia, has shown that success in global rankings does scale with research expenditures, but that only universities with R&D expenditures of more than US\$150 million are effectively guaranteed a spot in the Shanghai Jiao Tong University top 500 ranking.<sup>80</sup> To have a regional university in Australia with R&D expenditures on this scale, one would have to amalgamate all non-metropolitan regional institutions – and in doing so one would lose the independence of the only regional university that already has a Shanghai Jiao Tong University ranking (James Cook University).

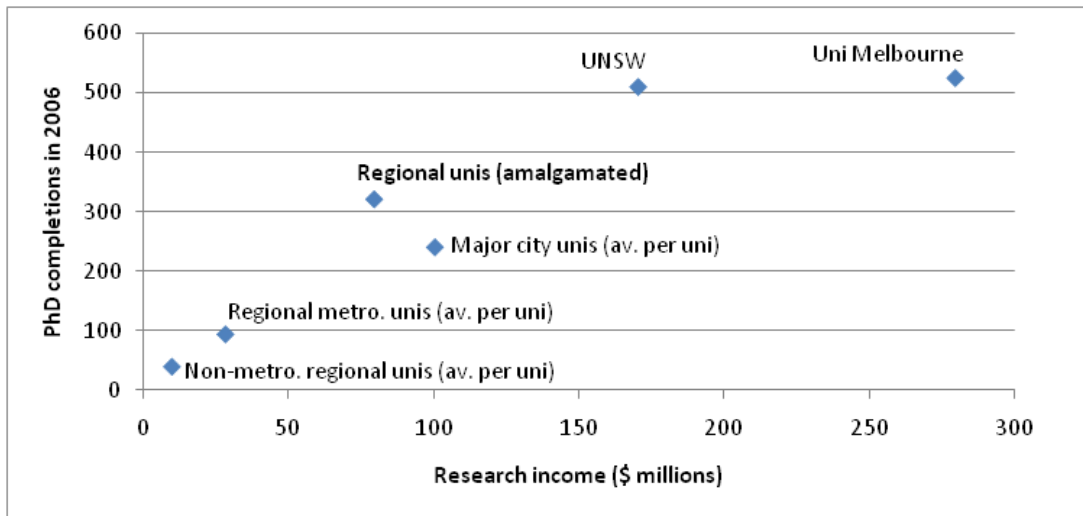
This brings us to a critical issue. If there are potential benefits in finding mechanisms for increasing the scale of research across regional universities, how much scale would be enough?

Figure 5.8 shows the scale of research income and PhD completion numbers per institution in regional, metropolitan-regional, and major city areas across the three eastern states, as derived from the HERDC. The data is normalised per institution for each region. But data for the University of Melbourne and for UNSW are also shown to provide an example of the scale of activity at two high-scale institutions.

---

<sup>80</sup> Barlow 2009.

**Figure 5.8 – Scale of research activity averaged per institution, by region, 2006**



Notes: (i) Derived from UA 2008. Note that this figure shows research income, not research expenditure. (ii) Sums activity across all regionally based universities. Share shows regional expenditures as a proportion of combined state higher education research expenditure totals across NSW, Victoria and Queensland.

The results are illuminating. In non-metropolitan regional areas, research income *per institution* was only 10% of that received *per institution* in major cities. PhD completions were 17% of those graduating *per institution* in major cities. Incidentally, the fact that the difference is less significant for PhD completions than it is for research income is consistent with the preceding analysis suggesting: (a) that demand for PhD training opportunities has not saturated in regional areas; and (b) that students pursuing PhD training in regional areas are currently under-resourced compared with those pursuing PhD training in major cities. But the main point of this figure is broader than this.

It shows that if you were to amalgamate all regional universities in non-metropolitan eastern Australia, the single institution so formed would still attract less research income on its own than the average research income per institution in a major city (which is heavily weighted by the Group of Eight). It also shows that such an amalgamated organisation would still sit, in scale terms, a long way behind a leading Group of Eight university. Indeed, you would have to amalgamate all regional universities then double their research income to create an institution that performs research in regional Australia on the scale of a Group of Eight university.

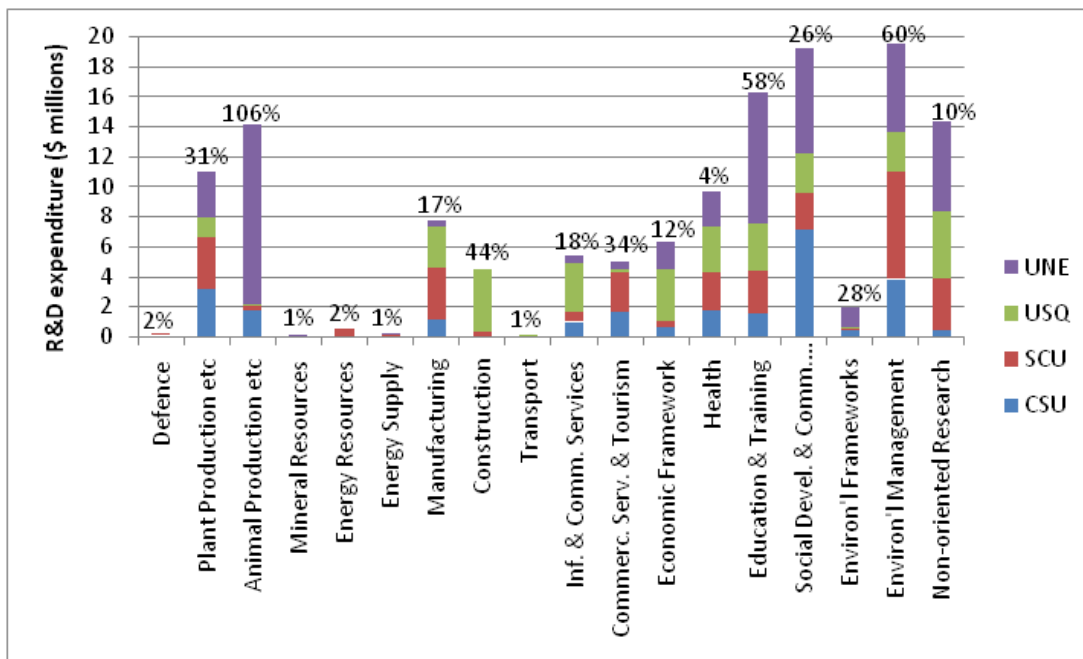
There is no doubt that bringing regional universities together would produce synergies such that the resulting research activity would be greater than simply the sum of the parts (see section 5.6 below). It is nonetheless instructive to look at the scale effects of simply combining the research efforts of regional universities in different fields.

As an example, Figure 5.9 shows the impact of combining R&D expenditures for four major regional universities in the eastern States (Charles Sturt University, Southern Cross University, the University of New England, and the University of Southern Queensland) across all the major socio-economic objectives. In only one area would the activity of those four combined institutions exceed the scale of the leading university across the three eastern

States. This is in ‘Animal Production and Animal Primary Products’, where the University of New England already has a presence that is close to leading.

In other areas – such as ‘Plant Production and Plant Primary Products’, ‘Education and Training’, ‘Social Development and Community Services’, and ‘Environmental Management’ – joining these four institutions would clearly enhance the scale and visibility of their research, but without expanding their efforts they would continue to sit significantly behind the leading institutions.

**Figure 5.9 - Impact of pooling research across four eastern regional universities, 2006**



Notes: (i) Derived from ABS 8113.0 and Barlow 2009, based on 2-digit SEO codes. (ii) Sums reported R&D activity across four regionally based universities. The percentage shows how the R&D expenditure in the amalgamated institutions compares with that of the highest spending institution across NSW, Victoria and Queensland in each of the SEO codes.

Table 5.4 calculates the ratio of research expenditure by these four universities combined (CSU, SCU, UNE and USQ) to that of the leading eastern state university for seven areas of research by socio-economic objective. It also shows the corresponding ratio for all regional universities combined. For example, the combined expenditure by the four universities on research relating to plant production and plant primary products totalled 31% of the expenditure of the leading university in this area. The combined total for all regional universities was 49% of the leading university’s expenditure.

By combining research effort, regional universities would achieve a dominant scale position within Australia in research aimed at ‘Animal Production and Animal Primary Products’ and ‘Environmental Management’. They would come close also in their research aimed at ‘Education & Training’.

**Table 5.4 – Comparing regional groupings with east coast leaders in key SEOs, 2006**

|  | CSU + SCU +<br>UNE + USQ | All regional |
|--|--------------------------|--------------|
| Plant Production & Plant<br>Primary Products   | 31%                      | 49%          |
| Animal Production &<br>Animal Primary Products | 106%                     | 132%         |
| Construction                                   | 44%                      | 52%          |
| Commercial Services &<br>Tourism               | 34%                      | 39%          |
| Education & Training                           | 58%                      | 76%          |
| Social Development &<br>Community Services     | 26%                      | 35%          |
| Environmental<br>Management                    | 60%                      | 132%         |

Notes: (i) Derived from ABS 8113.0 and Barlow 2009, based on 2-digit SEO codes for NSW, Victoria, and Queensland. (ii) Percentages show reported R&D activity across two groupings of regionally based universities as a proportion of the expenditure in the highest spending institution across NSW, Victoria and Queensland.

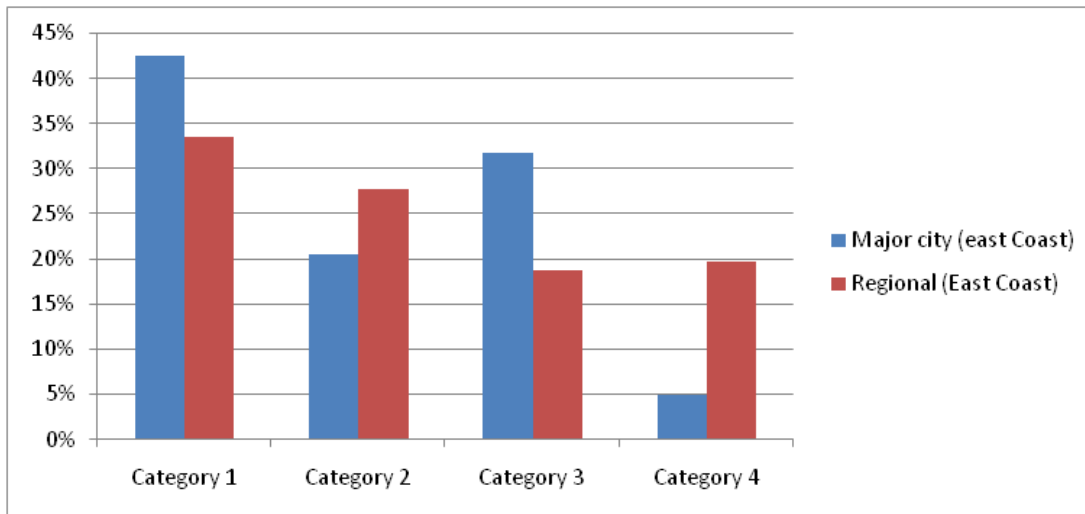
As identified at the outset, the problem for regional institutions in delivering superb research to regional communities is not just fragmentation – it is scale of their combined activity. As noted, institutional collaboration or consolidation can itself be a catalyst for improving research performance. In the long-run, the success of any such initiative will depend upon the extent to which such action stimulates ongoing growth.

## 5.6 *Approaches to growth*

If the main challenges faced by regional universities in research relate to scale, and even the combined scale of several regional universities is somewhat modest by national and international standards, a key question for consideration is how regional institutions can grow the scale of their research – either individually or as a group.

Under existing arrangements, the scope for regional institutions to attract research investment is fairly constrained. The starting base is low - there is no non-metropolitan regional institution that accounts for more than 1% of total national university R&D expenditures and the funding streams are highly competitive.

**Figure 5.11 – Where institutions source their research income**



Notes: (i) Derived from UA 2008. (ii) Sums activity across all regionally based universities. Share shows regional expenditures as a proportion of combined state higher education research expenditure totals across NSW, Victoria and Queensland.

Figure 5.11 shows the breakdown of research income across competitive grants (category 1), other public sector funding (category 2), industry and other funding (category 3), and CRCs (category 4) for non-metropolitan regional universities and universities in major cities across NSW, Victoria and Queensland. It shows that regional universities:

- a) are heavily dependent upon CRC funding and much less successful than universities in major cities at accessing national competitive grants schemes;
- b) are relatively successful in accessing public funding outside of competitive grant streams; and
- c) are not strongly competitive compared with city universities in attracting industry, philanthropic or international funding.

This funding structure is broken down in greater detail in table 5.12, which shows regional institutions' share of total east coast research income across various categories. What is striking about this data is how dependent the regional institutions are on CRC funding and on Commonwealth funding outside of competitive grants programs. This is consistent with a research program that is aligned with the needs of local communities and regional industry groups, but it also implies some vulnerabilities.

**Table 5.12 – Research income**

| Subcategory of research income      | Category                        | Share of East Coast Total |
|-------------------------------------|---------------------------------|---------------------------|
| Non-University CRC Participants     | Category 4                      | 20%                       |
| Commonwealth CRC Grant              | Category 4                      | 18%                       |
| Third-Party CRC Contributions       | Category 4                      | 13%                       |
| Other Commonwealth Funding          | Category 2                      | 9%                        |
| Local Government                    | Category 2                      | 6%                        |
| State Government                    | Category 2                      | 5%                        |
| <b>TOTAL RESEARCH INCOME</b>        | <b>Category 1, 2, 3 &amp; 4</b> | <b>5%</b>                 |
| Australian Contracts                | Category 3                      | 5%                        |
| Australian Grants                   | Category 3                      | 4%                        |
| Commonwealth Competitive Grants     | Category 1                      | 4%                        |
| International Funding               | Category 3                      | 2%                        |
| Non-Commonwealth Competitive Grants | Category 1                      | 2%                        |
| Donations, Bequests and Foundations | Category 3                      | 1%                        |

Notes: (i) Derived from UA 2008. (ii) Sums activity across all regionally based universities. Share shows regional expenditures as a proportion of combined state higher education research expenditure totals across NSW, Victoria and Queensland.

The lack of success in attracting competitive grants and international or philanthropic funding is consistent with the impression that regional universities have special challenges recruiting outstanding research staff. It is also indicative of a reputational effect which is likely to be compounded by the low scale at which research is currently performed in regional institutions.

Under present policy settings and organisational arrangements, there is certainly no reason to imagine that the scale of university research across regional Australia is set to dramatically increase in the immediate future. Indeed the impact of recent funding changes for research block grants – which will see significant growth in Research Infrastructure Block Grants flowing in proportion to competitive grant income – will advantage universities in major cities far more than universities in regional Australia, exacerbating the existing differences in scale of research between city and country.

Is there a need then for doing things differently in regional universities? Arguably the answer is yes. The challenge is developing a model that can establish the benefits of increased scale for regional institutions in a resource-limited and competitive environment. Three approaches to capacity building in the United States and Australia are discussed briefly below.

#### *A. Building scale directly through consolidation*

One model would be formally to amalgamate a subset of regional institutions or to consolidate research activity through joint ventures.

This is especially true were a formal amalgamation to be proposed specifically for CSU and SCU. On the positive side, if one compares the competitive grant funding of these two institutions one finds a number of complementarities. For example, judging from ARC grants data, there may be potential synergies between:

- SCU's capabilities in plant genomics and CSU's capabilities in crop and pasture production;
- SCU's capabilities in soil science and CSU's capabilities in viticulture; and
- SCU's capabilities in coastal systems research and CSU's capabilities in inland river ecology.

There are other areas too where amalgamation may provide scope for larger organisational groupings. In education and in philosophy, for example, an amalgamation might benefit researchers in both institutions by bringing together research-active colleagues which would help to stimulate the research culture of the amalgamated institution.

These points noted however, it must be recognised that competitive funding for research is driven by a relatively small number of individuals in both institutions. And, as discussed previously the scale of research funded from all sources would remain low by national and international standards, even in areas of strength.

#### *B. Funding regional universities to raise competitive performance*

A second model would be simply to fund regional universities to raise their competitive performance so that they are able to attract more external research income and thereby accelerate the building of scale in research.

The National Science Foundation (NSF) funds regional universities to raise their competitive performance so that they are able to attract more external research income and thereby accelerate the building of scale in research. Part of the statutory function of the NSF is "to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education."

Interestingly, the main vehicle for achieving this in the US is more sophisticated than simply subsidising regional research that has failed to attract competitive funding. The NSF runs an initiative called the Experimental Program to Stimulate Competitive Research (EPSCR), which provides seed funding or catalytic funding to regional institutions with the direct objective of making them more competitive. The NSF collates data on the initiative to show that regional institutions attracting EPSCR funding subsequently improve their performance in accessing competitive grants.



A similar program may be useful in Australia. Interestingly, the jurisdictions that apply for funding under this program in the US account for 20% of the national population but receive just 10% of NSF funding – a much narrower differential than currently exists in regional Australia, albeit on a different scale.

*C. Building scale indirectly through agency collaboration*

Another approach is to build on the success of regional universities in the CRC program by encouraging specific “scale-building” collaborations in regional Australia with a focus on infrastructure, visibility, and research outcomes – without necessarily seeking to foster new collaborations between universities.

One significant mechanism in this respect, for instance, would be to enable improved collaboration with state and federal agencies in co-locating research, in designing research programs, and in applying for infrastructure support. State agencies spend around \$300 million on research in agricultural, veterinary and environmental sciences across NSW, Victoria and Queensland. An estimated \$150 million is also spent across these same three states in agricultural, veterinary and environmental sciences by Commonwealth research agencies, mainly the CSIRO.<sup>81</sup>

There are examples in Perth, Adelaide, Brisbane, and Melbourne where government agencies have co-located with universities in state capitals to build a major research presence. Such initiatives have proved highly successful in attracting outstanding researchers not only from other parts of Australia but also internationally.

Federal funding has been an important aspect of such initiatives in other parts of Australia. A concerted program that fostered the development of significant research infrastructure to be shared by regional universities and state and federal government agencies (and possibly by multiple universities) would provide a powerful mechanism for building up research scale in regional institutions. An initiative along these lines could also provide some building blocks for a future National University in Regional Australia.

*D. Building scale through strategic collaboration with research intensive universities*

A further approach to boost the amount of regionally oriented research in Australian universities, and to enhance the performance of research in regional institutions could be for regional universities to develop strategic relationships with research intensive universities.

While one off research collaborations are common, there are opportunities to build deeper and more strategic relationships in research and research training between regional universities and major research universities based in the cities.

Clearly any such initiatives would need to be attractive to all parties involved in such an arrangement. This would be the case where there is significant mutual benefit, especially if additional external funding were to be provided, as it has been for

---

<sup>81</sup> Derived from ABS data. See ABS 8109.

example in relation to recent initiatives between the ANU and UniSA. One specific area where there may be potential for mutual benefit is in fostering increased interest in pursuing HDR studies among regional populations. It is conceivable for instance that a strategic research relationship between a major research university and one or more regional universities (or a future NURA) could:

- broaden the research training opportunities that are visible to regional students;
- enhance perceptions about the regional universities and about the value of pursuing research careers in general; and
- expand the demand for PhD training in all of the participating institutions.

There could also be other mutual benefits of such an alliance for teaching and learning.

## 5.7 *Summary*

Regional Australia accounts for approximately 40% of Australia's population yet significantly less than 20% of Australian investment in university R&D. While concentration of research activity in the cities makes sense in States with very widely dispersed populations outside of the capitals (WA, SA and the NT), it is less clearly justified in the case of the eastern States.

There would be benefits for regional communities – and for Australia more broadly – if regional institutions were able to find a mechanism to increase the scale of their research and to raise their research intensity. Roughly 4 million Australians live in non-metropolitan regional parts of NSW, Victoria and Queensland. The regional universities that service this population in the most immediate sense are significantly less research intensive and less able to offer research training opportunities or research-informed teaching than is true in other parts of Australia.

Analysis of the fields of research undertaken in regional universities shows a significant focus on agricultural, veterinary and environment science although expenditures in these areas are arguably still low given their importance to regional communities and the national economy. In many fields, such as health sciences and information and communications sciences, regional populations remain highly dependent upon metropolitan and city universities to perform research that is relevant to their needs. In some fields – notably in mathematics, physics, chemistry, and in several areas of the humanities – there is very little research activity going on at all in regional institutions, implying a lack of breadth in the research and teaching services offered to regional communities under current arrangements.

The main challenges faced by regional universities in research relate to scale: even the combined scale of several regional universities combined is somewhat modest by national and international standards. A key issue therefore is how regional institutions can grow the scale of their research – either individually or as a group.

Under existing arrangements, the scope for regional institutions to attract additional research investment is fairly constrained. The starting base is low - there is no non-

metropolitan regional institution that accounts for more than 1% of total national university R&D expenditures and the research funding streams are highly competitive.

Possible approaches to growth, all of which would be facilitated by the formation of a NURA, include:

- Building scale through consolidation of research teams and the synergies that would flow from integration of two or more regional universities
  - There are some evident areas of synergy in research between CSU and SCU
- The introduction of a program like the US Experimental Program to Stimulate Competitive Research (EPSCR), which provides seed funding or catalytic funding to regional institutions with the direct objective of making them more competitive for R&D funding.
- A concerted program to develop significant research infrastructure to be shared by regional universities and State and federal government research agencies.

## 6 The sustainability of current approaches to higher education provision in regional Australia

---

### 6.1 *Introduction*

The Review of Australian Higher Education observed that:

*Within the university sector there is informal acknowledgement that regional provision in many localities is close to unsustainable because of the cost. Many regional campuses are already non-viable without major cross-subsidisation from elsewhere in the institution, and the difficulties of maintaining these campuses will only increase, given current demographic projections. (p111)*

As noted in chapter 3, the demographic outlook varies greatly in different parts of regional Australia so the Review's final observation in the passage quoted above only applies in some parts of some States. Nonetheless, the broader and more fundamental issue remains whether, or to what extent, current approaches to regional higher education provision may be "close to unsustainable because of cost".

This is not a straightforward issue to assess. For a start there are marked differences in the student profiles and business models of Australia's regionally based universities that affect their financial characteristics and performance. Some maintain large capital city campuses while others are primarily or exclusively regionally based, some enrol a high proportion of international fee-paying students while others have relatively few such students, not all have a high proportion of students enrolled externally, two are dual-sector universities with substantial VET sector enrolments. Thus there is no single operational model for a regional university in Australia and no simple generalisation about their financial position or viability. This point is evident from the analyses in section 6.3 below.

There is also no simple, agreed definition of the concept of 'sustainability' in this context. The Bradley Review suggested that "regional provision in many localities is close to unsustainable because of the cost", but even if a single campus is not profitable in its own right, there may be good reasons why a university continues to operate and cross subsidise that campus. In a broader sense, operation of the campus could be seen as part of the mission of the university. In this context 'sustainability' has a wider meaning to do with the ongoing capacity of an institution to achieve its mission. It is worth considering this wider sense of the concept of 'sustainability' of regional universities before concentrating in more detail on issues of financial viability that were the focus of observations in the Bradley Review.

### 6.2 *The wider concept of 'sustainability' for regional universities*

Regional universities generally have a specific statutory mission to provide courses of study and conduct high quality research that meets the needs and aspirations of particular geographic communities. The needs and aspirations of each community will vary depending on its social and economic context.

This is not to suggest that geography is the sole determinant of the mission of regional universities. Most stakeholders acknowledge the importance of regional universities engaging first and foremost with their broader role as a university. The pride regional

communities often feel in their university derives not only from providing courses and research that are directly relevant to the community, but also the provision of courses and research that are recognised nationally and internationally.

The geographic component of the mission of regional universities, however, often requires investments that would not be contemplated by institutions outside regional Australia. The support of smaller campuses in particular locations through cross-subsidisation may on the one hand be viewed as financially unsustainable. On the other hand, if regional universities are to achieve their mission of expanding higher education participation or reaching particular communities (such as Indigenous or low SES students) they need to carefully balance financial considerations with the broader imperatives inherent in their mission. Most regional universities will readily acknowledge that this comes at a cost in terms of their comparative financial position and capacity.

There is an important link here to the point made in Chapter 1 about the limited recognition in Australia given to the role of universities in regional development. The legislated missions of regional universities, and the community expectations of them, involve substantial responsibilities to contribute to the social and economic development of the regions they serve. However this aspect of their missions is given at best very limited support in policy and funding terms.

While financial viability is a critical indicator for any organisation, it is not the only indicator of the 'sustainability' of a regional university, if we adopt the wider meaning of that term. This report highlights a number of other factors that should also be considered in any comprehensive assessment of the 'sustainability' of individual regional universities. These include:

*Course Profile* – the capacity of an institution to offer a sufficient range of courses to attract and retain students in a competitive market. Regional universities with a mission that includes the operation of small campuses need to attract not only local students, but also metropolitan students through distance education to provide sufficient scale. In the case of the dual-sector regional universities the capacity to attract VET sector students plays a key role in securing sustainable operations. This requires a capacity and an ongoing strategy for investment in the development of the course profile. A number of regional universities have made significant investments in recent years in high student demand courses and which have the capacity to attract students from a broader geographic catchment. While these courses have a significant cost impact, a course profile that maintains and builds student load is an important indicator of long term institutional sustainability.

*Maintaining Market Strengths* – like investment in course profile, a capacity and an ongoing strategy for investment in areas of market strength are important to long term institutional sustainability. For regional universities reliant on enrolment by students from outside of the region this relates in particular to the ongoing development of flexible and online learning and related pedagogies to maintain their market position with distance and digital learners.

*Student Demand* – if a regional university is successful in maintaining an attractive course profile and market positioning, this will be reflected in sustained levels of student demand. This is the basic driver of institutional revenue. Sustained declines or persistent weakness in student demand is a critical indicator of challenges to long term sustainability. It has the potential to feed a negative spiral of reducing capacity to

invest in course profile and market strengths and hence reducing capacity to attract and retain new students. This indicator will take on added importance with the transition to a demand driven system of funding for domestic students.

*Staff Recruitment and Retention* – anecdotally, some regional universities have greater difficulty than their city counterparts in attracting and retaining well qualified academic staff. Some evidence of this was noted in section 5.3. The academic labour market is a national and international one, in which all universities compete for a highly mobile workforce. The academic workforce is ageing in many western countries, including Australia, adding to the competition for well qualified staff. Regional universities must compete for staff in this market, but may not be able to offer the levels of remuneration or the extent of teaching and research support available in larger or more geographically concentrated universities.

*Research Capacity* – growing research concentrations in areas of strength is critical to an institution's research income and its research reputation and, in turn, its capacity to attract staff and students. As noted in Chapter 5, the level of research concentration at many regional universities is thin. In some regional institutions, the loss of a single researcher would significantly impact on research output. Regional institutions need to invest strategically in building research capacity around core areas of strength. The level of research investment and concentration is therefore an important indicator of future sustainability in its wider sense.

*Diversity of Revenue Streams* – diversity of revenue streams is important for any university to provide a buffer against changes in the market. Given the relatively narrow operating margins of regional universities generally (see section 6.3 below), over-reliance on individual sources of income will expose these institutions to difficulties during downturns affecting those income streams. There has been recent evidence of the significant and sometimes deleterious effect of market changes in domestic and international student demand affecting the financial position of some regional institutions. Building diverse and robust income streams is an important foundation for future sustainability.

*Improving Productivity* – the long term sustainability of regional institutions will require a continuing focus on improving productivity and the return on investment from productive assets. Many regional universities have strategically invested in a range of productivity reforms to enhance the student and staff experience, while improving the deployment of assets to meet organisational goals and enhance service delivery. Advances in technology and the use of the Internet offer prospects for productivity gains in teaching, research and administration across multi-campus operations. Shared use of facilities with other organisations can improve the return on investment in infrastructure and facilities on small campuses. Some institutions have introduced strategies that focus on increasing the per capita income from international fee paying programs, reducing the business cost of delivery and improving income performance. In a constrained budgetary environment, achievement of ongoing productivity improvements is an important factor in securing long term sustainability.

It is beyond the scope of this Needs Analysis to assess each individual regional university against each of these factors in order to draw comprehensive conclusions about the sustainability of each institution. This list of factors however provides a useful checklist

against which to assess the potential merits of any proposal for new institutional arrangements, including the creation of a NURA.

For the purposes of this study, we have focussed specifically on indicators of financial performance, to test for evidence that regional higher education may be “close to unsustainable because of the cost”, as suggested in the Higher Education Review.

## **6.3 *Financial Performance***

### **6.3.1 Introduction**

For the purposes of this analysis and to enable some comparisons to be made of different aspects of regional provision between institutions, we have focussed on the nine regionally based universities plus five comparator institutions:

#### Regionally based universities

- University of Ballarat
- Central Queensland University
- Charles Darwin University
- Charles Sturt University
- James Cook University
- University of New England
- Southern Cross University
- University of Southern Queensland
- University of the Sunshine Coast

#### Comparator universities

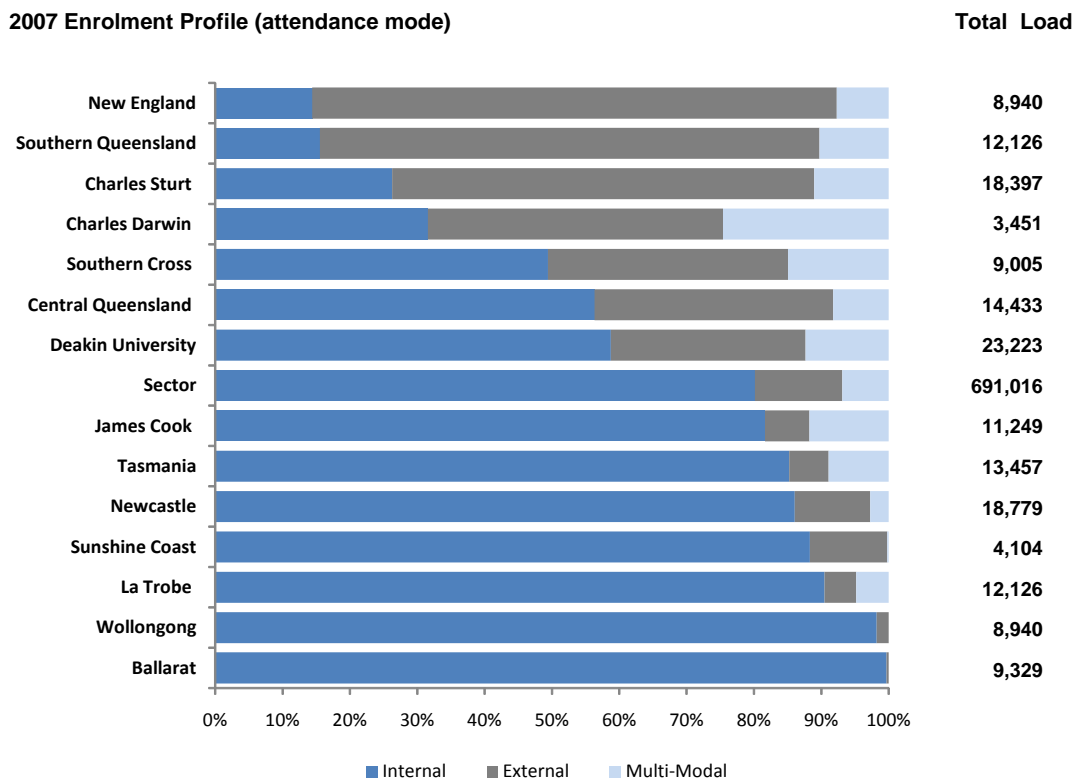
- Deakin University
- La Trobe University
- University of Newcastle
- University of Tasmania
- University of Wollongong

This grouping intentionally includes not only the regional universities analysed in previous chapters but also, for comparison, some metropolitan providers with regional campuses. With the exception of the University of the Sunshine Coast, all institutions are currently identified by DEEWR as “Designated Regional Higher Education Providers”.

All institutions in this group receive a Regional Loading from the Commonwealth in recognition of higher costs incurred on account of size, location and history as well as a more limited potential to diversify revenue sources. However, with the exception of Charles Darwin, the regional loading makes a small contribution to overall Commonwealth funding, accounting for less than 1% of total Commonwealth Grant Scheme funding. Some regional providers have claimed that these contributions would need to increase by up to ten times the current level of funding to adequately address the costs of operating regional campuses.

Figure 6.1 below shows the total student load reported for the full year 2007, and a breakdown of the enrolment profile by different attendance modes; internal (on-campus); external (distance education) and multi-mode (mix of internal and external study).

**Figure 6.1 Students 2007**



This figure highlights the fact that the regional universities (and the comparator institutions) differ quite markedly in the mix of students studying on campus and by external mode. The University of New England, Southern Cross, Wollongong and Ballarat are similar in size by reference to total student load reported from all sources in 2007. However, Wollongong and Ballarat have minimal external enrolments, whereas the University of New England has the highest proportion of external students: 78% of its total enrolments. At the University of Southern Queensland and Charles Sturt University external students represent 74% and 63% of total enrolments respectively. The external enrolments make a significant contribution to the overall student profile at these institutions and help sustain campuses with much lower on-campus enrolments. Domestic distance education load (EFTSL) at Charles Sturt University represents more than 50% of total domestic student load and is clearly important in building profile and activity at both larger and smaller regional campus locations.

In contrast, the University of Ballarat's relatively small higher education division is complemented a growing TAFE operation. This factor, in addition to the ability to attract the highest proportion of international students of all regional providers, helps Ballarat to overcome issues of scale in its higher education operations. The University of the Sunshine Coast does not have the same capacity to generate significant economies of scale; however it operates mainly from a single campus. It is building its growth capabilities in a number of ways including expanding pathways into its programs via the development of enabling programs; the introduction of new dual awards with the TAFE sector; as well as building infrastructure to support more flexible delivery and expanded online provision.



In short, there is a wide variation between Australia's regional universities in relation to their student profiles and other factors affecting institutional finances. Unsurprisingly therefore, there is substantial variation in their financial position and performance, although some common factors can be identified.

### **6.3.2 Operating margins**

The overall profitability of the Australian university sector has not grown significantly in the last 12 years. In 2007 the sector recorded an overall operating margin of 8.2% (total revenue less total expenses as a proportion of total revenue). This compares with a margin of 5.7% recorded in 1995.

The 2007 sector wide result is somewhat inflated since it includes significant Commonwealth and State Government capital grants for major building projects. In accordance with reporting guidelines, these grants are recorded as revenue in the Operating Statement of each university whereas the associated capital expenditures are reflected in the Balance Sheet. It is estimated that when account is taken for major capital grants, the actual operating margin achieved by the sector in 2007 was around 6.8%. This reflects a truer indication of financial performance of the sector overall.

Current pressures impacting on financial performance and growth for the sector as a whole include:

- Reduced returns from investment portfolios due to the global financial crisis
- A reduced capacity to generate additional sources of revenue as a flow on effect of the recession
- Increased infrastructure costs arising from expansion in research activities and a growing gap in the unfunded costs of undertaking competitive grant funded research
- A more competitive and volatile international market with smaller increases in revenue from international fee paying students being achieved
- Underperforming elements of university activity. These include commercial areas and fee for service contracts and consultancies providing inadequate net returns to the institution
- Capacity to manage increases in operating costs associated with growth and within the constraints of overall revenue growth. The next round of enterprise bargaining is placing more immediate pressure on institutions to grow revenue and achieve savings by delivering greater efficiencies in business processes.
- A low level of surpluses earned from all operating activities restricts the ability to raise both internal and external funding for infrastructure renewal
- Costs associated with ageing infrastructure.

The following charts draw on financial data extracted from the DEEWR Higher Education Finance Statistics 2007; the Higher Education Report 2007 and institutional 2007 annual reports.

As a measure of profitability, Figure 6.2 below compares the operating margins of the institutions in the group. Operating margins are normally measured by:

*Operating Surplus before tax ÷ Total Operating Revenue* shown as a percentage.

For the purposes of this analysis, university revenues have been adjusted to exclude major capital grants. In most cases these include Capital Development Pool and other infrastructure grants provided by the Commonwealth, as well as significant State Government capital grants where applicable.

Whilst it is recognised that all institutions may have some degree of abnormal items impacting on revenues and/or expenses, these form part of the view of operating performance. As highlighted above, removing the impact of capital grants provides a clearer picture of the operating performance of each institution.

It should be noted that this analysis is limited to a single year of data, and does not consider the trend in financial performance and business strategy.

**Figure 6.2: 2007 Adjusted Operating Margins**

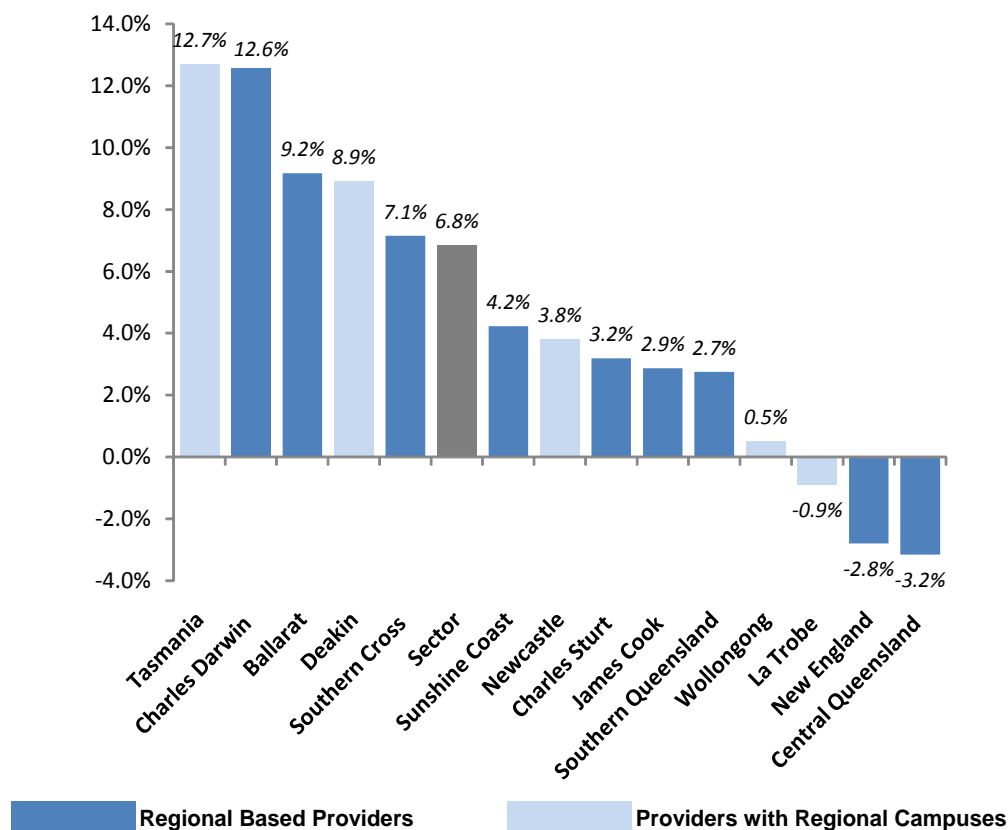


Figure 6.2 highlights that in 2007 a number of regional providers returned results well below the sector overall, with the University of New England and Central Queensland University showing operating deficits. The outcome for Central Queensland University is largely explained by a significant decline of \$35 Million in revenue from fee paying students in 2007 over the prior year, in addition to a \$4M reduction in Commonwealth Grant Scheme funding.

Maintenance of reasonable operating margins in the long term is required for institutions to build the funding base for investment in major initiatives and to support growth and

investment in teaching and research infrastructure. The ability to secure loan funding for capital development also requires operating surpluses at levels capable of servicing the borrowings.

Operating margins for individual universities fluctuate year on year, but can reasonably be compared when averaged over a period of years. Over the 10 years from 1998 to 2007 inclusive, the sector average annual operating margin was 5.5% (not adjusted for capital grants). Over that same period, four of the nine regionally based universities fell below the sector average. Over the five year period 2003 to 2007 inclusive, five of the nine fell below the sector average. USQ, SCU, and UNE in particular have operated with thin average margins over these periods (see Table 6.1) While CQU has been close to the sector average over these periods, it has experienced major volatility in revenue associated with its heavy reliance on international student fees. For example it recorded an operating loss in two of the five years from 2003 to 2007 inclusive.

**Table 6.1 Average annual operating margins for regionally-based universities**

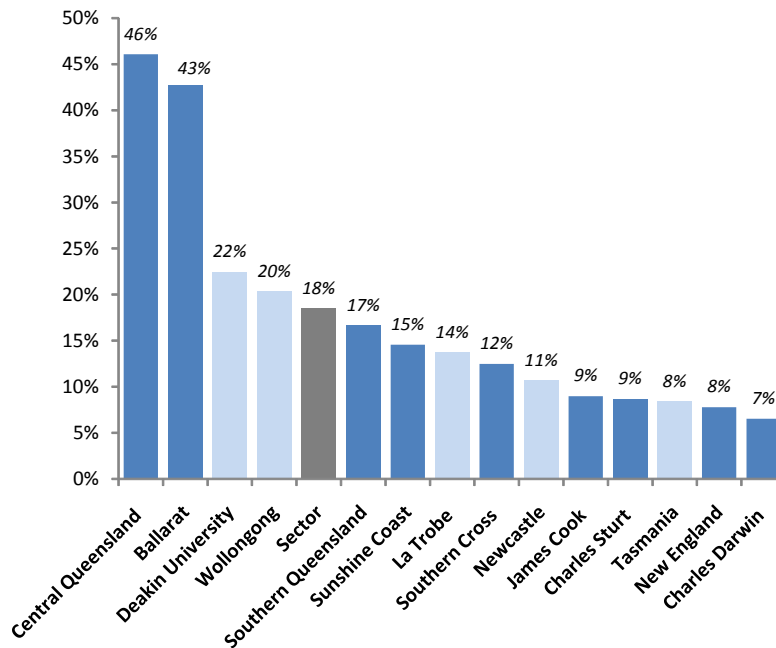
| University    | Operating Margin                       |                                       |
|---------------|--|---------------------------------------|
|               | 10 year average 1998 to 2007 inclusive | 5 year average 2003 to 2007 inclusive |
| Ballarat      | 8.6%                                   | 8.4%                                  |
| CQU           | 6.5%                                   | 4.7%                                  |
| CDU           | 17.3%                                  | 11.7%                                 |
| CSU           | 4.4%                                   | 6.2%                                  |
| JCU           | 7.7%                                   | 6.5%                                  |
| UNE           | 1.1%                                   | 1.5%                                  |
| SCU           | 1.2%                                   | -0.4%                                 |
| USQ           | 1.4%                                   | 3.5%                                  |
| USC           | na                                     | 7.6%                                  |
| <b>Sector</b> | <b>5.5%</b>                            | <b>6.3%</b>                           |

### 6.3.3 Fee revenue

For Central Queensland University and the University of Ballarat the revenue from fee paying students makes by far the most significant contribution to the total revenue generated overall as highlighted in Figure 6.3 below.

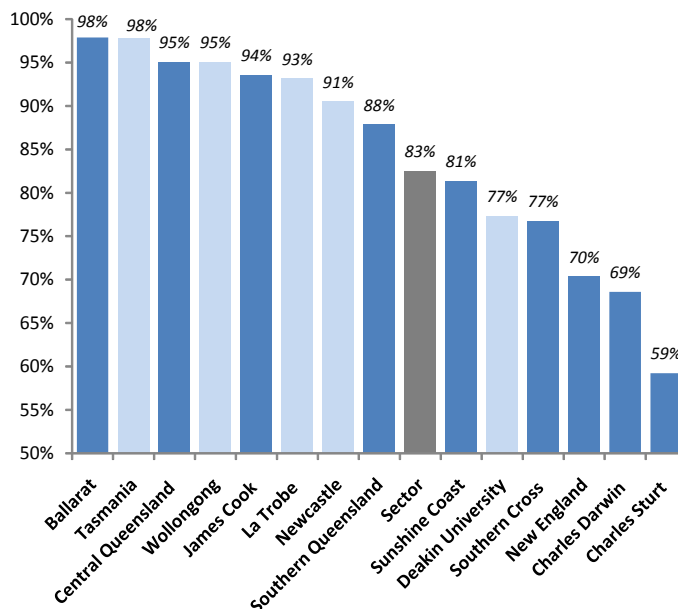
With the exception of these two institutions all of the regional based providers perform below the sector average in terms of the proportion of total revenue generated from fee paying students.

**Figure 6.3: Fee paying revenue as a percentage of total revenue (2007)**



Revenue from international students accounts for the largest share of income from all fee paying courses as shown in Figure 6.4 below, hence university income, especially at CQU and Ballarat, can be impacted acutely from any downturn in the recruitment of international students.

**Figure 6.4: International Fee Paying Revenue as percentage of total fee revenue**



Comparison of international student numbers to revenue generated from international student fees indicates that rates of return for regional providers are generally more modest than for metropolitan based providers. This may relate in part to the extent to which regional universities share international student fee revenue with off-shore and on-shore

partners or to other cost considerations. It also appears that course fees being charged by some regional providers are relatively low.

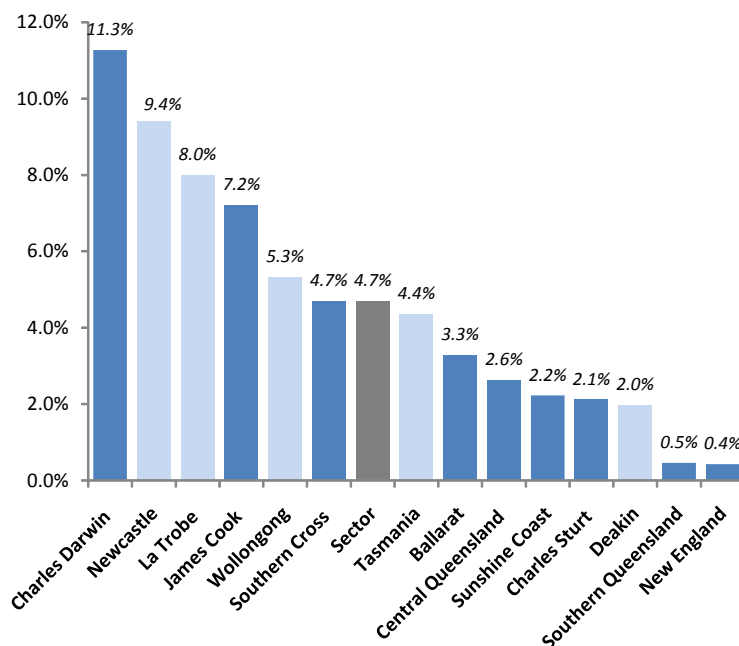
In recent years some regional universities appear to have stabilised their international enrolments while increasing their per capita revenue although the revenue per student remains relatively low compared to non-regional providers.

It is likely that the development of a stronger and more prominent profile in the international market through the formation of a NURA could generate increased demand from international students, although we are cautious about the extent of this effect. It is also likely that it could establish a higher price point for international student fees than is currently the case.

### 6.3.4 Other revenue sources

The proportion of revenue generated from consultancy and contract revenue is provided in Figure 6.5. This category includes both research and non-research contracts, and in the case of some institutions can also include other research grants which are not easily identified. Nevertheless it provides some indication of the relative success in generating revenue from sources other than teaching and program-funded research.

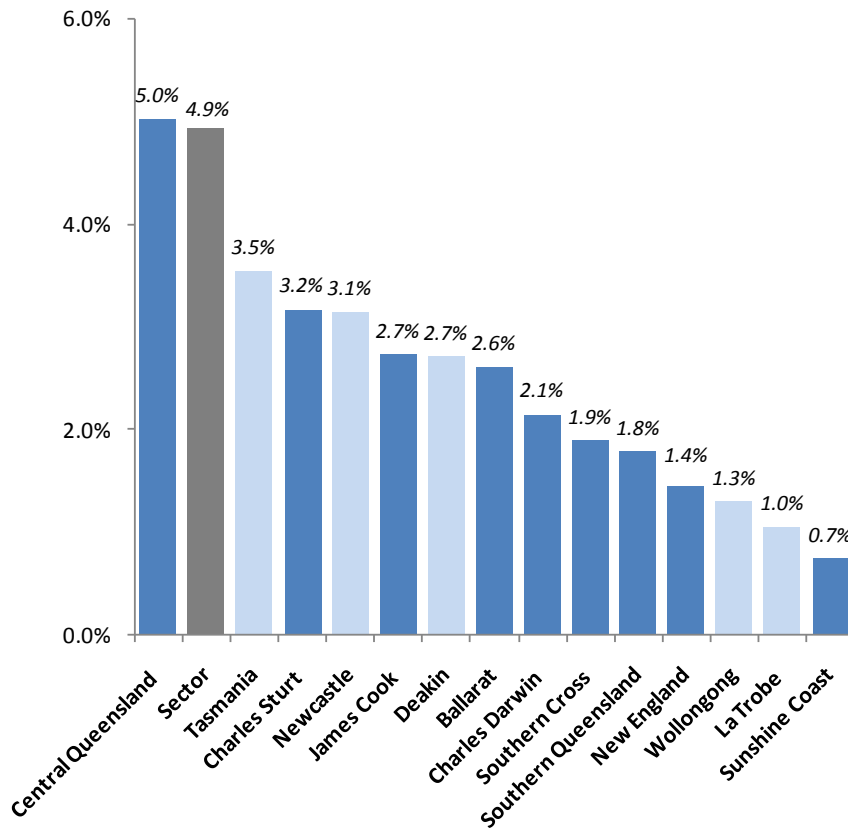
**Figure 6.5: Consultancy and Contracts revenue as a percentage of total revenue**



The regional universities generally are below the sector average in the proportion of revenue generated from this source.

Figure 6.6 shows the percentage of operating revenue generated by investments. All institutions in the group other than CQU performed below the sector average in 2007 in terms of the proportion of revenue generated from investments.

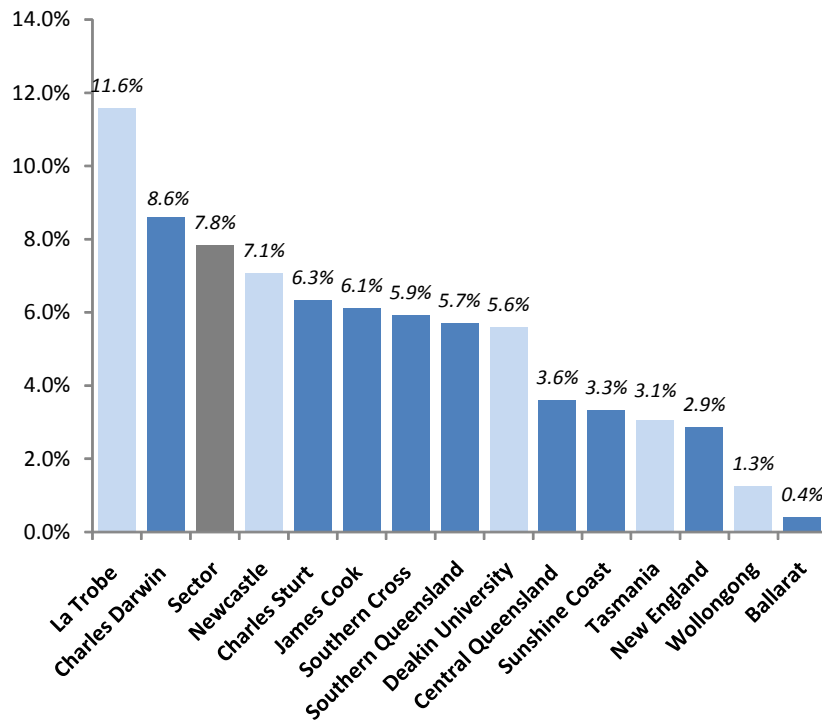
**Figure 6.6: Investment revenue as a percentage of total revenue**



The global financial crisis and the volatility in financial markets contributed to significant reductions in investment income across the sector last year. However the general pattern remained unchanged: regional universities generate less revenue from investments in total and as a proportion of their total income than do the larger, better endowed metropolitan universities.

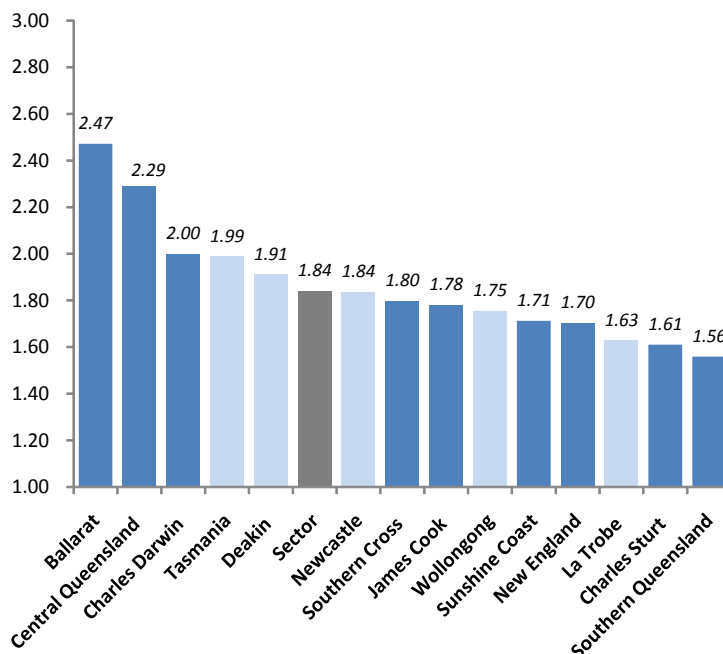
Revenue reported in annual accounts under the category of “other income” is difficult to compare between institutions since this category is often treated differently with varying amounts from grants and donations and variety of other revenue sources. However as shown in Figure 6.7, the proportion of revenue earned from these other sources among regional providers is also generally lower than the sector overall.

**Figure 6.7: Other Income as a percentage of total revenue**



A useful summary measure of productive earning capacity as a contributor to overall financial performance is the amount of revenue earned per dollar of expenditure on staff costs. This is shown in Figure 6.8 below.

**Figure 6.8: Total Revenue Generated per Staff Dollar (2007)**

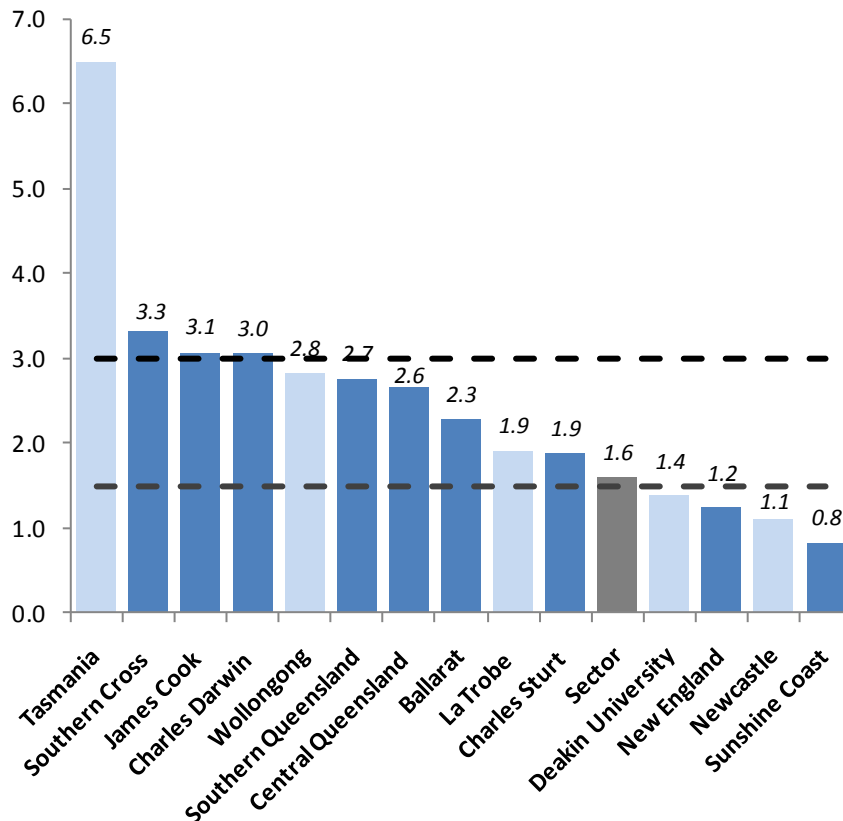


This figure highlights the significant contribution of fee paying revenue, particularly in the case of the University of Ballarat and Central Queensland University.

### 6.3.5 Liquidity

Reported statements of financial position show most of the regional providers have liquidity ratios within the DEEWR benchmark range (ratio of current assets to current liabilities between 1.5 and 3.0)

**Figure 6.9: Current Ratio**



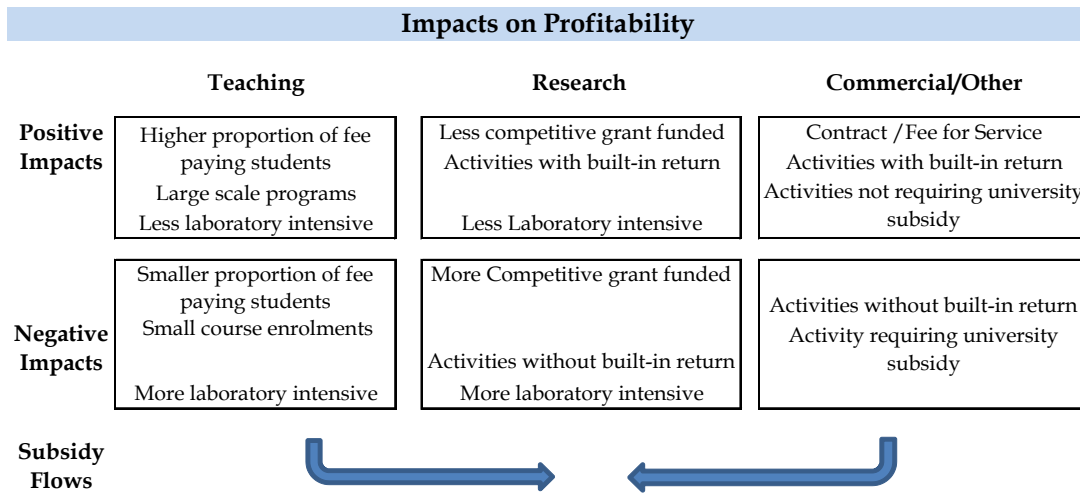
The higher ratios are mainly due to institutions having a greater proportion of short term deposits and minimal or no interest bearing liabilities. Universities that are better able to build a strong earnings base are also able to leverage stronger performance to access funding from external sources. This is an area in which there could be benefits from collaboration or partnerships between regional universities to enhance the scope and scale of activities and create more combined opportunities to generate revenue.

### 6.3.6 Costs of maintaining regional campuses

The Bradley Review drew attention in particular to the question of the financial viability of smaller regional campuses. In considering this question it is helpful to start with a brief review of the contribution of various core activities to the financial performance of any campus.

At a typical campus it is generally the case that positive returns from teaching activities, along with returns generated from commercial and other fee for service activities subsidise losses incurred from research activities.





The degree of financial impacts of teaching and research activities will vary depending on their nature, specific cost profiles and pricing. Previous work undertaken by PhillipsKPA at one institution indicated teaching activities overall generated positive returns of around 20%, whereas research activities overall generated losses of around 40%. The profitability of teaching varied in this case with the concentration of international fee paying students across the institution, with returns being greater from international students compared with Commonwealth funded places. In general returns from undergraduate programs tended to be greater than from postgraduate programs, due to smaller enrolments in the latter.

Outcomes in relation to research activity can vary greatly, depending on the type of activity and the diversity of funding sources. Operating costs tend to be higher in laboratory based areas, due to the costs of providing, supporting and maintaining the laboratories and related infrastructure. The mix of research funding sources is also important. Funding for grants other than from designated national competitive grant sources, for example, does not attract Research Infrastructure Block Grant allocations.

Other activities outside of teaching and research vary considerably across institutions. These can include contract and consultancies of a non research nature, other grant funded activities and commercial operations. These activities have the greatest positive impact when they are fully costed, have a built-in return ensuring a positive financial contribution to the university and do not require university subsidies or in-kind contributions as a condition of the funding arrangement. It is recognised that there are also activities undertaken relating to engagement with local communities, which by their nature, although strategically important, are undertaken at a net cost.

The broad elements of profitability outlined above are relevant in understanding the financial impacts associated with regional campus operations. The extent of overall contribution to the institution will clearly depend on the actual mix of teaching and research activities being undertaken at different locations and the associated revenue and expenditure flows.

At campuses with relatively small course enrolments, the contribution from teaching activities does not benefit from economies of scale. For institutions operating across multiple locations, course supervision and coordination are often duplicated, particularly where the

same degree program is offered at a number of different locations. The additional layer of “faculty” overhead will give rise to higher overall costs of delivery.

Where campuses are located at substantial travelling distances of one another, there are often “hidden” costs associated with travel of academic staff between campuses to provide teaching services. Charles Sturt University, for example, estimates that 80% of its domestic travel expenditure relates to inter-campus staff travel. Around half of this is related to providing either direct teaching or teaching administration support.

PhillipsKPA has undertaken previous work which involved estimating the financial performance of a university across metropolitan and regional campus locations. The regional campuses were characterised by:

- Predominantly small student numbers
- Largely teaching intensive
- Limited research activity, with research revenue representing a very small proportion of total revenue generated by the campus
- A relatively small cohort of fee paying students
- Lack of revenue generated by academic areas from consultancies, contracts and other activities.

The outcomes of this work indicated that after full attribution of revenues and expenses to campus operations, those campuses with small enrolments (less than 1,000 EFTSL) produced operating deficits. In most cases the costs associated with maintaining separate local campus administrations was a significant contributor to the overall financial outcome for the campus.

The smaller regional campuses were noted as having lower student staff ratios in some areas compared with the larger metropolitan campus. Some of this was due to difficulties in responding to falling enrolments and lack of success in recruiting academic staff to develop and deliver new courses.

In consultations for this project, one Vice-Chancellor noted that operating costs at the smaller regional campuses of his university were around 25% higher per EFTSL than for the main metropolitan campus after excluding costs of research. In addition, the provision of high speed IT links were noted as being almost 19 times higher per EFTSL at one isolated regional campus relative to the rest of the University. This measure in some way underestimates the true disparity of costs between the regional and metropolitan campus in this particular example since the regional campus in question has a very small number of local area network points relative to the high cost of providing IT links to the campus. This is another example of the diseconomies of scale evidenced at small regional campuses.

Similar themes are evidenced in an activity based costing analysis undertaken by Southern Cross University. This study examined the profitability of university operations across four main categories: Teaching; Research; Commercial; Community and Regional Engagement, based on 2006 financial results. The analysis highlights that positive returns from teaching activities offset losses incurred in research and commercial activities and help cover the costs associated with community and regional engagement.

A breakdown of teaching activity by “student location” shows that operating losses at some locations are mainly associated with lower unit enrolments and lack of economies of scale.

Areas with a higher proportion of postgraduate coursework programs also generated lower returns. There is also some evidence of higher unit costs associated with providing local campus services, such as the maintenance of facilities and other infrastructure.

Whilst financial results are not available at a campus level to enable similar analysis for Charles Sturt University, it is highly likely that campuses such as Dubbo and Orange operate at a net cost to the University. Both these campuses have less than 300 EFTSL studying on campus (2007) and neither is supplemented by any significant distance education load for courses administered from these locations. Student staff ratios are also much lower than at other campus locations (e.g. in 2007 a ratio of 9:1 at Orange compared with the university average of 22:1).

Collocation of university and TAFE operations provides opportunities for sharing facilities more cost effectively, particularly where on campus enrolments are small. The Coffs Harbour Education campus through its co-location of secondary school, TAFE and the university creates some economies via sharing facilities and services including ICT infrastructure and Library services. There are a number of examples of joint arrangements in place such as at Ballarat and La Trobe (Mildura) and Wollongong (Bega, Batemans Bay, Shoalhaven). CQU's major investment plan to establish a resources innovation precinct at its Mackay campus is specifically aimed at creating multi-purpose teaching and research facilities that can be shared by the university, vocational education, industry and other organisations.

In any future model, these types of developments and the ability to build efficient distance education delivery systems will be important factors in helping to sustain small regional campus operations. These models can offer opportunities for small regional campuses to build numbers and scale as well as benefit from shared use of some facilities and services.

### **6.3.7 Distance and digital delivery**

At SCU, attribution of revenues and expenses to programs delivered by distance mode appear to indicate that teaching by distance mode achieves higher margins than for on campus teaching. The major contributing factor to this outcome appears to be the lower academic staff time per unit of enrolment attributed to distance delivery compared with on-campus delivery.

There needs to be some caution in drawing conclusions from the Southern Cross analysis. We understand that further investigation is necessary to confirm the extent to which staff academic staff time devoted to all teaching activities associated with distance education has been properly captured.

Analyses conducted at other institutions suggest that academic staff costs associated with students studying by distance can be greater than for students studying on campus. This outcome is attributed to the additional time required of academic staff to engage with students outside of direct teaching. This can entail communication by telephone or email to respond to individual enquiries, provide direction and clarification in relation to subject assignments, etc.

The assessment of teaching costs by Charles Sturt University is that there is no significant difference in direct academic staff costs across different modes of delivery. It should be noted that this is not based on any detailed cost analysis, but is based on having similar student to staff ratios for on campus and distance education.

Analyses of costs undertaken at Charles Sturt University indicate that the provision of a number of support services account for additional costs associated with distance education delivery. These include the following:

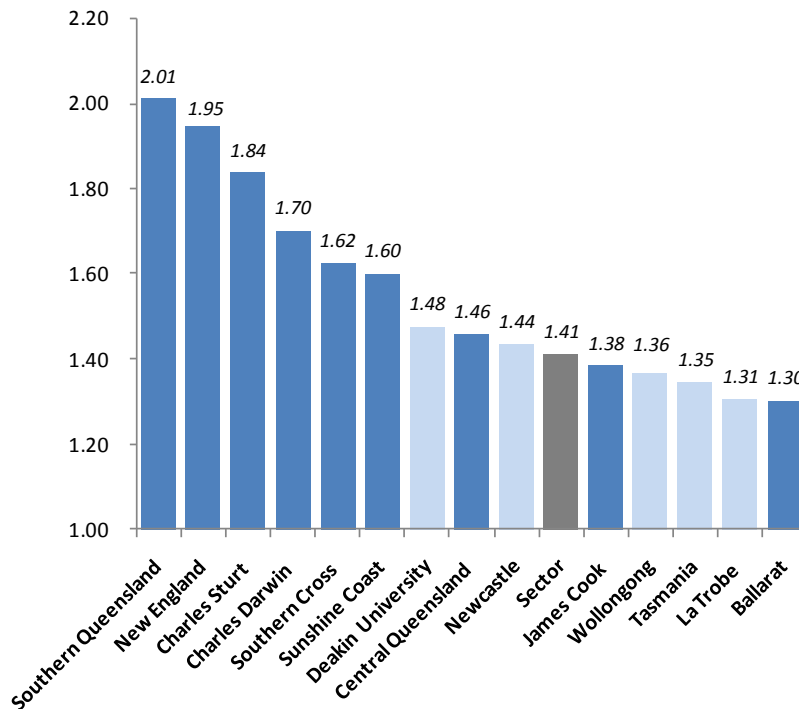
- Provision of educational design services – This covers the development of new units, courses and teaching material specifically for distance education or the conversion of existing subject material to an appropriate form for external study. At Charles Sturt University educational design services are located across multiple campuses, which may not always provide the most efficient use of educational design resources across the university.
- Production of study packs for distance education students – These typically include printed study guides, course outlines, reading lists, CD-ROMs, DVDs and other study materials which are mailed to students following enrolment and prior to the commencement of each study period.
- Coordination of examinations for distance education students including the booking of off campus examination venues and invigilation. The cost per subject enrolment of providing these functions was estimated to be around 4 times the cost of managing the examination processes for on campus students.
- Provision of library services – Whilst all students regardless of mode of study have equal access to all library services, specific costs are incurred for distance students covering items such as the courier and postage of books and journal articles; scanning and photocopying of requested reference items. Analysis of the use of online library enquiry services indicates that the use of this service by distance education students far outweighs usage by both staff and on-campus students.
- The production and despatch of study packs to distance students is a more costly process than if the subject content and associated learning materials are directly accessible online.

### **6.3.8 Part time enrolment**

In reviewing its central support costs, CSU estimated that the additional costs of providing services to part time students were around 30%. This is because the cost of services relating to student admissions, records and administration, examination and graduation as well as some aspects of IT and library services are driven by the volume of student enrolments, not student load. The higher proportion of part time student enrolments across some regional providers therefore equates to higher operating costs on a standard EFTSL measure.

Figure 6.10 below shows the ratio of student enrolment to load (EFTSL) for the sample universities. This illustrates that the ratio is significantly higher for most regional providers which have higher proportions of part-time students compared with metropolitan based universities.

**Figure 6.10: Ratio of student enrolments to load**

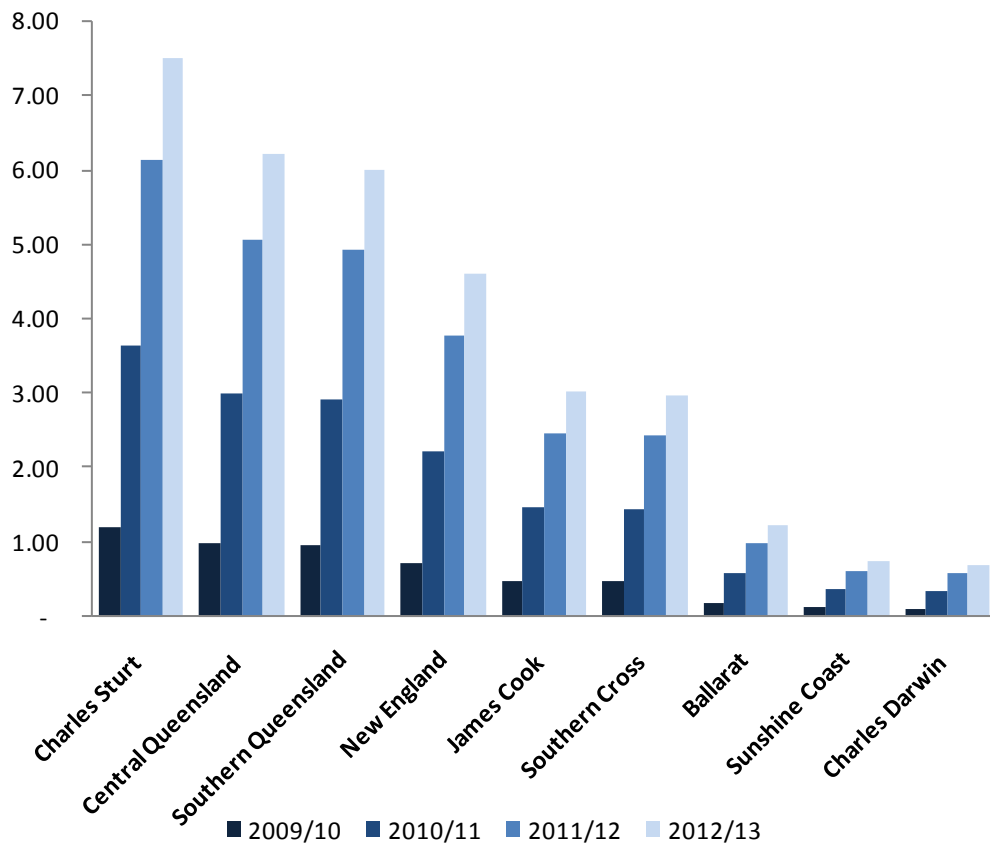


### 6.3.9 Low SES and Indigenous students

Regional universities also point to greater costs associated with supporting low SES and indigenous students as well as students who are first in family to experience higher education. Particular areas of support include addressing difficulties with transition, improving general study and time management skills, and providing workshops in literacy and numeracy. The proportion of low SES enrolments to domestic load is above 20% in most regional universities (46% at Central Queensland University) compared with around 15% for the sector as a whole.

The recent budget measures include the introduction of additional funding in recognition of the costs pressures associated with providing higher levels of support to low SES Students. Indicative funding for the regionally based universities through the new measure are shown below.

**Figure 6.11: Loading for low SES enrolments (\$m)**



The impacts are generally modest until the funding available increases in 2011 and 2012. Some of these gains will be partially offset by the removal of existing grants under the Higher Education Equity Support program.

#### **6.4 *Broadening provision and the sustainability of regionally-based universities***

The central themes emerging from the previous sections are that regional providers face a number of challenges to long term sustainability arising from:

- Small student cohorts
- Lack of real economies of scale
- Higher operating costs associated with regional campus support services and infrastructure
- Higher costs associated with proportionally larger numbers of part-time, low SES, and Indigenous students
- Limited ability to invest in infrastructure and innovation in teaching and research.

Expansion of distance and digital delivery can offer a means by which the scale and scope of provision by a regional provider can be increased:

- Distance and digital delivery can improve the viability of programs where on campus enrolments are small and academic staff resources are underutilised

- Broadening provision through distance delivery offers opportunities to compete more effectively both nationally and internationally
- Attractive programs that offer a blended learning experience can potentially draw additional students to on campus learning
- Expansion of programs can be managed with greater flexibility, without creating additional pressure on the provision of space and the infrastructure required to support teaching on campus. Online access to library materials and information services can more easily be managed than providing the additional physical study environment for students enrolled on campus.

A key point to be considered in the NURA context is whether regional providers are better able in the long term to expand distance and digital delivery on their own or whether this can be achieved more effectively through some form of integration.

Integration clearly provides opportunities to increase scale, but the geographical dispersion of regional campuses would not easily provide the means to increase critical mass by consolidating on-campus numbers. Collaboration in relation to distance and digital delivery could however offer opportunities to increase both the scale and depth of programs and broaden demand for the courses regional providers are able to offer. This issue is explored in more detail in chapter 7.

## 6.5 *Impact of external developments*

The recent budget set out phased changes to the overall funding and regulation of higher education and support for research and innovation.

The reforms outlined in *Transforming Australia's higher education system* will see a phased introduction of a student driven funding system in which universities will be funded for all Australian students they enrol. It is intended that the student driven system will be fully in place by 2012, with universities allowed to over enrol and be funded for up to 10% of agreed funding targets in 2010 and 2011.

The Government has gone part way in responding to the proposals in the Bradley Report in relation to core funding increases:

- Provision of new performance funding equivalent to 2.5% of funding currently provided for teaching and learning subject to meeting agreed performance targets for teaching and learning quality.
- Funding equivalent to 4% of teaching and learning grants aimed at raising participation and completion rates of students from low SES backgrounds. This funding will include additional direct funding via a new loading payable on low SES enrolments as well as grants to assist institutions develop partnerships with schools and vocational education and training providers.
- Additional funding via revised indexation arrangements applying to all teaching and research grants that currently fall under the Higher Education Support Act 2003 as well as to maximum student contribution amounts.
- Additional funding to institutions by moving the student contribution amounts payable for nursing and education units from “national priority” to “band 1”.

Whilst these measures will provide additional resources intended to underpin reforms to the higher education system, there are a number of concerns in relation to the possible impacts of the changes on regional providers.

- The student driven system will remove constraints on student enrolment levels, but institutions will need to offer programs that are able to attract students in a more competitive market. Some regional providers have recently experienced difficulties in meeting funded targets for Commonwealth supported places.
- The new system could potentially put more pressure on smaller campuses that are already accommodating courses with low student enrolments and further threaten viability if students are drawn to other institutions.
- The new system could potentially impact on institutions that are located in outer metropolitan and 'regional-metropolitan' centres as the expansion of course availability in metropolitan areas encourages regional students to relocate to study.
- Lack of diversity and scale of activities as well as financial capacity, may make it more difficult for regional universities to restructure existing courses, invest in new curriculum development and manage risk in responding to shifts in student demand, although it is not known how quickly such shifts might occur.
- There are no immediate measures which address the additional operating costs for regional universities although the Government has indicated a commitment to examine the costs associated with the provision of teaching and research in regional Australia.
- The flow on costs of the current round of enterprise bargaining negotiations across the sector could negate the positive impact of the additional Government funding. This will depend on the capacity of institutions to generate sufficient net returns from operations in future years to fund the salary increases. As salaries and related costs for most regional providers make up around 60% of total operating costs, a 5% per annum increase in salaries equates to a 3% increase in total operating costs. This must be met by an equivalent increase in net earnings or cost savings each year to maintain operating margins at existing levels.

Future investment in research and innovation infrastructure outlined in *Powering Ideas* includes a number of new funding initiatives some of which are designed to build on research strengths at regional universities:

- Under the Sustainable Research Excellence in Universities scheme, universities will be able to negotiate additional funding to meet the unfunded indirect costs associated with competitive grant funded research activities. This will increase funding progressively from the current level of around 20 cents per competitive grant dollar funded under the RIBG scheme to 50 cents per dollar from 2014. This will be of benefit to regional providers who have been successful in attracting national competitive grants. However the largest beneficiaries will be the research intensive universities.
- Regional universities having more industry based research grants will benefit from the change in performance funding under the Joint Research Engagement (JRE) Program. This replaces the Institutional Grants Scheme, and the research income

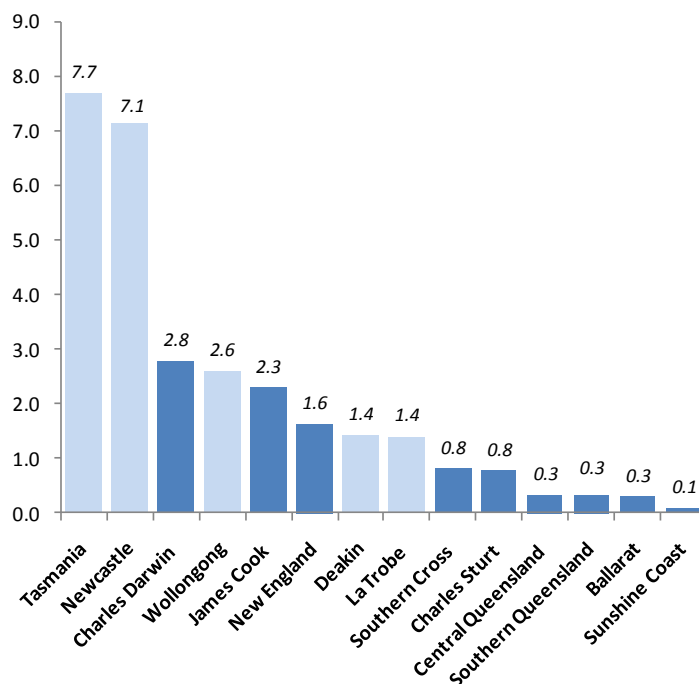


driver will be based entirely on grant income from other than national competitive sources.

- The Collaborative Research Network scheme is directed at assisting regional and smaller universities collaborate on research projects around a “hubs and spokes” model with researchers at different locations having access resources and expertise in common areas of research.

The indicative combined impact of the change in to RIBG (increase to 50c per \$) and moving to the JRE scheme is shown below.

**Figure 6.14: Indicative impact of changes to RIBG and JRE (based on 2008 grants -\$m)**



This chart highlights the fact that universities which are stronger in attracting national competitive grants will benefit more substantially from these measures. The quantum increase in infrastructure support funding outweighs the impact of moving to the JRE scheme. This is reflected in the increases for Tasmania and Newcastle. Although some of the smaller regional universities gain some benefit from the removal of competitive grants from the JRE formula, these gains are limited as other research earnings are relatively small.

## 6.6 Opportunities for enhancing long term sustainability

The general conclusion to be drawn is that an increase in both the scale and scope of teaching and properly funded research activity is necessary to build critical mass at regional campuses, improve utilisation of infrastructure and generate resources to support future growth. A question for consideration is whether a merger of two or more institutions would bring these increases in a way which generates genuine economies of scale.

A review of merger activity in the UK Further Education sector<sup>82</sup> suggests that although there was a lack of long term evidence of overall impact of success of college mergers, there was evidence of economies of scale as well as benefits flowing to financially weaker institutions through merging with larger and stronger entities. Mergers have appeared to be successful in a number of countries where they have addressed problems of fragmentation and threats to the financial viability of institutions<sup>83</sup>.

In the context of regional provision in Australia, the creation of a larger entity, with the ability to offer a broader range of coursework and research programs could potentially offer greater opportunities to attract additional students and staff than would otherwise be possible by smaller entities operating independently.

However integrating regional providers that are geographically dispersed would involve greater practical constraints on the capacity to reorganise and relocate activities and deliver the benefits of scale that are generally evidenced in institutional mergers. Where institutions are operating in close proximity it is easier to consolidate programs in some discipline areas, make more effective use of space and facilities and achieve the desired economies in teaching and administration.

Some form of integration could however deliver benefits in other areas:

- i. Benefits from consolidating expertise and investment in distance and digital delivery, including the development of systems and program content.
- ii. Opportunities to share a range of units that could be taken up via distance education. This could make the overall programs more attractive to prospective students by providing more choice and diversity.
- iii. Shared use of facilities to support research activities and opportunities for joint supervision of research students. This can provide greater flexibility to research students to undertake research based at one physical location and liaise with research supervisors who could be located elsewhere.
- iv. Increased opportunities to share resources to deliver a range of support functions more cost effectively, for example:
  - a. Provision of training of academic staff in aspects of design of programs or units and instruction for online delivery
  - b. Development and integration of learning management systems. It is recognised that there are range of different learning management systems that have been adopted by universities. If development of common systems could take place within a future integrated model this would provide a more cost effective solution.
  - c. Provision of web based services providing the bulk of support services to students such as student enquiry and enrolment processes; course and subject

---

<sup>82</sup> Department for Innovation, Universities and Skills - Research Report 2008

<sup>83</sup> Harman, G & Harman, K 2003, 'Institutional mergers in higher education: lessons from international experience', *Tertiary Education and Management*, vol. 9, pp. 29-44

related communications; access to tools and study guides to support online learning.

- d. Adopting where appropriate a shared services approach for some corporate level activities including aspects of human resources, finance, marketing and recruitment services.

Overall, we believe that there would be benefits in terms of enhanced financial sustainability flowing from some form of integration of regional universities. It would create opportunities to better leverage size, share resources, increase capacity to broaden areas of teaching and research and increase competitiveness as the sector moves towards a more demand driven system.

## 6.7 *Summary*

In general, regional universities face greater challenges than larger metropolitan universities in generating a sustainable financial return that enables them to invest in infrastructure and innovation. In 2007 a number of regional providers returned operating results well below the sector overall, with the University of New England and Central Queensland University showing operating deficits.

Regional universities tend to have less diverse revenue profiles and face significant diseconomies of scale on smaller campuses. Previous work by PhillipsKPA indicates that campuses with enrolments less than 1,000 EFTSL tend to operate a deficit. Operating losses are mainly associated with lower unit enrolments and lack of economies of scale. This broad conclusion appears to be confirmed by studies at CSU and SCU.

The diseconomies of scale on small campuses can be offset to some degree by collocation of university and TAFE operations and sharing of facilities with other partners.

There is also evidence of additional costs faced by regional universities in relation to their relatively high proportions of part time, Indigenous and low SES students, as well as their unfunded community engagement activities.

The changes announced in the Budget will bring some financial benefits but also some increased risks through the introduction of student demand driven funding from 2012. The financial benefits will be limited and will not flow immediately. The increases to research funding will be concentrated in the research intensive universities.

The general conclusion is that an increase in both the scale and scope of teaching and properly funded research activity is necessary to build critical mass at regional campuses, improve utilisation of infrastructure and generate resources to support future growth. A question for consideration is whether a merger of two or more regional institutions would bring these increases in a way which generates genuine economies of scale.

Overall, we believe that there would be benefits in terms of enhanced financial sustainability flowing from some form of integration of regional universities. It would create opportunities to better leverage size, share resources, increase capacity to broaden areas of teaching and research and increase competitiveness as the sector moves towards a more demand driven system. However there are constraints on the extent of the potential benefits arising from the wide geographic dispersion of the constituent parts.

Ultimately, to be sustainable in the long term, any integration must be consistent with advancing the missions of the participating universities.

## 7 Impact of new developments in course design and delivery

---

### 7.1 Introduction

The vision for a National University in Regional Australia includes a distinctive mission to enhance Australia's distance and digital education capacity. The vision is for this to be achieved by:

- A strategy of significant new investment in:
  - New and emerging technologies;
  - Innovative approaches to curriculum design and course delivery; and,
  - An expanded course profile.
- Accelerating the conversion of existing professional, clinical, and technical offerings of the university to leading edge digital modes.
- Establishing a 'national resource centre to promote engagement with new forms of learning across Australian and Asia-Pacific universities'.

This chapter considers the likely impact of recent and emerging developments in course design and delivery on the provision of higher education in regional Australia. It does this in the context of ongoing changes to student expectations. New and emerging information and communication technologies (ICTs) are examined with the aim of identifying the challenges and opportunities facing regional providers in their mission to deliver education by distance to students in regional Australia. The chapter concludes with an assessment of the implications of these trends for a university with a distinctive mission to enhance Australia's distance and digital education capacity.

### 7.2 Developments in distance and flexible education

A proliferation of recent studies and reports provides abundant evidence of policy makers and institutions grappling with the implications of rapid and ongoing changes in learning technologies, and the new dynamics generated by their adoption, application and use by students.<sup>84</sup> New challenges emerge with every major innovation. It is not surprising that the definitions of various modes of delivery involving these technologies are fluid and interchangeable. Current usage is discussed in this section to identify areas where regional distance providers may have a claim to special expertise.

The definitions are not competing so much as overlapping, as analysts and practitioners attempt to capture the moving targets of new technologies and applications as they intersect

---

<sup>84</sup> See for example: Committee of Inquiry into the Changing Learner Experience (Clex) 2009, *Higher education in a Web 2.0 world*, Report of an independent Committee of Enquiry into the impact on higher education of students' widespread use of Web 2.0 technologies, <http://www.clex.org.uk/>; Commonwealth of Learning 2008, *Education for a digital world: advice, guidelines, and effective practice from around the globe*. [www.col.org/digitalworld](http://www.col.org/digitalworld); Higher Education Funding Council for England (HEFCE) 2009, *Enhancing learning and teaching through the use of technology: a revised approach to HEFCE's strategy for e-learning*, March 2009/12. [www.hefce.ac.uk/pubs/hefce/2009/09\\_12/](http://www.hefce.ac.uk/pubs/hefce/2009/09_12/); Vincent-Lancrin, S 2008, *E-learning in tertiary education: what difference for the future of learning?* OECD/CERI. [www.oecd.org/dataoecd/53/30/40726206.pdf](http://www.oecd.org/dataoecd/53/30/40726206.pdf)

with significant shifts in the nature of student engagement with learning. Although terms such as 'blended' and 'converged' are widely used, a Southern Cross University report<sup>85</sup> makes the point that ultimately they are not appropriate since they 'continue to emphasise the 'old modes' being converged rather than representing the emerging realities of a fully integrated system of delivery that combines traditional internal and external modes of enrolment and delivery. This is the SCU starting point in the search for new forms of delivery. Similarly, Charles Sturt University has approached the task of reframing teaching and learning with recent initiatives such as the new academic calendar, the Flexible Learning Institute (FLI), and the Education for Practice Institute (EFPI).

### 7.2.1 Distance education

Although the lines between distance education and variations in digital forms of provision have become blurred, it is nevertheless important to separate distance education out as a distinct enterprise meeting the needs of particular cohorts of students. At its most fundamental, distance education is: 'A form of educational instruction where the students and academic staff are to be found in separate venues.'<sup>86</sup> It is useful to set out briefly the historical context since it is easy to overlook the significant role and experience of regional distance education providers that underpins their case for taking national leadership in the provision of new forms of distance and digital learning in regional Australia.

Australia's early involvement in the design and delivery of education for students in rural and isolated communities created a 'remarkable depth of expertise' as the basis for the establishment of eight Distance Education Centres (DECs) in 1990.<sup>87</sup> These centres were intended to reduce duplication of effort and introduce efficiencies in distance education provision. However, as Barnard noted, 'This arrangement was untenable and was dismantled in 1994, partly because of the financial arrangements in place for other institutions to provide distance education courses through the funded distance education centres.' Moreover, he concluded:

*...the arrangement would surely have failed eventually because most, if not all universities, to survive, had to address the needs of their students through employing the flexibilities that distance education was successfully providing. The opportunities that the new information and communication technologies promised for reaching and serving expanded distance markets hastened the demise of the distance education centre system.*

Distance education instruction has become more learner-centred, nonlinear, and self-directed as new technologies allow for considerably more flexibility in delivery in teaching

---

<sup>85</sup> Southern Cross University 2007, *New directions for delivery at Southern Cross University*, Report from the New Directions in Delivery Action Group (NDDAG).

<sup>86</sup> Rogers, P, Berg G, Boettcher, C, Justice, K & Schenck, K (eds), 2009, *Encyclopedia of distance learning*, vol. 1, Idea Group.

<sup>87</sup> Barnard, I 2003, 'Changes in distance education', *National report on higher education in Australia (2001)*, DEST, Canberra, p. 206.

[www.dest.gov.au/sectors/higher\\_education/publications\\_resources/.../national\\_report\\_on\\_higher\\_education\\_in\\_australia\\_2001.htm](http://www.dest.gov.au/sectors/higher_education/publications_resources/.../national_report_on_higher_education_in_australia_2001.htm)

and assessment. Barnard identified three patterns of institutional responses nationally following the removal of the distance education monopoly:

- A stronger focus on the development of the potential of particular new media for educational application;
- Exploiting existing media to service the needs of niche markets; and,
- Adopting a whole-of-university approach to the incorporation of available technologies into their learning and teaching strategies.

More recently, there has been a trend of decentralisation of organisational structures in some campus-based universities, with responsibility for course design and delivery increasingly resting with academic units. This is particularly evident in course-based distance provision in professional education programs.

### **7.2.2 Flexible Learning**

‘Flexible learning’ covers a broad span of arrangements that facilitate the availability of choices as to what, when, where and how people learn. It refers to flexibility in:

- Course access, participation and progression, including the provision of alternative pathways to course entry, duration and completion;
- Course design and forms of assessment to enable students to choose subjects, sequences of studies and learning tasks that meet their needs, interests and aspirations;
- Modes of learning to suit diverse student needs and contexts, including face-to-face, print, multimedia, online and blended learning environments;
- Access to comprehensive and readily available information and learning resources;
- Provision of student support services, including learning skills, career development and course advice;
- Management of social learning experiences, including collaborative work with fellow students and communities of learners across national and international borders; and,
- Opportunities for timely and frequent interaction with tutors and lecturers to maximise engagement with learning.

There is nothing inherently new about the concept of flexibility in course design and delivery, what is new is the potential offered by digital technologies to maximise flexibility and the trend towards universal access in terms of cost, availability, and skill levels required to participate.

‘Online learning’ provides flexible teaching and learning through the Internet. It can complement a traditional learning environment or be offered as a complete online learning package. The term ‘blended learning’ has been used to refer to learning and teaching which draws on elements of internal, online and distance education to enhance student learning. The usefulness and relevance of the term ‘e-learning’ continues to be questioned with a

recent marked shift in orientation towards technology as a supporting element rather than a driver of policy and practice.<sup>88</sup> It refers to the 'use of information and communications technology (ICT) to enhance and/or support learning', including both wholly online provision and campus-based or other distance-based provision supplemented with ICT in some way.'<sup>89</sup>

Although the growing importance of ICTs in learning delivery has been widely accepted, there has also been a reluctance on the part of educators to entirely abandon established procedures and processes: blended approaches combining traditional strategies with technical applications have established a strong middle ground.

The major trends in university investment in electronic technologies through the early part of this decade included:

- Increasing use of digital technology in lecture theatres and other teaching spaces;
- Provision of high bandwidth connections within and between campuses;
- Provision of larger numbers of computer laboratories with extended access hours;
- Installation of web-based learning environments;
- Purchase or development of instructional resources in a variety of subject areas; and,
- Staff development activities to support the use of these various elements in the teaching situation.

The primary factors promoting the generalised movement towards greater use of technologies included the pressure of large classes and the belief that state of the art technology could enhance student learning by:

- Enabling more opportunities for self-directed learning;
- Providing flexibility in the modes of learning to suit student needs;
- Encouraging students and teaching staff to communicate with one another both in real time and asynchronously; and,
- Blurring the boundaries between on-campus and off-campus study.

A major theme of the literature concerns the overly enthusiastic predictions of the adoption of e-learning. The comments of the 2005 OECD report *E-Learning in Tertiary Education* on promise and performance sum up the shift from over-enthusiasm to scepticism that followed the burst of the dot.com boom: 'While it is still growing at a rapid pace, from a very low starting point, does e-learning live up to the promise that it once embodied? Probably not.'<sup>90</sup>

---

<sup>88</sup> Higher Education Funding Council for England (HEFCE) 2009, *Enhancing learning and teaching through the use of technology: a revised approach to HEFCE's strategy for e-learning*, March 2009/12, p. 8.

[www.hefce.ac.uk/pubs/hefce/2009/09\\_12/](http://www.hefce.ac.uk/pubs/hefce/2009/09_12/)

<sup>89</sup> OECD 2005, *E-learning in tertiary education: where do we stand?* p. 21. [www.oecd.org/dataoecd/13/4/41344282.pdf](http://www.oecd.org/dataoecd/13/4/41344282.pdf)

<sup>90</sup> OECD 2005, *E-learning in tertiary education: where do we stand?* p. 21.

[www.oecd.org/dataoecd/13/4/41344282.pdf](http://www.oecd.org/dataoecd/13/4/41344282.pdf)

More recently, the 2009 policy statement from the Higher Education Funding Council of England (HEFCE) revised its 2005 national strategy for e-learning starting with a re-consideration of the term to emphasise the centrality of learning:

*'e-learning' ... can sometimes be too narrowly defined – for example with an over-emphasis on distance learning. Developments such as the use of mobile devices to support portfolio development in work-based learning, developing and reusing educational content, learning space design, standardising course information for different purposes, and virtual research environments are all about using technology to enhance teaching and learning, but tend to fall outside the traditional, non-expert, perception of e-learning. We promote and support this diversity.*

The report adds that 'creating a wholly e-based learning experience remains an interesting challenge' but is not of central interest. In summary, flexible learning is now considered the norm for both campus-based and distance-education universities. It is more frequently subsumed under the heading 'innovative teaching and learning practices' as the focus shifts to the student: their experience, engagement and learning outcomes<sup>91</sup>.

### **7.3 Student choices, preferences and expectations**

There is little point in considering the potential impact of new technologies on forms of learning in isolation from factors influencing student choices of courses and institutions, and ongoing changes in the nature of their engagement. It is especially important to recognise the significant differences in the needs and expectations of students across age groups, degree types and areas of study.<sup>92</sup> Regionally based distance education providers face a particular set of challenges in course design and delivery serving large and diverse cohorts of distance enrolments alongside significant numbers of campus-based undergraduates with large numbers in residential accommodation.

Australian research consistently identifies the two most important reasons undergraduate students give for enrolling at university as: studying something that interests them; and, improving their job prospects.<sup>93</sup> This is also generally confirmed by international research, and in some areas such as science and technology, the image of the professions and the content of the curriculum are also shown to be major determinants of student choices.<sup>94</sup> Decisions about which course and which university are generally centred on the field of study as the dominant factor in prospective student decision-making. With the exception of ease of access from home, institutional characteristics beyond the specific qualities of courses are not generally strong influences. However, in some fields of study such as the sciences, institutional reputation for research in the area and opportunities for postgraduate study are

---

<sup>91</sup> Commonwealth of Learning 2008

<sup>92</sup> McLinnis, C forthcoming, 2010, 'University students' experiences of higher education', in B McGaw, E Baker & P Peterson (eds) *International Encyclopaedia of Education*, 3<sup>rd</sup> edn, Elsevier.

<sup>93</sup> McLinnis, C. & James, R 1995, *First year on campus: Diversity in the initial experiences of Australian undergraduates*, Canberra: AGPS.

<sup>94</sup> OECD 2006, *Evolution of student interest in science and technology studies*, Policy Report, 17-18 May. [www.oecd.org/dataoecd/16/30/36645825.pdf](http://www.oecd.org/dataoecd/16/30/36645825.pdf)



significant. In some professional areas institutional image and prestige play a part, and in others, recognised expertise in particular subjects is critical.<sup>95</sup>

Young students attending regional universities have typically rated the atmosphere on campus and availability of accommodation as important factors in their decision-making. Mature age students have a particular interest in timetables and subject availability. Likewise, people looking to upgrade their professional qualifications, or changing career paths, are focused on the capacity of the course to meet their needs and interests, and to fit around work and family commitments.

Clearly, if regional universities are unable to offer a full range of courses then some regional students will look elsewhere. Flexible delivery has opened up more options in choices of course and institution, and students are increasingly highly strategic in the choices they make. More students now shop for courses that best accommodate their schedules and learning styles and are increasingly likely to acquire credits from more than one institution in line with their desire to package programs to suit their interests and to improve their opportunities.<sup>96</sup> It is noteworthy that Open Universities Australia (OUA) does not expect that students will necessarily acquire all their course credits through its open and distance mode.

Notwithstanding diversity in student circumstances there is a trend towards convergence in their expectations in some important respects. Significant numbers of off-campus students increasingly expect their course experience to provide the benefits of the campus-based experience. This includes ready access to both individual service and group learning experiences, and a reasonable level of social engagement with teachers and fellow students to enhance the quality of their experience and their learning outcomes. Indeed, in many areas professional accreditation requires specified periods of face-to-face contact with teaching staff and with other students.

Where once it was assumed that traditional campus-based students would naturally form peer support groups and make regular informal contact with academics, the priority they give to part-time work, their idiosyncratic timetables and the accessibility of web-based resources requires lecturers and course designers to craft learning experiences using a mix of web-based social networks and a variety of face to face experiences.

### **7.3.1 Student use of ICTs**

There is no evidence to suggest that students choose institutions because of the quality of ICTs provided. Young students appear to have fairly basic expectations about the amount of ICT used, and these are generally met to their satisfaction. Nor is there any certainty that particular technologies will necessarily drive student behaviours in ways that might be

---

<sup>95</sup> James, R, Baldwin, G & McInnis, C 1999, *Which university? The factors influencing the choices of prospective undergraduates*, Canberra: AGPS.

<sup>96</sup> Howell, SC, Williams, PB & Lindsay, NK 2003, 'Thirty-two trends affecting distance education: an informed foundation for strategic planning', *Online Journal of Distance Learning Administration*, vol. 6, no.3, Fall, State University of West Georgia, Distance Education Center.  
<http://www.westga.edu/~distance/ojdla/fall63/howell63.html>

imagined. Other factors intervene to shape student study patterns including external pressures such as financial circumstances that cause students to look to technologies to help them meet their multiple commitments, although generally within the framework of their preferred forms of interaction and learning. Student preferences for particular modes of delivery 'reflect both uncertainty as to the inherent values of particular modes and an openness to consider a variety of modes'.<sup>97</sup>

Undergraduate students remain firmly attached to the importance of traditional approaches to university education, notably personal contact, albeit in a web-supported setting.<sup>98</sup> However, student preferences with respect to learning technologies can shift radically in a short space of time. Some innovations and developments, such as social computing and personal broadcasting moved much faster than predicted. Other innovations slowed down. Students are not always enthusiastic to embrace new technologies for very practical reasons. They prefer, as do most people, user-friendly technology, that is, largely intuitive with no training required, and 'in the background'. Recent UK research confirms this orientation of young students:

*While the students expect to be able to set themselves up, technologically, in the same way that they are perhaps used to now, they will not expect either their connectivity to decrease or for the technology to encroach on what they see as the key benefits from university – interaction and learning.*<sup>99</sup>

Moreover, making assumptions about the ICT capacity and capability of young people in new forms of course design and delivery is risky. A 2008 report commissioned by the Joint Information Systems Committee (JISC) and the British Library<sup>100</sup> has countered the common assumption that the 'Google generation' – young people born or brought up in the internet age – is naturally adept at using the web effectively. The report argues that, although young people demonstrate an ease and familiarity with computers, they rely on the most basic search tools and do not possess the critical and analytical skills to assess the information that they find on the web.

The circumstances and experiences of students differ markedly with respect to their expectations of their learning experience and use of ICTs. The experiences of the major age cohorts are qualitatively different and the outcomes vary accordingly. Dealing with diversity in student profiles has become a significant challenge for all universities. A recent study of UK universities concludes that: 'In attempting to cope with increasing student

---

<sup>97</sup> Allen, IE, Seaman, J & Garrett, J 2007, *Blending in: the extent and promise of blended education in the United States*, Sloan Consortium, p .3. [www.sloan-c.org/publications/survey/online\\_nation](http://www.sloan-c.org/publications/survey/online_nation)

<sup>98</sup> Committee of Inquiry into the Changing Learner Experience (Clex) 2009, *Higher education in a Web 2.0 world*, Report of an independent Committee of Enquiry into the impact on higher education of students' widespread use of Web 2.0 technologies, p. 8. <http://www.clex.org.uk/>

<sup>99</sup> Ipsos Mori 2007, *Student Expectations Study*, prepared for the Joint Information Systems Committee (JISC) UK. [www.jisc.ac.uk/media/documents/publications/studentexpectations.pdf](http://www.jisc.ac.uk/media/documents/publications/studentexpectations.pdf)

<sup>100</sup> CIBER 2008, *Information Behaviour of the Researcher of the Future*, CIBER Briefing paper no. 9, A British Library/JISC Study, University College London, [www.jisc.ac.uk](http://www.jisc.ac.uk)

diversity, certain institutions are effectively running ‘parallel universities’ for different types of student.’<sup>101</sup>

It is therefore critical in the analysis of student needs to consider the potential responses of the major age sub-groups of students: for example, traditional domestic school leavers (residential halls and commuter); traditional international school leavers; deferred entry under 25 years age, mature age return to study over 25 years age, and professional upgrade students.

### 7.3.2 Key trends in student expectations

The key trends in student expectations making an impact on course design and delivery can be summarised as follows:

- Students expect their courses to include the development of employability skills. Students in professional and vocationally oriented programs expect work integrated learning to be a critical component of their university experience.
- Students expect the modes of delivery to suit their personal priorities, commitments, and learning preferences. They assume the availability of options to study in a range of formats and settings for both collective and individual learning opportunities that suit their career aspirations.
- There remains a strong expectation amongst undergraduate students and those in professional education programs that their experience will include significant face-to-face learning opportunities.
- Students enrolled in full-time studies expect to be able to work substantial hours in paid part-time work. They also want to be able to move in and out of full-time and part-time enrolment to enable them to work and they will increasingly shop for courses to mix and match with their aspirations and commitments.
- Increasing numbers of students expect flexibility in academic calendars with multiple enrolment and completion points during the year to enable them to enrol, accelerate degree completion, catch up on failed or missed subjects, or work around other commitments.
- Students increasingly prefer to create their own ‘collage’ of study programs with combined degree and diploma courses including university and vocational education. They also expect to be able to move seamlessly between institutions, including opportunities to complete part of their study program abroad.
- Students generally expect that they will have or use:
  - their own hardware;
  - ubiquitous internet access;
  - course materials online or as backup to lectures;

---

<sup>101</sup> Brennan, J, Patel, K & Tang, W 2009, *Diversity in the student learning experience and time devoted to study: a comparative analysis of the UK and European evidence*, report to the HEFCE by Centre for Higher Education Research and Information, The Open University. [www.open.ac.uk/cheri/documents/publications-list.pdf](http://www.open.ac.uk/cheri/documents/publications-list.pdf)

- high level technical support systems; and,
- content and media services delivered to a diverse range of mobile and personal devices.

## 7.4 *An expanded course profile*

If a national regional university is to make a significant difference to the opportunities and experiences of regional students and their communities, it will need to do what the current providers cannot do: offer a comprehensive range of highly regarded courses across all major fields of study. As one observer noted, 'people go past the regional universities to the city to do the courses they want'. The course profiles of most regional and distance universities have been constrained in part by limited student demand in some fields, but also by lack of resources to invest in areas that require specialist facilities, infrastructure, or academic staff. Medicine and engineering are frequently cited examples of fields that are currently difficult to establish and sustain in regional universities.

The West Review drew attention to the fundamental issue that 'no Australian distance education provider has achieved real economies of scale' with respect to subject profile.<sup>102</sup> There appeared to be consensus at that time that:

*...for most subjects very significant economies of scale cut in only past 1,000 enrolments. For numbers fewer than 1,000, economies of scale favour traditional large-group single-campus teaching institutions. But very few distance education subjects delivered in Australia have 1,000 enrolments or more. On the other hand, hundreds of subjects taught by distance education have fewer than 100 enrolments.'*

An expanded course profile meeting regional demand cannot be achieved by any of the current regional providers operating alone, nor is it feasible to provide a comprehensive set of courses on any one regional campus. Some regional universities have been more successful than others at building course profiles that attract significant numbers of students, including in areas where accreditation requirements were considered problematic. Success in these areas has been achieved in part through innovative use of academic expertise, and creative approaches to resolving difficulties in meeting external requirements for practicum supervision.

Expanding course profile to address current scale issues would require a combination of:

- Strategic consolidation of existing courses currently delivered by the partner institutions, including the concentration of specialist courses on a particular campus;
- Recruitment of academics with a strong interest in innovative approaches to course design and delivery, particularly in fields not generally taught in distance and digital modes;

---

<sup>102</sup> West, R 1999, *Learning for life: review of higher education financing and policy: Final Report*, November, DEETYA, Canberra, p. 144.

- Addressing national skills shortages impacting on regional Australia through innovative approaches in course design and delivery;
- Creating a critical mass of pedagogical and technological expertise in course design and delivery covering all fields of study;
- Using new technologies to maximise economies of scale across both distance and campus-based courses;
- Engaging new technologies to deliver new distance and blended programs in fields traditionally restricted to campus-based learning;
- Building leading edge residential school facilities, including laboratories; and,
- Designing totally integrated cross-site communications infrastructure.

Above all, as one contributor to the preliminary staff and student consultation report argued: 'it would be a mistake to presume that what regional unis currently offer is what they should offer – we need enough imagination to anticipate demand and drive demand for new disciplines.'

## 7.5 *New and emerging technologies*

A groundbreaking national regional university would require not only a significant investment of funds but also a visionary program of major initiatives to enhance forms of learning directed primarily at regional students and their communities. The new and emerging developments in ICTs outlined below have the potential to support major transformations in distance education delivery to regional Australia and beyond. New developments in ICTs are occurring on almost a weekly basis and while it is tempting to be overly enthusiastic about their impact, even the most expert observers of the impact of technological change consider that a 'four to five years time to adoption' perspective is about as far as they can reasonably go in their predictions.

In broad terms, the new developments mean that technologies are becoming more open and accessible, cheaper for individual users, highly interactive and learner focused. Importantly, the technologies are accelerating collaborative learning activities including the collective sharing and generation of knowledge, opening up potentially significant possibilities for multi-campus and distance providers.

Underlying these developments is the concept of Web 2.0 generating new ways of thinking about promoting the engagement of learners and researchers in collaborative information gathering and knowledge production. However, the use of social networking in teaching and learning to date is patchy and mostly driven by enthusiastic individuals in particular areas of study. Although Web 2.0 has made a huge impact on everyday social communications, students are not necessarily convinced of its relevance to their learning, indeed, the extent to which the concept can be considered transformative is perhaps still unclear:

*One can...debate whether the so-called Web 2.0 developments fall into the category of 'transformative' or 'general purpose' changes. In most instances they can probably be considered exemplars of the latter rather than the former. What slightly confuses the issue is that the earlier versions upon which Web 2.0 applications are based have also had*

*a short and changeable life span. In some cases, new upgrades occur even before the older models have reached a tipping point among the wider population.*<sup>103</sup>

The following summary of the major technologies currently in the process of adoption across a range of fields, or about to become prominent in universities, is based primarily on the Horizon Project, a collaborative effort of the New Media Consortium (NMC) and the Educause Learning Initiative (ELI). These developments overlap in a number of respects and have been grouped under three broad headings concerning: mobile and personalised learning; collective learning and user-created knowledge; and, data self-recognition and connectivity.

### ***Mobile and personalised learning***

Mobile and personal technology is increasingly viewed as a means of delivery for a wide range of services adding to increased student expectations for individualized services. For many users, broadband mobile devices such as the iPhone have already assumed many of the tasks of laptop computers. New displays and interfaces make it possible to access almost any Internet content. The next-generation mobiles 'bubbling with innovation' have the ability to access cellular, wifi and GPS networks and are beginning to rival laptop computers in the range of capabilities they possess. The significant element driving innovation here is that: '... the manufacturers are working with the developer community to open up the device to all the innovation that third party developers can bring.'<sup>104</sup> This, of course, includes universities.

The Horizons prediction for the next 4-5 years is that mobiles will become a main source of educational and campus-based activities and that the applications of mobile technology to teaching and learning are virtually limitless: 'they are the natural choice for content delivery such as dictionaries, and even field work and data capture'.

The 'personal web' refers to a collection of technologies used to configure and manage customised ways of viewing and using the web: 'Springing from the desire to reorganise online content rather than simply viewing it, the personal web is part of a trend that has been fuelled by tools to aggregate the flow of content in customisable ways...' <sup>105</sup> It is now easy, and becoming easier, to create a personal web to support individual learning activities.

### ***Collective learning and user-created knowledge***

Cheap and effective social computing tools and processes are enabling new forms of collaborative learning and research with considerable potential for regional universities generally and for distance learning in particular. Almost all learners are now able to

---

<sup>103</sup> Gunter, B 2007, 'Technology trends, Work package V', *Information behaviour of the researcher of the future*, A British Library/JISC Study, University College London, CIBER.  
[www.ucl.ac.uk/slais/research/ciber/downloads/GG%20Work%20Package%20V.pdf](http://www.ucl.ac.uk/slais/research/ciber/downloads/GG%20Work%20Package%20V.pdf)

<sup>104</sup> Johnson, L, Levine, A & Smith, R 2008a, *The Horizon Report: 2008*, Austin, Texas: The New Media Consortium, p. 8. [www.nmc.org/pdf/2008-Horizon-Report.pdf](http://www.nmc.org/pdf/2008-Horizon-Report.pdf)

<sup>105</sup> Johnson, L, Levine, A & Smith, R 2008a, p4

contribute to the gathering of data that can be readily organised and accessed by others, creating possibilities for students and researchers collaborating at a distance.

Related developments with the potential to transform higher education in rural and regional areas include:

- ‘Cloud-based applications’ using networked computers that distribute processing power, applications and large systems among many machines. This makes aspects of computing such as disk storage cheaper and ubiquitous. The applications most relevant are those that enable users to create easily sharable content. Key features include the ability to scale up the applications quickly, and the ease of group work and collaboration at a distance.
- ‘Grassroots video’, now commonplace through popular hosting services such as *You-Tube*. Capturing, editing and sharing short video clips on Internet sites have become something anyone can do easily for almost nothing. The uses of inexpensive video capture in the classroom are endless and the opportunities readily extend to distance students.
- ‘Collaboration webs’ which allow students and teachers to open web browsers, edit group documents, hold online meetings, swap information and data, and collaborate in any number of ways. The newest tools are small, flexible, free, and easily tailored to the needs of individuals and groups. Given that they do not require special installation, expensive equipment or expert skills, these applications present a myriad of opportunities for distance education students in diverse contexts.
- ‘Collective intelligence’ refers to knowledge gathered from large numbers of people to produce, for example the *Wikipedia*. This opens up opportunities for students to contribute to knowledge construction. Significant developments are underway in fields such as astronomy and meteorology with amateur scientists and students capturing data and contributing to the knowledge base gathered by professionals.
- ‘Social operating systems’ are predicted to be the next generation of social networking systems such as Facebook and MySpace. While some projects such as Yahoo Life are still in the conceptual stages, the possibilities of placing people in networks according to their behaviours and preferences will be accelerated with a new generation of software.
- ‘Virtual worlds’ and other digital environments allow students to interact with places and objects, or to construct their own. Many universities have invested considerable resources into technologies to support these activities and a continuing stream of new developments have, according to Horizons, ‘skyrocketed in the last few years’ in Australia and New Zealand. The opportunities for distance education include enabling students to take part in activities that are difficult to host in live classrooms.
- ‘Alternative input devices’ refer to movement and gesture-based interfaces that currently accompany games, mobile phones and the most recent computers. According to Horizons 2008, these devices will change the way we work with computers. Importantly, they open up possibilities for simultaneous collaborative



work and enhanced learning experiences using natural movement with further potential in virtual and remote laboratories and workplace settings.

### *Data self-recognition and connectivity*

Advanced recognition, search, find and store applications have multiplied dramatically in the Web 2.0 environments. The critical shifts in orientation and use concern the capacity of devices and applications to recognise their location and connect with other devices without being dependent on shared software. The use of the Internet as a platform for business and education has made universal inter-operability possible and therefore enabled the acceleration of the collaborative activities described in the preceding section.

'Geo-location technology' now enables common devices to automatically determine and record their own precise location, capture and save the data, and transmit to web-based applications. Applications include data visualisation tools, personalised place-based services and procedures for finding and searching. Horizon 2008 suggests that the 'full implications are still unfolding' and that it is likely to have a profound impact on research.

A series of interrelated emerging technologies are under development each with its own impact as well as accelerating broader changes. 'Deep tagging' is a way to access the content buried within rich media like video and pod-casts. It enables parts of larger media to be tagged and annotated thus improving search and retrieval. 'Semantic-aware applications' are tools that gather the context in which information on the Internet is couched, extract meaning from the context and make appropriate connections. However, the education-specific examples of these applications have not yet emerged. Similarly, 'smart objects' are also on the longer 'time to adoption' horizon. These are new forms of sensors, identifiers and applications enabling ordinary objects to recognise their location, respond and connect with other objects or information. It is important to note that some of these devices and applications have been used in industry and research for some time.

#### **7.5.1 Limitations in the adoption of the new and emerging technologies**

Some of the early radical visions for the transformational role of digital technologies were premature and ultimately misguided. Some university leaders made 'excessive and extravagant claims'<sup>106</sup> including forecasts that the traditional classroom would disappear entirely with the inevitable rise of the virtual university. Asking why the e-learning boom focused on developing distance and online learning 'went bust', Zemsky and Massey<sup>107</sup> found that three key assumptions stood out as basically flawed:

---

<sup>106</sup> Department of Education, Science and Training (DEST) 2003, *National Report on Higher Education in Australia (2001)*, Canberra.

[http://www.dest.gov.au/sectors/higher\\_education/publications\\_resources/summaries\\_brochures/national\\_report\\_on\\_higher\\_education\\_in\\_australia\\_2001\\_splitpdf.htm](http://www.dest.gov.au/sectors/higher_education/publications_resources/summaries_brochures/national_report_on_higher_education_in_australia_2001_splitpdf.htm)

<sup>107</sup> Zemsky, R & Massey, W 2004, *Thwarted Innovation: what happened to e-learning and why*, The Learning Alliance, University of Pennsylvania/ Thomson Corporation.



- In the case of online external enrolments, the belief that 'if we build it they will come' was simply 'not so'. The only e-learning products widely used were learning management systems, and PowerPoint. Importantly, most of the online enrolments were existing, on-campus students.
- It was assumed that students would take to e-learning 'like ducks to water'. The research found that students wanted to be connected electronically but principally to one another, they wanted to be entertained, and they wanted to use online facilities to present themselves and their work.
- Critically, it was assumed that e-learning would 'force a change in the way we teach. It did not do this by a long shot'.

These findings serve as an important reminder that any significant investments in new and emerging technologies for the national regional university need to be firmly grounded in an understanding of the expectations and preferences of students. The feasibility of the proposals need also to consider the limitations of the technologies in the real world in which rural and regional students live, work and study, as well as the capacity and capability of teaching and support staff to implement and sustain innovative approaches to course design and delivery for widely dispersed populations.

The factors limiting the adoption of the technologies apply to most institutions to varying degrees. Although regional providers face special challenges, given their collective experience in developing innovative solutions to the pedagogical and technological problems associated with distance education, they have new opportunities to take a national and international leadership role.

Some of the limitations of the new applications are technical: there is a considerable amount of work to be done to bring them into mainstream use in higher education. For example, screen resolutions for mobile devices make reading slow, liable to error, and reduce comprehension. Similarly, the quality of locally produced videos is problematic where clarity and definition are required. There are also unresolved issues and risks associated with data storing and sharing using cloud-based applications including privacy, ownership and sustainability.

Access barriers for students in distance education include in the first instance access to current technologies, problems of budgeting, training, and technical support, and experiential or attitudinal aspects such as a reluctance to use technological tools. Participation issues for rural and isolated students from low-socio-economic backgrounds are compounded by a number of factors described earlier in this report. The issues specific to ICTs include limited experience with the technologies, low levels of information literacy skills, the cost of access, and the quality of the services.<sup>108</sup>

Institutional limitations include program establishment costs, resource availability lack of equipment and infrastructure, scheduling, reservations of academic staff, and the quality of technical support. All universities face difficulties in attracting and retaining academic and support staff with high-level expertise in ICTs, against competition from business and other

---

<sup>108</sup> Zirkle, C 2004, *Access barriers experienced by adults in distance education courses and programs: a review of the research literature*. <http://idea.iupui.edu/dspace/handle/1805/273?show=full>

sectors. This is particularly problematic for regional universities where the expertise in some fields of study and support services is thinly spread across multiple campuses.

These challenges were emphasised in the staff and student consultation report with references to the:

- Need to centralise specializations;
- Lack of capacity to deliver support that is expected or needed across multiple locations;
- Spreading of resources too thinly across too many small campuses; and,
- Duplication of disciplines and support services across too many locations.

Student barriers to accessing distance education are well-known but perhaps need restating. There is a considerable amount of research in this area and the key barriers identified include:

- costs and motivation
- feedback and teacher contact
- alienation and isolation
- student support and services
- experience and training.

In the case of later entry and adult learners with limited school success, a lack of experience with ICTs is a significant barrier to their access in the first instance and to their participation and success. They may lack the experience and training needed to navigate course sites or download course materials or indeed, to deal with online course information. As the new and emerging technologies become commonly used across the community, the challenges of online learning will diminish. However, students and academics currently encounter technical difficulties in connections and lack of timely and effectively technical assistance: adult learners in particular have limited tolerance for these delays.

Poor broadband service has been a major factor limiting the capacity of regional students and their communities to use the Internet and mobile devices. Slow and unreliable and expensive services limit subject options and discourage network use. Virtual worlds are particularly demanding in terms of computer requirements and bandwidth. These significant limitations were emphasised in the preliminary staff and student consultations report:

*Telecommunications in regional Australia were identified as inadequate. There was a strong, recurrent complaint around technology – that the people needing it the most – isolated regional and rural communities – have the least access to it. There was concern about how to reach the 2% of people who would not have access to the National Broadband Network. Typically they would be small communities in great need, and likely to include communities within each university's footprint.*

## 7.6 *Opportunities for innovation*

The West Review reported on the ‘vitality, sense of purpose, and relative clarity of vision of most regional providers’<sup>109</sup> and referred in particular to their established track record of adaptability and use of educational technologies. This represents a potentially significant advantage of regional distance education providers over competitors, both national and international. The opportunities to advance the use of ICTs afforded by the establishment of a national regional university are largely centred on the economies of scale that result. This includes the potential to create a critical mass of expertise in innovative approaches to course design and delivery.

There is currently a lack of major groundbreaking initiatives in course design and delivery at the national level. This represents an opportunity for a national regional university to attract major funds to reassert Australia’s standing as a leader in the field. The challenge is to enhance that reputation with a significant investment in people and infrastructure. A stronger national profile will improve advocacy for funding and the promise of a new and significant profile should improve recruitment prospects.

Individual regional universities have made impressive efforts to develop whole-of--institution strategies for flexible delivery, however, as noted, pedagogical and technical expertise is often spread thinly across the institutions. Bringing this expertise together to create a critical mass of academics and professional support staff may open up opportunities for significant advances in the integrated use of ICTs and high-end learning management systems.

Some of the most obvious candidates for improvement and innovation that might result from economies of scale include:

**A comprehensive course profile.** The primary potential benefit of a larger regional university is the opportunity to address the single most important factor influencing student demand: course choice. Economies of scale should make it possible to build more substantial student numbers with collaborative team teaching and depth in academic expertise to fully support and develop fields of study facilitated by high end technologies. The new technologies are also likely to make it possible to add fields of study to the regional university profile that have not been possible until now to offer in distance and digital modes. The level of investment required for these innovations on this scale is currently beyond any one of the regional universities.

**Leading edge cross-campus communications.** While facilities for cross-campus links are adequate in most multi-campus universities they are still often unreliable and difficult to manage. Combined resources and expertise should accelerate the development of more sophisticated systems. As one observer of US trends recently predicted, ‘next generation’ interactive high definition video conferencing and integrated collaboration technologies being adopted by major corporations to cut costs and

---

<sup>109</sup> (1998:143)

reduce carbon footprints will also emerge in the research laboratories and lecture theatres of universities.<sup>110</sup>

The technologies are also likely to open new opportunities for significant cost-reductions and improved links across applications. The University of Sheffield, for example, has decided to use Google Mail rather than provide its own in-house email. "Institutions are having discussions about when it's sensible to develop services in house - such as virtual learning environments - and when it's best to use services in the clouds, such as email."<sup>111</sup>

**Improved connectedness.** The increase in connectedness and capability of technologies has multiplied options for educators. The ubiquity of the tools has lowered the cost of entry to use them, which in turn is opening up a range of new opportunities for technology-mediated learning and communication. The increasing connectedness of people has dramatically reduced the costs of collaboration. This has been paralleled by equally dramatic growth in free and low-cost tools available to bring people together in real time to share assets and resources, and to communicate. The greater the critical mass of people involved, the more likely these activities will move beyond the inspired efforts of a handful of enthusiasts.

**Advancing workplace integrated learning.** The increasing impact of the workplace on universities includes the opportunities students have for authentic work-related learning experiences. This is associated with new forms of documenting work and study experiences such as e-portfolios. The promotion of work integrated learning across Australian universities and difficulties providing practicum placements in many professional education programs, have encouraged universities to work towards developing alternatives such as virtual experiences. The combined expertise and technologies of a new university could lead to a significant acceleration of existing professional, clinical, and technical offerings towards leading edge digital modes.

**Technology-business partnerships.** A critical mass of the kind envisaged would perhaps also position a national regional university to lead groundbreaking business partnerships with large communications providers such as Telstra. It is possible to imagine significant gains for regional students and a national regional university with free downloads and support services included as part of enrolment packages.

**The Local Regional Broadband Hubs** initiative of the Australian Broadcasting Commission in the 2009 Budget presents a timely and potentially major opportunity for a national regional university. The initiative will involve the development of user-generated content and create online avenues for local communities to connect and collaborate. The ABC will establish community websites and portals, and create 'virtual town squares' for communities to share experiences. This new funding provides for more than 50 enhanced regional broadband hubs to be rolled out over the next three years. The projects will include but will not be contained to:

---

<sup>110</sup> Gonick L, 2009, *The Year Ahead*, Inside Higher Education, January.  
<http://www.insidehighered.com/views/2009/01/06/gonick>

<sup>111</sup> Lipsett, A 2009, *Time to get with the program?* The Guardian, Tuesday 12 May.  
<http://www.guardian.co.uk/education/2009/may/12/computer-science-it/print>

- Remote medical consultation, diagnosis and treatment to address regional skills shortages; and,
- Digital resources and services such as teleconferencing to improve access to educational opportunities for regional, rural and remote students.

## 7.7 Competition

The new and emerging technologies provide an opportunity but they also magnify the potential for competition. To state the obvious, all universities are now able to provide some courses to students by distance and digital modes. Cheaper and more accessible devices and applications allow teaching departments and even individual academics to design and deliver their courses and subjects by distance.

The threat of external competition from foreign universities involved in distance education has been widely mooted for some time. For example, the West Review<sup>112</sup> warned that 'the distance mode is significantly exposed to inbound international competition.' It argued that unless the economy of scale issues is addressed, current distance education providers would have difficulty surviving in the face of competition from private providers capturing the high demand, high volume subjects. The OECD policy brief on e-learning makes the point that until recently at least, there has been little evidence of any large-scale cross-border activity to worry current providers:

*Contrary to the predictions of the dot.com boom, distance online learning in general and cross-border e-learning by students outside the country where the institution's central campus is located have generally failed to emerge as significant activities. In most institutions, cross-border enrolments for e-learning are a small-scale, peripheral activity.*<sup>113</sup>

However, and while mindful of the history of false alarms, it is useful to consider the growing impact of private for-profit providers overseas. Garrett's recent analysis<sup>114</sup> suggests that:

- in the US, the large for-profit online providers are aiming for genuinely national markets to break up existing patterns of local enrolments;
- the online market share of for-profit providers will continue to increase more strongly than public providers. The 10 largest online providers in the US are for-profit;
- online for-profit providers have a disproportionately high share of the student market and will increase at a faster rate because they:

---

<sup>112</sup> 1998:143

<sup>113</sup> OECD 2005, Policy brief: *E-learning in tertiary education*, December, p.2.  
[www.cominit.com/en/node/243450/303](http://www.cominit.com/en/node/243450/303)

<sup>114</sup> Garrett, R 2009, *Online higher education markets*, Online presentation, Eduventures.  
<http://www.eduventures.com/services/online-higher-education/>

- are more focused in their vision and are able to fit their mission directly to the online mode of delivery;
- spend much more on marketing, are more sophisticated in their approach, and have the capacity and capability to respond quickly to opportunities; and,
- give greater priority to customer service.

Nevertheless, public providers of online learning have some advantages. They can attract students with lower fees, strong brands and, currently at least, they can use the security of their established brand names and traditional learning environments to attract students. Not-for profit providers are likely to offer a broader range of courses and corner local student markets through forms of hybrid delivery. Garrett also suggests that we can expect to see stronger interest in online programs from younger students, although 'this will not necessarily last'.

Competition between Australian distance education providers will continue. Deakin University, for example, has a long established mission to provide leadership in both rural and regional engagement, and also in the research, development and use of new technologies for flexible learning. Indeed, almost all Australian universities are endeavouring to raise their capacity and capability in flexible learning with some major metropolitan universities making significant investments to establish market leadership positions.

Other providers, including OUA, and various consortia and networks in specific fields of study, have made significant inroads into the enhancement of distance and digital education. OUA has increased its market share of distance enrolments significantly to rise from fifth in 2004 to first in 2007. It now claims to be the largest online university education service in Australia. Over the last 4 years OUA undergraduate enrolments have increased by 13.6% and postgraduate enrolments by 33.9%, with a total of 28,000 students in 2008.<sup>115</sup>

Some leading distance education providers, such as Deakin University, are unlikely to join a national regional university and although concentrating on their strengths in campus-based education, will continue to offer distance and online programs. Competition will increase from courses and subjects offered by faculties and departments within other campus-based universities. This is typically motivated by market opportunities in specific field of study such as the distance programs from the College of Engineering and Computer Science at the Australian National University, and the University of Sydney Postgraduate coursework programs in animal and veterinary science.

## **7.8      *A national resource centre***

The proposal to establish a national resource centre to promote engagement with new forms of learning across Australia has potential to add value to a national regional university. In Section 4 we suggested that NURA also propose the establishment of a centre for excellence in education for remote communities internationally. The synergies with a national resource centre on new forms of learning are obvious. This has the potential to establish a NURA as

---

<sup>115</sup> Open Universities Australia 2008, *Annual Report*. [www.open.edu.au/](http://www.open.edu.au/)

one of a kind: combining groundbreaking research and development on new forms of learning with an international leadership role informing the provision of higher education to remote populations in Australia's regions.

It is assumed that the scope of the centre will embrace world-class research into regional distance and digital delivery, strategic advice to governments and universities, and the development of innovative approaches to the use of ICTs in new forms of teaching and learning. The national resource centre would play a key role in filling major gaps in research on pedagogy and patterns of student learning in regional Australia and Australia's regions. It would also provide strategic support for faculties and schools in a university-wide priority program aimed, for example, at accelerating the conversion of existing professional, clinical, and technical offerings of the university to leading edge digital modes.

We suggest a different title be considered rather than 'resource centre' since our consultations raised the concern that this might be seen narrowly as a repository of information and materials. Currently, the Australian Learning and Teaching Council (ALTC) is the major source of information via its Learning Exchange. Most of this material relates to large grants for development projects sponsored by the ALTC for individual academics and various networks of interest groups.

Almost all Australian universities have academic development centres. In some cases they own, or are connected with, specialist units focused on new forms of learning. The research and development work of these units tends to be patchy and usually involves coordinating collaborative work with academic departments or similar centres in other universities. Examples of new initiatives include: the Innovation in Distance Learning initiative at the University of New England which is in the early stages of development; and the Institute of Teaching and Learning at Deakin University which is taking a whole of university approach to establishing a program of research in higher education teaching and learning.

A growing number of faculties, particularly in the health fields, have established research and development units to advance the use of new forms of course delivery. There is however, no obvious leader amongst the centres specialising in new forms of distance and digital learning in any one institution comparable to the Centres for Excellence in Teaching and Learning in the UK. HEFCE funds, for example, the Institute for Learning Enhancement at Wolverhampton University which aims to become the national leader in e-learning, and the Blended Learning Unit at the University of Hertfordshire. Significant programs of research into ICTs and learners are also being conducted by UK organizations such as the Centre for Information Behaviour and the Evaluation of Research (CIBER) at University College London.

There is an opportunity establish national leadership in this area particularly given the need for national groundbreaking projects in distance and digital education. Such a centre would play a key role in providing national leadership and filling major gaps in research on pedagogy and patterns of student learning in regional Australia and Australia's regions. It might also provide strategic support for faculties and schools in a university-wide priority program aimed, for example, at accelerating the conversion of existing professional, clinical, and technical offerings of the university to leading edge digital modes.

The problem for most centres of this kind in regional universities is their size and reach. A national regional university could support a significant initiative along the lines of

Athabasca University where the Technology Enhanced Learning Research Institute aims to create knowledge and foster innovation in the use of digital technologies to support learning, and the Centre for Distance Education (CDE) offers a suite of postgraduate qualifications in distance education pedagogy, technology and educational technology. We are not able to make an assessment of the impact of the Athabasca initiatives but it is nonetheless worth noting the scale of the organizations. The CDE is staffed with 12 core faculty members and one Canada Research Chair. Its primary focus is on the scholarship of teaching and learning in open and distance environments.

## 7.9 *Issues for the next stage of the Feasibility Study*

The implications of this analysis for the modelling stage of the Feasibility Study relate to how developments in distance and digital delivery might impact on the provision of higher education through a NURA model. The key areas of interest are as follows:

- the potential impact of an expanded course profile on student demand, student profile, and staffing requirements;
- the feasibility, benefits and costs of maximising flexibility in course design and delivery involving, for example:
  - Academic calendars that allow multiple enrolment points and accelerated programs;
  - New forms of enrolment to enable students to move in and out of full-time and part-time studies, and shift between internal and external modes;
  - Innovative ways of conducting practical, laboratory, and workplace integrated learning; and,
  - Sustaining high levels of interaction with teachers and peers, using both face-to-face and social computing tools;
- opportunities to achieve significant advances in the expansion of low entry cost, low maintenance and flexible application driven and open source web-based learning environments;
- opportunities for significant cost-reductions and improved links across applications;
- development of leading-edge systems of cross-campus communications in teaching, research and administration including virtual and simulated learning experiences in areas previously requiring physical attendance and infrastructure, for example, laboratory work in science, engineering and the health professions; and provision of authentic work-based learning experiences, practicum placements, and education for the professions; and,
- the potential of the National Broadband Network to increase levels of participation by students from rural and regional areas and enable significant advances in the scope and provision of virtual learning opportunities.



## 7.10 *Summary*

The vision for a National University in Regional Australia includes a distinctive mission to enhance Australia's distance and digital education capacity.

To achieve this vision, a NURA will need to be at the cutting edge of developments in distance and flexible education. A groundbreaking national regional university would require not only a significant investment of funds but also a visionary program of major initiatives to enhance forms of learning directed primarily at regional students and their communities. The new and emerging developments in ICTs have the potential to support major transformations in distance education delivery to regional Australia and beyond.

If a national regional university is to make a significant difference to the opportunities and experiences of regional students and their communities, it will also need to do what the current providers cannot do: offer a comprehensive range of highly regarded courses across all major fields of study.

There is a lack of major groundbreaking initiatives in course design and delivery at the national level. This represents an opportunity for a national regional university to attract major funds to reassert Australia's standing as a leader in the field. Individual regional universities have made impressive efforts to develop whole-of-institution strategies for flexible delivery, however, pedagogical and technical expertise is often spread thinly across the institutions. Bringing this expertise together to create a critical mass of academics and professional support staff may open up opportunities for significant advances in the integrated use of ICTs and high-end learning management systems.

Potential areas of innovation include:

- Leading edge cross-campus communications using next generation interactive high definition video conferencing and integrated collaboration technologies
- Improved connectedness making use of the dramatic growth in free and low-cost tools available to bring people together in real time to share assets and resources, and to communicate
- Advancing workplace integrated learning opportunities for students have for authentic work-related learning experiences
- Technology-business partnerships through groundbreaking business partnerships with large communications providers such as Telstra
- Content and technology provider partnerships such as the Local Regional Broadband Hubs initiative of the Australian Broadcasting Commission.

The new and emerging technologies provide an opportunity but they also magnify the potential for competition. To state the obvious, all universities are now able to provide some courses to students by distance and digital modes. Other providers, including OUA, and various consortia and networks in specific fields of study, have made significant inroads into the enhancement of distance and digital education. Indeed, almost all Australian universities are endeavouring to raise their capacity and capability in flexible learning with

some major metropolitan universities making significant investments to establish market leadership positions.

There is potential for a NURA to take a lead nationally through the development of a centre to promote engagement with new forms of learning. The scope of the centre could embrace world-class research into regional distance and digital delivery, strategic advice to governments and universities, and the development of innovative approaches to the use of ICTs in new forms of teaching and learning.

## 8 Overview of needs, opportunities, and constraints

---

The preceding analysis has identified a range of needs and opportunities for change in relation to higher education in and for regional Australia. It has also drawn attention to a number of potential obstacles and constraints. These are drawn together in this chapter to set the context for consideration of possible new models for higher education in and for regional Australia.

### 8.1 *Needs and opportunities*

#### 8.1.1 Needs

The needs for change in regional higher education relate to:

- Access, participation and attainment
  - people from regional Australia are less likely to have higher education qualifications, less likely to enrol in university, and more likely to move in order to access higher education
  - young regional Australians (15-24) are about half as likely to be attending university as comparable city age groups
  - university attainment levels in regional areas are only just more than half the level of the capital cities
  - the differences are particularly marked for Indigenous and low SES students
  - while projected population growth in the prime higher education age groups is generally lower in regional areas than in metropolitan areas, the population of potential higher education students is still projected to grow in most States and Territories, in some areas quite strongly.
- Regional labour force requirements
  - there have been persistent shortages of professionals in certain occupations across most States and Territories and especially in areas of regional Australia
  - the shortages are particularly marked in professions for which the relevant qualification is not offered by universities in the region or is provided only on a limited basis
    - notable examples include engineering in NSW, medicine, a number of allied health professions, dentistry, and architecture
  - employment demand for graduates in regional areas is generally projected to rise quite strongly, albeit not quite as strongly as in metropolitan areas.
- The sustainability of regional universities, especially small campuses
  - in addition to the range of financial and staffing pressures affecting all universities, regional universities face a number of additional challenges to their sustainability

- these include additional uncompensated costs relating to: diseconomies of small scale, geographic dispersion of campuses, and relatively high proportions of part time students and students who are the first in their families to attend university.

### 8.1.2 Opportunities

The opportunities for change in regional higher education relate to:

- The potential to use higher education policy as a much more active agent for regional development in Australia
- The targets of the Australian Government to boost higher education attainment rates and higher education participation rates for students from low SES backgrounds
  - Achievement of both these targets will require a particular focus on regional areas
- The projected growth in demand for higher education globally and in Australia's region
- The roll out of broadband in regional areas and the increasing use of new information and communications technologies
- More efficient and effective use of infrastructure through collaboration and collocation with other educational providers and related users on regional campuses
- The potential for some form of collaboration or integration of regional universities to deliver benefits through:
  - increased scope and depth of programs
  - consolidation of expertise and investment in distance and digital delivery, including the development of systems and program content
  - collaboration in research programs and shared use of facilities to support research activities and opportunities for joint supervision of research students
  - increased opportunities to share resources to deliver a range of support functions more cost effectively.

If, and only if, substantial new funding were to be available, we believe that there is also an opportunity to go further and create a new national regional university in some form that could operate at a higher level of scale, efficiency and impact. Such an entity could be marked by:

- Clarity of mission and strategy
  - to be a leading provider of higher education teaching and research with national and international reach and impact, and a special mission to contribute to the social and economic development of Australia's regional areas
- A comprehensive course profile offered through a highly flexible mix of on- and off-campus learning and new forms of learning supported by advances in ICT applications

- Increased student numbers and demand, providing for an increase in the scale and sustainability of individual programs and campuses
- Leading edge cross-campus communications and levels of connectedness between staff, students and communities
- A quantum step forward in research depth and scale
- Organisational innovation including more intensive utilisation of physical infrastructure, reduced duplication and fragmentation of services and expertise
- Enhanced pathways to higher education for people in regional areas, especially Indigenous and low SES students
- Groundbreaking business partnerships with large communications providers
- Centres of excellence for remote community education and for the promotion of new forms of learning.

## **8.2      *Constraints and issues***

It must be recognised with clarity however, that there are major obstacles to change and significant constraints on the extent to which the opportunities can be realised.

### **8.2.1      *The competitive nature of higher education industry and the independent status of universities***

Australian universities have always enjoyed higher levels of institutional autonomy and independence than those in many other countries where, for example, State agencies determine which institutions may offer certain levels of qualifications and in which fields, make detailed planning decisions on the distribution and use of capital funding between universities, and even determine staff numbers and salary levels. This level of central planning and coordination has not been a feature of the Australian higher education system. Indeed the consistent direction of policy over many years now has been toward a deregulated, competitive system comprising a mix of autonomous public, private and mixed public/private institutions. The latest changes following the Higher Education Review consolidate this direction.

In this environment even the ‘public’ universities are characterised by:

- Reduced reliance on government funding and greater reliance on student fees and other sources of income;
- A focus on distinctive institutional branding; and
- A high degree of institutional independence.

In many ways these characteristics build on the separate identity of Australian universities, all of which were first established as independent institutions rather than as part of multi-institution or state wide ‘systems’ as found in other countries. This independent identity is enshrined in the charters of a number of universities that give them a particular educational or geographic mission. It is reflected in the strong identification of a number of regional universities with their regional communities and the corresponding sense of ‘ownership’ of those universities by their communities. It is symbolised by the strong rejection by most

Vice-Chancellors we consulted of any model that involves a change to an established university name.

These characteristics mean that universities will collaborate in ways that are perceived to be in their mutual interests, but will resist very strongly any measures, particularly externally imposed, which diminish their independence, compromise their 'brand' or limit their freedom of operation.

For some senior university personnel in key decision making roles, this reality has been shaped by negative experiences of institutional mergers in the past.

These are issues of particular significance for all of the Vice-Chancellors of the universities that might partner with CSU and SCU in a new model for regional higher education in Australia. At this stage all of these Vice-Chancellors are extremely cautious about models for institutional integration that could affect the continuing identity and freedom of operation of their universities.

### **8.2.2 Limits on and competing priorities for public funding**

Very substantial new funding would be required to realise the full vision of a comprehensive, leading university for regional Australia, and to provide the level of incentive required to encourage currently independent universities to come together in any tightly integrated new model. The precise level and nature of this funding will need to be analysed further in subsequent phases of the Feasibility Study, but it could well be in the hundreds of millions of dollars.

There will always be very tough scrutiny of the case for such expenditure both in terms of the public benefits of the proposal and in terms of the competing priorities for the use of the funds. A strong case can be made that expenditure on this proposal represents a nation-building investment that addresses multiple national priorities in relation to objectives in education, economic and workforce growth, regional development and social inclusion. It may well have met receptive ears had it been advanced 18 months or two years ago. The capacity of Government to respond positively to such a case now has been curtailed by the impact on the Budget of the global financial crisis. This is not to say that major public investment would not be forthcoming if a well supported case is developed. It is a reality however that, in the new budgetary environment, the level of scrutiny will be intense, especially following the substantial additional outlays committed to the higher education sector in response to the Bradley and Cutler Reviews.

### **8.2.3 Resistance to special funding arrangements**

The OECD report, Higher Education and Regions: Globally Competitive, Locally Engaged (OECD 2007), made the following observation which will resonate with regional universities in Australia:

*Funding and incentive structures often provide limited support for regional engagement. HEIs are faced with competition, new tasks and pressures to reduce cost notably by the central authorities. This context does not necessarily favour an enhanced regional role for HEIs. Research is generally funded on a geographically neutral basis or aims to create critical mass. HEIs can seek to diversify their funding sources and turn to private external funds but are faced with legal constraints in doing this. A strong focus on excellence when allocating research budgets may result in concentration in advanced regions which is often considered necessary in*

*the face of increasing global competition within the HE sector. Funding for teaching is weakly oriented towards building human capital in deprived regions and higher education's role in aiding community development is not systematically funded. (OECD 2007, p13)*

The message from the OECD is clear:

- the development of the knowledge economy in regional areas is an important component of national prosperity; and
- higher education policy and funding arrangements should recognise and support the vital role of universities as agents of regional development.

This is a message that has not yet been heard clearly in Australia.

In part this reflects the federal system in which the States and Territories have primary focus on issues of regional development, while the Commonwealth has primary policy and funding responsibility for higher education. The policy direction of the Commonwealth has been to encourage an increasingly open, competitive, national higher education system which is largely blind to geography. The education portfolio, which is responsible for higher education funding, does not see regional development as a core part of its responsibilities. The States have been reluctant to invest in higher education institutions for regional development purposes because they have seen higher education funding as a Commonwealth responsibility.

The NURA concept is an opportunity to use higher education policy as a much more active agent for regional development in Australia. This would require a change in the orientation of national policy makers, and possibly greater collaboration between the portfolios responsible for regional development and education, and between the Commonwealth and the States and Territories.

At the least, it would require an acknowledgement that investment in higher education in regional areas can serve a dual public policy objective and that investment decisions can and should legitimately reflect this dual purpose.

In the absence of such an acknowledgement, any particular funding arrangements for a targeted set of regional universities will be criticised as special treatment that should not be supported in an open and competitive system.

This type of criticism will be especially strident in relation to any 'special' funding for research or research infrastructure, where the Australian system of public funding for research is now operated effectively on a fully competitive basis. (As noted in section 5.6 this stands somewhat in contrast to the arrangements in the US where part of the statutory function of the National Science Foundation is "to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education.")

This presents a significant challenge to the full realisation of the NURA vision. A quantum step forward in research is integral to the achievement of the enhanced national and international standing envisaged in the NURA concept. As noted in chapter 5, while combining the current research efforts of regional universities provides an increase in scope and scale and opportunities for further gains through the consolidation of research

strengths, under present funding arrangements it is unlikely that there would be a genuine quantum step up in the scale of university research.

#### **8.2.4 Federal issues**

The full NURA vision is for a national university formed through the integration of a number of universities in different States under Commonwealth law. The implementation of this would not be straightforward given that constitutional authority for higher education does not rest with the Commonwealth and that the States currently own (in various ways) many of the assets of the universities that might be involved. The full legal and political implications of such a concept may need to be tested further in later stages of the Feasibility Study. It is worth flagging at this point that, while these matters may be of second order importance, they have the potential to be a deal breaker if the parties are intransigent.

#### **8.2.5 Geography – the tyranny of distance**

The geographic spread of campuses would be enormous under even a limited model of integration of existing regional universities. In a truly national model, it is conceivable that there could be campuses, many of them very small, from coast to coast. While geographic dispersion is not an issue that defeats the logic of integration in its own right, especially given recent developments in ICT, practical experience demonstrates that it does constrain the extent of the benefits that can be achieved. It limits the extent to which courses can be rationalised and services and infrastructure can be consolidated. It imposes extra costs in communication and travel, and it introduces additional challenges in management and forging a shared sense of culture and purpose.

#### **8.2.6 Student demand and demography**

In recent years student demand for higher education has not been uniformly strong in regional Australia. In some regions and in some fields of study demand has fallen. Some universities have struggled to fill their allocated places.

The general level of domestic demand may rise in response to the weaker labour market, but there are likely to remain some areas where demand is soft. As noted in chapter 3, while the demographic outlook is positive in some regions and is not negative overall for regional Australia, there are parts of the country where the numbers in the prime higher education cohorts will decline.

There is also the potential for adverse impacts on domestic student demand for regional universities under the demand driven funding system to be introduced fully from 2012. While the patterns are likely to vary across the country and between fields of study, there is some potential for expansion of student numbers by higher demand providers to draw students away from other universities.

Of course the NURA concept is explicitly intended to address the issue of student demand on at least five fronts:

- Increasing demand from regional students and from metropolitan students by offering a comprehensive set of courses through leading edge, flexible delivery;
- Increasing the depth and quality of courses through consolidation of course offerings;



- Increasing scale and hence sustainability by aggregating student enrolments across participating institutions;
- Enhancing the standing of the combined institution and hence its attractiveness to staff and students; and
- Over the longer term raising educational aspiration levels among regional communities.

It is likely that these types of benefits could be realised to some extent if an effective model of institutional collaboration or integration can be developed. Nonetheless, given recent experience, it is prudent to be realistic about the level of demand growth that can be achieved. In this context we believe that an important element of any model should be enhanced pathways to higher education for people in regional areas, especially Indigenous and low SES students. We suggest that in the development of final models, serious consideration should be given to the provision of an open access pathway.

The NURA concept is also intended to enhance international student demand. Again it is prudent to be cautious about the extent of demand growth that might be achieved. As noted in chapter 6, the demand for higher education globally and in Australia's region is projected to grow and be accelerated with the demands of global economic recovery. However, Australia's position as a lead provider of international education is being challenged by increasing competition for on-campus and online provision from in-region and international providers. Regionally based universities, even a new, higher profile national regional university, will face stiff competition.

### **8.3**      *Summary*

In summary, we think the needs for a new approach to regional higher education in Australia are strong, and the opportunities are substantial for some form of collaboration or integration of regional universities. If, and only if, substantial new funding were to be available, we believe that there is also an opportunity to go further and create a new national regional university in some form that could operate at a higher level of scale, efficiency and impact. It must be recognised with clarity however, that there are major obstacles to change and significant constraints on the extent to which the opportunities can be realised.

---

## References

- ABS 2006 A Picture of a Nation – Cat No 2070.0, 2006
- ABS Cat No. 4713.0 - Population Characteristics, Aboriginal and Torres Strait Islander Australians, 2006
- Allen, IE, Seaman, J & Garrett, J 2007, Blending in: the extent and promise of blended education in the United States, Sloan Consortium, [www.sloan-c.org/publications/survey/online\\_nation](http://www.sloan-c.org/publications/survey/online_nation)
- Alloway, N, Gilbert, P, Gilbert, R & Muspratt, S 2004, Factors impacting on student aspirations and expectations in regional Australia, DEEWR, Canberra, [http://www.dest.gov.au/sectors/higher\\_education/publications\\_resources/indexes/by\\_series/evaluations\\_investigations\\_program/](http://www.dest.gov.au/sectors/higher_education/publications_resources/indexes/by_series/evaluations_investigations_program/)
- ANZ 2009 Regional and Rural Quarterly, June Quarter 2009
- Australian Council for Educational Research 2005, Longitudinal Study of Australian Youth (LSAY) Briefing No 5, Jan 2002 *Rural and urban differences in Australian education*
- Australian Education International 2009, International Students Statistics Higher Education Commencements 2003 to 2009: Year to Date
- Australian Institute of Health and Welfare, Dental Statistics and Research Unit Research Report No. 43 Dentist labour force projections, 2005 - 2020
- Barlow T 2009 The Australian Miracle: An Innovative Nation Revisited
- Barnard, I 2003, 'Changes in distance education', *National report on higher education in Australia* (2001), DEST, Canberra
- Bradley D, (Chair) 2008, Review of Australian Higher Education, Full Report, Commonwealth of Australia
- Brennan, J, Patel, K & Tang, W 2009, Diversity in the student learning experience and time devoted to study: a comparative analysis of the UK and European evidence, report to the HEFCE by Centre for Higher Education Research and Information, The Open University. [www.open.ac.uk/cheri/documents/publications-list.pdf](http://www.open.ac.uk/cheri/documents/publications-list.pdf)
- Business Higher Education Roundtable, 2000 *The role of universities in the regions*
- Centre for International Economics Canberra & Sydney 1997, Assessing the economic contribution of regional universities, prepared for Review of Higher Education Financing and Policy. [www.dest.gov.au/archive/highered/hereview/mediareleases/mrherc4-97.htm](http://www.dest.gov.au/archive/highered/hereview/mediareleases/mrherc4-97.htm)
- Charles Sturt University 2008, Submission to the Review of Australian Higher Education

Charles Sturt University, 2004, Participation Rates 2004 - Participation in Higher Education at the CSU, State and Australia wide level for regions across NSW, ACT and Victoria downloaded from

[http://www.csu.edu.au/division/plandev/publications/docs/participation\\_rates.pdf](http://www.csu.edu.au/division/plandev/publications/docs/participation_rates.pdf)

CIBER 2008, Information Behaviour of the Researcher of the Future, CIBER Briefing paper no. 9, A British Library/JISC Study, University College London, [www.jisc.ac.uk](http://www.jisc.ac.uk)

Committee of Inquiry into the Changing Learner Experience (Clex) 2009, Higher education in a Web 2.0 world, Report of an independent Committee of Enquiry into the impact on higher education of students' widespread use of Web 2.0 technologies,

<http://www.clex.org.uk/>

Commonwealth of Learning 2008, Education for a digital world: advice, guidelines, and effective practice from around the globe. [www.col.org/digitalworld](http://www.col.org/digitalworld)

Conroy, S, 2009, Speech to the ATUG Regional Communications Conference, Australian War Memorial, 21 May 2009

Cooke, 2008, Online Innovation in Higher Education, Department of Universities, Innovation and Skills, downloaded from

[http://www.dius.gov.uk/higher\\_education/shape\\_and\\_structure/he\\_debate/~/\\_media/publications/O/online\\_innovation\\_in\\_he\\_131008](http://www.dius.gov.uk/higher_education/shape_and_structure/he_debate/~/_media/publications/O/online_innovation_in_he_131008).

Department for Innovation, Universities and Skills UK - Research Report 2008

Department of Education, Employment and Workplace Relations (and predecessor agencies), Selected Student, Staff and Finance Higher Education Statistics, various years

Department of Education, Science and Training (DEST) 2003, *National Report on Higher Education in Australia* (2001), Canberra

Department of Education, Science and Training (DEST) 2003, *National Report on Higher Education in Australia* (2001), Canberra,

[http://www.dest.gov.au/sectors/higher\\_education/publications\\_resources/summaries\\_brochures/national\\_report\\_on\\_higher\\_education\\_in\\_australia\\_2001\\_splitpdf.htm](http://www.dest.gov.au/sectors/higher_education/publications_resources/summaries_brochures/national_report_on_higher_education_in_australia_2001_splitpdf.htm)

Department of Health and Ageing 2008, Australia 2020 Summit, Long Term Health Strategy, April 2008

Dunbabin, J & Levitt, L 2003, 'Rural origin and rural medical exposure: their impact on the rural and remote medical workforce in Australia', *The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy*, Deakin University, [www.rrh.org.au/publishedarticles/article\\_print\\_212.pdf](http://www.rrh.org.au/publishedarticles/article_print_212.pdf)

European Commission, 2008, The Impact of Broadband on Growth and Productivity, downloaded from

[http://ec.europa.eu/information\\_society/eeurope/i2010/docs/benchmarking/broadband\\_impact\\_2008.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/broadband_impact_2008.pdf)

- Ferguson, C, Cooper, B, Wines, G & Jackling, B 2009, Accounting services in rural and regional Australia. [http://www.cpaaustralia.com.au/cps/rde/xchg/SID-3F57FECB-E45B9E75/cpa/hs.xsl/1017\\_31566\\_ENA\\_HTML.htm](http://www.cpaaustralia.com.au/cps/rde/xchg/SID-3F57FECB-E45B9E75/cpa/hs.xsl/1017_31566_ENA_HTML.htm)
- Ford and Koutsky, 2005, Broadband and Economic Development: A Municipal Case Study from Florida, Applied Economic Studies downloaded from <https://wiki.internet2.edu/.../Seminoles+Co+broadband+study.pdf>
- Fuller, D & Wilde S 2006, The economic value of Southern Cross University campuses to their regional campuses: a campus-based input-output analysis, <http://www.cedar.net.au/publications.htm>
- Fuller, D, Sutton, T, Mason, S & Wilde, SJ 2007, 'The impact of the Coffs Harbour Education Campus on the Coffs Coast regional economy', *Journal of Economic & Social Policy*, vol. 11, no. 1
- Gabriel M 2006, *Youth Migration and Social Advancement: How Young People Manage Emerging Differences between Themselves and their Hometown*, *Journal of Youth Studies*, Vol 9, No. 1, February 2006
- Garlick, S 1998, *Creative associations in special places: enhancing the partnership role of universities in building competitive regional economies*, EIP Report No. 98/ 4, April 1998, DEETYA
- Garrett, R 2009, Online higher education markets, Online presentation, Eduventures. <http://www.eduventures.com/services/online-higher-education/>
- Gillard, J 2009, Budget 2009-10 Ministerial statement on education, employment and workplace relations, Jobs, productivity and fairness - a foundation for recovery, Canberra, [www.budget.gov.au/2009-10/content/ministerial\\_statements/deewr/download/ms\\_deewr.pdf](http://www.budget.gov.au/2009-10/content/ministerial_statements/deewr/download/ms_deewr.pdf)
- Golding B, C Barnett, M Brown, L Angus, J Harvey 2007 *Everything is harder: Participation in tertiary education of young people from rural and regional Victoria* March, 2007
- Gonick L, 2009, The Year Ahead, Inside Higher Education, January. <http://www.insidehighered.com/views/2009/01/06/gonick>
- Gunter, B 2007, 'Technology trends, Work package V', Information behaviour of the researcher of the future, A British Library/JISC Study, University College London, CIBER. [www.ucl.ac.uk/slais/research/ciber/downloads/GC%20Work%20Package%20V.pdf](http://www.ucl.ac.uk/slais/research/ciber/downloads/GC%20Work%20Package%20V.pdf)
- Harman, G & Harman, K 2003, 'Institutional mergers in higher education: lessons from international experience', *Tertiary Education and Management*, vol. 9
- Higher Education Funding Council for England (HEFCE) 2009, Enhancing learning and teaching through the use of technology: a revised approach to HEFCE's strategy for e-learning, March 2009/12. [www.hefce.ac.uk/pubs/hefce/2009/09\\_12/](http://www.hefce.ac.uk/pubs/hefce/2009/09_12/)
- Hillman K, Rothman S, 2007, LSAY 50, Movement of Non-metropolitan youth towards the cities, January 2007

Howell, SC, Williams, PB & Lindsay, NK 2003, 'Thirty-two trends affecting distance education: an informed foundation for strategic planning', *Online Journal of Distance Learning Administration*, vol. 6, no.3, Fall, State University of West Georgia, Distance Education Center. <http://www.westga.edu/~distance/ojdl/fall63/howell63.html>

Ipsos Mori 2007, *Student Expectations Study*, prepared for the Joint Information Systems Committee (JISC) UK.  
[www.jisc.ac.uk/media/documents/publications/studentexpectations.pdf](http://www.jisc.ac.uk/media/documents/publications/studentexpectations.pdf)

James R, J Wyn, G Baldwin, G Hepworth, C McInnis, A Stephanou 1999, *Rural and Isolated School Students and their Higher Education Choices: A re-examination of student location, socioeconomic background, and educational advantage and disadvantage*, Higher Education Council, 1999

James, R, Baldwin, G & McInnis, C 1999, *Which university? The factors influencing the choices of prospective undergraduates*, Canberra: AGPS

Johnson, L, Levine, A & Smith, R 2008a, *The Horizon Report: 2008*, Austin, Texas: The New Media Consortium, [www.nmc.org/pdf/2008-Horizon-Report.pdf](http://www.nmc.org/pdf/2008-Horizon-Report.pdf)

Laureate Education Inc. <http://www.laureate-inc.com/> as at 12/6/09

Lipsett, A 2009, *Time to get with the program?* *The Guardian*, Tuesday 12 May.  
<http://www.guardian.co.uk/education/2009/may/12/computer-science-it/print>

Marginson S 2004: *Don't Leave Me Hanging on the Anglophone: The Potential for Online Distance Higher Education in the Asia-Pacific Region*, *Higher Education Quarterly*, 0951-5224 Volume 58, Nos. 2/3, April/July 2004

Marks G 2007, *Completing University: Characteristics and Outcomes of Completing and Non-Completing Students*, LSAY Research Report 51, March 2007

McInnis, C forthcoming, 2010, 'University students' experiences of higher education', in B McGaw, E Baker & P Peterson (eds) *International Encyclopaedia of Education*, 3rd edn, Elsevier

McInnis, C. & James, R 1995, *First year on campus: Diversity in the initial experiences of Australian undergraduates*, Canberra: AGPS

Mining Journal 2009, *China expected to raise investment in Australia* <http://www.mining-journal.com/production-and-markets>

Ministry of Education People's Republic of China.  
<http://www.moe.edu.cn/english/international> as at 12/6/09

New South Wales Parliament Legislative Council, Standing Committee on State Development, Tony Catanzariti Chair, May 2006

OECD 2001, *Cities and Regions in the New Learning Economy*, [http://miha.ef.uni-lj.si/\\_dokumenti3plus2/191029/OECD\\_New\\_Learning\\_Economy\\_2001.pdf](http://miha.ef.uni-lj.si/_dokumenti3plus2/191029/OECD_New_Learning_Economy_2001.pdf)

OECD 2005, *Policy brief: E-learning in tertiary education*, December, p.2.  
[www.cominit.com/en/node/243450/303](http://www.cominit.com/en/node/243450/303)

OECD 2006, Evolution of student interest in science and technology studies, Policy Report, 17-18 May. [www.oecd.org/dataoecd/16/30/36645825.pdf](http://www.oecd.org/dataoecd/16/30/36645825.pdf)

OECD 2007, Higher education and regions: globally competitive, locally engaged  
[http://www.oecd.org/document/33/0,3343,en\\_2649\\_35961291\\_39378401\\_1\\_1\\_1\\_1,00.html#ES](http://www.oecd.org/document/33/0,3343,en_2649_35961291_39378401_1_1_1_1,00.html#ES)

Open Universities Australia 2008, Annual Report. [www.open.edu.au/](http://www.open.edu.au/)

Pratley, J 2008, 'Workforce planning in agriculture: agricultural education and capacity building at the crossroads', *Farm Policy Journal, Australian Farm Institute*, vol. 5, no. 3, August Quarter

Review of Australian Higher Education 2008, *Discussion Paper*, Commonwealth of Australia

Rogers, P, Berg G, Boettcher, C, Justice, K & Schenck, K (eds), 2009, *Encyclopedia of distance learning*, vol. 1, Idea Group.

Rolfe, J, Cui, W & Sidiropoulos, L 2008, Economic impact analysis of Central Queensland University, Paper presented at the 52nd annual conference of the Australian Agricultural and Resource Economics Society, Canberra, February

Rourke, J 2008, 'Increasing the number of rural physicians', *Canadian Medical Association Journal*, 29 January, vol. 178, no. 3,  
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2211345>

Southern Cross University 2007, *New directions for delivery at Southern Cross University*, Report from the New Directions in Delivery Action Group (NDDAG).

Stevenson S; Evans C; Maclachlan M; Karmel T and Blaker R 1999 *Access: effect of campus proximity and socio-economic status on university participation rates in regions DEST 2001; Regional Participation in Higher Education and the Distribution of Higher Education Resources across Regions DETYA 1999*

UNESCO Statistics 2009 <http://stats.uis.unesco.org/unesco/ReportFolders/ReportFolders> as at 12/6/09

University of Ballarat 2009, Submission to the Inquiry into the impact of the global financial crisis on regional Australia, Submission no. 77,  
<http://www.aph.gov.au/House/committee/itrldg/financialcrisis/subs.htm>

Vincent-Lancrin, S 2008, E-learning in tertiary education: what difference for the future of learning? OECD/CERI. [www.oecd.org/dataoecd/53/30/40726206.pdf](http://www.oecd.org/dataoecd/53/30/40726206.pdf)

Wang C, E Walker, J Redmond & J Breen 2008 'Home-based business: Australia's hidden economic engine', *Monash Business Review*, vol. 4, no. 2, July 2008

Warrnambool City Council 2008, Submission to the National Review of Higher Education

Warrnambool City Council, 2008, Submission to the review of Australian higher education, Submission no. 256,  
<http://www.deewr.gov.au/HigherEducation/Review/Pages/Submissions.aspx>

West, R 1999, *Learning for life: review of higher education financing and policy: Final Report*, November, DEETYA, Canberra

Western Research Institute 2005, Economic Impact of Charles Sturt University

Western Research Institute Ltd, 2008, School of Dentistry and Oral Health Economic Impact Report downloaded from  
<http://news.csu.edu.au/director/latestnews/health/dentistry.cfm?itemID=147CAA62CEC74132AED7186512BD32BD&printtemplate=release>

Western Research Institute, 2006, The Destination of On-Campus Graduates of Charles Sturt University 2006 Update downloaded from  
[http://www.csu.edu.au/division/plandev/publications/docs/final\\_graduate\\_destinations\\_report\\_2006.pdf](http://www.csu.edu.au/division/plandev/publications/docs/final_graduate_destinations_report_2006.pdf)

Western Research Institute, 2008, Charles Sturt University Graduate Destination Survey of Accountants

Wilberforce, M 2005, Beyond the financial benefits of a degree, Centre for Research on the Wider Benefits of Learning, Institute of Education. DfES. London.  
[http://www.prospects.ac.uk/cms/ShowPage/Home\\_page/Labour\\_market\\_information/Graduate\\_Market\\_Trends/Beyond\\_the\\_financial\\_benefits\\_of\\_a\\_degree\\_\\_Autumn\\_05\\_/p!eXeLcmm](http://www.prospects.ac.uk/cms/ShowPage/Home_page/Labour_market_information/Graduate_Market_Trends/Beyond_the_financial_benefits_of_a_degree__Autumn_05_/p!eXeLcmm)

Zemsky, R & Massey, W 2004, *Thwarted Innovation: what happened to e-learning and why*, The Learning Alliance, University of Pennsylvania/ Thomson Corporation

Zirkle, C 2004, Access barriers experienced by adults in distance education courses and programs: a review of the research literature.  
<http://idea.iupui.edu/dspace/handle/1805/273?show=full>