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How do mining towns contribute community value?: Roxby Downs and Leigh Creek

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Abstract

The literature is replete with examples of communities which have suffered significant impacts from nearby mine operations and their subsequent closure. Increasingly, there is awareness amongst the International and Australian mining peak bodies for the need to plan for enduring value for communities that are reliant on nearby mines. Mining companies have embraced the concept of corporate social responsibility, endeavouring to maintain a 'social license to operate'. The concepts of enduring value and mine lifecycle planning may help to ensure companies meet this objective and communities endure beyond mine closure.

This paper presents the initial findings of research undertaken in Roxby Downs, Leigh Creek and surrounding communities in the North-east of South Australia. It explores the level and nature of the current economic and social dependence the surrounding communities have on these major centres. The paper also highlights the local residents' views of the amenity and the future of both centres, exploring the potential resilience of the outlying communities in the event of downsizing in the mining industry.

The findings indicate a high dependency on Leigh Creek by neighbouring communities along with a significant negative sentiment about the future viability of Leigh Creek without an expansion of population and continuation of mining. Furthermore, a significant majority of respondents felt there was no future for Roxby Downs post mining. The findings also indicate the communities surrounding Roxby Downs are yet to develop the dependency on this major centre as is evident in the case of Leigh Creek. The negative sentiment from respondents over the future of both major centres suggests planning will need to be undertaken to diversify the economic base, and particularly in Leigh Creek with ideally a need to increase the population, to ensure the enduring value of these major centres to the surrounding communities.

Introduction

This paper presents the initial findings of research undertaken in Roxby Downs, Leigh Creek and surrounding communities in the north-east of South Australia. The research is part of a wider Cooperative Research Centre for Remote Economic Participation (CRC-REP) project examining enduring community value from mining. It will examine the utilisation of both towns' services by residents, along with respondents' views of the amenity and future of both communities.

To mitigate some of the negative impacts caused by the boom/bust nature of mining, this paper argues that whole of mine lifecycle planning needs to be undertaken. The focus of the lifecycle planning should, in part, ensure enduring value from the mining operations to the surrounding communities. (Bhattacharya, 2007; Davies, et al., 2012; Veiga, et al., 2001). The International Council for Mining and Metals and the Minerals Council of Australia guidelines recommend that mineral developments plan to minimise economic and social impacts on dependent communities throughout the mine lifecycle. Failure to work with communities in the planning for a mining operation can lead to the community withholding the company's social license to operate (International Council for Mining and Metals, 2003; Minerals Council Australia, 2006). Similarly, unplanned mine shutdowns can have a significant effect on community sentiment and can negatively impact the company's social license to operate (McDonald, et al., 2012; Pini, et al., 2010).

There are numerous examples in Australia and overseas where communities established to support mining operations have experienced negative impacts from mining booms and subsequent downturns or mine shutdowns. Some of the impacts from mining booms are increased costs of living through higher house prices, social disruptions through lower income families being displaced from their community and increasing male populations. Other disruptions include local non-mine employers being unable to recruit workers due to high local housing costs, or the loss of qualified workers to the mining industry (Carrington & Hogg, 2011; Carrington & Pereira, 2011; Petkova, et al., 2009; Rolfe, et al., 2007). Whereas, during a downturn or as a result of mine closure the impacts are a sudden reduction in the value of housing, closure of businesses developed to support the mine and resultant decreased population, social disruption as families move to find new employment in other mines and unused infrastructure deteriorating or being vandalised (Centre for Sustainabilty in Mining and Industry, 2010; Browne, et al., 2011; Pini, et al., 2010). These impacts are not specifically related to communities established to support a mine; they also impact existing communities that have had mines established nearby or have become service centres or residential communities for Fly-In Fly-Out workers.

Methodology

A survey was developed to ascertain the level of use and potential dependency of surrounding communities on Leigh Creek and Roxby Downs for a range of goods and services. Further questions in the survey were developed to build a view of the amenity and the perceived future of both communities by the respondents. A paper version of the survey was distributed in the communities surrounding Leigh Creek and Roxby Downs while the link to the online survey via survey monkey was also provided in the information page for respondents. Each survey included a reply paid envelope addressed to the researcher. The paper surveys were distributed via local progress associations and post office mail box drops. Returned paper surveys were manually coded into survey monkey by the researcher to create one central database of results because of the interface's superior analytical and presentational capability.

In Leigh Creek flyers were initially distributed via town services and the progress association with the information also included in the local newsletter. Follow-up distribution of the flyer to all households was undertaken within 12 months of the original distribution of the survey. The Facebook page of the local café/information centre was used to distribute the information. Aboriginal community researchers from Ninti One Pty Ltd were engaged to conduct the surveys within the local Aboriginal communities. The Aboriginal researchers used Isurvey on Ipads to record the surveys. These results were later coded into survey monkey by the researcher.

For Roxby Downs advertisements promoting the project and survey were placed in a local newspaper, The Roxby Monitor and during a local market day flyers promoting the survey were distributed. The Roxby Council placed information on the project, and a link to the survey, on their community Facebook page twice at an interval of six months. The project was further promoted via an interview on the ABC Radio South Australia North and West morning program. A link to the survey was provided on the program's Facebook page.

Table 1 lists the communities within the Leigh Creek and Roxby Downs hinterlands where survey respondents were located. These communities fit within a selected 140 kilometre radius around both Leigh Creek and Roxby Downs. This radius was selected as it incorporated communities within a reasonable driving distance of Roxby Downs and Leigh Creek and avoided an overlapping both towns (see Figure 1).

Table 1: Communities within 140km radius of centres.

Andamooka	Lyndhurst
Beltana	Maree
Blinman	Neppabunna
Copley	Port Augusta
Iga Warta	Woomera

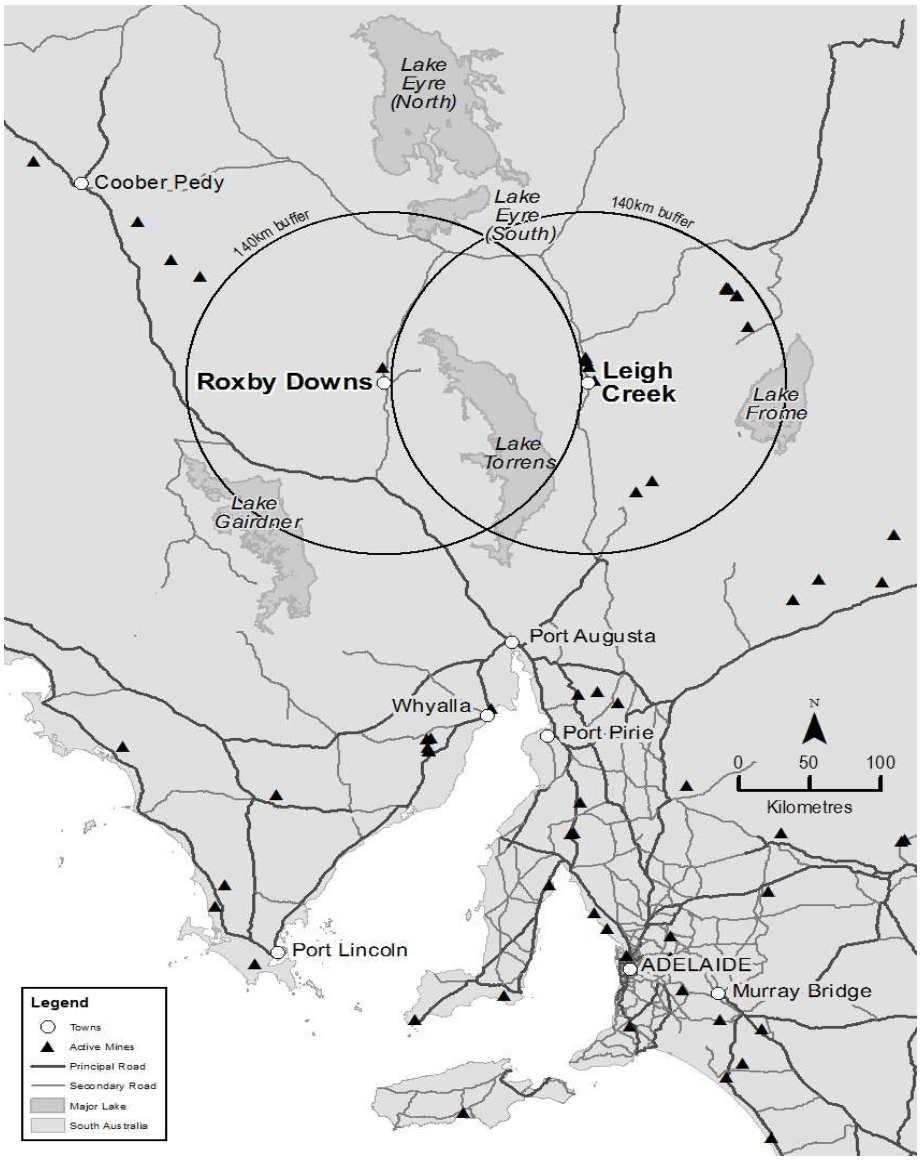

Figure 1. Location of Roxby Downs and Leigh Creek with defined radius marked.

Discussion

There are some significant differences between Leigh Creek and Roxby Downs. Leigh Creek, established in the 1940s, is a closed residential community, meaning that a resident or member of the household is required to work for the mine or a service supporting the town for a minimum of 20

hrs per week (Collins Anderson Management, 2007; Liz's Open Cut Cafe, 2011). However, the township services are open for use by residents of the surrounding communities.

Roxby Downs, by contrast, is an open community and residents are permitted to purchase local property. When Roxby Downs was established in the early 1980s the neighbouring communities of Andamooka and Woomera had existing services. However, at this time Woomera was still a fully closed community, with no public access, supporting the military and rocket testing range in the Woomera prohibited area.

As a service centre and the largest population centre in the far north-east of South Australia, Leigh Creek provides the following public and private services to the town and surrounding communities:

- Education from Pre-School to Year 12
- Selected TAFE courses
- Public access to the school library
- Emergency Services, Police, Ambulance, Fire and State Emergency Service
- Hospital, General Practice surgery and Chemist
- Hairdresser
- Post Office and banking agency
- Newsagency
- Supermarket
- Visiting Dentist and Physiotherapist
- Service station and mechanic
- Takeaway food outlets, hotel and bistro
- Olympic sized public swimming pool, movie theatre and sporting fields

The closest services of an equivalent level are located in Quorn (220 kilometres south). There are no services available east from Leigh Creek to beyond the New South Wales border. To the north only basic services are available in Marree until beyond the Queensland and Northern Territory border. The Leigh Creek desalination plant also supplies the communities of Copley and Lyndhurst from the Leigh Creek water supply at Aroona Dam.

Leigh Creek's longevity and focus as a service centre has ensured that the surrounding communities became dependent on it for these services.

The survey results highlight the level of dependency that the hinterland communities have upon Leigh Creek as a result of its role as the service centre for the region (see Table 2). As highlighted in Table 2, a higher percentage of residents from neighbouring communities utilise Leigh Creek for groceries and medical services than the residents of the town itself. Survey respondents indicated that they utilise Port Augusta, (260 kilometres south), for services they cannot access in Leigh Creek or at an alternative service centre. If Leigh Creek was unable to fulfil its role as a major service centre, residents of the hinterland could be faced with travelling to Quorn or Port Augusta to access essential public and private services.

Table 2. Use of services in Leigh Creek as a percentage of respondents.

Leigh Creek region	Hinterland	Town	Combined
Groceries	94.3	92.6	93.8
Fuel	77.1	88.9	80.4
Medical	90.0	66.7	66.0
Govt. services	67.1	92.6	74.2

The communities surrounding Roxby Downs have not yet built the level of dependency seen in the communities surrounding Leigh Creek (see Table 3). In part, this is due to there being operational supermarkets in Woomera and Andamooka along with area schools. However, there is the potential of the services provided within Woomera and Andamooka diminishing, thus increasing the level of these communities' dependency on Roxby Downs. The Woomera hospital has recently closed (Australian Broadcasting Corporation, 2014), and one of Andamooka's hotels and service station /roadhouse has also recently closed (Roxby Downs Sun, 2014). However, for the Andamooka services, the critical reason given for the closure of the services was the decision of BHP Billiton not to proceed with the open cut expansion at Olympic Dam (Roxby Downs Sun, 2014).

Table 3. Use of services in Roxby Downs as a percentage of respondents.

Roxby Downs	Hinterland	Town	Combined
Groceries	83.3	100	97.4
Fuel	50.0	95.3	88.2
Medical	66.7	85.9	82.9
Govt. services	16.7	87.5	76.3

There were some differences as well as a major similarity in the respondents' views of Leigh Creek (Figure 2) and Roxby Downs (Figure 3). A higher percentage of respondents utilising Roxby Downs reported that the town provided ample opportunities for them to lead fulfilling lives compared to Leigh Creek. There were similar differences in relation to the variety and number of job opportunities, with Roxby Downs being regarded more positively than Leigh Creek. Similarly, the Roxby Downs respondents indicated a more positive view of the future in relation to population growth compared to Leigh Creek respondents. These differences may be explained by the significant differences in population size and support services that come with an increase in the population. At the 2011 Census, Roxby Downs had a usual resident population of 4,702 compared to Leigh Creek with a usual resident population of 505 (Australian Bureau of Statistics, 2013a, 2013b). However, the striking similarity between Roxby Downs and Leigh Creek is the majority of respondents who consider the community to have no future without mining. This indicates a challenge for future planning for the ongoing viability of both towns and their dependent communities.

This challenge is further highlighted by 100% (n=30) of the survey respondents indicating that there is no community involvement in future planning of the mine operations. In addition, 90% (n=30) of the respondents indicated they received little or no information about the future of the mine than was generally available via the media, the exceptions were the respondents working in higher level positions in the mine who obtained the information as part of their role. Another theme emerging from the interviews was respondents' general lack of long-term commitment to town and community life. Interviewees stated that they resided in either Roxby Downs or Leigh Creek for a mine related job and anticipated that the life of the community was related to the future of the mine, particularly in Leigh Creek where their residency was dependent upon their employment. In the case of Roxby Downs a majority of the respondents were there for a set period with certain goals or had no intention of remaining post retirement. This view has the potential to decrease the opportunities for intergenerational residency to occur which can be a crucial aspect of developing enduring value for a community. It also further highlights the need for a town to have a diverse economic base to enable residents to have more diverse employment opportunities to lower the perception that it is a mine only community.

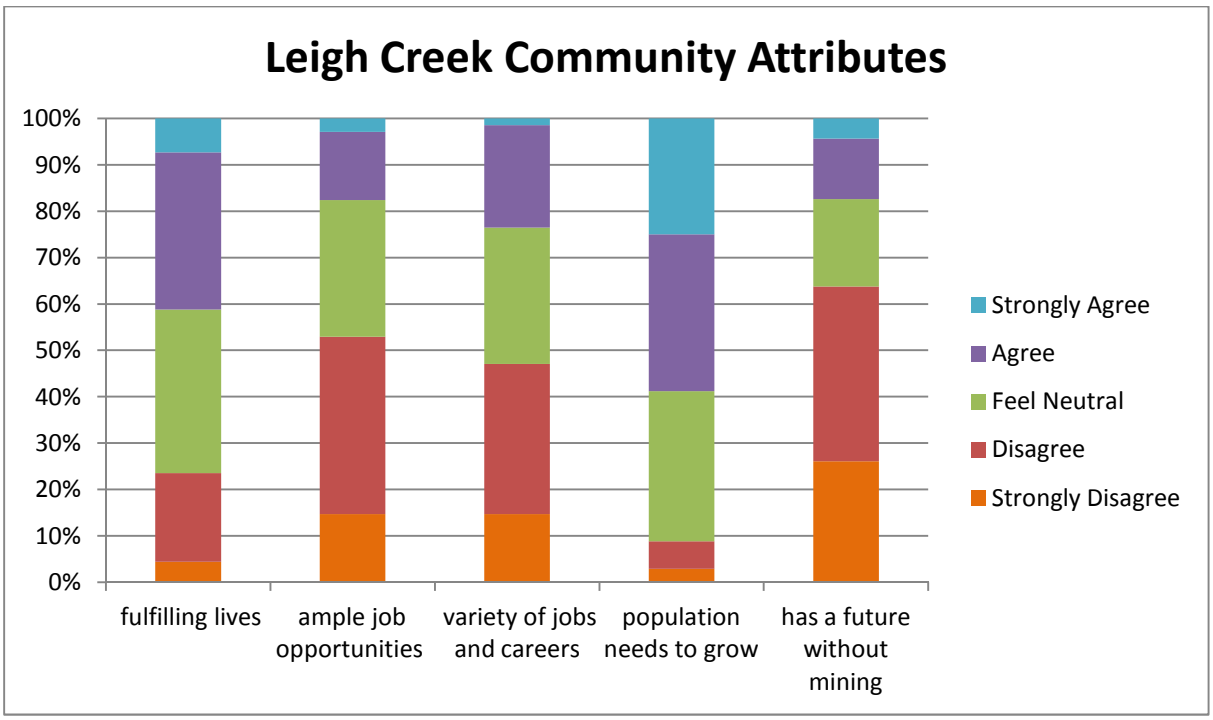

Figure 2. View of Leigh Creek by all respondents as a percentage.

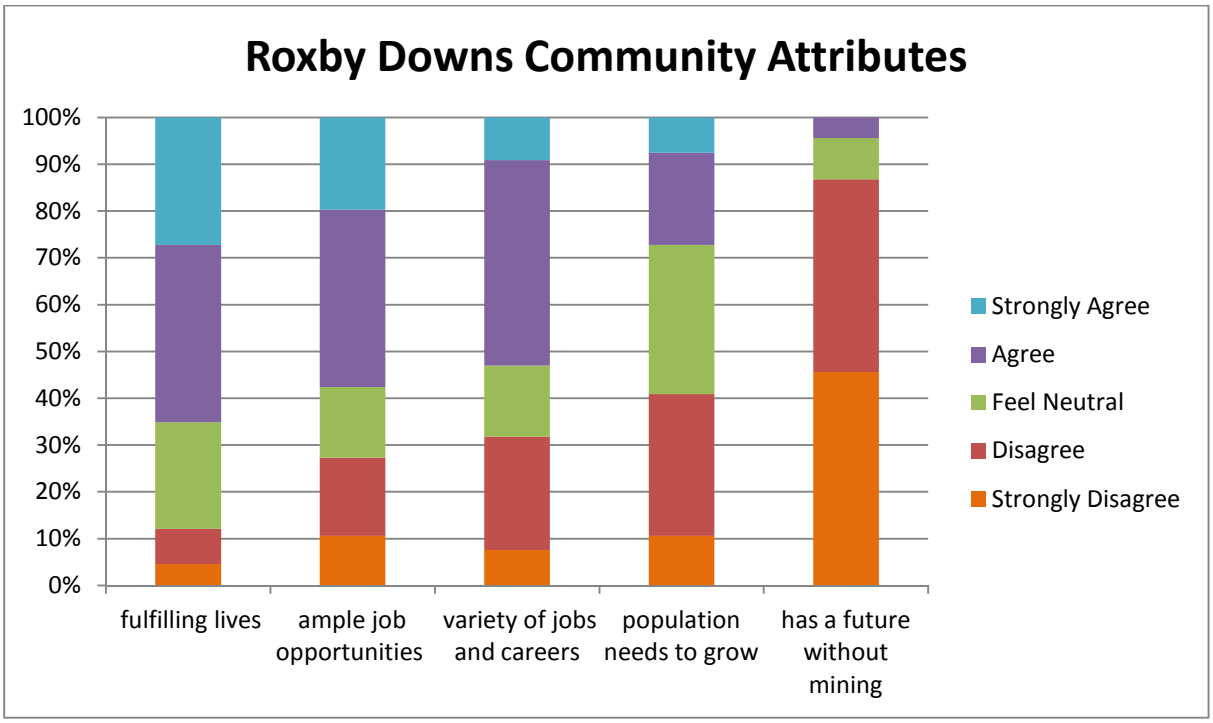

Figure 3. View of Roxby Downs by all respondents as a percentage.

Conclusion

The survey findings highlight the very high dependency upon Leigh Creek by hinterland communities; however, the hinterland communities of Roxby Downs do not have a similar high level of dependency. With Leigh Creek coal mine nearing the end of its lifecycle, urgent consideration needs to be given to planning for the enduring future of the town and ongoing services to the communities that have become dependent on Leigh Creek.

Whilst not so time critical as Leigh Creek, planning is also required to ensure that Roxby Downs is able to develop a diversified economic base to assist in minimising the peak and troughs inherent to the mining industry. The planning needs to consider the future of Andamooka given its close proximity to Roxby Downs and its use as a residential satellite of Roxby Downs to ensure it does not become fully dependent upon its larger neighbour.

The negative view of the future of both communities by the respondents provides a baseline sentiment for Government, mining companies and communities in planning. To generate an enduring value for these communities, all parties need to consult and work together to develop a vision for both communities.

References

Australian Broadcasting Corporation. (2014). Woomera hospital closes as funding ends Retrieved 18/08/2014, from http://www.abc.net.au/news/2014-06-03/woomera-hospital-closes-as-funding-ends/5496124

Australian Bureau of Statistics. (2013a). 2011 census community profiles: Leigh Creek (SA) -basic community profile Retrieved 20/06/2013, from http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/communityprofile/SSC40363?opendocument&navpos=230

Australian Bureau of Statistics. (2013b). 2011 census community profiles: Roxby Downs - time series profile Retrieved 20/06/2013, from http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/communityprofile/406021143?opendocument&navpos=230

Bhattacharya, J. (2007). *Principles of mine planning*. Allied Publishers, New Delhi.

Browne, A., Stehlik, D. and Buckley, A. (2011). Social licences to operate: for better not for worse; for richer not for poorer? The impacts of unplanned mining closure for “fence line” residential communities. *Local Environment 16*(7), 707-725.

Carrington, K. and Hogg, R. (2011). Benefits and burdens of the mining boom for rural communities. *Human Rights Defender 20(2), 9-11.*

Carrington, K. and Pereira, M. (2011). Assessing the social impacts of the resources boom on rural communities. *Rural Society 21*(1), 2-20.

Centre for Sustainabilty in Mining and Industry. (2010). *The socio economic aspects of mine closure and sustainable development: Literature overview and lessons for the socio-economic aspect of closure.* Report 1 of 2. Centre for Sustainability in Mining and Industry, Johannesburg.

Collins Anderson Management. (2007). *Leigh Creek - regional service centre report*. Northern Regional Development Board, Adelaide.

Davies, J., Maru, Y. and May, T. (2012). *Enduring community value from mining: conceptual framework*. Ninti One Limited, Alice Springs.

International Council for Mining and Metals. (2003). *10 principles of sustainable development performance*. International Council for Mining and Metals, London.

Liz's Open Cut Cafe. (2011). Leigh Creek visitor information outlet - Town history Retrieved 22/01/2013, from http://www.loccleighcreek.com.au/page4.php

McDonald, P., Mayes, R. and Pini, B. (2012). Mining work, family and community: A spatially-oriented approach to the impact of the Ravensthorpe nickel mine closure in remote Australia. *Journal of Industrial Relations 54*(1), 22-40.

Minerals Council Australia. (2006). Leading practice sustainable development for the mining industry: Community engagement and development: Department Industry Tourism and Resources.

Petkova, V., Lockie, S., Rolfe, J. and Ivanova, G. (2009). Mining developments and social impacts on communities: Bowen Basin case studies. *Rural Society 19*(3), 211-228.

Pini, B., Mayes, R. and McDonald, P. (2010). The emotional geography of a mine closure: a study of the Ravensthorpe nickel mine in Western Australia. *Social & Cultural Geography 11*(6), 559-574.

Rolfe, J., Miles, B., Lockie, S. and Ivanova, G. (2007). Lessons from the social and economic impacts of the mining boom in the Bowen Basin 2004 - 2006. *Australasian Journal of Regional Studies 13*(2), 134-153.

Roxby Downs Sun. (2014). Andamooka business closing down Retrieved 24/02/14, from http://www.roxbydownssun.com.au/story/2055544/andamooka-business-closing-down/

Veiga, M., Scoble, M. and McAllister, M. (2001). Mining with communities. *Natural Resources Forum 25*, 191-202.