



**Bowen Basin
Mining
Communities
Partnership
Project**

***Social/Economic
Researchers' Workshop***

Prepared by

Institute for Sustainable Futures

For

*Queensland Department of
the Premier and Cabinet*

Monday, 12 May 2003



**UNIVERSITY OF
TECHNOLOGY SYDNEY**

Institute for Sustainable Futures

© UTS May, 2003

Bowen Basin Mining Communities Partnership Project

Social/Economic Researchers' Workshop

Monday 12 May 2003

For Queensland Department of the Premier and Cabinet

Institute for Sustainable Futures

© UTS May 2003

The **Institute for Sustainable Futures (ISF)** was established by the University of Technology, Sydney in 1996 to work with industry, government and the community to develop sustainable futures through research, consultancy and training. Sustainable futures result from economic and social development that protects and enhances the environment, human well-being and social equity.

Where possible, we adopt an approach to our work which is interdisciplinary and participatory. We aim to engage with our partners, funding agencies and clients in a co-operative process that emphasises strategic decision making.

Readers wishing to obtain more information could contact ISF on (02) 9209 4350 or at isf@uts.edu.au. The ISF website can be visited at www.isf.uts.edu.au.

INTRODUCTION 6

Aims of the Workshop 6

RESEARCH PRESENTATIONS 6

PANEL AND SMALL GROUP DISCUSSION..... 7

Panel reflections..... 7

Small group discussion 9

SUMMARY OF THE DAY 9

PARTICIPANTS REFLECTIONS 10

APPENDIX A — PRESENTATIONS 12

APPENDIX B — CONTACT DETAILS 13

APPENDIX C — FINDINGS OF THEMATIC GROUPS 18

APPENDIX D — RELEVANT WEBSITES 20

INTRODUCTION

There is a diverse range of social and economic research taking place within the Bowen Basin area of Central Queensland. This research may relate directly to mining, such as impact assessment for particular development proposals, or it may be focused on social issues or trends within mining communities. Discussions between researchers and staff within the Department of the Premier and Cabinet led to a proposal that a workshop be held to find out more about this area of research. The workshop was coordinated by the Community Engagement Division of the Department of the Premiers and Cabinet and an invitation was made to researchers involved in current and potential studies of social/economic issues affecting mining dependent or semi-dependent communities in the Bowen Basin. In response, many researchers were keen to present their research for discussion. The workshop was well attended by researchers, government personnel and representatives for the mining industry.

The workshop format was more formal in the first part of the day, with researchers providing a brief presentation, followed by questions and discussion. The second part of the day began with a panel giving reflections on the morning and then small groups worked on a number of different themes. Arising from a discussion of future directions for social and economic research in the Bowen Basin the potential for a research network to be developed was identified and agreed upon. There was a need to find ways to share results of research and collaborate on projects. The potential for funding opportunities was also discussed.

Aims of the Workshop

Provide an opportunity to exchange professional views and information on research studies affecting mining dependent or semi dependent communities in the Bowen Basin area of Central Queensland.

Identify current and prospective research into social or economic issues affecting Bowen Basin Mining Communities.

Seek collaborations, co-ordination and alignment of research efforts

Develop possible protocols for researchers in the area

Identify and minimise duplication amongst research projects where feasible.

Research presentations

A range of research was presented. The complete presentations are contained in Appendix A.

Understanding Knowledge, Justice and Change in Sustainable Development in Regional Communities by Fiona Solomon and Evie Katz, CSIRO Minerals.

The Economic and Social Impacts of the Coppabella Mine on Nebo and the Mackay Region by John Rolfe and Stewart Lockie, Centre for Social Science Research, Central Queensland University.

Study Findings – Youth Suicide Prevention & Social Capital in the Mackay Region by Helen Waite, Queensland Centre for the Prevention of Domestic and Family Violence, Central Queensland University.

Wellbeing of Women and Children in Mining Communities in the Bowen Basin by Susan Rees, Queensland Centre for the Prevention of Domestic and Family Violence, Central Queensland University.

Population Trends and Socio-economic Characteristics of Bowen Basin Communities by Ross Barker & Alison Taylor, Planning Information and Forecasting Unit, Department of Local Government and Planning.

Developing Social Indicators for Mining Associated Communities by David Brereton, Centre for Social Responsibility, The University of Queensland.

BTRE – Regional Centres Project by Kerry Laughton, Bureau of Transport and Regional Economics.

ACMER projects relevant to Sustainable Mining in the Bowen Basin by Owen Nichols, Australian Centre for Mining Environmental Research.

Priorities in the area of Social Research – ACARP in 2003 by John Merritt, Anglo Coal, ACARP Representative.

Panel and small group discussion

A Panel gave critical reflections and feedback on the presentations including impressions, potential for collaboration and co-operation and identified gaps in social and economic research. The members of the Panel were:

Mr Roger Wischusen, Manager, Australian Coal Association Research Program (ACARP)

Ms Lisa Pollard, Principal Policy Officer, Innovation Unit, Department of the Premier and Cabinet

Mr Keith Barker, Queensland Mining Council

Professor Bob Miles, Institute for Sustainable Regional Development, Central Queensland University

Ms Fiona Martin, Office of Regional Development, Department of State Development

Panel reflections

Mr Roger Wischusen, Manager, Australian Coal Association Research Program (ACARP)

It is obvious that a large amount of important research is being conducted and there is perhaps a bit of duplication.

The group seems to want to achieve a partnership and if this happens it will be a major accomplishment. However, he feels that researchers and mining companies will find it difficult to ever really work together.

Gaps in the research need to be addressed and ACARP are willing to help with that.

Ms Lisa Pollard, Principal Policy Officer, Innovation Unit, Department of the Premier and Cabinet

There are issues of how to connect and work with people.

Key themes of the workshop have been mine closure and the affects on the community.

There is a need to use information for social indicators and carefully analyse the results.

We need to look at key link areas of commonality and what everyone thinks would be fair managing expectations and clarifying what is expected.

Discussion on involving the coal industry research through case studies.

There are global industry links, what comparative research links are there?

Mr Keith Barker, Queensland Mining Council

Workshop a great success. There seems to be many people researching a lot of topics but there is a need for better planning. How does this region differ from others? Is the problem unique to mining or is it a part of broader problems?

Bowen Basin should be planning for the future instead of looking at the past.

A true partnership with State Government, Local Government and the community needs to be developed.

Look at other regional planning that is already in place and consider how we can use something that already exists eg WHAM 2015 & CQANM.

We need to put in the structure of where we want to go and concentrate on the future.

Facilitating change and whole of life planning and extending communities past the 40-year life of mining.

What role does the Government play, what does the mining company play or is it a social economic issue?

Must look at what funds that we have collectively and how can it best be spent.

Bowen Basin region provides royalties to Government but basic services are apparently not available. Where is the money going?

Professor Bob Miles, Institute for Sustainable Regional Development, Central Queensland University

Mining industry is very committed to work in health and safety and the industry is aware of internal along with the external safety.

The overall social environment is important in achieving this.

The industry is reluctant to be dictating to the workforce what they can do away from work. Possibility this is a reason why there is a reluctance to take on such research. Industry is keen to understand changes and is looking for assistance from the researchers.

The industry expects a very long future and wants to plan for the future.

Communication is very important.

Comment from the Mayor that Emerald has not really had such a hard time of it and suggests that diversity has a lot going for it and should think about how we can diversify in this area.

Ms Fiona Martin, Office of Regional Development, Department of State Development

Praised the project and identified a need to integrate this research.

Identified economic synergies from the mining industry, such as supply chains and jobs for local businesses and the need for industry partnerships, education and training.

Small group discussion

In consultation with Workshop participants, a number of thematic areas were suggested. The groups were asked to examine four key questions relevant to these themes; what they would take away? links? understandings? and next steps? The following topics were suggested as a starting point for group discussion:

- impacts assessment;
- issues of change and regional development;
- specific individual projects;
- economic diversification;
- the jigsaw of people, projects and funding;
- how to make strategic links: and
- ACARP and industry funding.

Summary and outcomes of the day

In addition to the valuable discussion and development of relationships on the day, the most significant outcome from the workshop was the establishment of a Bowen Basin Research Network. A group was formed to coordinate the network and to act on a number of suggestions made by the group. These included the establishment of a website containing details of both past and current relevant research projects and an email list. It was agreed that the network would be informal and focused on research related to the region.

It was also suggested that a second forum be held in order to build on the activity of the “Positive Futures in Mining Communities” held in Moranbah in November 2000. Another suggestion was that an annual planning meeting be held for researchers. Both the forum and future meetings could also be an opportunity for the research network to meet again and continue developing the ideas discussed at this workshop. These included:

- the need to identify and agree on research priorities;
- to reduce any overlap in research activities;

- to further understanding of social and economic research;
- to continue dialogue with industry;
- to assist government with regional planning; and
- to explore research partnerships and funding options.

A number of significant research gaps were also identified. These include:

- health issues related to an aging workforce;
- ethnographic studies of mining communities;
- links between social issues and mining community industry patterns such as work/home commuting.

Participants Reflections:

In the final exercise all participants provided their reflections and feedback on the day:

Owen Nichols: Companies struggle to decide what are the financial priorities of small communities and it would be appreciative if there were policies or guidelines to make these decisions.

Lisa Pollard: Asked to make a time to meet for the network group.

Stewart Lockie: Felt the work discussed today has been beneficial to make sure the research is used.

John Merritt: How to take it forward from today to include ACARP?

Janet Benson: Good connections, which will be further developed through the website. One of the main things is one cannot work in isolation and the need to connect there is a need to form partnerships.

Stephen Schwarten: Hopes that all participants keep the commitments made at this forum and he will continue to liaise with local government and the community in the region.

Lynda Herbert-Cheshire: Positive.

Patrick Noonan: Positive.

Helen Waite: Really worthwhile, new opportunities, new problems to address and let's get started.

Susan Rees: Positive and has learnt a lot which will enhance her research.

Ross Barker: Need to work collaboratively.

Alison Taylor: Echo Stewart's view. It is always good to have people appreciate what you do and the importance of it confirmed and the need for a wider audience to be given the information as well. Would like to see a repeat forum like Moranbah. I am now convinced that this research is very important.

Roger Wischusen: Emphasised the strength of this work and liked the breakdown of isolated positions and the sharing of views that occurred during the day.

John Morris: Fantastic, will be in touch with John (ACARP) and will work closer with the whole of this group and the community in this region.

Rhys Worrall: Great enthusiasm and looks forward to the network being established.

Jim Grundy: Useful exercise, from this, it can only get stronger.

Gail Kelly: Looking forward to reflecting on the similarities of the issues raised. The desire and the need to work more closely.

Fiona Solomon: Quality of the discussion has been so good. The outcomes have been excellent.

Evie Katz: Gained a lot as not a local. Relieved to see they are not duplicating and looks forward to sharing information.

Bill Higham: The region warrants this attention. . The challenges are to pick up this amazing amount of work, to look at it and apply it. Progress this and continue with it. Looking for the project team to progress on behalf of everybody.

Frank Gilbert: Ownership of the network is about to be created. There is a need to show the community of mining communities good deliberation, communication and engagement. Look forward to the possibility of holding another future search style conference similar to Moranbah

APPENDIX A — PRESENTATIONS

1. Understanding Knowledge, Justice and Change in Sustainable Development in Regional Communities by Fiona Solomon and Evie Katz, CSIRO Minerals.
2. The Economic and Social Impacts of the Coppabella Mine on Nebo and the Mackay Region by John Rolfe and Stewart Lockie, Centre for Social Science Research, Central Queensland University.
3. Study Findings – Youth Suicide Prevention & Social Capital in the Mackay Region by Helen Waite, Queensland Centre for the Prevention of Domestic and Family Violence, Central Queensland University.
4. Wellbeing of Women and Children in Mining Communities in the Bowen Basin by Susan Rees, Queensland Centre for the Prevention of Domestic and Family Violence, Central Queensland University.
5. Population Trends and Socio-economic Characteristics of Bowen Basin Communities by Ross Barker & Alison Taylor, Planning Information and Forecasting Unit, Department of Local Government and Planning.
6. Developing Social Indicators for Mining Associated Communities by David Brereton, Centre for Social Responsibility, The University of Queensland.
7. BTRE – Regional Centres Project by Kerry Loughton, Bureau of Transport and Regional Economics.
8. ACMER projects relevant to Sustainable Mining in the Bowen Basin by Owen Nichols, Australian Centre for Mining Environmental Research.
9. Priorities in the area of Social Research – ACARP in 2003 by John Merritt, Anglo Coal, ACARP Representative.



Understanding Knowledge, Justice and Change in Sustainable Development in Regional Communities

Fiona Solomon, Evie Katz, Gail Kelly, Geoff
Syme, Blair Nancarrow, Russell Gorddard



Purpose today

- Here to talk about our proposal ideas and seek feedback, ideas, interest
- Keen to collaborate with existing or planned research / policy initiatives
- Could look at setting up network to facilitate knowledge sharing



Background

- CSIRO Emerging Science Areas
- ‘Social and Economic Integration’ (SEI)
 - integration of social and economic sciences with other scientific and technological R&D
 - encapsulates an intent to ensure that (scientific and technological) research is relevant and significant in human affairs



SEI 'Vanguard' projects

- Major new projects based on multi-divisional teams and collaboration with external SEI practitioners
- Proposals are developed and submitted to the SEI Board through three stages
 - concept plan
 - project design and business planning
 - project implementation



SEI proposal themes

- Our project seeks to:
 - Explore diverse **knowledge** frameworks used in sustainable development discourses
 - Develop greater **understanding** of change issues facing regional communities
 - Understand criteria for **procedural justice** in participatory decision making



Two case studies: challenges for sustainability

- Wheatbelt region in WA:
 - Dryland salinity, single-crop agriculture, population decline
- Bowen Basin region in QLD:
 - Dominant industry sector, post-closure landscapes and communities, population decline



Two cases

Why these two cases

- Similarities: dominant industry, regional change
- Differences: type of industry and its relation to sustainability; degree and nature of change

Comparative case study approach

- Regional focus as distinct from urban or site specific
- Role of science and technology in social processes
- Allows for triangulation for increased research rigour



Bowen Basin case

Why this region

- Mining a central economic activity with social and sustainability implications
- Interest in participatory processes eg CHRRUPP
- CSIRO Minerals Social Values group research area

Focus on mine closure

- Social research emphasis on development / approval stage
- Closure usually framed as technical / environmental problem



Three stages

1. **Preliminary data gathering:** on key topics pertaining to issues of mine closure, post-mining landscapes and communities.
2. **Action research:** multi-stakeholder participatory dialogue, ideally in partnership with government and industry.
3. **Analysis:** comparison with Wheatbelt case, report and recommendations.



Research outcomes

- Broad-brush picture of the interconnectedness of the social, economic, environmental aspects of mining futures in the Bowen Basin
- Stakeholder perspectives of relevant knowledge and fairness principles in the context of mine closure
- Policy implications for government, industry, international agencies



CSIRO Research groups

- Resource Futures, CSIRO Sustainable Ecosystems, Canberra
 - Gail Kelly, Russell Gorddard
- Social Values/Sustainable Development, CSIRO Minerals, Melbourne
 - Fiona Solomon, Evie Katz
- Australian Research Centre for Water in Society (ARCWIS), CSIRO Land and Water, Perth
 - Geoff Syme, Blair Nancarrow



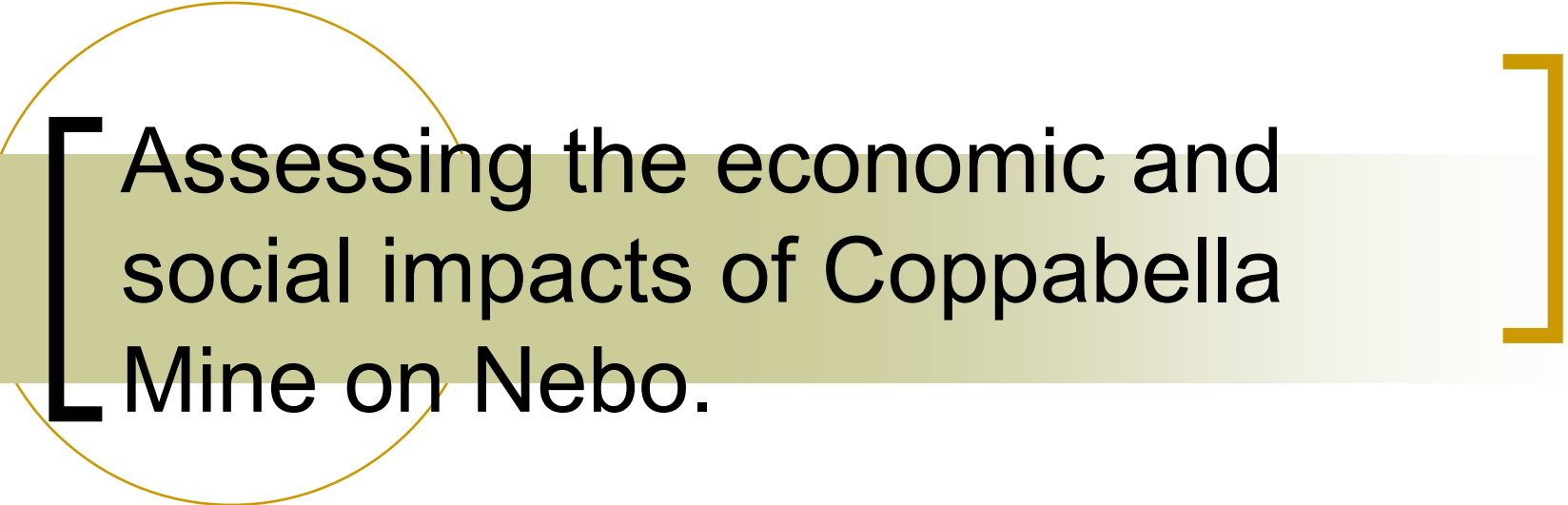
Where to from here

- Final proposal (business plan) in development
- Will be submitted to SEI Board in June
- If supported, plan a 3 year project



Close

- Feedback/questions welcome
- Opportunities for collaborating with or alongside parallel research in the region
- Ways to continue linkages after this workshop



[Assessing the economic and social impacts of Coppabella Mine on Nebo.]

John Rolfe

Stewart Lockie

Maree Franettovich

[Overview of problem]

- Mining is major economic driver of regions
- Not always clear what impact is in local communities
- In some cases growth in mining may substitute for downturn in agriculture
- Coppabella mine does not appear to have had major impacts on Nebo

[Reasons for study]

- Local community wants to maximise economic and social benefits of mining
 - Shift work operations?
 - Proximity to Mackay for business services?
- Local community wants to avoid problems
 - Previous downturn has affected other towns
 - Mine has a limited life
- How to make Nebo attractive for people and businesses to locate there?

[Expenditure from mine]

- Total operating costs = \$230 Million/year
- Expenditure in region = \$192 Million
- \$5.4 Million spent directly in Nebo Shire
 - Wages
 - Contract services
 - Other business expenditure
- \$1.7 Million captured from miners living outside of shire

[Summary of direct spending]

	Nebo Shire (\$ Mill)	Mackay Area (\$ Mill)	Rest of Mackay region (\$ Mill)
Direct wage expenditure	4.51	15.09	15.87
Expenditure from miners not living in area	1.715	0	0
Contracted services and supplies from businesses	0.282	Not assessed	Not assessed
Miscellaneous services and supplies from businesses	0.595	11.687	0.331
Total	7.102	26.777(excluding contracted services)	16.201(excluding contracted services)

Secondary economic impacts

- Consumption of local goods and services
 - Discretionary spending = 5%
 - Rental spending = 10%
- Proportion of business inputs from local area (mostly labour) = 23.5%
- Income multiplier estimated at 3.66%
- Expenditure multiplier estimated at 16.6%
- Total additional turnover estimated at \$1.18 Million

[Input-output study for Nebo]

- Assesses regional impacts of Coppabella Mine using model of regional economy
- Expenditure levels assessed at \$10.7 Million
- Income levels assessed at \$5.1 Million
- Input-output model may overestimate expenditure in shire (because economic activity in shire is concentrated on agriculture and mining)

[Input – output for Nebo.]

	Output (\$m 2000-01)	Income (\$m 2000-01)	Employment (FTE persons)	Value added (\$m 2000-01)
Direct	\$7.7	\$4.5	36	\$4.7
Indirect	\$3.0	\$0.6	26	\$1.3
Total	\$10.7	\$5.1	62	\$6.0

[Input-output for Mackay region]

	Output (\$m 2000-01)	Income (\$m 2000-01)	Employment (FTE persons)	Value added (\$m 2000-01)
Direct	\$209.0	\$35.5	283	\$129.3
Indirect	\$80.6	\$20.3	500	\$39.9
Total	\$289.6	\$55.8	783	\$169.2

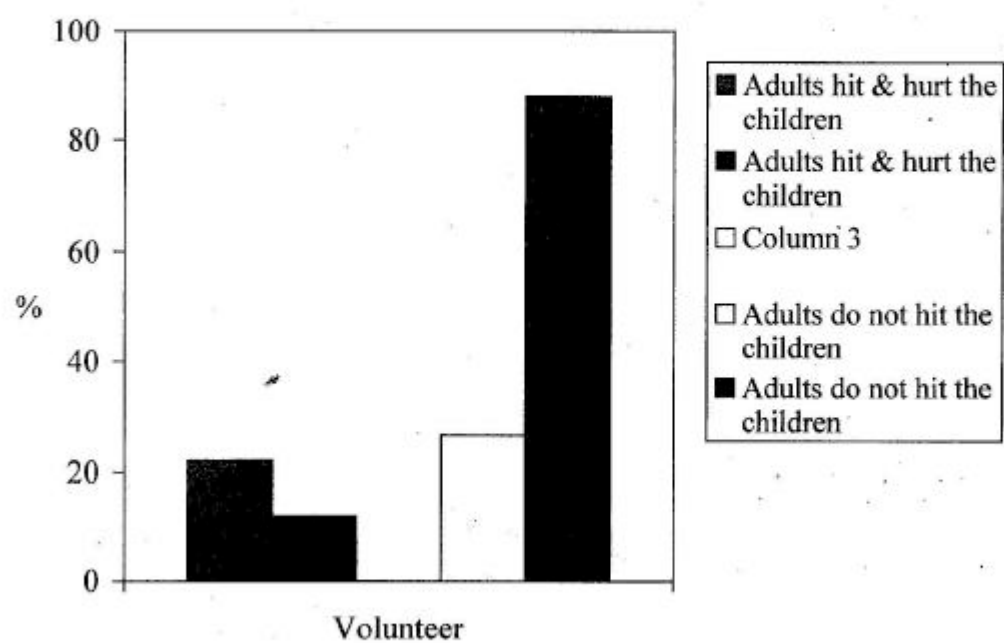
Economic impacts

- Mining appears to be about as important as agriculture to Nebo
 - Gross value of agriculture to shire in 2001 was \$27 Million - not all serviced from Nebo
- 89% of businesses in Nebo rate mining as very important to them – especially Coppabella
- Small business employment has increased by 34% over past 2 years (despite the drought affecting agriculture)

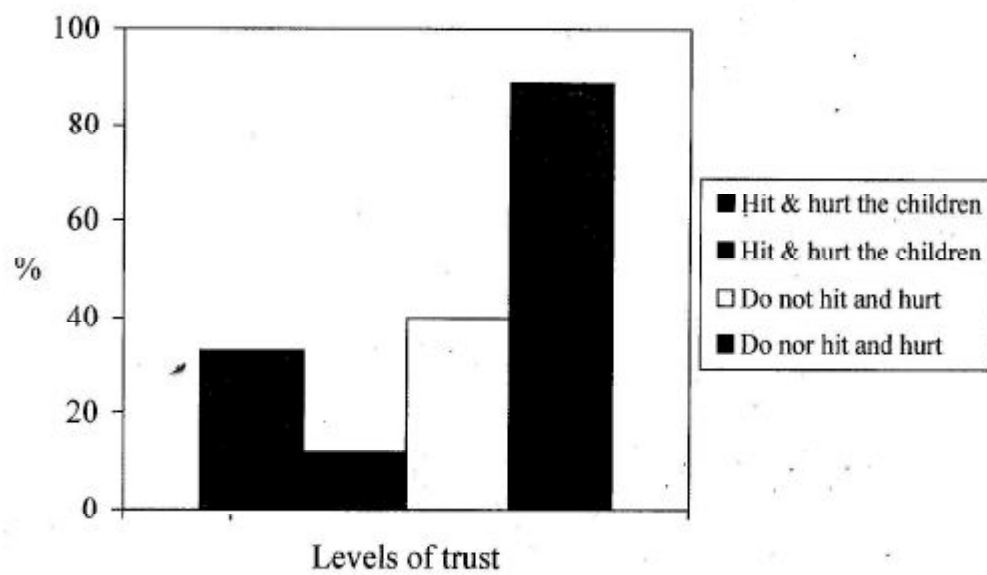
Economic opportunities

- Some missed opportunities
- Several mines in area, but not many new businesses opening to service them
- Some mine employees interested in living closer to mine (estimated 45 at Coppabella out of workforce of 340)
- Housing is scarce, not much development occurring to meet the demand

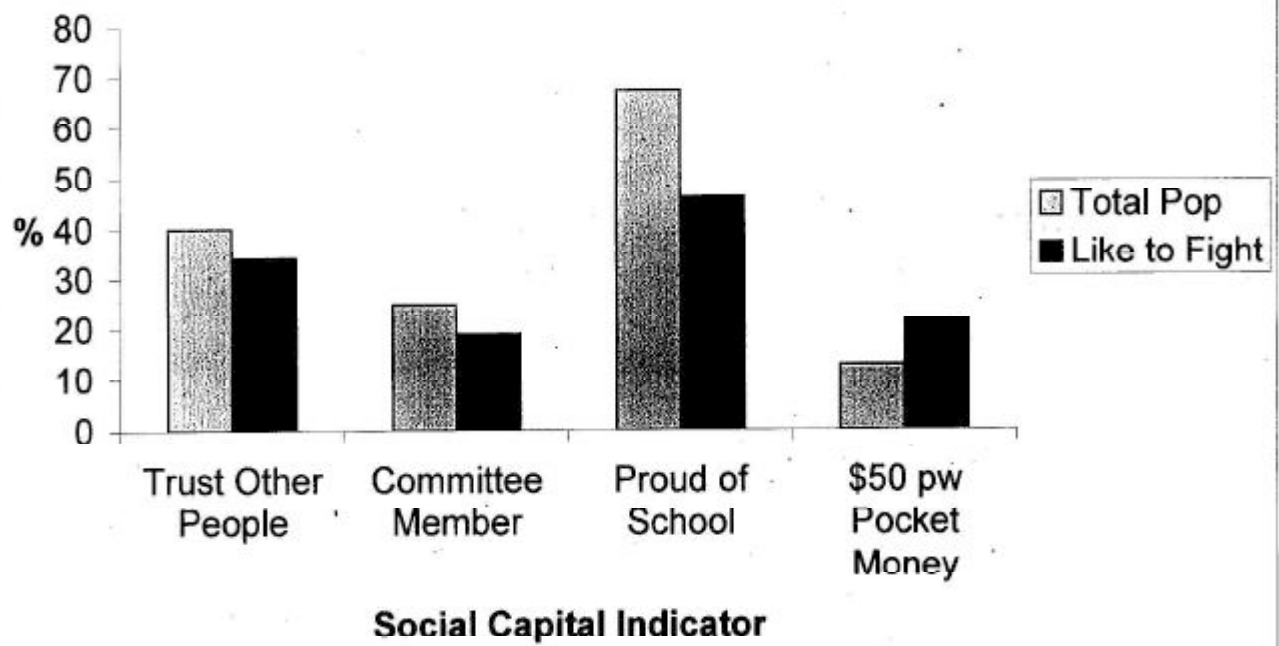
Adults sometimes hit and hurt the children/Helping a local group



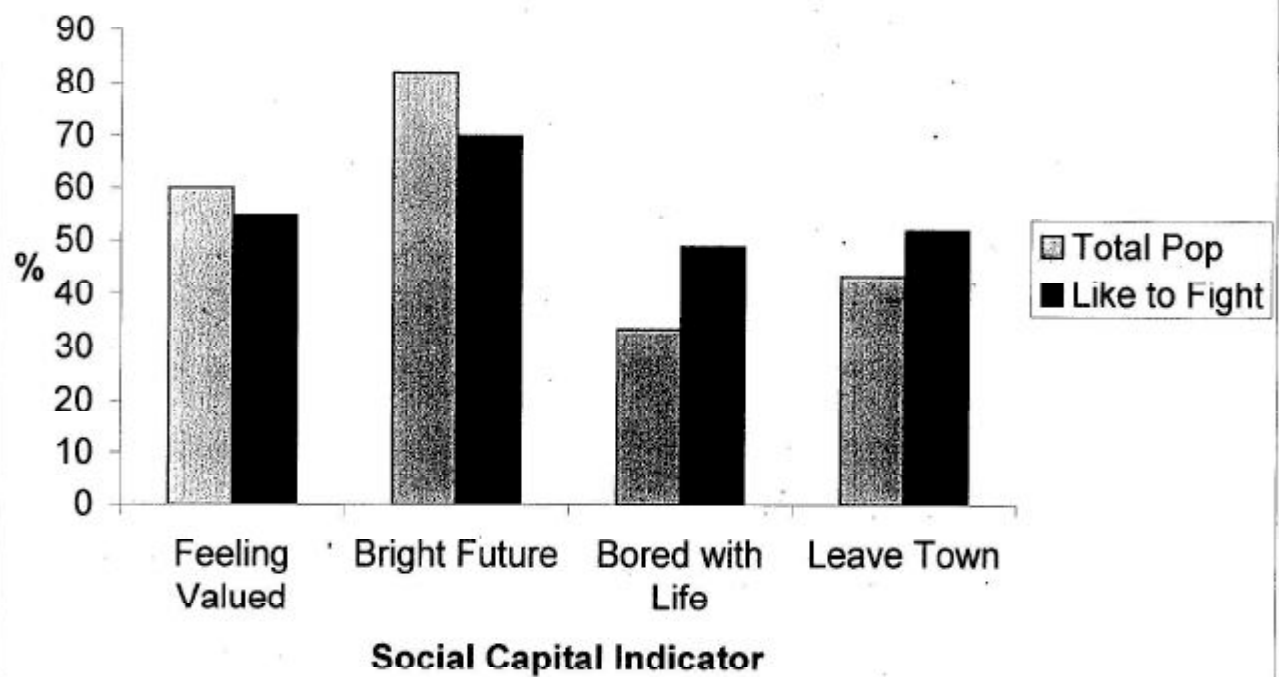
Adults in my family sometimes hit and hurt the children/Most people can be trusted



Social Capital and Fighting



Social Capital and Fighting



Indicators of SC not protective of suicide & self harm

- Picking up other people's rubbish
- Religious activities
- Speaking out
- Enjoying school
- Feeling safe
- Having a bright future
- Tolerance of diversity
- Family relatives in town

Possible protective factors

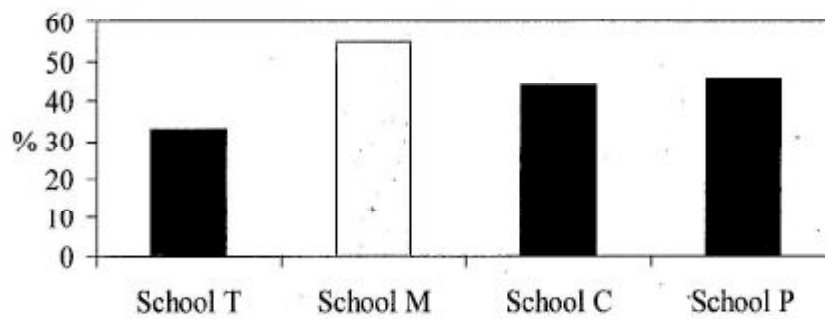
• Social capital	TS	AS	SH
• Trust in others	40%	25%	29%
• Volunteerism	26.5%	15%	20%
• Com'te member	20%	13%	16%
• Feeling valued	60%	30%	50%

Most people can be trusted.

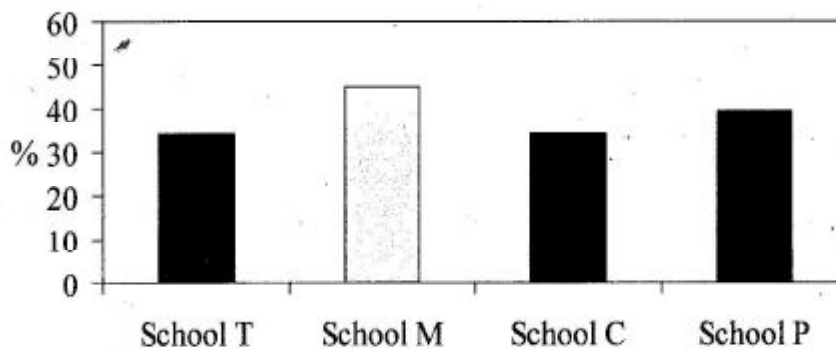
Yes: M = 43%, F = 37%

N = 565M, 630F

BOYS:



GIRLS:

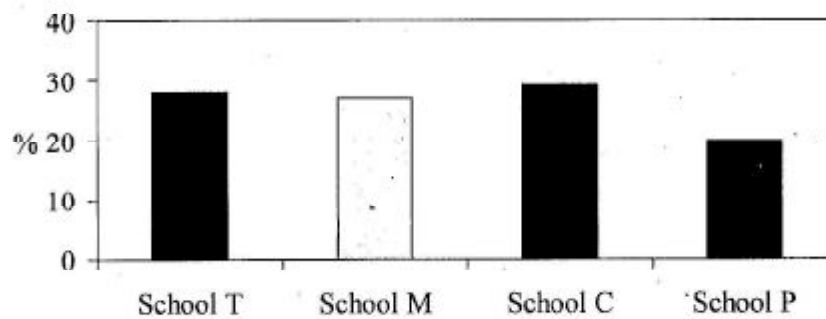


Trust: who would you talk to if you felt bad about yourself?

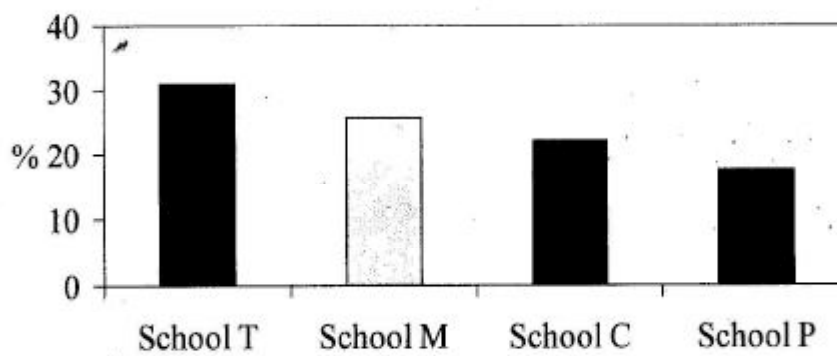
- 52% of girls & 29% of boys talk to friends
- 19.5% to Mum, 5% to Dad
- 4.5% to a professional
- 3% mentioned teachers/SGO's
- Boys are 3 times more likely than girls to talk to no-one

I have sometimes physically hurt myself on purpose.
Yes: M = 25%, F = 24.5% N = 565M, 630F

BOYS:

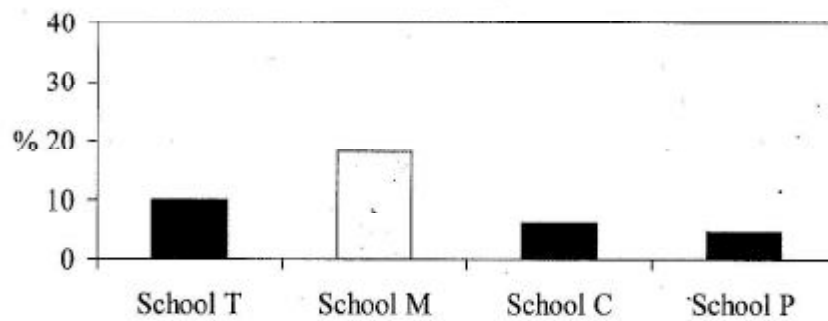


GIRLS:

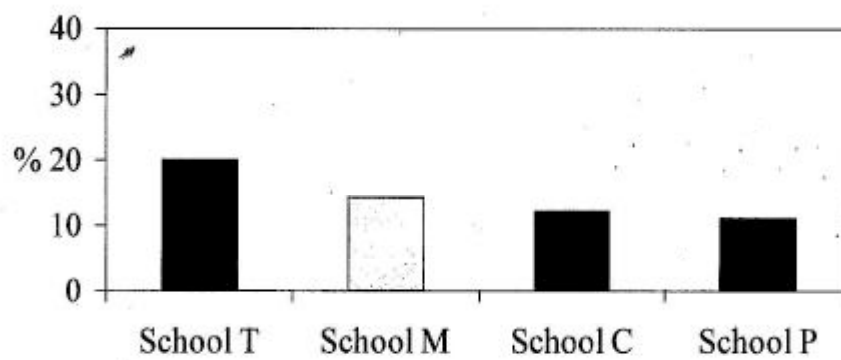


I have tried to end my own life.
Yes: M = 9%, F = 15% N = 565M, 630F

BOYS:



GIRLS:



Social capital:suicide & self harm

- 15% of girls & 9% of boys have tried to end their life
- 25% of boys and 24.5% of girls sometimes hurt themselves on purpose
- Boys in a mining town and girls in a regional city are most likely to have attempted suicide

Measures of Social Capital in Young people's study

- **4 capacity building blocks:**
 - proactivity
 - feelings of trust & safety
 - tolerance of diversity
 - value of life
- **4 arenas:**
 - participation in local community
 - neighbourhood connections
 - family & friends connections
 - school (work) connections

Common elements of SC in literature

- Networks of relationships
- Reciprocity
- Trust
- Social norms
- The commons
- Personal and collective efficacy

Wellness perspective

- New public health: physical, social, cultural, emotional, spiritual, economic & political wellness
- Preconditions for health: shelter, food
- Safety, education, income, work
- Stable ecosystem, sustainable resources
- Social justice, equity



Overview of Young People



- Social capital & a wellness perspective for suicide prevention policy & strategies in non metropolitan schools & communities
 - Partners: Community Mental Health & CQU
 - Survey & focus groups in 4 schools, 3 distinct geographic locations: main town, mining town
 - Yr 10-12 students (1220) parents (500), and all teachers (214)
-

Well-being of women and children in mining communities in the Bowen basin

Susan Rees Ph.D.

Postdoctoral Research Fellow

Centre for Social Science Research and Queensland Centre
for the Prevention of Domestic and Family Violence

Central Queensland University

S.Rees@cqu.edu.au

Phone 07 4940 7833

- A recent study of male employees from an open-cut coal-mine in remote central Queensland indicated that the community variables of family isolation and kinship support have the largest total (direct and indirect) effects on life satisfaction. Job satisfaction was found to be the next most important factor (Iverson and Maguire, 1999).

- The study revealed that job satisfaction and life satisfaction are mutually reinforcing and that organisations operating in isolated regions need to be aware of both work and non work environments. The study had clear implications for mining organizations and associated community development initiatives in remote regions.

- Little is known about the interrelated issue of wellbeing of women partners of male employees in mining communities, nor the wellbeing of children living in households where the male is employed in the mining industry.

- This study aims to investigate the experiences of dependent female partners of male employees employed in the coal mining industry and residing in single industry resource communities in the Bowen basin.

The consequences of intimate partner violence

- The consequences of intimate partner violence are profound, extending beyond the health and happiness of individuals to affect the well-being of entire communities (WHO, 2002).

Environmental factors

- The study will examine environmental factors including: Isolation taking into account both physical and social dimensions (ie lack of transport, child support, depression, alienation); and Kinship support (which relates to the coping mechanism that is provided by family and close friends).

- It is pertinent to note that domestic violence occurs more often in societies in which men have economic and decision-making power in the household (Levinson, 1989). In mining communities male dominance and decision making power has been noted as the cultural norm (Collis, 1999; Sturnley, 1989).

- The study would contribute to regional and local economic and social wellbeing and security through identification of implicated social factors affecting the development and maintenance of functional and resilient families, capacity for community building and engagement, and opportunities for personal change and advancement.

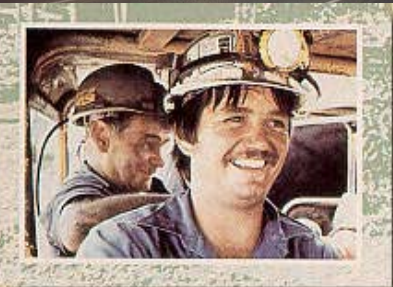
- The methodology will be multi-method, qualitative and quantitative, with a focus on emotional dimensions within an ecological framework.

Determinants

- personal safety, autonomy and empowerment
- loneliness and isolation
- anxiety about personal development and future goals
- concerns about the well-being of children
- difficulties with work demands on partner
- mental and physical health problems and concerns
- expectations of shared leisure time
- negative and positive affectivity (satisfaction with life, disposition towards life in the community)
- feelings about relationship with partner
- the experience of being listened to and supported

Expected benefits of the study

- 1. Assist companies, community and health development professionals to respond accurately to identified areas of social need, including areas of family violence and dysfunction.
- 2. Assist in planning for future responses to prevent family violence and dysfunction affecting both women and children.
- 3. Be a necessary prerequisite to accurate planning for employment, vocational and training services to mining communities.
- 4. Assist capacity for dependent women to identify and meet personal life objectives



Population trends and socio-economic characteristics of Bowen Basin communities

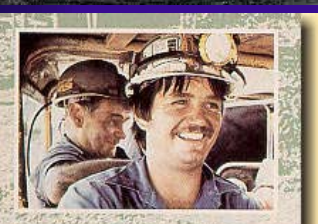
Alison Taylor & Ross Barker

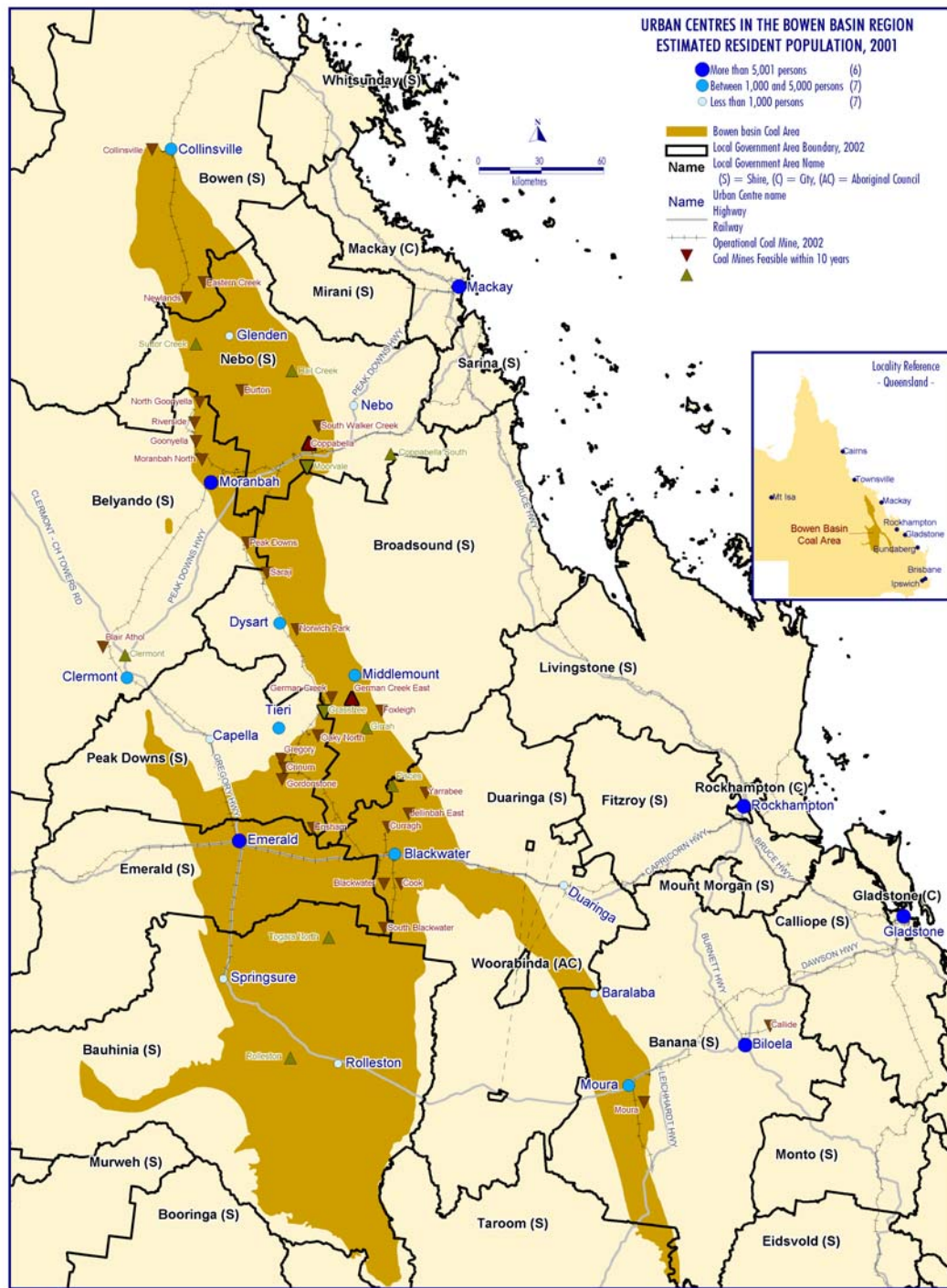
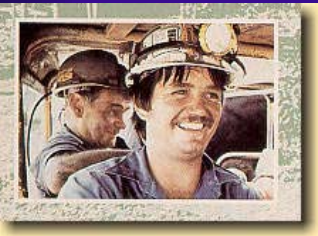
Planning Information & Forecasting Unit

Qld Department of Local Government & Planning

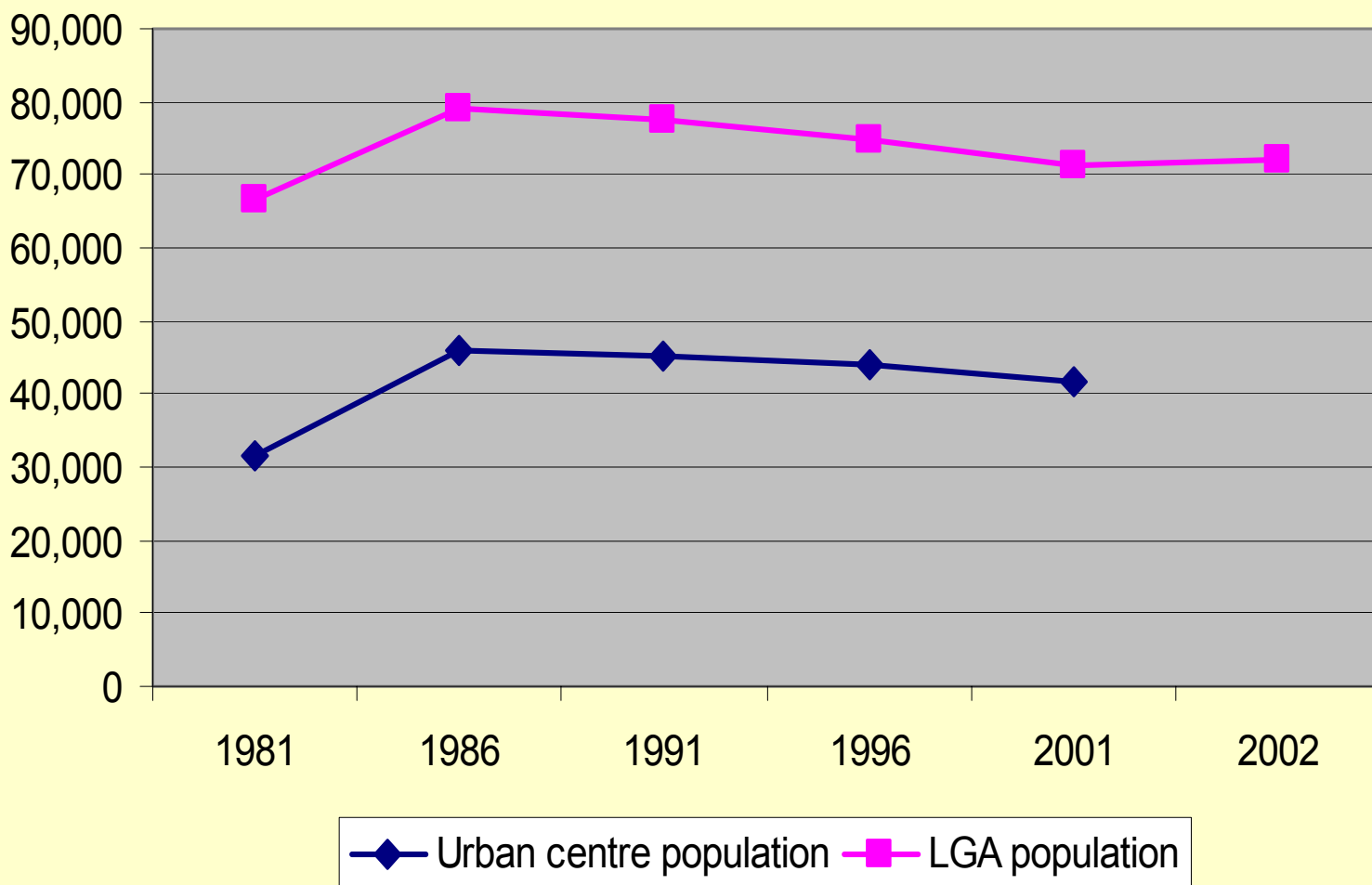
Outline

- ◆ Population trends last 20 years
- ◆ Socio-economic characteristics of localities
- ◆ Journey to work patterns
- ◆ Proposed future research





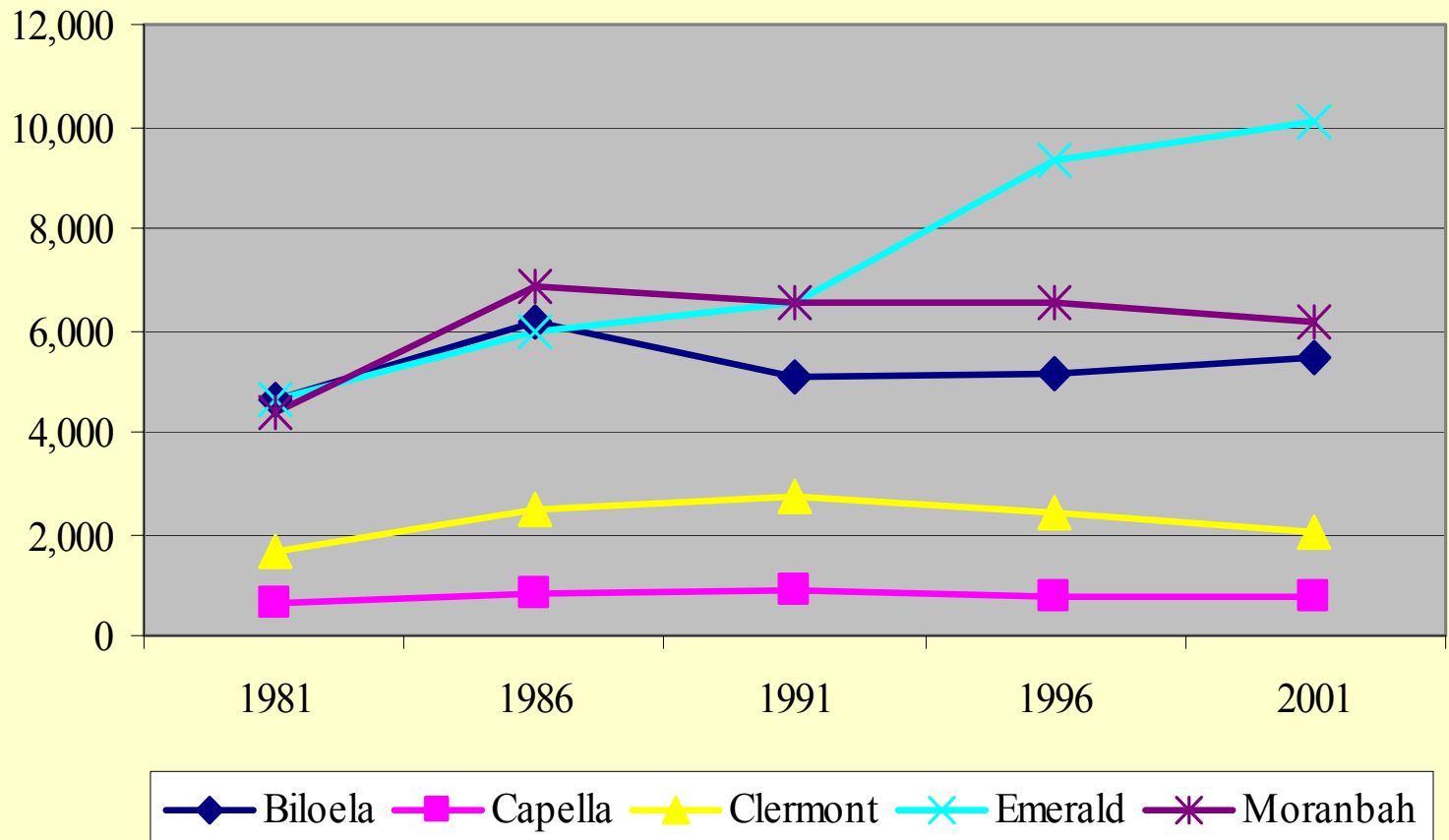
Bowen Basin population trends



Source: ABS, Census of Population & Housing & Cat 3218.0

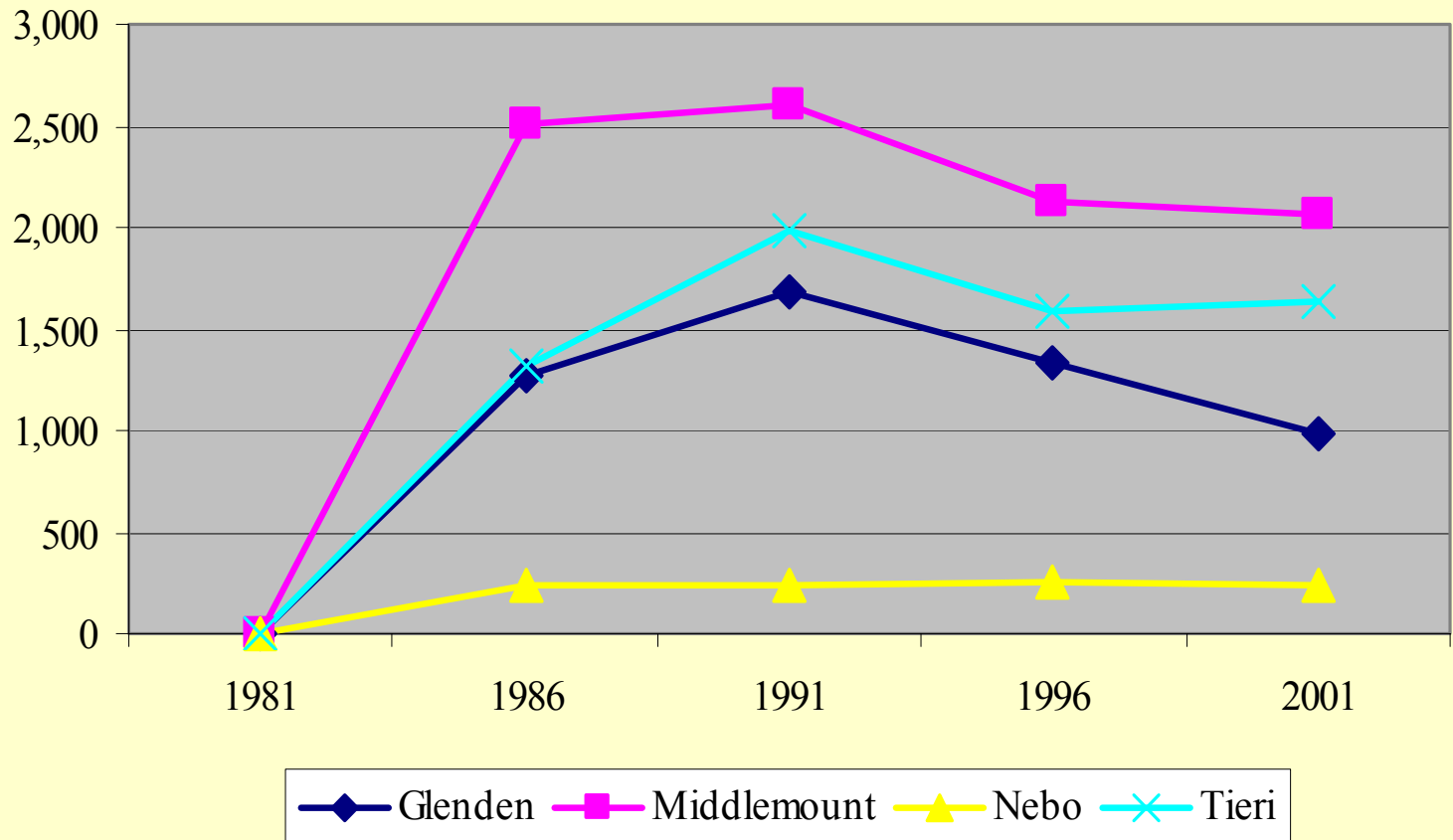


Towns that grew 1981-2001



Source: ABS, Census of Population & Housing

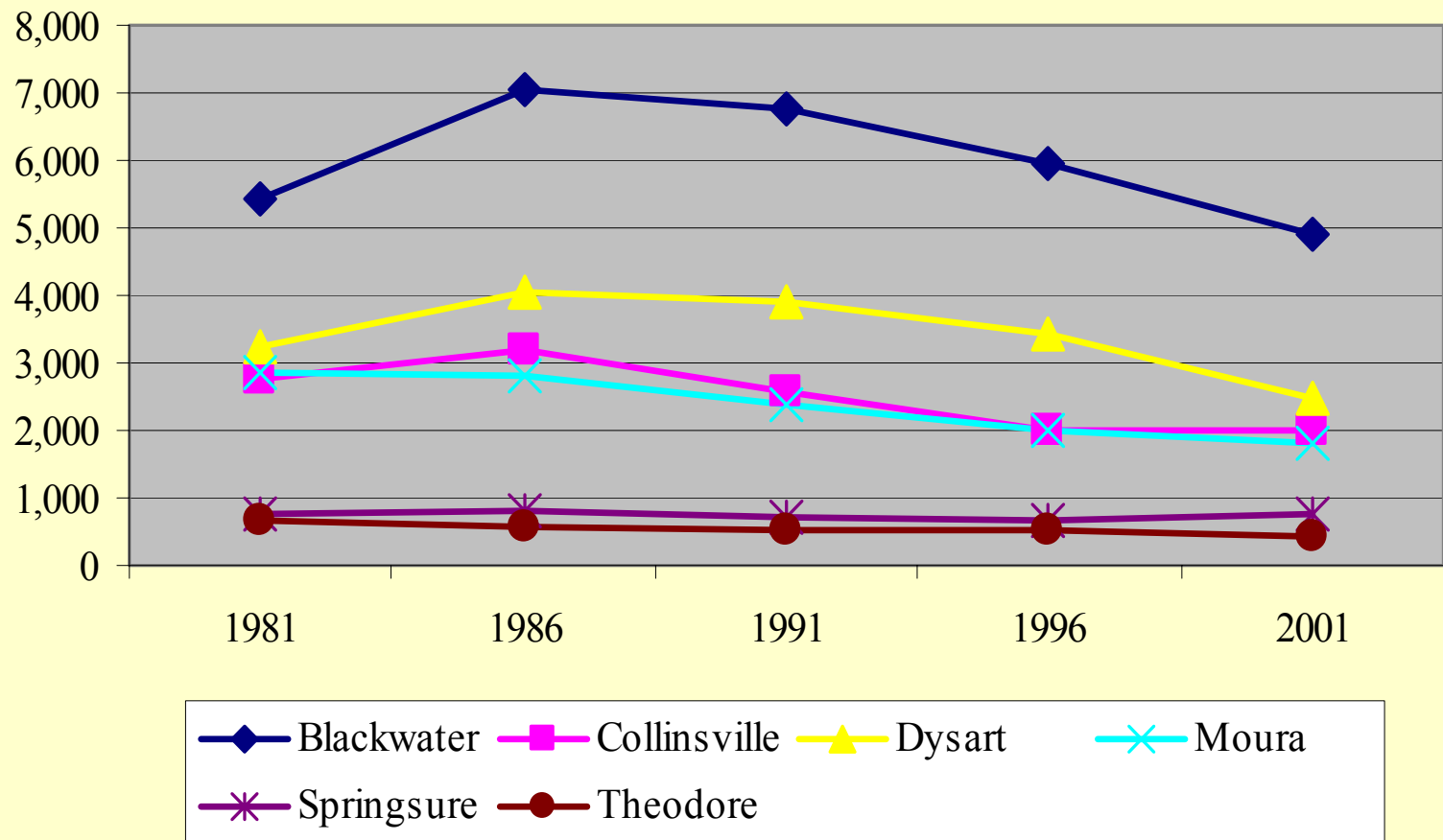
Towns that grew from nothing



Source: ABS, Census of Population & Housing

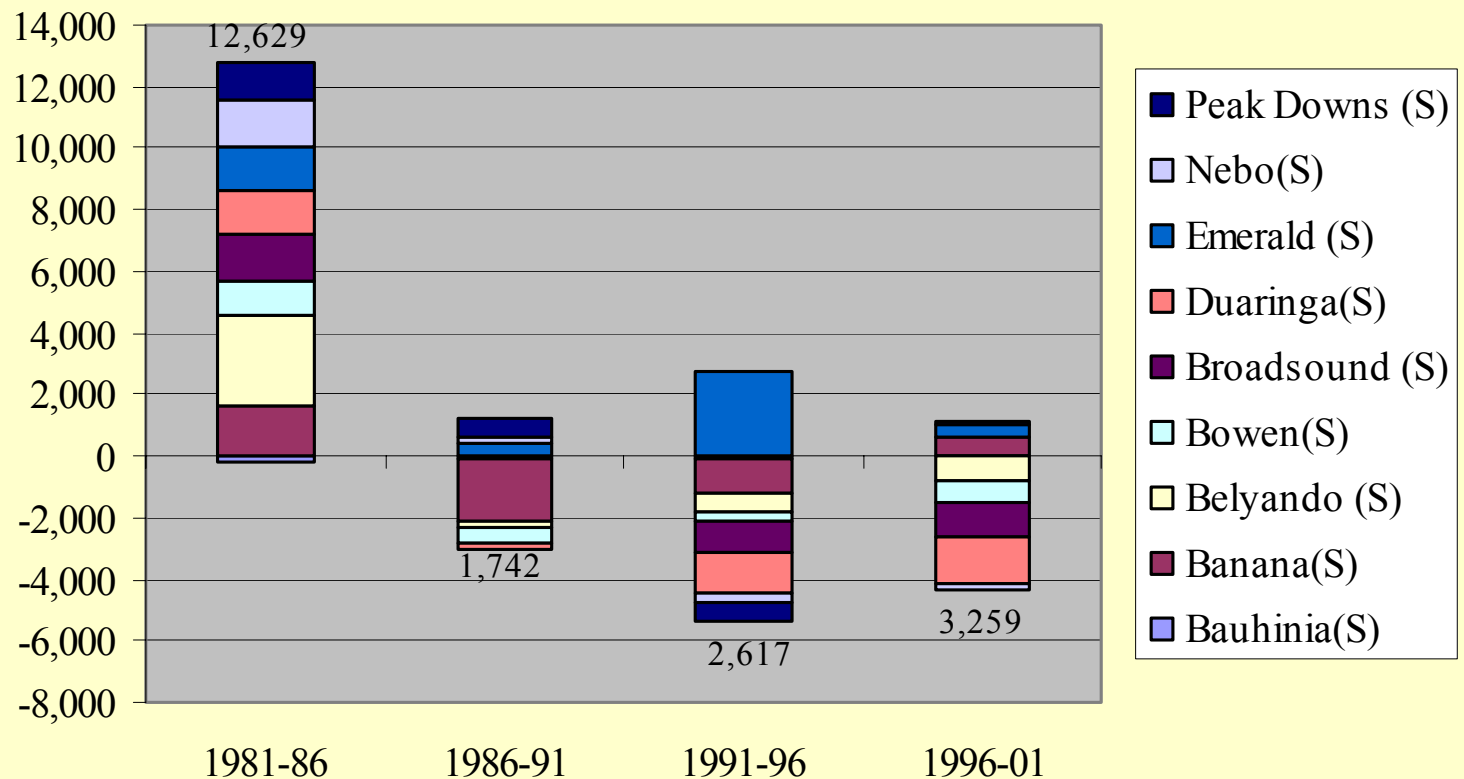


Towns that declined 1981-2001



Source: ABS, Census of Population & Housing

Bowen Basin population change



Source: ABS, Cat No 3218.0

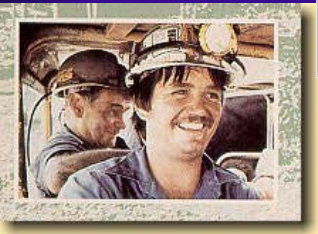
Average annual pop change

	1981-86	1986-91	1991-96	1996-01	2001-02
Banana(S)	329	-401	-223	113	-74
Bauhinia(S)	-30	-18	-25	3	4
Belyando (S)	592	-46	-108	-162	280
Bow en(S)	220	-104	-70	-147	109
Broadsound (S)	294	-4	-204	-214	1
Duaringa(S)	291	-24	-264	-315	-94
Emerald (S)	293	87	544	98	195
Nebo(S)	289	44	-55	-33	1
Peak Dow ns (S)	248	117	-119	4	109
Total Bow en Basin LGAs	2,526	-348	-523	-652	531

Source: ABS, Cat No 3218.0



Mining industry workers by location on Census night

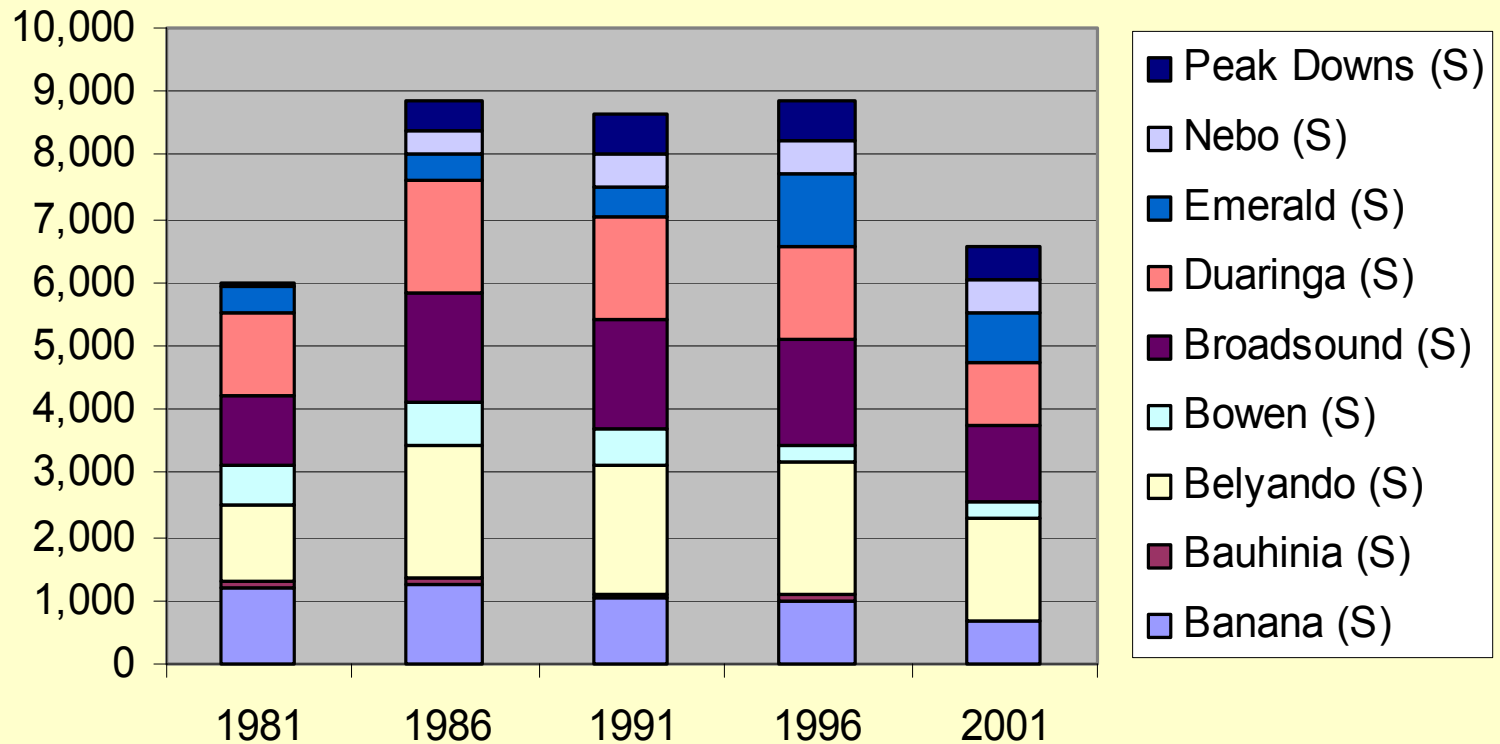


	1981	1986	1991	1996	2001
Banana (S)	1,173	1,260	1,051	1,005	657
Bauhinia (S)	130	87	64	106	45
Belyando (S)	1,220	2091	2012	2068	1591
Bow en (S)	589	651	575	279	267
Broadsound (S)	1,106	1,722	1,724	1,652	1,170
Duaringa (S)	1,280	1,779	1,591	1,468	1,032
Emerald (S)	434	429	504	1,149	735
Nebo (S)	6	390	474	521	544
Peak Dow ns (S)	66	464	631	616	542
Bow en Basin LGAs	6,004	8,873	8,626	8,864	6,538

Source: ABS, Census of Population & Housing

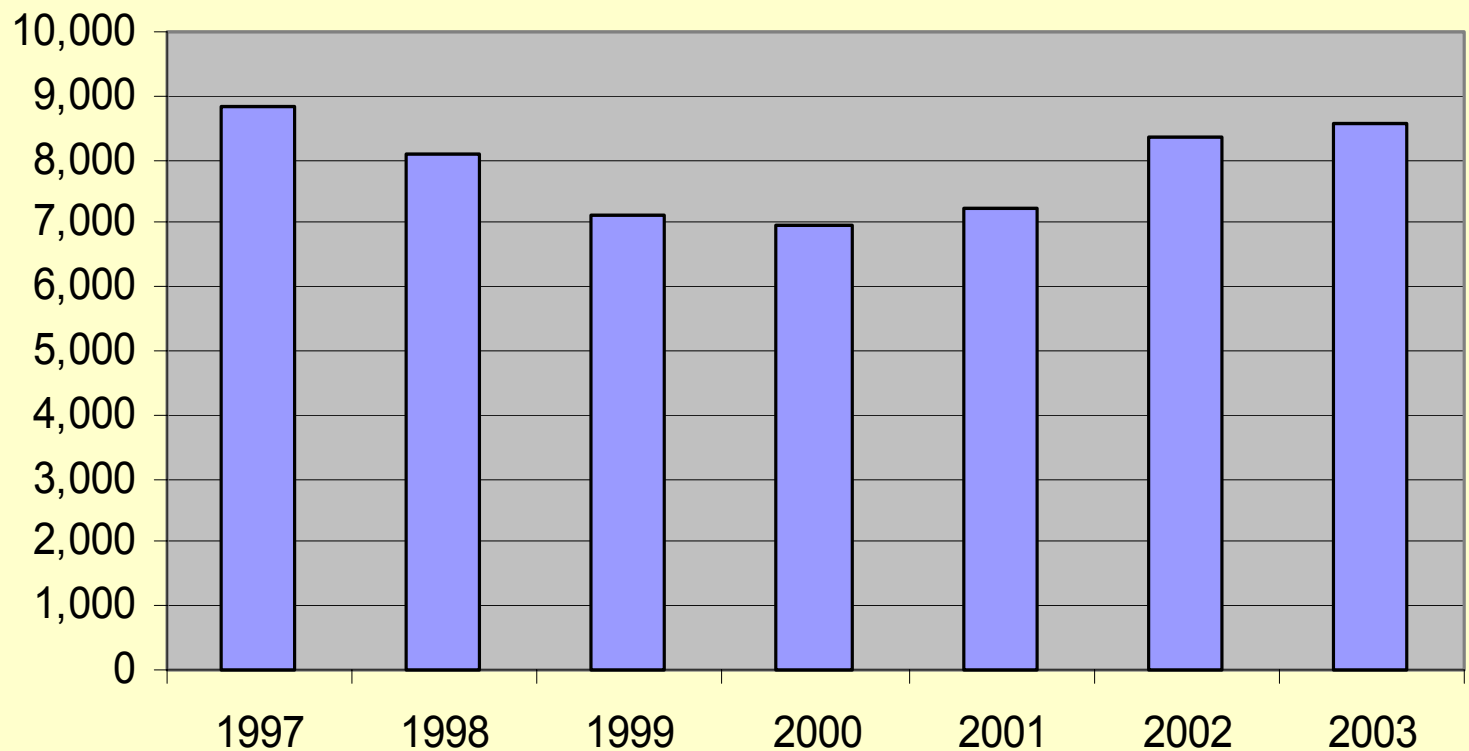
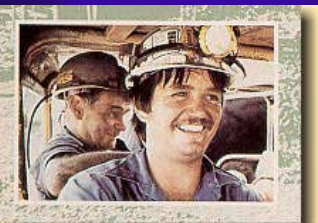


Mining industry workers by location on Census night



Source: ABS, Census of Population & Housing

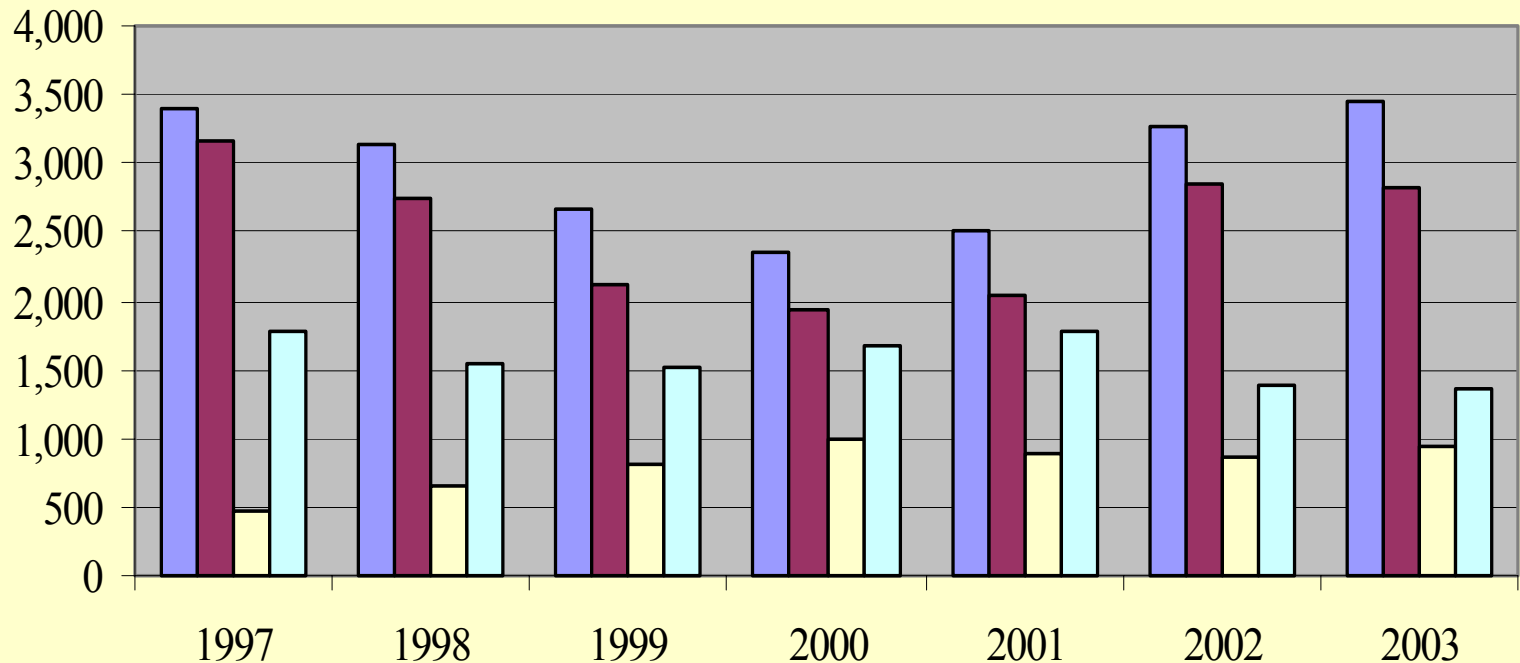
Changing coal industry employment, Northern & Central Districts



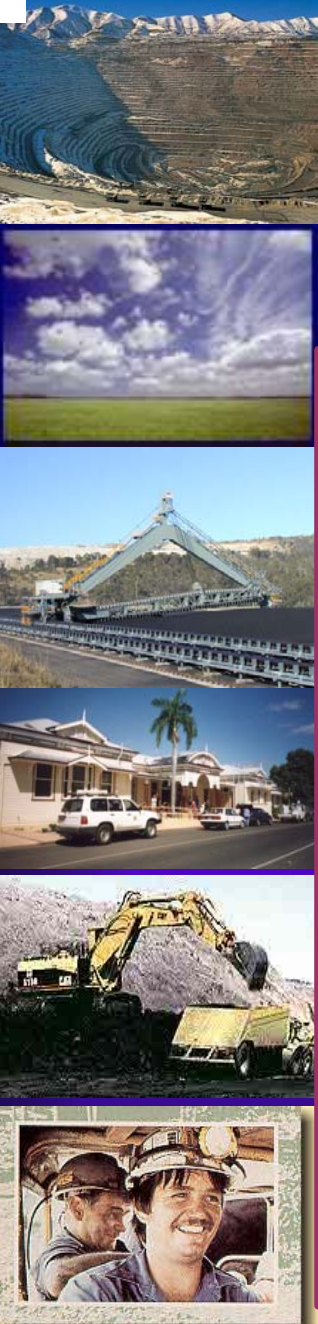
As at January



Coal industry employment estimates



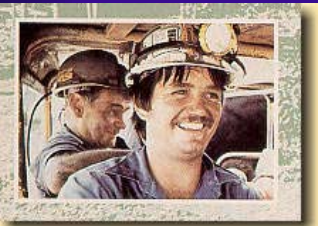
■ Opencut Northern ■ Opencut Central
■ Underground Northern ■ Underground Central





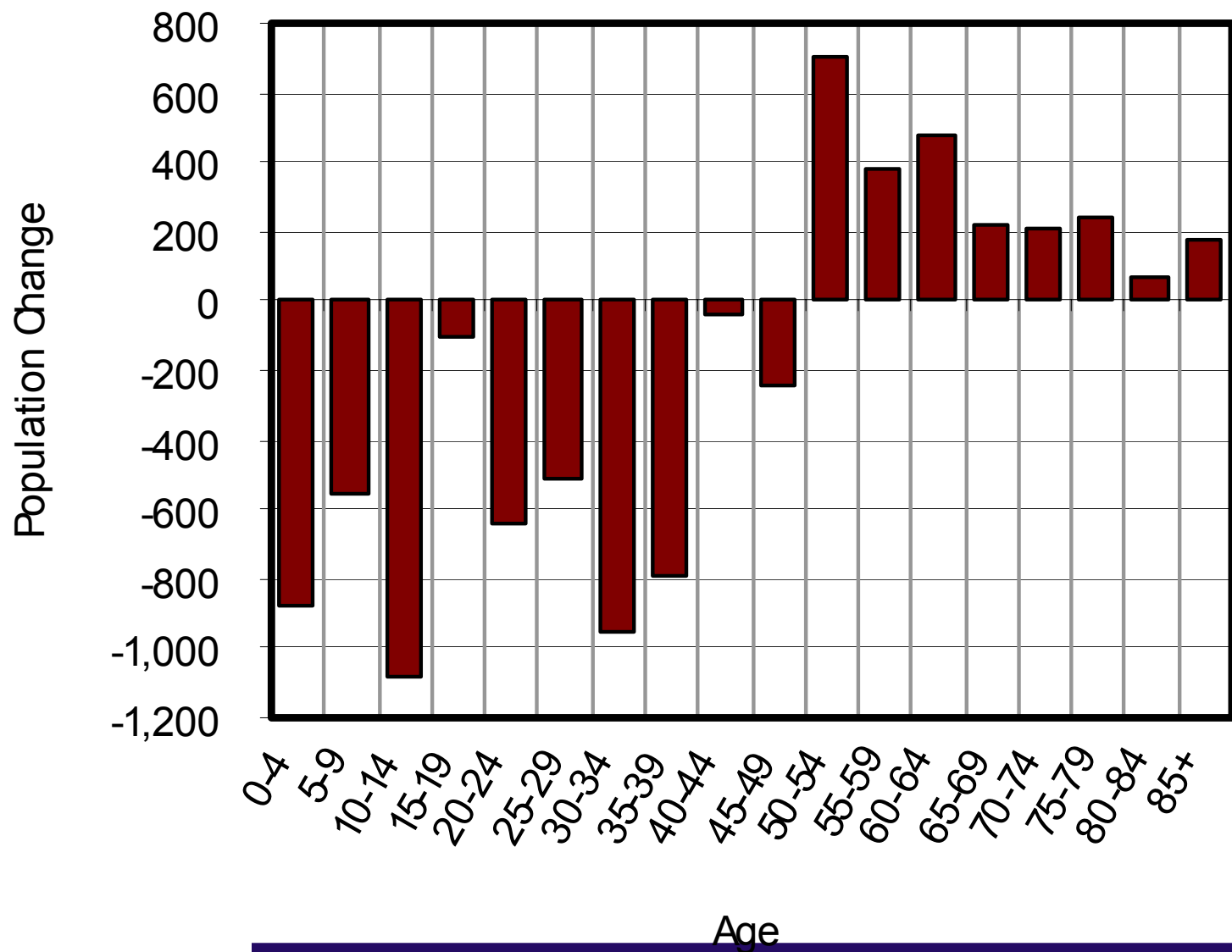
Estimated resident population change in urban centres

	1996	2001	Change 1996-01	% Change 1996-01
Emerald	9,231	9,786	555	6.0
Moranbah	6,627	6,287	-340	-5.1
Biloela	5,244	5,716	472	9.0
Blackwater	5,867	4,850	-1,017	-17.3
Dysart	3,475	2,596	-879	-25.3
Middlemount	2,150	2,114	-36	-1.7
Collinsville	1,799	2,043	244	13.6
Clermont	2,378	1,993	385	-16.2
Moura	2,012	1,930	-82	-4.1
Tieri	1,569	1,610	41	2.6





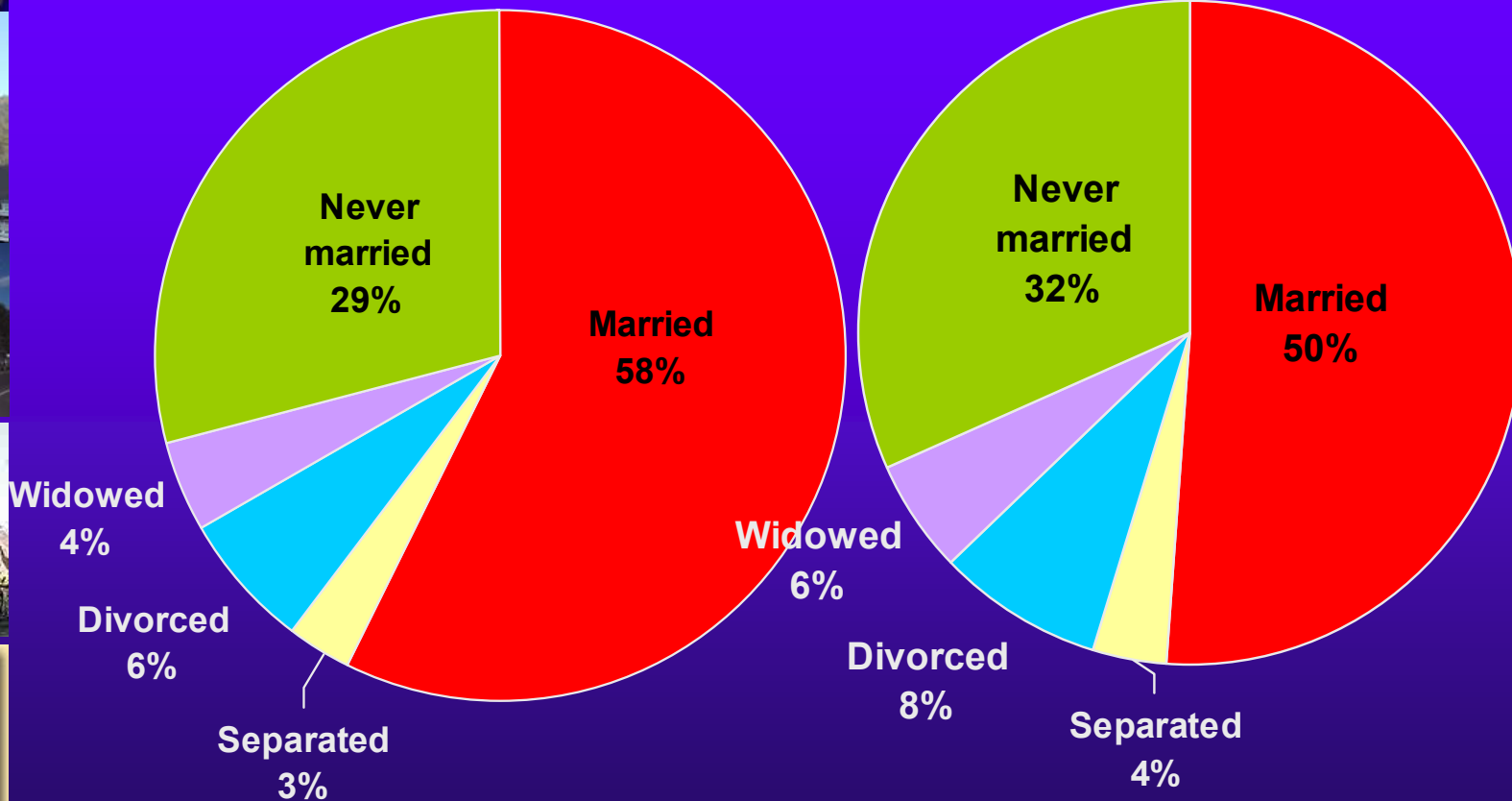
Population change between 1996 - 2001, Bowen Basin Localities



Marital status 2001

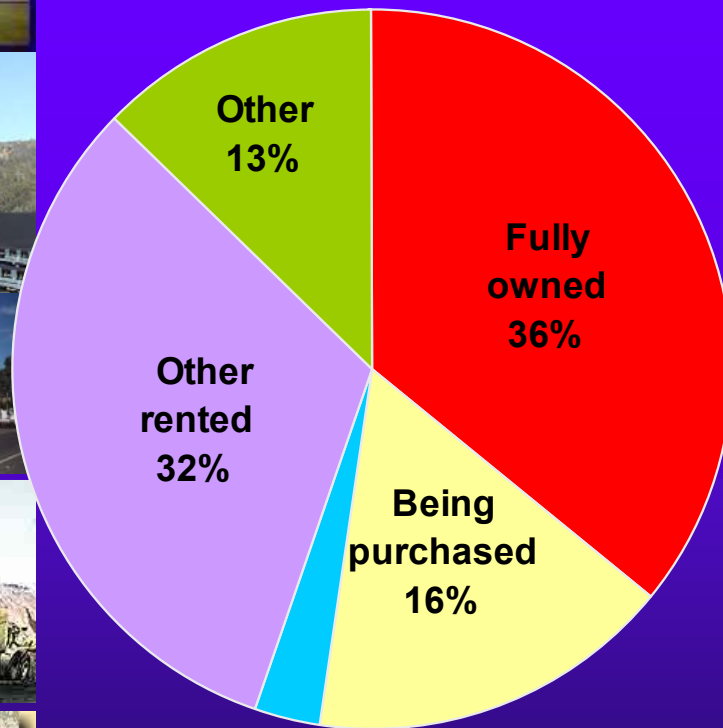
Bowen Basin Localities

Queensland



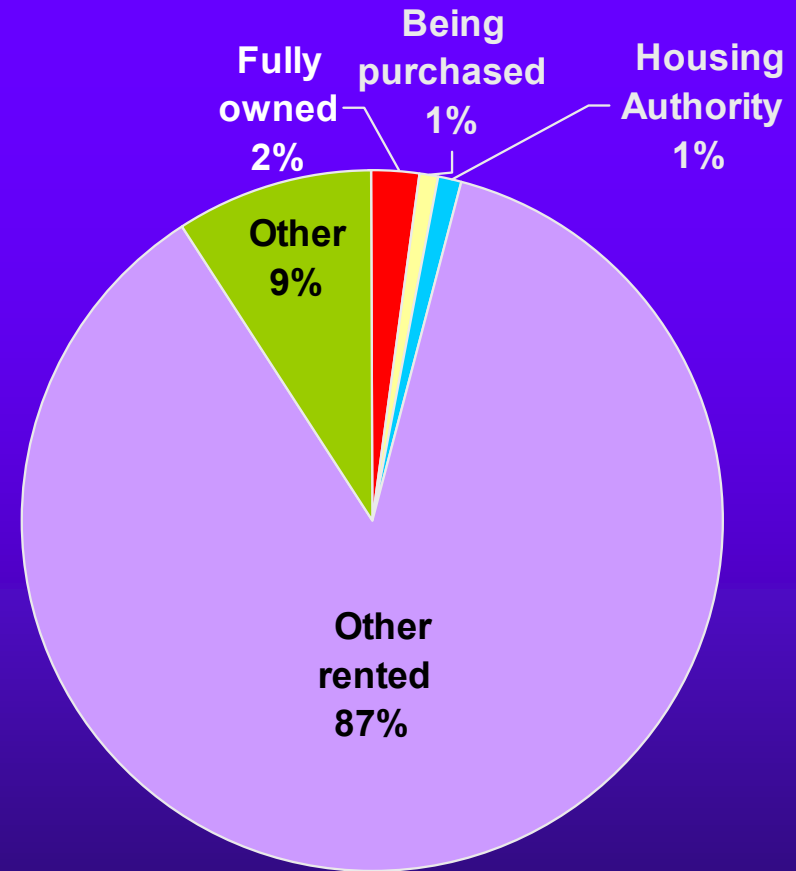
Source: ABS, Census of Population & Housing

Tenure type 2001



Housing
Authority
3%

Bowen Basin Localities

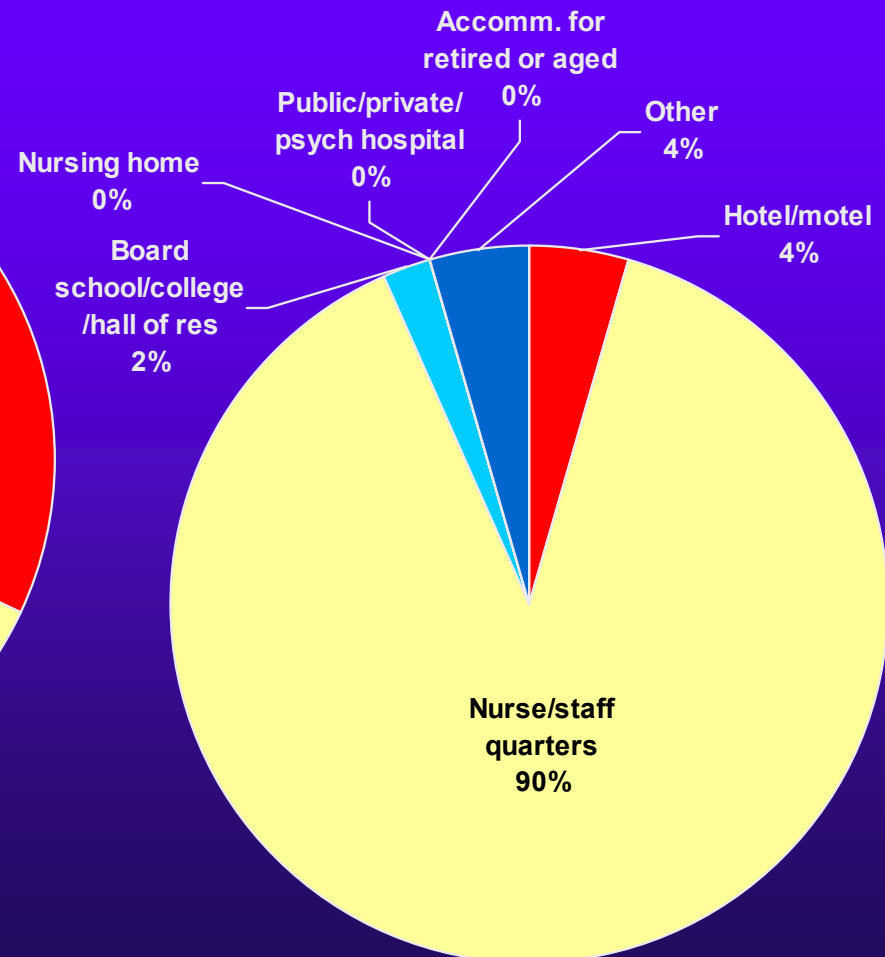
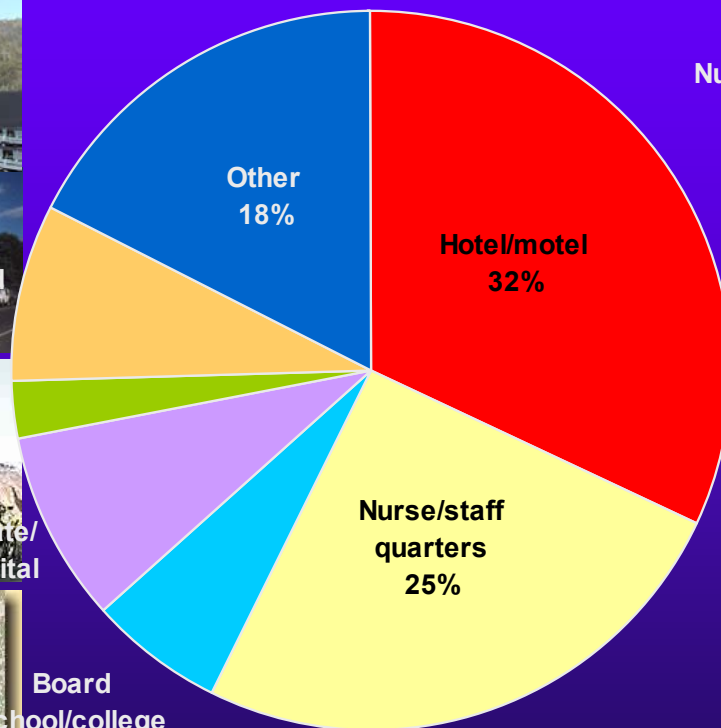


Middlemount

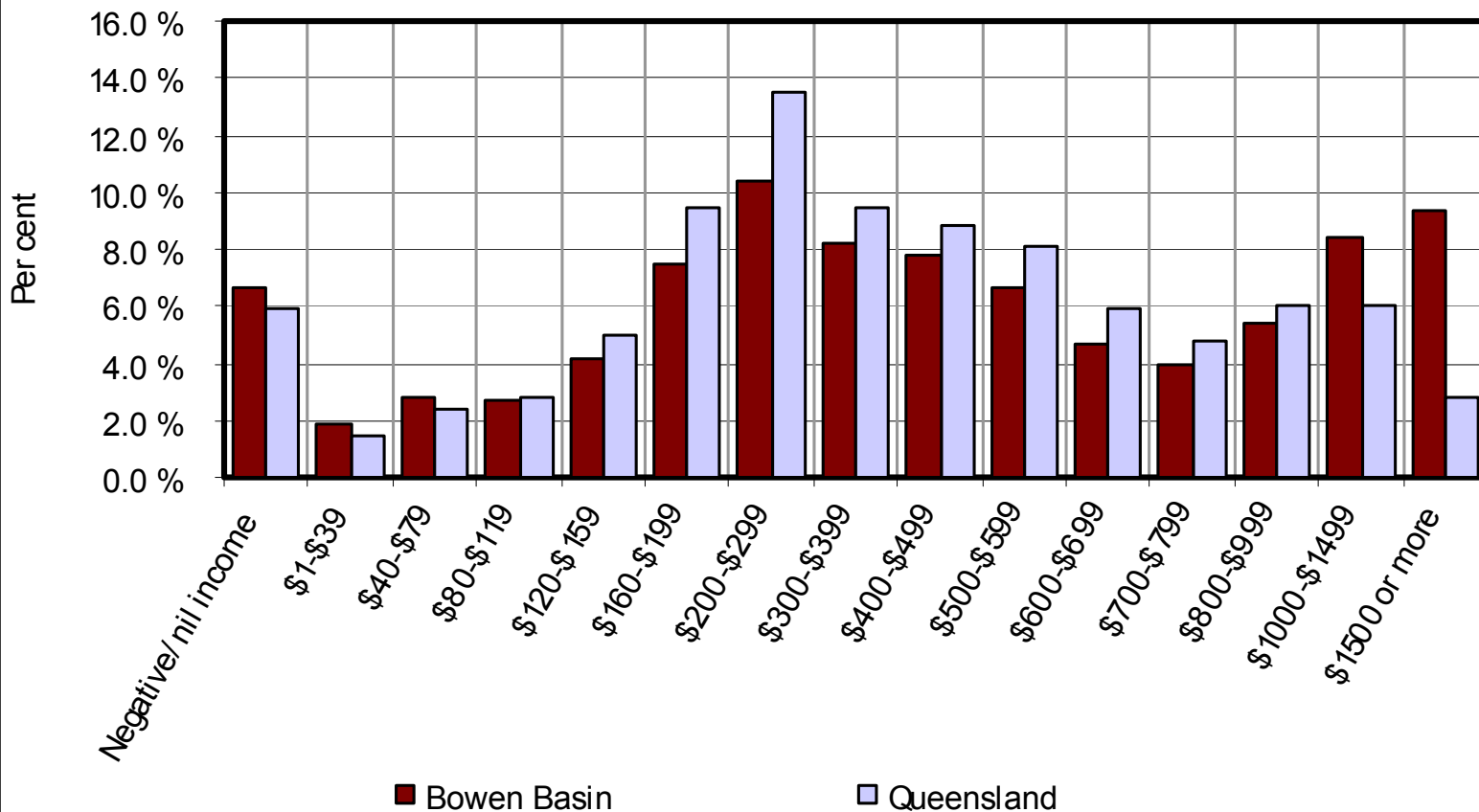
Persons in non-private dwellings 2001

Middlemount

Bowen Basin Localities

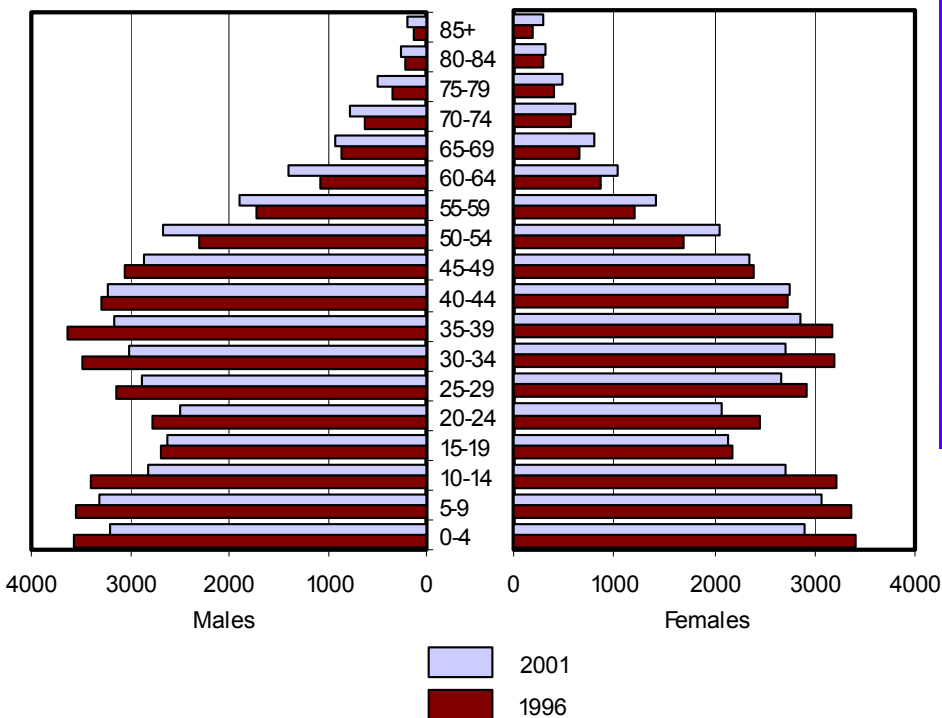


Distribution of weekly individual income, Bowen Basin Localities, 2001



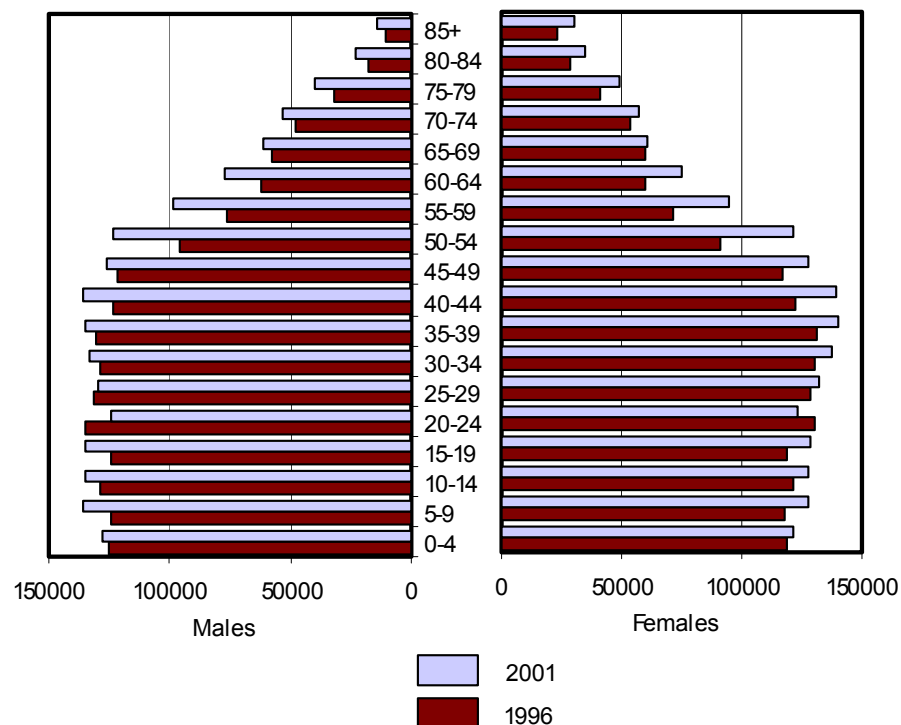
Source: ABS, Census of Population & Housing

Graph 2: Changing age structure

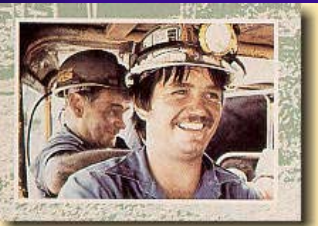


Queensland

Graph 3: Changing age structure, Queensland



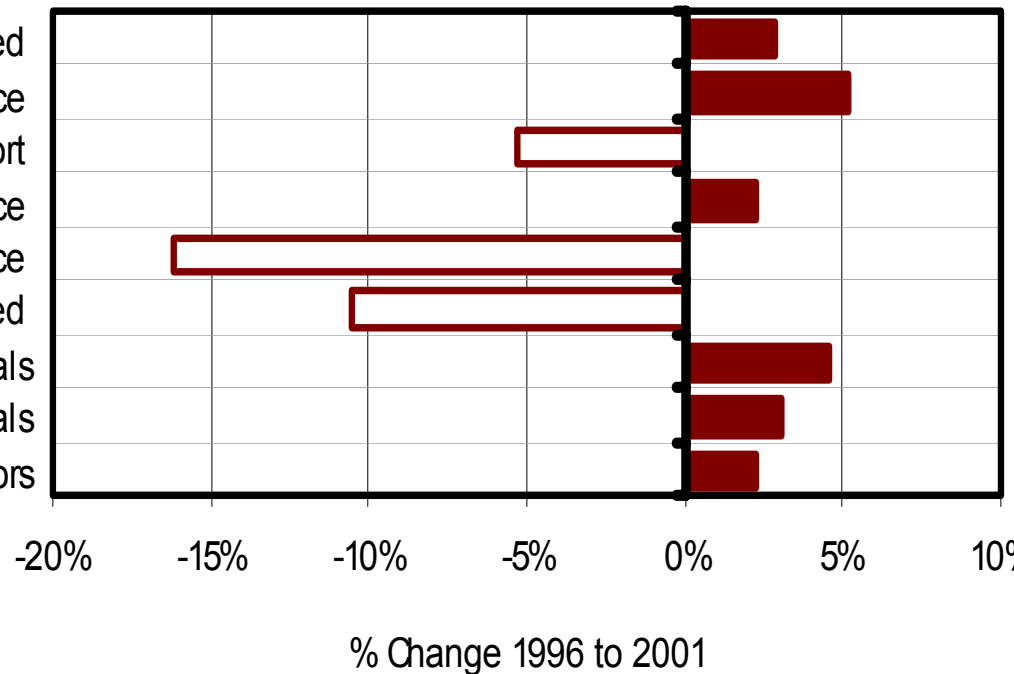
Bowen Basin Localities



Change in occupation 1996-2001, Bowen Basin Localities

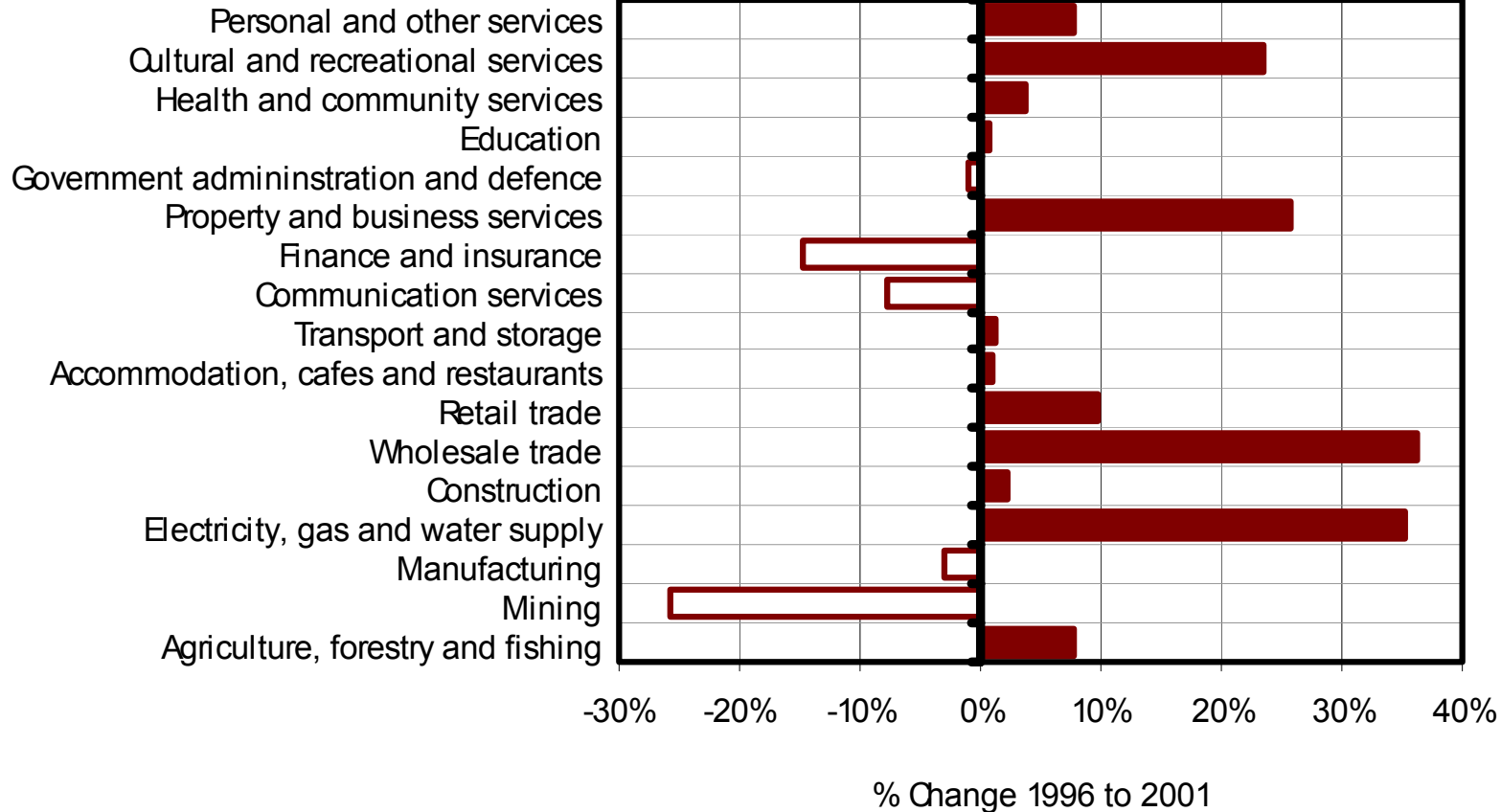


Labourers & related
 Elementary clerical, sales & service
 Intermediate production & transport
 Intermediate clerical, sales & service
 Advanced clerical & service
 Tradespersons & related
 Associate professionals
 Professionals
 Managers & administrators



Source: ABS, Census of Population & Housing

Change in industry 1996-2001, Bowen Basin Localities



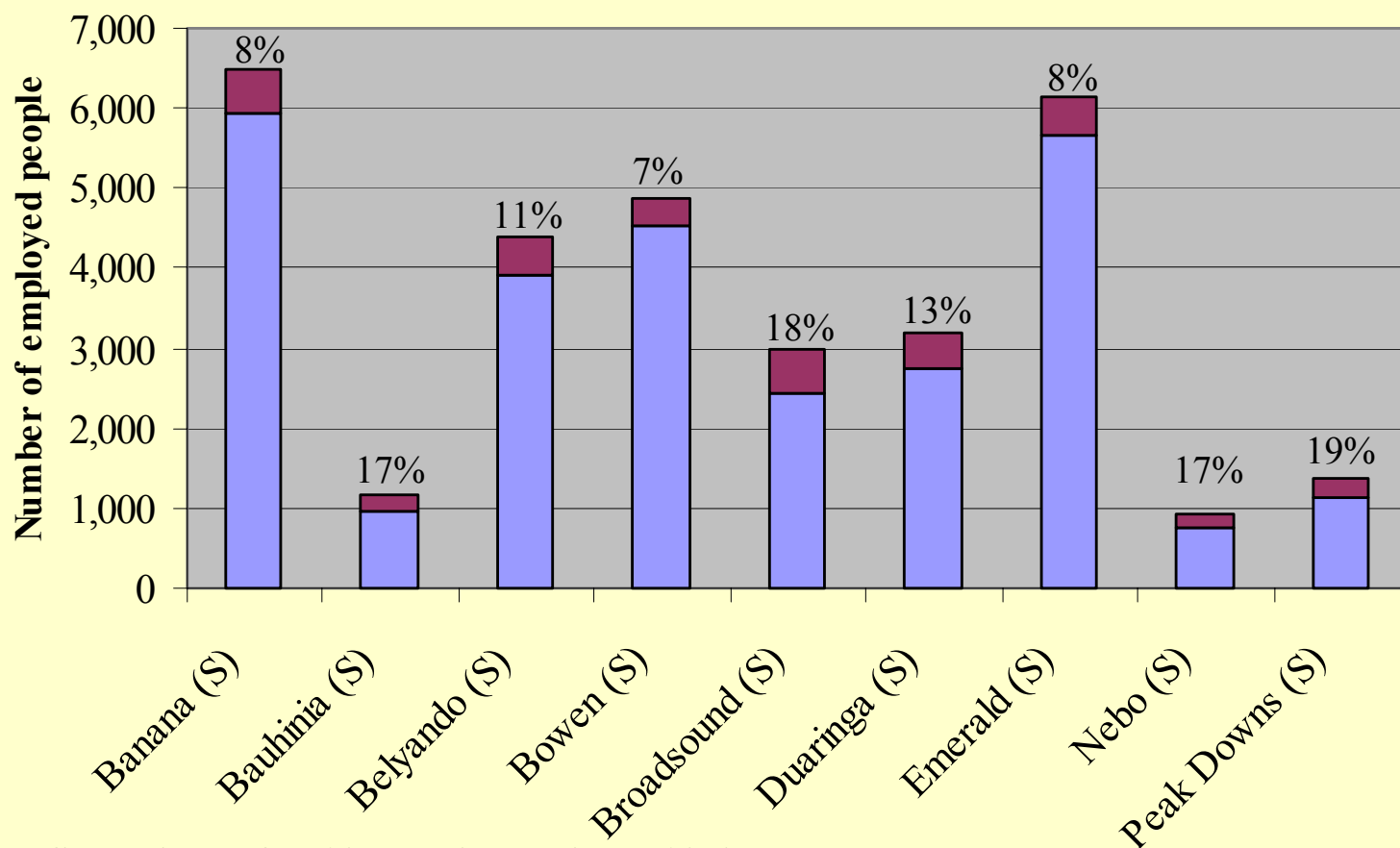


Journey to work patterns, 2001

	Total jobs	Employed Residents	Work in another LGA	
			No.	%
Banana (S)	6,611	6,479	537	8.3
Bauhinia (S)	1,219	1,173	205	17.0
Belyando (S)	4,673	4,408	501	11.4
Bowen (S)	5,233	4,862	316	6.5
Broadsound (S)	3,295	2,982	547	18.3
Duaringa (S)	3,862	3,180	424	13.3
Emerald (S)	6,701	6,149	503	8.2
Nebo (S)	1,652	927	159	17.2
Peak Downs (S)	1,590	1,378	256	18.6
Bowen Basin	34,836	31,538		



Where residents work, 2001

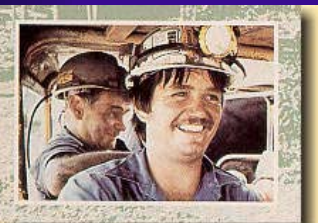


% reflects share of residents who work outside home LGA

Work locally Work elsewhere



Jobs held by non-resident workers, 2001

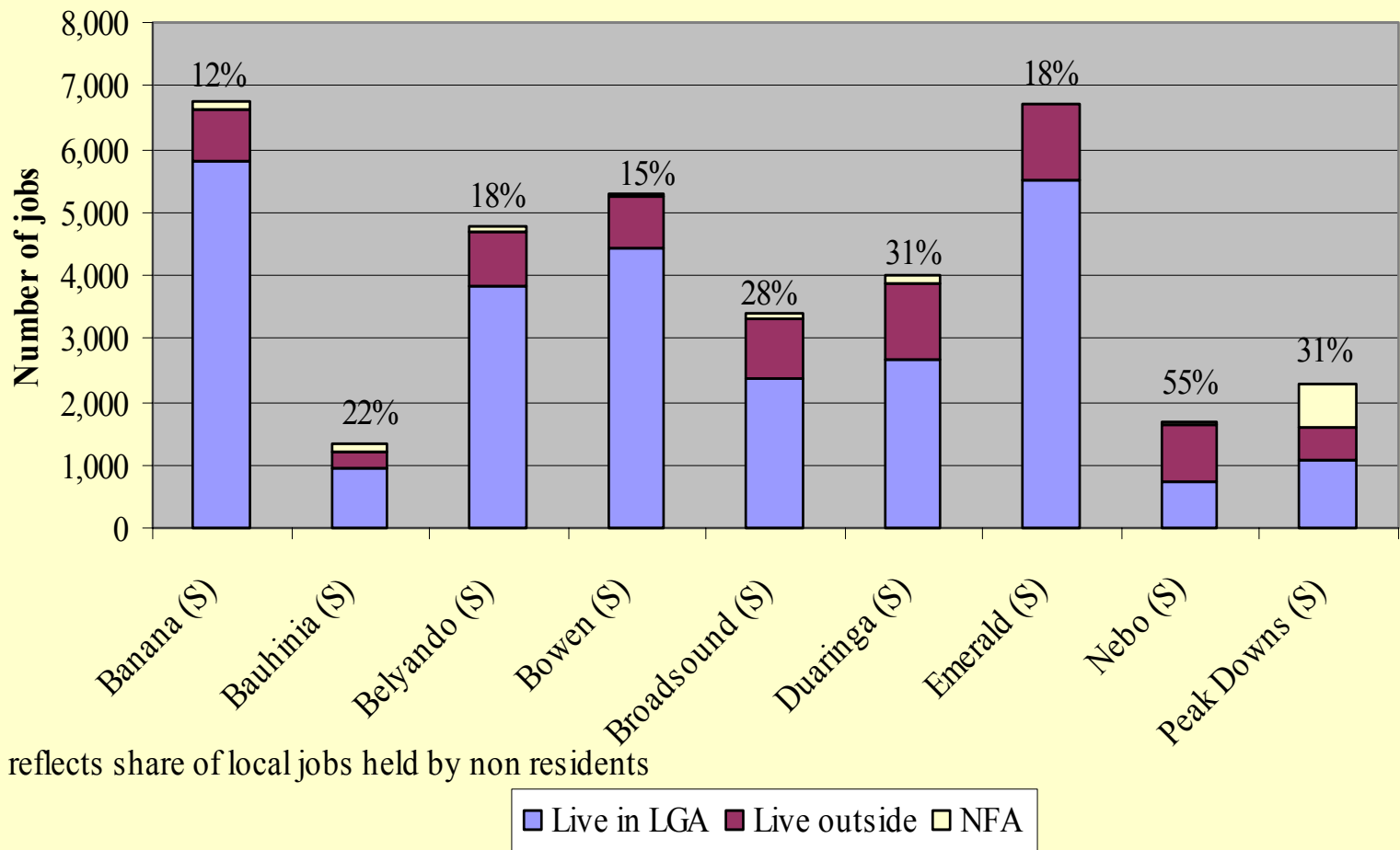


	Total jobs	Employed Residents
Banana (S)	6,611	6,479
Bauhinia (S)	1,219	1,173
Belyando (S)	4,673	4,408
Bowen (S)	5,233	4,862
Broadsound (S)	3,295	2,982
Duaringa (S)	3,862	3,180
Emerald (S)	6,701	6,149
Nebo (S)	1,652	927
Peak Downs (S)	1,590	1,378
Bowen Basin	34,836	31,538

Jobs held by non-residents	
No.	%
804	12.2
268	22.0
862	18.4
796	15.2
929	28.2
1,202	31.1
1,183	17.7
904	54.7
496	31.2



Where workers live, 2001



% reflects share of local jobs held by non residents



Jobs in the mining industry, 2001

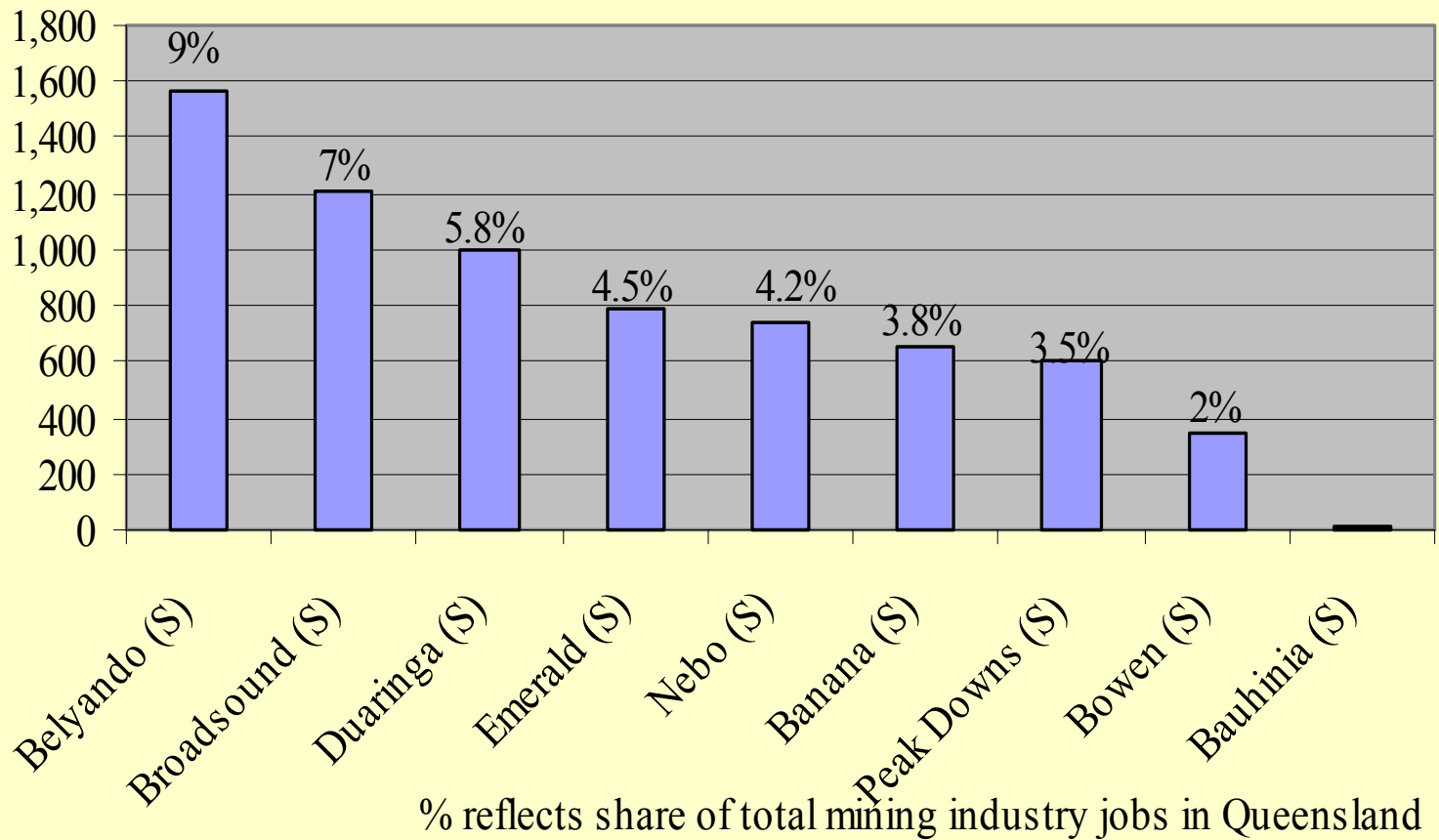
- ◆ 25 LGAs in Queensland had more than 100 jobs in mining
- ◆ Top 20 LGAs each had more than 200 jobs in mining
- ◆ 8 of top 20 LGAs in Bowen Basin
- ◆ Total of 17,368 jobs in mining in Queensland
- ◆ 40% of mining jobs in Bowen Basin

LGA	No. of jobs
Brisbane (C)	2,205
Mt Isa (C)	2,148
Belyando (S)	1,567
Broadsound (S)	1,213
Duaringa (S)	1,004

Source: ABS, 2001 Census,
Customised matrix

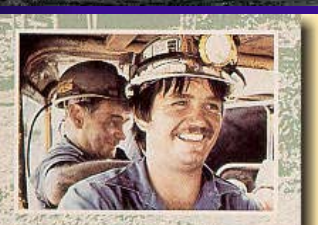


Jobs in the mining industry in Bowen Basin LGAs, 2001



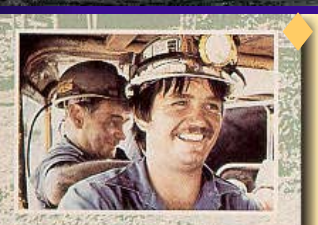
Nebo (S) – journey to work patterns, 2001

- ◆ 1,652 jobs in Shire, 927 employed residents
- ◆ 17% of employed residents worked outside the Shire (159 people)
- ◆ Bowen-51, Belyando-28, Sarina-23 NFA-20, Mackay-16 – all adjoining areas
- ◆ 55% of jobs filled by non-residents (904 people)
- ◆ Mackay-417, Belyando-93, Broomsound-74, Sarina-51 – all adjoining areas
- ◆ Thuringowa-31, Townsville-12, Brisbane-24

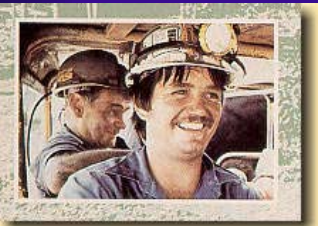


Emerald (S) journey to work patterns, 2001

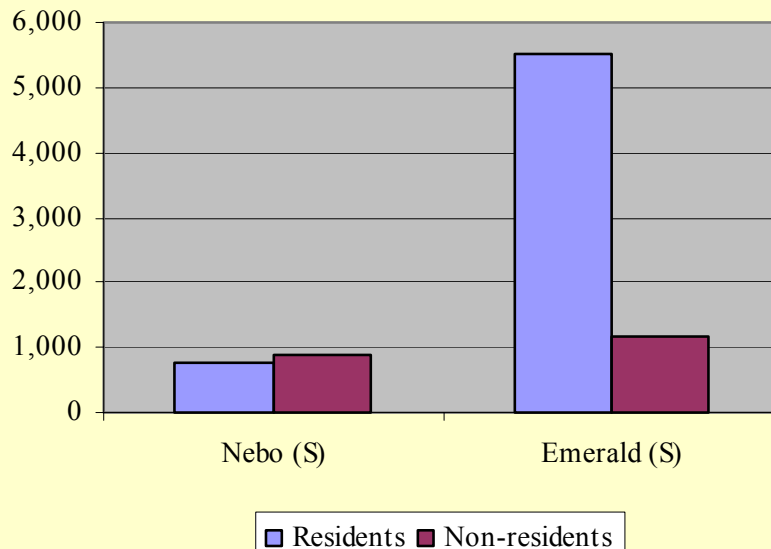
- ◆ 6,701 jobs in Shire, 6,149 employed residents
- ◆ 8% of employed residents worked outside the Shire (503 people)
- ◆ NFA-128, Peak Downs-112, Bauhinia-93, Duaringa-88, ---Brisbane-22, Mackay-13
- ◆ 18% of jobs filled by non-residents (1,183 people)
- ◆ Duaringa-149, Thuringowa-141 (Townsville-98), Peak Downs-133, Bauhinia-80
- ◆ Cooloola-55, Rocky-50, Livingstone-49, Brisbane-22



Nebo & Emerald – different functions

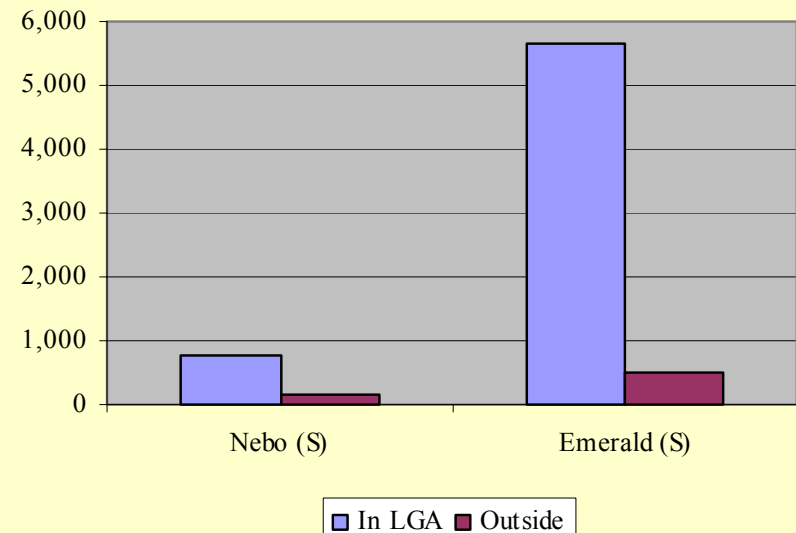


Local Jobs



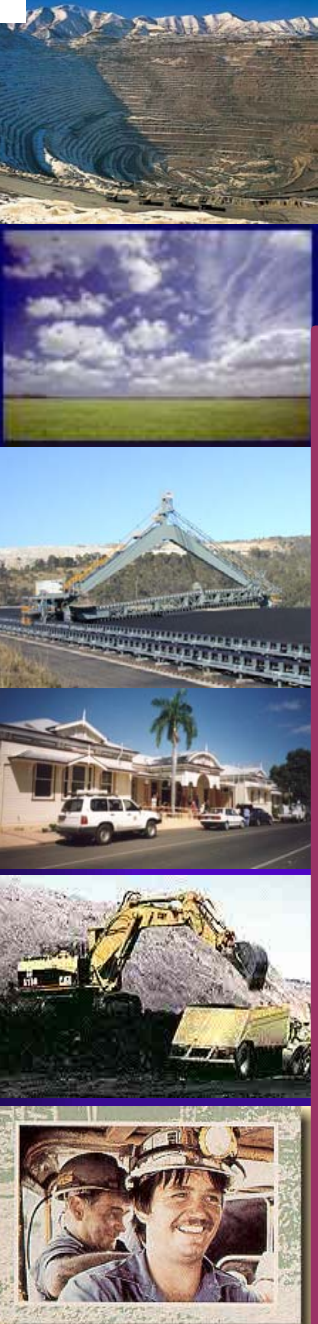
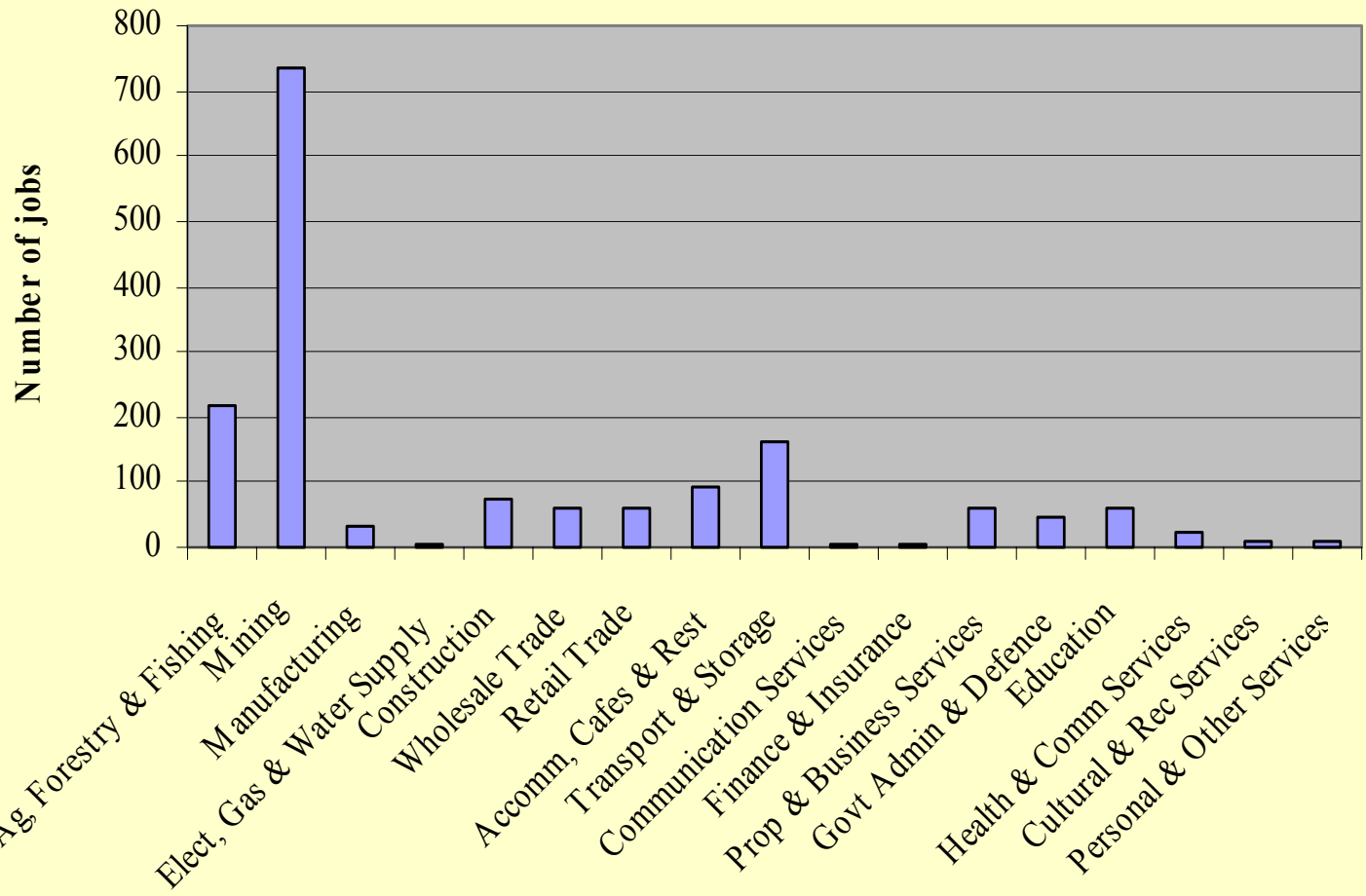
Nebo (S) imports workers from nearby Mackay (C)

Local Workers

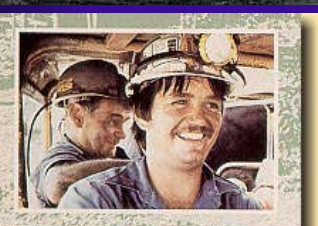
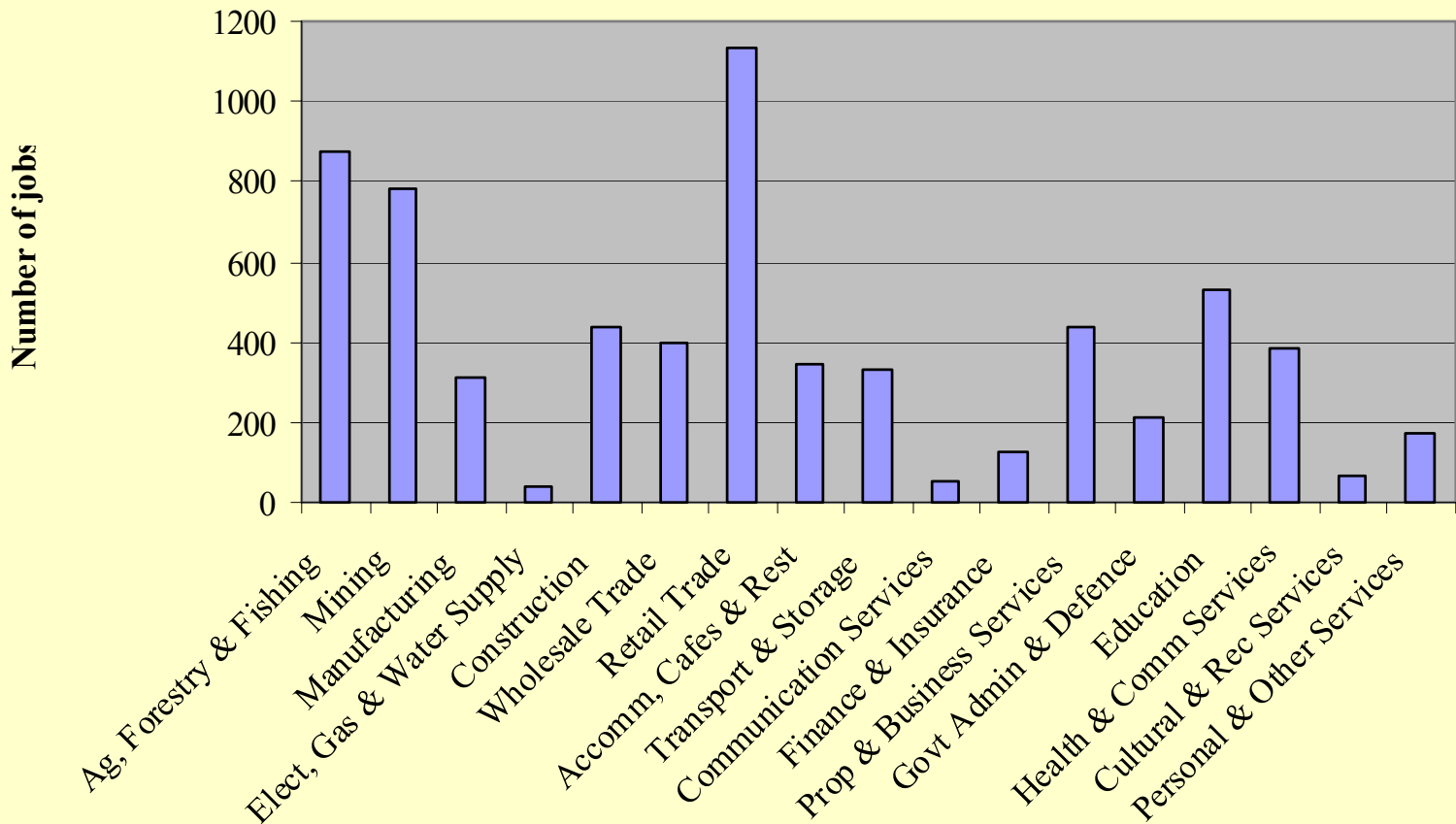


Emerald (S) is a service and accommodation centre

Nebo (S) industry structure, 2001



Emerald (S) industry structure, 2001



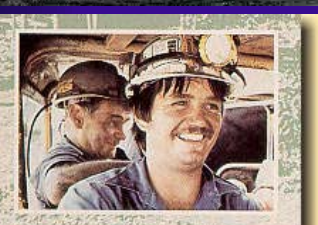
Further research

1. Updating '*Population trends overview*'

Includes

- ◆ most recent population figures
- ◆ 2003 school enrolments
- ◆ 2001 Census data on mining sector employment trends

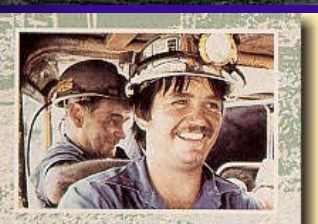
Later in 2003 – new population projections



Further research

2. Analysing characteristics of Bowen Basin communities

- ◆ What makes Bowen Basin communities different?
- ◆ What differentiates Bowen Basin communities from each other?
- ◆ How are these patterns changing?



Further research

3. Investigating patterns of journey to work in the Bowen Basin

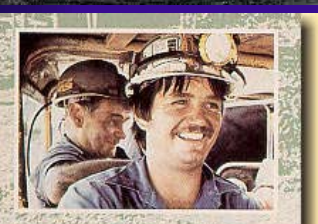
- ◆ How many jobs are there and where are they located?
- ◆ Who is filling these jobs? (residents/non-residents)
- ◆ Where do the non-residents come from?
- ◆ Do they commute or stay in accommodation?



Further research

4. Population trends in rural and regional Queensland

- ◆ Analysis of population change over recent decades
- ◆ Patterns of migration
- ◆ Shift to the coast
- ◆ Regional centre growth
- ◆ Journey to work patterns
- ◆ Indicators of well-being



PLANNING INFORMATION AND FORECASTING UNIT

**For specialist consultancy services in
demographic analysis and forecasting,
customised GIS applications and
urban development monitoring.**



FOR MORE INFORMATION, PLEASE CONTACT:

(07) 3235 4580 (Demography)

(07) 3237 1254 (GIS)

pifu@dlgp.qld.gov.au (e-mail)

www.dlgp.qld.gov.au/pifu (web-site)



Queensland Government
Department of Local Government and Planning

Project Overview



What are we aiming to do?

Develop a user-friendly interactive database which can be used to monitor key socio-economic trends and patterns in selected communities

Project Overview cont'd



Stage 1: Prototype Design (SMI funded)

- Designing the database
- Selecting core indicators for inclusion
- Constructing a prototype for Belyando, Broadsound, Emerald and Peak Downs Shires

Project Overview cont'd



Contingent on interest and funding...

- Stage 2: Customisation for individual communities, companies and government agencies
- Stage 3: Database maintenance – updates & extensions

Potential Users

A decorative graphic consisting of a horizontal bar with a color gradient from dark blue on the left to bright yellow on the right. To the right of the bar is a large, stylized arrow pointing to the right, filled with a brown-to-orange gradient.

- State Government agencies
- Local governments
- Regional planning bodies
- Community organisations
- Companies

How is our application different?

- Strong user focus – targets specific needs
- Draws on multiple data sources
- Tailors indicators to communities
- System design and delivery



System Design



Seven key features:

1. On-line system (via internet)
2. State of the art internet mapping technologies
3. User-friendly interface - intuitive
4. Graphic, tabular and map outputs
5. Interactive map display with selectable layers, zoom in/out
6. Multiple types of areas (geography)
7. Time series data

1	Select indicators
---	-------------------

2	Choose areas
---	--------------

3	Output options
---	----------------

4	GO!
---	-----



Social Indicators for Mining
Associated Communities



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

Introduction

Contact

Help

Query

This project is being undertaken jointly by the Centre for Social Responsibility in Mining and the Queensland Centre for Population Research at the University of Queensland, with funding from the Sustainable Minerals Institute.

Aim:

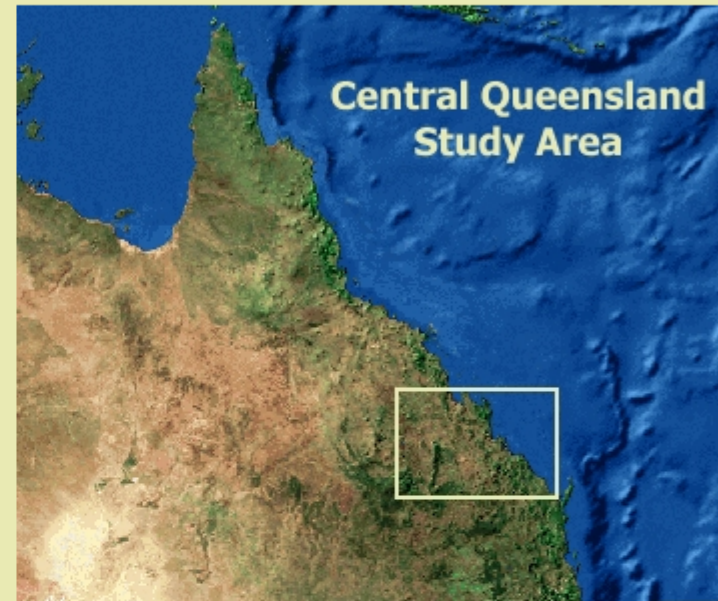
Develop a user-friendly interactive database which can be used to monitor key socio-economic trends and patterns in mining-associated communities.


To Generate a Graph:

Check [Data Availability](#) then move to the **Query** tab shown at the top of the screen and follow these steps:

- 1 Select a Theme
- 2 Select a Social Indicator
- 3 Select up to 5 interest Areas using the Controls Provided
- 4 Click the highlighted **Graph** button!

[View Examples](#)





[S I M A C] - Data Availability Matrix - Microsoft Internet Explorer				
Theme	Geographical Data Availability for the 'Demography' Theme			
Population Change				
Demography				
Housing				
Health				
Labour Force and Economy				
Education				
Social Infrastructure				
Social Wellbeing				
Service provision				
	Indicator	Local Government Area	Urban Centre	State
	Total Fertility Rate	Available		Available
	Proportion Single Parent Families	Available	Available	Available
	Proportion lone person households	Available	Available	Available
	Proportion ATSI Population	Available	Available	Available
	ATSI Population number	Available	Available	



Social Indicators for Mining
Associated Communities



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

Introduction

Contact

Help

Query

Theme:
Indicator:
Areas:

4

Graph

All Years



1 Theme

2 Indicators

3 Areas

Please select a Theme for your Query...

- ☐ Population Change
- ☐ Demography
- ☐ Housing
- ☐ Health
- ☐ Labour Force and Economy
- ☐ Education
- ☐ Social Infrastructure
- ☐ Social Wellbeing
- ☐ Service provision



Social Indicators for Mining
Associated Communities



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

[Introduction](#)[Contact](#)[Help](#)[Query](#)

Theme: Labour Force and Economy

Indicator: Proportion Employed in Mining

Areas: Belyando, Emerald

4 **Graph**

All Years

All Years

2001

1996

1991

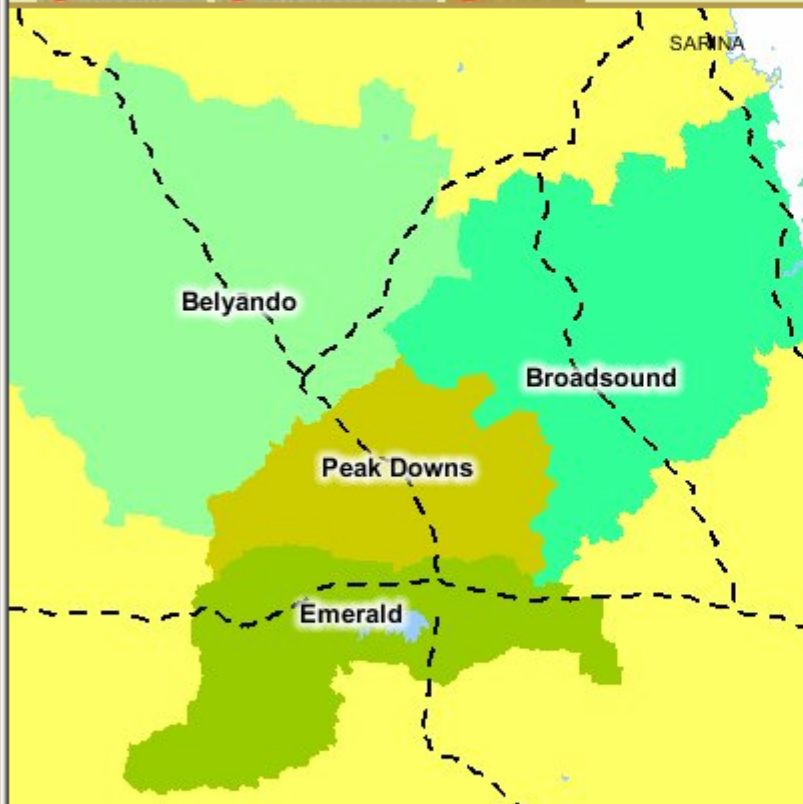
1986



1 **Theme**

2 **Indicators**

3 **Areas**



Select your Area Type

- ☒ Local Government Area
- ☐ Urban Centre
- ☐ Post Office Area
- ☐ Police Division

Select at least 1 Area

- ☐ Broadsound
- ☒ Emerald
- ☐ Peak Downs

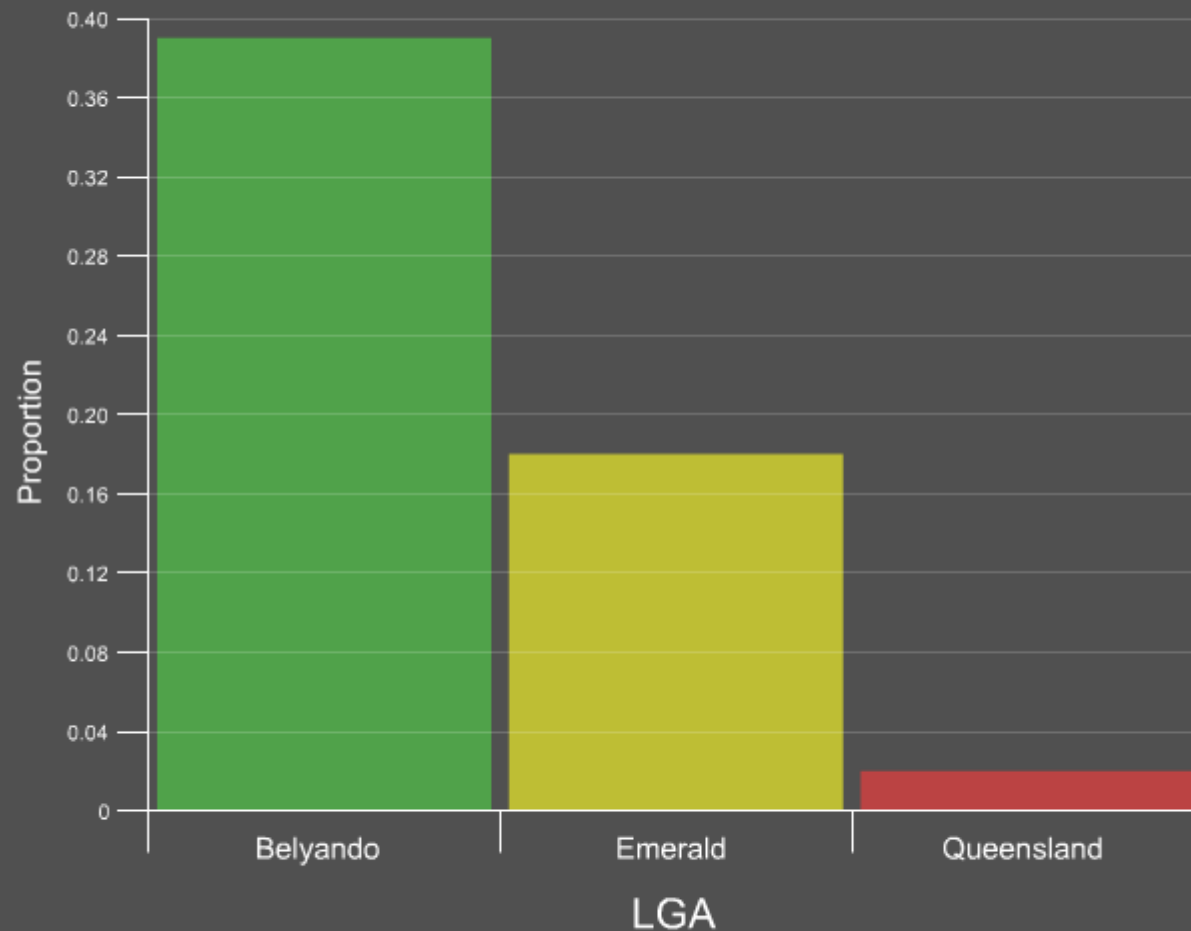
Clicking on the Map will:

- ☐ Zoom In
- ☐ Zoom Out
- ☐ Pan
- ☒ Select Feature

NB: to create 'Population Pyramids' select the Indicator 'Population' and 1 Local Government Area.

Proportion Employed in Mining (LGA) 1996

PRESS (F5) TO RESTART ANIMATION
RIGHT MOUSE CLICK FOR CONTROLS

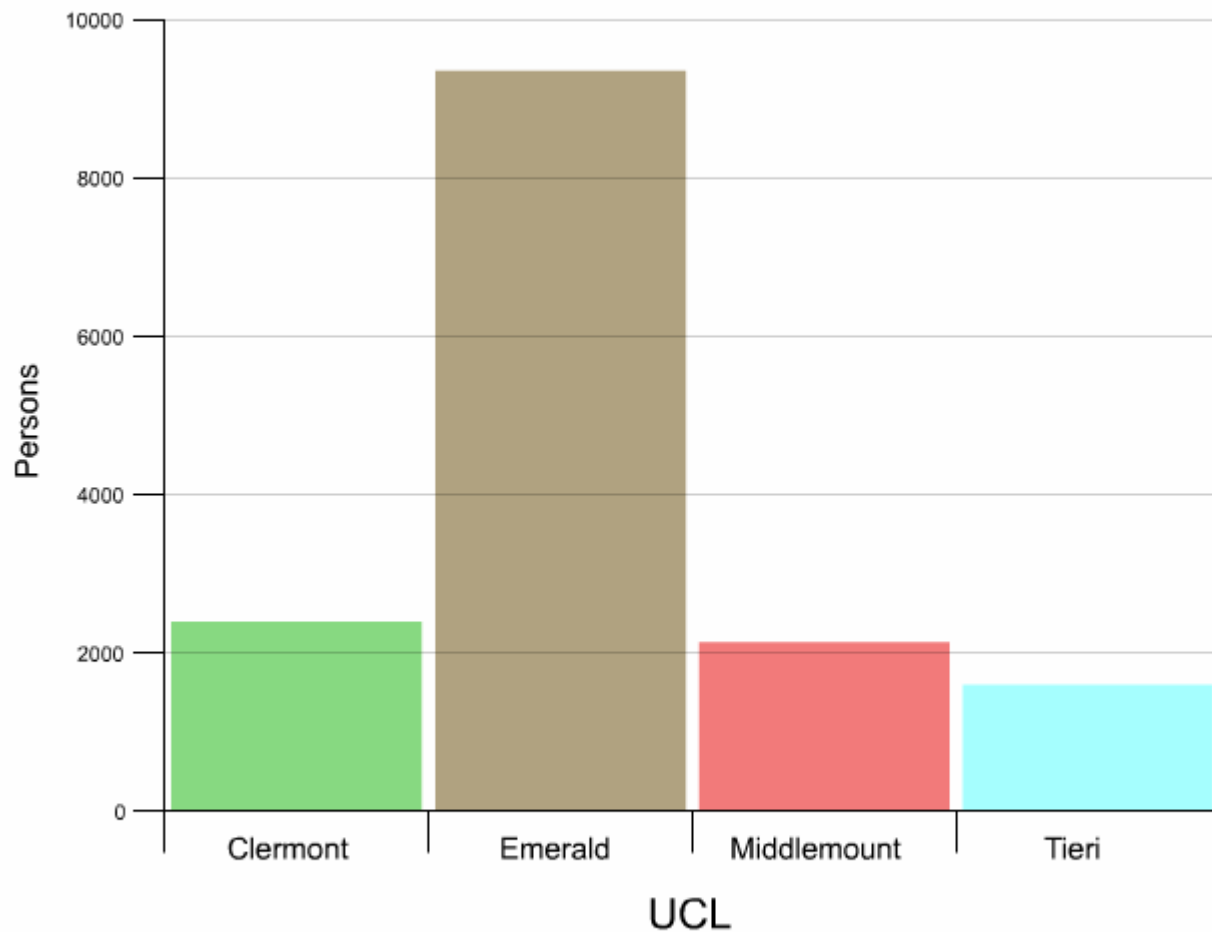


Proportion of employed people aged 15 years and over employed in the mining industry sector. A person's industry of employment is classified based on responses to a range of questions in the census form asking for a description of the business, and the main goods produced, or main services provided. The name of the business, the employed person's occupation and main tasks and duties, may also help in classifying industry of employment.

Population (UCL) 1996

Source: Queensland Centre for Population Research, Urban Centres Project 2002

PRESS (F5) TO RESTART ANIMATION
RIGHT MOUSE CLICK FOR CONTROLS

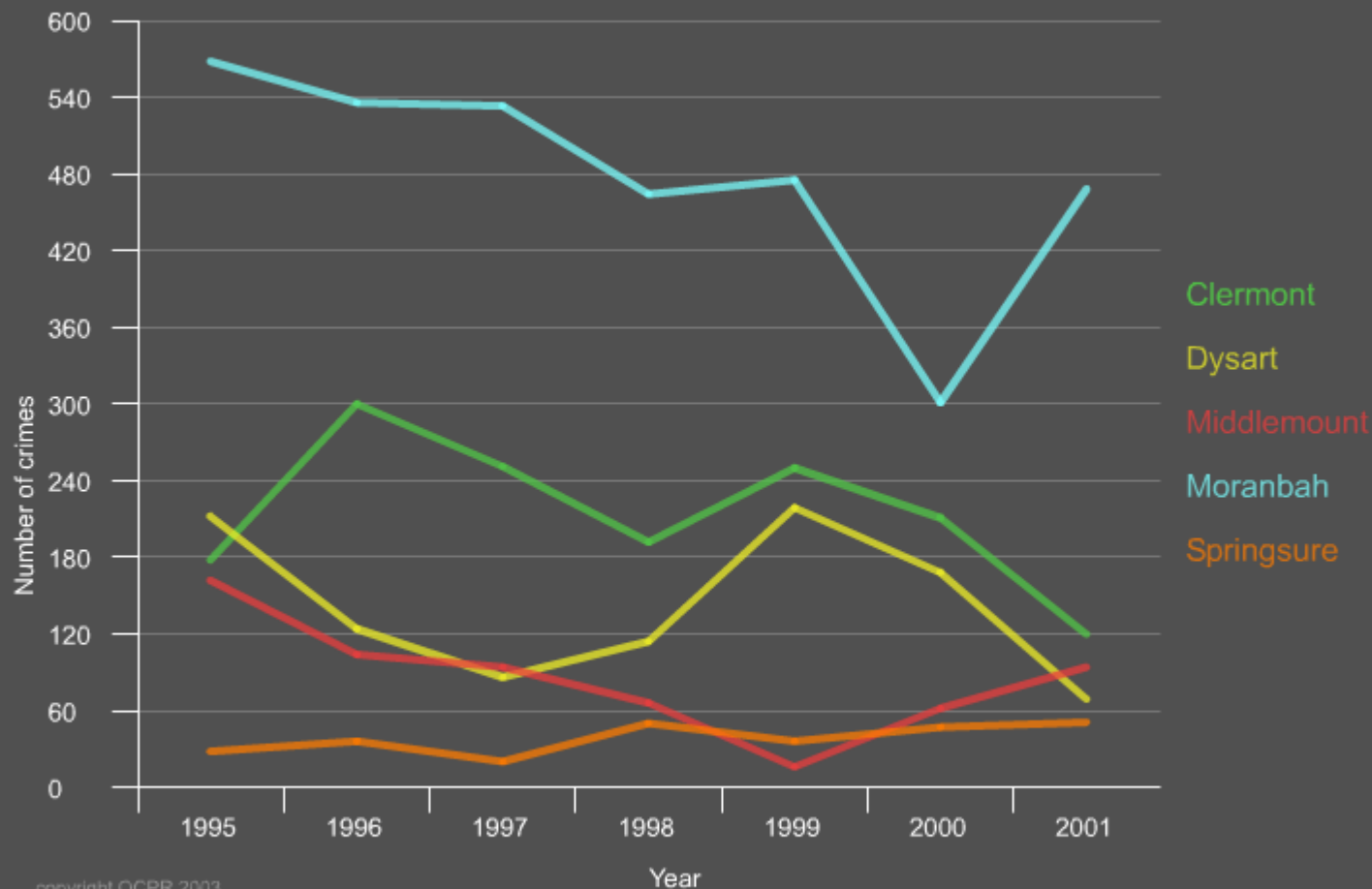


Population in Urban Centres and Rural Localities (UCLs with population over 199 persons). The UCLs are determined by population density in Census Collection Districts (CCDs). The unit of measure is persons counted in the census.

Crimes against property (Police Division) 1995-2001

Source: Extraction of Unofficial Service data from Queensland Police Services

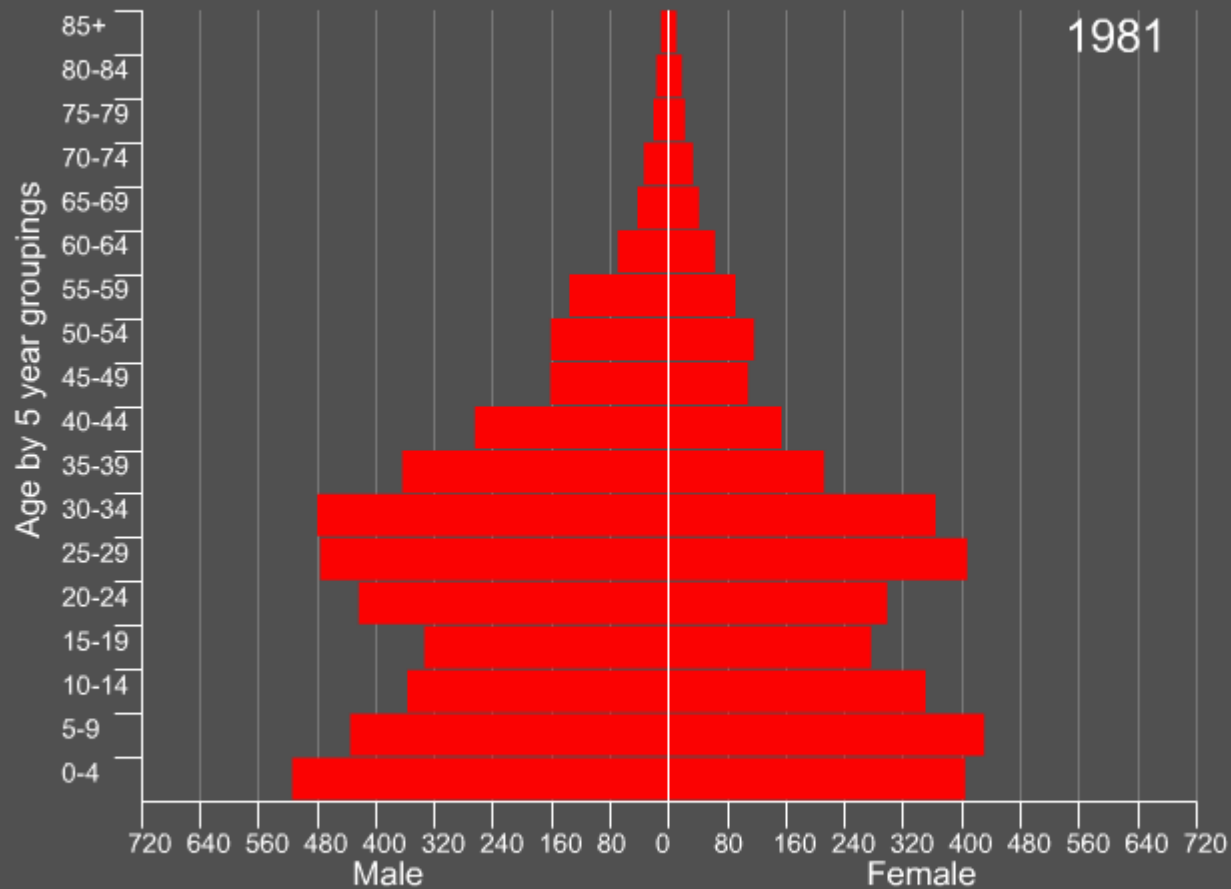
PRESS (F5) TO RESTART ANIMATION
RIGHT MOUSE CLICK FOR CONTROLS

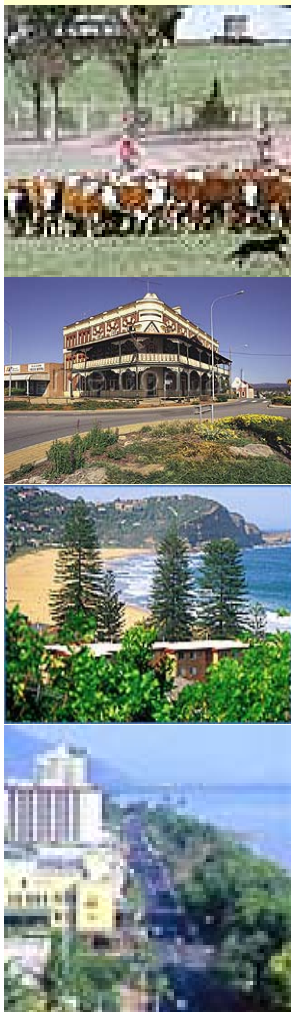


copyright QCPR 2003

Number of reported crimes against property (including Unlawfull Entry, Arson, Other Property Damage, Unlawful Use of Motor Vehicle, Other Theft, Fraud and Handling Stolen Goods)

Population Pyramid: Belyando





Bowen Basin Communities Social/Economic Researchers' Workshop

Bureau of Transport & Regional Economics

Kerry Laughton

02 6474 6979

Kerry.Laughton@dotars.gov.au

About the BTRE

- Specialised research unit within the Department of Transport and Regional Services.
- The Bureau (under the name Bureau of Transport Economics, and other variations) has undertaken transport research, analysis and data collection for the Commonwealth Government for 31 years.
- BTRE gained the 'R' in its name and formalised its regional research role in June 2002.
- BTRE essentially undertakes research in-house and has a significant reputation for high quality, unbiased, publicly accessible research in the public interest.



Regional Research Programme

- Regional research programme developed annually
 - undertaking high level policy research on regional issues to enable better informed policy making on regional issues at a strategic and national level
 - approved by the Minister for Transport & Regional Services, and Deputy Prime Minister, John Anderson
 - developed with an eye to strategic policy issues, particularly with an economic focus, and areas in which additional research is needed
- Programme available at www.btre.gov.au

Recently completed projects

- ***‘Regional Public Transport in Australia’* working papers**
 - Trends and projections for long-distance regional public transport
 - Snapshot of Commonwealth and State/Territory government regulatory and assistance arrangements for long-distance regional public transport
- ***‘Government Interventions in Pursuit of Regional Development: Learning from Experience’* working paper**
 - Select review of key experiences and lessons from Australia, Canada, US and European Union
- ***‘About Australia’s Regions’* regional statistics booklet**
 - 40 page accessible introduction to economic, social and environmental statistics for Australia’s regions
- **Regional economics 4-day course**
 - Covering economic theories of growth/decline, and economic analysis tools

Current projects

- **Information sheet series**
 - skills, education and employment in regions
 - main economic bases of regions by industry
 - comparative taxable income in Australia's regions
- **Factors influencing irrigation investment in the lower Murray-Darling Basin**
 - Examining the extent to which water property rights influence investment patterns

Upcoming project

Regional Centres Project

- Examining factors underlying the economic growth/decline of selected regional centres and the relationship of the centres with their surrounding regions
- Focusing on regional centres of between 10,000 and 40,000 residents
- Case study approach (field research) - a likely 4 case studies one of which may be Emerald
- Centres will have a variety of economic bases and geographic circumstances
- Case studies will attempt to draw general conclusions about dynamics of economic growth and test them against regional development theories
- Timing: expect to begin second half of 2003, and finalise in early 2004

In conclusion

- Almost all BTRE analysis is published and freely available on the web
 - » www.btre.gov.au
- We invite you to
 - register your details on our regional research contact list - we'll keep you posted on our progress
 - keep us posted of your progress

Please do leave your details with me.



ACMER PROJECTS RELEVANT TO SUSTAINABLE MINING IN THE BOWEN BASIN

Dr. Owen Nichols

Research Program Manager

Australian Centre for Mining Environmental Research



ACMER

Australian Centre for Mining Environmental Research (ACMER)

Vision

To be an internationally recognised centre of excellence supporting continual improvement in environmental performance in the minerals industry for the benefit of all stakeholders

Mission

To provide the scientific and technological rigour and support to enable the minerals industry to enhance its environmental performance from exploration to active mine management and closure



ACMER

Australian Centre for Mining Environmental Research (ACMER)

Objectives

- To work with industry, government, researchers and the community to define key environmental issues facing the minerals industry from exploration through to mine closure.
- To focus the collective skills of researchers to produce technical solutions to key environmental issues identified by industry and relevant stakeholder groups.



Australian Centre for Mining Environmental Research (ACMER)

Objectives (cont'd)

- To ensure effective national and international transfer of research outcomes and key environmental technologies through advisory services, the conduct of short courses and workshops and the publication of research reports, workshop proceedings, manuals and handbooks.



ACMER Partners

Research Partners

- Australian Nuclear Science and Technology Organisation (ANSTO)
- CSIRO
- Curtin University of Technology
- The University of Queensland
- The University of Western Australia



ACMER Partners (cont'd)

Industry Partners and Associates

- BHP Billiton Limited
- Newmont Australia Limited
- Placer Dome Asia Pacific Limited
- Rio Tinto Limited
- WMC Resources Ltd



Other Members of the ACMER Board

- Commonwealth Department of Environment and Heritage
- Ministerial Council on Mineral and Petroleum Resources
- Queensland Government (Department of Natural Resources and Mines)
- Minerals Council of Australia



ACMER's Current Activities

- A major focus is mine closure
- Closure is considered a whole-of-mine life process typically culminating in tenement relinquishment
- Involves environmental (and other) issues from exploration to operation and decommissioning
- Note - ACMER Board supports community consultation where relevant to environmental issues



Current Research Projects and Proposals

- **Completion Criteria for Native Ecosystems**
- **Water Quality Monitoring for Ephemeral Streams**
- **Improving Efficiency of Seeding**
- **Qseed (in conjunction with EPA and others)**
- **Store-release covers for tailings and waste rock dumps**
- **Effects of longwall mine subsidence on plant production**
- **Managing waste dumps containing dispersive spoil material**
- **Innovative techniques for promoting fauna return**



ACMER Funded Research Projects

- Two PhD projects at UCQ on ecosystem development and the evaluation of open-cut mine rehabilitation
- Two Master's projects at UQ's CMLR: one on sustainable grazing and the other on long-term ecosystem development



Technology Transfer

- Short course on environmental management for EPA Officers, Rockhampton Dec. 02
- Water Quality in Ephemeral Streams and Voids, Brisbane, July 03
- Mine Closure, Canberra, August
- Management and Rehabilitation of Derelict Mines, Brisbane, November
- More details are on the web site www.acmer.com.au



Relevant Research Proposal (Community Consultation):

**Coal mining-dependent communities in
central Queensland in the context of mine
downsizing and closure: future options**



Understanding and managing social aspects of mine downsizing and closure

- **Mining industry and communities developing strategies to plan for, and manage social issues associated with mine downsizing and closure.**
- **Identifying community needs and expectations, examine current interactions and establish best forms of industry-community engagement**
- **Submitted to ACARP in 2002**
- **Decision pending outcomes of workshops in the Hunter Valley (November 2002) and Bowen Basin (tba)**



Example of a relevant current project:

**Development of rehabilitation completion
criteria for native ecosystem establishment on
coal mines in the Bowen Basin**



Background

- The Queensland mining industry is increasingly moving towards establishment of native ecosystems following mining, due to a recognition of management issues associated with grazing, and a view that re-establishment of conservation values is an appropriate objective
- This raises a number of key issues...



Key issues relevant to the establishment of native ecosystems

- Development of clear, long-term objectives
- Monitoring programs to unequivocally show objectives have been met, and achieve continuous improvement
- The use of indicators
- Long-term sustainability
- Completion criteria – when is rehabilitation completed?



Why do we need completion criteria?

- To indicate whether rehabilitation has been 'successful'
- To assist in the design of monitoring and rehabilitation programs
- To enable the company to relinquish the mining lease without incurring further liability
- For accounting purposes, to enable provisioning for closure liabilities
- To confirm that the post mining land use should be sustainable, if managed correctly - and to define post closure management requirements
- They will be increasingly required as part of the Government regulatory process



Objectives and Deliverables

- The project deliverables will be a practical set of guidelines that mining companies undertaking native ecosystem establishment can use in designing monitoring programs, and in the selection of rehabilitation completion criteria, reference or analogue sites, and key performance indicators
- Note that criteria can be performance-based, or prescriptive



The Process for Developing Completion Criteria Should Take Post-Mining Land Management Requirements Into Account

- All rehabilitated mined land will require management and, for a period, monitoring.
- Defining what needs to be done and who is responsible for doing it is a key component of any mine closure process.
- These issues should be considered as early as possible in the environmental assessment process



Post-closure management may require:

- Weed control
- Refertilising
- Control of grazing intensity/stock exclusion
- Control of public access, recreation
- Feral grazers, insect pests
- Kangaroos
- Fire management
- Maintenance of safety signs



Approach

- Review the current approach of industry leaders, Government Regulators, research and other organisations. Identify processes that have worked elsewhere
- Conduct site visits to a wide range of Bowen Basin coal mines, and detailed studies of two chosen representative mines
- Develop a draft set of guidelines and refine these through discussion with project monitors, sponsors and mining industry site representatives



For Bowen Basin coal mines, specific issues will need to be taken into account:

- Differences in climate, soils, land use, history, stakeholder views
- Don't promise the unachievable
- Technical limitations (soils, landform, species propagation)
- What really is 'best practice?'



Who's involved?

- **Funded by ACARP, Callide, Curragh and Newlands**
- **Managed by ACMER**
- **Project Leader O. Nichols**
- **ACARP Monitor J. Merritt**
- **Steering committee of sponsors**
- **Literature review CMLR**
- **Expert input from Randal Hinz, James Elsol and Bevan Emmerton**
- **Liaison with all interested coal mining companies**



**We will also take into account views of
other stakeholders, including regulators
and neighbours**



Time Lines

- Commenced on 1 March
- Meeting in July following site visits
- Meeting in October to present draft final report
- Proposed completion date mid-November



Feedback Welcome

Dr. Owen Nichols

ACMER Research Program Manager

Tel. (07) 3327 4753 Mob. 0417 188 321

acmer.research@uq.edu.au



ACMER

Mining and the Community

- **Improved methods to quantify and ameliorate the effects of mining on neighbouring communities**
- **Improved quantification of the socio-economic benefits of mining to help understand the consequences, both positive and negative, of developing a new mine, or the closure of an existing mine or mines**
- **A determination of the factors necessary to improve the understanding of the role of the coal mining industry in the community.**

Effective Closure and Lease Relinquishment

- **Determine the key parameters for establishing sustainable post mining land uses such as grazing, native eco-systems and forestry.**
- **Development of robust key performance indicators for rehabilitation and guidelines for pre and post closure monitoring of rehabilitated land.**
- **Evaluate the options for minimising the value of residual mining voids, ensuring their safety and stability, and maximising their utility in the community.**

Future

- > Strong competition for funding
- > Ethereal results a concern
- > Growing recognition of value and need
- > Sustainability is more than a fashionable word

Examples

- > C10031 Safety: What Works Best?
- > C10006 Scoping Study Fitness for Duty
- > C10032 Development of a Risk Management Tool for Shiftwork
- > C11062 GAP Workshop

Responding to Sustainability Drivers

- > Investing in Greenhouse Gas Mitigation
- > Producing a safer work environment
- > Realising the Imperative of positive community relationships

ACARP

Australian Coal Association Research Program

Size

- > 160 current projects
- > All aspects of coal production and marketing
- > Mine site Focus

ACARP

Australian Coal Association Research Program

- > Established to develop technologies that lead to the safe sustainable production and use of coal
- > Funded by a 5¢ per tonne levy
- > Managed by Australian coal producers
- > Spending \$10 million p.a.

APPENDIX B — CONTACT DETAILS

Participants' contact details

Title	Name	Surname	Position	Association	Address	Town	Phone	E-mail
Researchers								
Dr	Fiona	Solomon	Research Fellow	CSIRO Minerals	PO Box 312	Clayton South Vic 3169	03 9545 8893	fiona.solomon@csiro.au
Dr	Evie	Katz	Social Scientist	CSIRO Minerals	PO Box 312	Clayton South Vic 3169	03 9545 8877	evie.katz@csiro.au
Mr	Rhys	Worrall	Scientific Officer	Exploration and Mining Division	PO Box 883	Kenmore QLD 4069	3327 4459	rhys.worrall@csiro.au
Dr	Gail	Kelly	Social Scientist	Urban & Regional Futures	PO Box 284	Canberra ACT 2601	02 6242 1600	gail.kelly@csiro.au
Dr	Stewart	Lockie	Director	Centre for Social Science Research	Central Queensland University	CQ Mail Centre Qld 4702	4930 6539	s.lockie@cqu.edu.au
Assoc Prof.	Helen	Waite	Senior Research Officer	Queensland Centre for the Prevention of Domestic & Family Violence	PO Box 5606	Mackay Qld 4741	4940 7474	h.waite@cqu.edu.au
Dr	Susan	Rees	Postdoctoral Research Fellow	Queensland Centre for the Prevention of Domestic & Family Violence	PO Box 5606	Mackay Qld 4741	4949 7833	s.rees@cqu.edu.au
Prof	Bob	Miles	Executive Director	Institute for Sustainable Regional Development	Central Queensland University	CQ Mail Centre Qld 4702	4930 9053	r.miles@cqu.edu.au
Prof.	David	Brereton	Director	Centre for Social Responsibility in Mining	University of Queensland	Qld 4072	3346 9223	d.brereton@epsa.uq.edu.au

Dr	Lynda	Herbert-Cheshire	Post Doctoral Research Fellow	School of Social Science	University of Queensland	Qld 4072	3365 2383	l.herbertcheshire@uq.edu.au
Dr	Owen	Nichols	Research Program Manager	Australian Centre for Mining Environmental Research (ACMER)	PO Box 883	Kenmore Qld 4069	3327 4753	acmer.research@uq.edu.au
Dr	John	Rolfe	Assoc. Prof. in Regional Econ. Development	Faculty of Business and Law & Centre for Environmental	PO Box 197	Emerald Qld 4720	4980 7081	j.rolfe@cqu.edu.au
Mr	Ross	Barker	Manager	Planning Info & Forecasting Unit, Dept Local Govt & Planning	PO Box 31	Brisbane Albert Street Qld 4002	3237 1153	ross.barker@dlgp.qld.gov.au
Ms	Kerry	Laughton	Researcher	Bureau of Transport & Regional Economics	GPO Box 501	Canberra ACT 2601	02 6274 6979	kerry.laughton@dotars.gov.au
Ms	Alison	Taylor	Principal Demographer	Planning Information & Forecasting Unit	PO Box 31	Brisbane Albert Street Qld 4002	3235 4044	alison.taylor@dlgp.qld.gov.au
Mr	John	Merritt	Senior Environmental Advisor	Anglo Coal (Capcoal Management) Pty Ltd			4985 0335 0417 334 131	john.merritt@Capcoal.com.au

Facilitator

Ms	Helen	Cheney	Senior Research Fellow	Institute for Sustainable Futures	University of Technology	PO Box 123 Broadway NSW 2007	02 9209 4350	Helen.Cheney@uts.edu.au
----	-------	--------	------------------------	-----------------------------------	--------------------------	------------------------------	--------------	-------------------------

Observers

Mr	Roger	Wischusen	Manager	Australian Coal Association Research Program (ACARP)	PO Box 7148	Riverside Centre Qld 4001	3229 7661	roger@acarp.com.au
Ms	Lisa	Pollard	Principal Policy Officer	Department of the Premier and Cabinet	PO Box 185	Brisbane Albert Street Qld 4002	3224 5591	lisa.pollard@premiers.qld.gov.au

Ms	Fiona	Martin	Principal Advisor	Office of Regional Development	GPO Box 168	Albert Street Brisbane Q 4002	3225 8010	fiona.martin@sd.qld.gov.au
Mr	Keith	Barker	Representative	Queensland Mining Council	Level 13, 133 Mary Street	Brisbane Qld 4000	(0417) 646 715	keithb@qmc.com.au
Cr	Peter	Maguire	Mayor	Emerald Shire Council	65 Egerton Street	Emerald Qld 4720	4982 8335	mayor@emerald.qld.gov.au
Mr	Roger	Wischusen	Manager	Australian Coal Association Research Program (ACARP)	PO Box 7148	Riverside Centre Qld 4001	3229 7661	roger@acarp.com.au
Ms	Lisa	Pollard	Principal Policy Officer	Department of the Premier and Cabinet	PO Box 185	Brisbane Albert Street Qld 4002	3224 5591	lisa.pollard@premiers.qld.gov.au

**Bowen Basin Partnerships Project
Management Group**

Mr	Frank	Gilbert	Regional Manager	Mackay/Whitsunday Region	PO Box 858	Mackay Qld 4740	4967 4443	frank.gilbert@premiers.qld.gov.au
Mr	Patrick	Noonan	A/Strategic Projects Manager	Mackay/Whitsunday Region	PO Box 858	Mackay Qld 4740	4967 1020	patrick.noonan@premiers.qld.gov.au
Mrs	Louise	McLennan	A/Executive Support Officer	Mackay/Whitsunday Region	PO Box 858	Mackay Qld 4740	4967 1022	louise.mclennan@premiers.qld.gov.au
Mr	Bill	Higham	Regional Manager	Central Queensland Region–Rockhampton	PO Box 737	Rockhampton Qld 4700	4938 4218	bill.higham@premiers.qld.gov.au
Mr	Arthur	Hunt	Principal Projects Manager	Central Queensland Region–Rockhampton	PO Box 737	Rockhampton Qld 4700	4938 4474	arthur.hunt@premiers.qld.gov.au
Mr	Jim	Grundy	Regional Manager Mines	Department of Natural Resources and Mines	PO Box 257	Rockhampton Qld 4700	(0417) 770 485	GrundyJ@nrm.qld.gov.au
Mr	John	Morris	Director	State Development Centre	PO Box 710	Mackay Qld 4740	4967 1099	john.morris@sd.qld.gov.au

Mr	Stephen	Schwarten	Senior Policy Officer	Office of Rural Communities	CDE D32	Rockhampton Qld 4700	4921 4575	schwartzs@rcc.qld.gov.au
Ms	Janet	Benson	Principal Policy Officer	Regional Strategy and Policy	PO Box 185	Brisbane Albert Street Qld 4002	3225 2204	janet.benson@premiers.qld.gov.au

Unable to attend

Ms	Paula	Thomson	Manager	Department of the Premier and Cabinet	PO Box 185	Brisbane Albert Street Qld 4002	3404 3339	paula.thomson@premiers.qld.gov.au
Dr	Martin	Bell	Demographer	Qld Centre for Population Research	University of Queensland	Qld 4072	3365 1111	martin.bell@uq.edu.au
Ms	Maree	Franettovich	Research Consultant	Centre for Social Science Research	Central Queensland University	CQ Mail Centre Qld 4702	(0409) 894 131	cabochon@mackay.net.au
Dr	Judith	Winternitz	Deputy Executive Director	Bureau of Transport & Regional Economics	GPO Box 501	Canberra ACT 2601	02 6274 6181	judith.winternitz@dotars.gov.au
Dr	Neil	Paulsen	Lecturer	School of Business	University of Queensland	Qld 4072	3381 1047	n.paulsen@business.uq.edu.au
Dr	Lee	Di Milia	Senior Lecturer	School of Management	Central Queensland University	CQ Mail Centre Qld 4702	4930 9422	v.dimilia@cqu.edu.au

APPENDIX C — FINDINGS OF THEMATIC GROUPS

<p>NETWORK</p> <ul style="list-style-type: none"> ▪ local ▪ manageable scope ▪ website - government ▪ update every quarter ▪ content <p>name of project researcher summary link to other website social research similar areas and comparative studies not included</p> <p>UNDERSTANDINGS Structural change in the area creating friction and opportunities opportunity to make inter-sectoral links especially because of the special relationship with coal industry.</p> <p>STEPS One website with a small project team: David Arthur Hunt Stewart Lisa Pollard Mining Industry CSIRO</p>	<p>LINKAGES</p> <ul style="list-style-type: none"> ▪ email list ▪ website ▪ ISRD as an organiser? <p>Target</p> <ul style="list-style-type: none"> ▪ mine site ▪ people at this workshop <p>Action Approach Bob Miles to set up web pages under ISRD?</p> <p>FORUM</p> <ul style="list-style-type: none"> ▪ a repeat of Moranbah forum in 2003 not covering old ground ▪ involvement of groups in Moranbah? as a way of building network ▪ repeat planning session each year <p>WARNING Don't expect the group to do to much – informal network a dedicated group.</p> <p>GAPS IN RESEARCH</p> <ul style="list-style-type: none"> ▪ involvement of local government no regional organisation ▪ mining companies ▪ development groups ▪ planning groups <p>GAPS IN RESEARCH</p> <ul style="list-style-type: none"> ▪ ageing workforce, health issues ▪ ethnography studies of communities ▪ links between social issues and mining community patterns (eg live on the course, worker productivity. <p>OUTCOMES WANTED</p> <ul style="list-style-type: none"> ▪ identifying and agreeing on what are priority issues ▪ ensuring that there is not overlapping activities ignorant of each other 	<p>KEY TAKEAWAYS Understanding and Linkages/Networking</p> <p>NEXT STEP</p> <p>Continue Development of Understanding</p> <ul style="list-style-type: none"> ▪ initial Stages of Progress, there is more to be understood <p>Draw Industry into Social Framework</p> <ul style="list-style-type: none"> ▪ funded Scoping Study ▪ showcasing at CEO level <p>Clarify information needs</p> <ul style="list-style-type: none"> ▪ industry ▪ justification for Govt Planning ▪ direct industry effects <p>Economic diversification</p> <p>Community consultation including unions</p> <p>FUTURE DIRECTIONS</p> <ul style="list-style-type: none"> ▪ uniqueness of mining communities v rural/regional or other resource dependence communities ▪ who is the audience for the research ▪ importance of applied research ▪ need for a more integration(partnership) approach: <ul style="list-style-type: none"> - Government (three tiers): industry, community, researchers eg: ARC Linkage. ▪ importance of Clearing House ▪ collating previous/current research, literature review/library ▪ need for closer dialogue with industry
<p>ISSUES IN FORMING PARTNERSHIPS who owns it? who controls it? what will the outcomes be?</p>		

APPENDIX D — RELEVANT WEBSITES

Websites relevant to Bowen Basin

Research Organisations	URL
Australian Coal Association Research Program (ACARP)	http://www.acarp.com.au/
Australian Centre for Mining Environmental Research (ACMER)	http://acmer.com.au/
Bureau of Transport and Regional Economics	http://www.btre.gov.au/
CQU – Institute for Sustainable Regional Development	http://www.isrd.cqu.edu.au/isrd/home.htm
CQU - Centre for Social Science Research	http://www.ahs.cqu.edu.au/cssr/
CQU - Qld Centre for the Prevention of Domestic and Family Violence	http://www.noviolence.com.au/
CQU – Faculty of Business and Law	http://www.bus.cqu.edu.au/
CSIRO Minerals	http://www.minerals.csiro.au/
CSIRO Minerals Sustainable Development	http://www.minerals.csiro.au/sd/
CSIRO Exploration & Mining Sustainable Mining Group	http://www.em.csiro.au/sustainable_mining/aboutus/generalinfo/index.html
CSIRO Sustainable Ecosystems	http://www.cse.csiro.au/
UQ - Centre for Mined Land Rehabilitation (CMLR)	http://www.cmlr.uq.edu.au/
UQ - Centre for Social Responsibility in Mining (CSRM)	http://www.csrn.uq.edu.au/
UQ – Social Indicators for Mining Associated Communities (SIMAC)	http://www.geosp.uq.edu.au/qcpr/

	http://www.csrn.uq.edu.au/index.html?id=5694&pid=5693
UQ - School of Social Science	http://www.ansoc.uq.edu.au/
UTS – Institute for Sustainable Futures	http://www.isf.uts.edu.au/
Mining Organisations	
Australian Mines and Metals Association (AMMA)	http://www.amma.org.au/
Construction, Forestry, Mining and Energy Union (CFMEU)	http://www.cfmeu.asn.au/
International Institute for Environment and Development (IIED) - Mining, Minerals and Sustainable Development Project (MMSD)	http://www.iied.org/mmsd/
Mineral Policy Institute	http://www.mpi.org.au/
Minerals Council of Australia (MCA)	http://www.minerals.org.au/
Queensland Mining Council (QMC)	http://www.qmc.com.au/main.htm
World Coal Institute	http://www.wci-coal.com/web/bl_content.php?menu_id=0.0
Companies	
Anglo Coal (Moranbah North, German Creek, Callide)	http://www2.recruitmanager.net/anglocoal/publicjobs/index.cfm
Apollo Resources (Ebenezer)	http://www.apollo.com.au/
BHP Billiton Mitsubishi Alliance (Goonyella/Riverside, Saraji, Peak Downs, South Walker Creek, Blackwater, South Blackwater/Kemare, Norwich Park, Gregory/Crinum)	http://bmacoal.com/bccom/export/index.html
Burton Coal (RAG Coal/Thiess JV - Glenden)	http://www.mining-technology.com/projects/burton/

Centennial Coal Company (Cook Resource Mining - Cook)	http://www.centennialcoal.com.au/cmsaxs/main/cenCoalHomePage.asp
Curragh Coal (Curragh)	http://www1.wesfarmers.com.au/company.asp?ID=5
Ensham Resources (Ensham)	http://www.ensham.com.au/
Foxleigh (Foxleigh)	http://www.ame.com.au/mines/co/Foxleigh.htm
Jellinbah Resources (Jellinbah East)	http://www.jellinbah.com.au/
Macarthur Coal (Australian Premium Coals - Coppabella)	http://www.macarthurcoal.com.au/
M.I.M. Coal Operations (NCA JV - Collinsville, Newlands, Oaky Creek, Rolleston)	http://www.mim.com.au/coal.html
Moura Coal Mining (Anglo Coal/Mitsui JV - Moura)	http://www.mining-technology.com/projects/moura/
New Hope Corporation (Jeebropilly, New Oakleigh)	http://www.newhopecoal.com/
Pacific Coal (Blair Athol, Meandu, Kestrel)	http://www.pacificcoal.com.au/
RAG Australia Coal (North Goonyella)	http://www.rag-coalinter.de/profil/eprofil101b.htm
Xstrata plc	http://www.xstrata.com/
Yarrabee Coal(Yarrabee) – possible takeover by Aulron Energy	http://www.mips1.net/mgjr.nsf/Current/85256ACE0035918D42256D1F0061E21E?OpenDocument
Qld Government Departments	
Natural Resources and Mines – Buying Qld Coal	http://www.nrm.qld.gov.au/mines/qtherm/buying.html
Natural Resources and Mines - Simtars	http://www.nrm.qld.gov.au/simtars/

Department of the Premier and Cabinet	http://www.premiers.qld.gov.au/
Dept of Local Government and Planning – Planning Information and Forecasting	http://www.dlgp.qld.gov.au/planning/information_and_forecasting/
Dept of State Development – Office of Regional Development	http://www.sd.qld.gov.au/dsdweb/htdocs/global/content.cfm?id=538
Regional Organisations	
Central Highlands Development Corporation	http://www.chdc.com.au/chdc/index.htm
Central Highlands Regional Information Service	http://www.centralhighlands.com.au/chris/index.htm
Central Highlands Regional Resource Use Planning Co-operative	http://www.centralhighlands.com.au/CHRRUP/index.html
Dawson Valley Development Association	http://www.dawsonvalley.org/
Fitzroy Basin Association	http://www.fba.org.au/
Mackay Whitsunday Regional Economic Development Organisation	http://www.mwredc.org.au/
Rockhampton Regional Development Ltd	http://www.sirisbiz.com.au/
Local Government	
Banana Shire Council	http://www.banana.qld.gov.au/
Bauhinia Shire Council	
Belyando Shire Council	http://www.belyando.qld.gov.au/
Bowen Shire Council	http://www.bowen.qld.gov.au
Broadsound Shire Council	

Duaringa Shire Council	
Emerald Shire Council	http://www.emerald.qld.gov.au/
Mackay City Council	http://www.mackay.qld.gov.au/
Nebo Shire Council	http://www.nebo.qld.gov.au/
Peak Downs Shire Council	http://www.peakdowns.qld.gov.au/
Rockhampton City Council	http://www.rcc.qld.gov.au/
CQ – A New Millennium	http://www.dlqp.qld.gov.au/planning/projects/cq/
WHAM 2015	http://www.dlqp.qld.gov.au/planning/projects/wham/
Individuals	
Mr Keith Barker	http://www.qmc.com.au/about-staff.htm
Dr Martin Bell	http://www.geosp.uq.edu.au/qcpr/Homepage/staff.htm
Professor David Brereton	http://www.csrn.uq.edu.au/index.html?id=5266&pid=5263
Ms Helen Cheney	http://www.isf.uts.edu.au/whoweare/helen.html
Dr Lee Di Milia	http://www.bus.cqu.edu.au/Faculty/STAFF/dimiliav/
Dr Evie Katz	http://www.minerals.csiro.au/sd/Body_People.htm
Dr Stewart Lockie	http://www.ahs.cqu.edu.au/ahsfaculty/psychsoc/staff/stewart_lockie2.htm
Professor Bob Miles	http://www.isrd.cqu.edu.au/isrd/staff/Bob.htm

Ms Caroline Morrissey	http://www.qmc.com.au/about-staff.htm
Mr Neil Paulsen	http://www.business.uq.edu.au/staff/academics/paulsen.phtml
Dr John Rolfe	http://www.bus.cqu.edu.au/Faculty/STAFF/rolfej/
Dr Fiona Solomon	http://www.minerals.csiro.au/sd/Body_People.htm
Associate Professor Helen Waite	http://www.ahs.cqu.edu.au/ahsfaculty/psychsoc/staff/helen_waite2.htm
Mr Rhys Worrall	http://www.em.csiro.au/sustainable_mining/aboutus/people/rhysworrall/
Publications	
The Struggle for Time report - Department of Infrastructure, Energy and Resources, Tasmania.	http://www.wst.tas.gov.au/wstpublish/node/strugglefort-23.htm
Fifty Families report - ACTU	http://www.actu.asn.au/public/campaigns/reasonable/fiftyfamily.html
The Effect of Long Hours on Family and Community Life - ACTU	http://www.actu.asn.au/public/campaigns/reasonable/pocock.html
Extended Working Hours in Australia: Counting the Cost - Department of Industrial Relations, Queensland	http://www.ir.qld.gov.au/publications/workinghours/report.pdf
Maria Donald & Robert Bush (1998) The Health and Well-Being of Young People in Moranbah Rapid Appraisal - October 1997	
Colin Huntly (1996/97?) Social and Cultural Life in Mining Communities Curtin University	