

Measuring what matters: Monitoring the contribution of a new mining project to community sustainability

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ABSTRACT

Ravensthorpe Nickel Operation (RNO) is a major new mine and processing plant currently being constructed by BHP Billiton in a 'green field' site near the small town of Ravensthorpe, about 150 km west of Esperance and six hours drive from Perth in Western Australia. Ensuring that the project has a positive overall impact on the surrounding region and that this extends well beyond the life of the operation will be a major challenge for RNO, state and local government, and the local community.

For the last two years, the Centre for Social Responsibility in Mining (CSRMI) has been assisting RNO management and the RNO Community Liaison Committee to develop a community sustainability monitoring framework for the project. This paper reports on the process that was used to develop the framework, describes the main elements and briefly discusses key learnings from the exercise.

1. INTRODUCTION

Most of the leading companies in the minerals sector have expressed, in one form or another, a desire to contribute to the sustainable development of the communities and regions in which they operate. However, there are some significant barriers to translating this high level commitment into improved practice at the operational level. These include:

- persuading managers at the operational level to commit time and resources to the pursuit of sustainability objectives;
- getting local community 'buy-in' to the sustainability agenda;

- the limited state of knowledge about 'what works' in delivering sustainable outcomes for communities;
- the wide diversity of locations and circumstances in which mining is conducted; and
- the lack of agreement on how sustainability impacts should be measured and reported.

In this paper we describe the work we have been doing with RNO to assist it to meet these challenges. This has focused on developing a monitoring framework based on the 'five capitals' model of community sustainability (see below). This framework is still very much a work-in-progress but it provides a strong basis for going forward and arguably can be regarded as an example of leading practice in the area.

2. THE RAVENSTHORPE CONTEXT

RNO is a US\$2.2 billion integrated mine and processing development located near the town of Ravensthorpe, some 530 kilometres south-east of Perth, the capital city of Western Australia (Fig. 1).

Until the RNO development, the Shire of Ravensthorpe was a small, rural community with a local economy based on agriculture and small-scale tourism. Even by Australian standards, the region has a relatively short history. First surveyed in 1848, the Shire's major towns of Ravensthorpe and Hopetoun (originally known as Mary-Ann Harbour) were not formally gazetted until 1900. Like much of rural Western Australia, Ravensthorpe Shire's early development owed much to mining, with small to medium scale gold and copper mining underpinning the region's initial population and infra-



Figure 1: Location of Ravensthorpe.

structure growth. However, unlike the nearby Western Australian Goldfields region, which has maintained its mining focus despite fluctuations in the industry's fortunes, the decline of local mining activity in Ravensthorpe, coupled with the allocation of large sections of land to farming in the 1960s and 1970s, saw the district's economic and industrial focus shift progressively towards agriculture.

Regional employment statistics are indicative of the dominance of the agriculture industry. By 2001, agriculture (including forestry and fishing) accounted for 43 per cent of regional employment, compared to just 7 per cent mining (ABS, 2001) (At the 2001 census, the total population of the Ravensthorpe LGA was 1,418, of which employed persons were 688). There is some small-scale tourist activity built around the pristine coast line and the nearby Fitzgerald River National Park, an internationally recognized biosphere, but this has remained a relatively minor contributor to the regional economy and is low-key compared to the neighbouring south-west regional centres of Esperance and Albany.

The advent of the RNO project will result in significant and fundamental shifts in the demographic and industrial profile of the Shire of Ravensthorpe. Unlike many mines in Western Australia, RNO will utilise a locally based, residential workforce rather than being staffed on a fly-in-fly-out basis. An estimated 80 per cent of RNO's permanent workforce of 650 employees and contractors will be housed within the Shire (Fisher and Beare, 2007), resulting in a population increase that is expected to see the Shire's current population of about 1,500 (ABS, 2007)

double in less than five years. The majority of this expansion will take place in the coastal community of Hopetoun where the rapid increase in housing stocks has already seen the town transform from an easy-going and isolated seaside village to a growing rural centre.

With an estimated 25 year mine life, RNO provides the Shire with a unique opportunity to build its community infrastructure and build a more diverse economic base. But expansion of this magnitude also carries significant risks of social and economic disruption as the current dominance of agriculture is displaced by mining, and existing residents face the prospect of integrating a whole new population sector into their community.

The "new" residents are likely to have a very different demographic profile to the traditional resident of Ravensthorpe - they are likely to be more affluent, to have increased leisure time, to have young families of school or pre-school age children, and they will potentially bring with them differing value-sets and aspirations. Unlike many of the existing residents who have multi-generational links to the land, the "new" residents may well conform to the more transient profile of the traditional mining worker. Although the mine is not yet in production, pressure points are already apparent within the Shire as services and infrastructure, already operating at capacity, struggle to meet the demands of such a rapidly changing community.

The challenge for all stakeholders is to capitalize on the opportunities brought about by the RNO development while minimizing the disruption and distortions than are often associated with large-scale resource developments. The long term aim should to ensure that, when the mine eventually closes, the Shire and its communities are able to transition into a sustainable future. To achieve this objective, the community's key stewards - local government, RNO management, and various community groups - will need to chart a course through a process of often unpredictable change. The monitoring framework outlined here is intended to provide a map to help them with this journey.

3. THEORETICAL ORIENTATION

The organising framework that we have utilised for this exercise is based on the 'five capitals'

model of sustainable development. Capital refers to “a stock of anything that has the capacity to generate a flow of benefits which are valued by humans” (Porritt, 2005). Traditionally, capital has been thought of primarily in financial or economic terms, but the ‘five capital’ model emphasises that communities need access to a diverse array of resources if they are to survive and flourish. These are:

1. Human capital: the skill, knowledge and good health that enables people to work and earn a living.
2. Social capital: networks and relationships of trust and reciprocity that enable people to cooperate.
3. Built capital: physical infrastructure such as buildings, transport and communications.
4. Natural capital: access to key natural resources, such as water, land, clean air, fisheries, forests etc.
5. Economic capital: income and financial resources.

As argued by Porritt, these five forms of capital “judiciously combined ... are the essential ingredients of modern industrial productivity” (114).

The genesis of the ‘five capitals’ model can be traced back to the mid-1990s and the work of organisations such as the World Bank and the Balaton Group (Meadows, 1998). Some variants of the approach refer to four, rather than five, types of capital, and the individual forms of capital have sometimes been categorised differently (for example, some approaches treat institutional capital as a separate category; others refer to manufactures capital, rather than economic and built capital). However, there is general agreement on the core assumptions.

A fundamental precept of the model is that it is not acceptable to run down some stocks in order to build up others. In particular, economic growth should not be at the expense of depleting key non-renewable natural resources or destroying the social capital of the community, since by definition growth cannot be sustained under these conditions. However some substitutability within capital categories is considered acceptable, provided the net impact is positive (or at least neutral). For example, in relation to social capital disruption caused to existing social networks by an influx of ‘mining people’ into a

community may be balanced out by the re-energisation of community organisations and the creation of new social networks (e.g. around schools).

Our decision to utilise the ‘five capitals’ model was influenced by several considerations. Firstly, the model has a strong intellectual pedigree and is increasingly influential in the literature on regional and community development. Secondly, the model requires that attention is given to the full range of potential project impacts, rather than the focus being mainly on economic environmental impacts, which has traditionally been the approach taken in Australia. Specifically, the model focuses attention on overall “health” and interconnectedness of a system, instead of just on a couple of components. Thirdly, it encourages companies to think more broadly about the potential contribution they can make to the development of a community and/or region (for example, by highlighting the importance of human capital). Fourth, the model facilitates a structured dialogue about what kinds of substitutions and trade-offs are, and are not, acceptable. Lastly, it provides a reference point for the development of metrics, by highlighting the need to think creatively about how to measure trends in different forms of capital and how to assess net impacts within and across capital domains. The challenge here is to develop metrics or indicators that measure the flow of capital through the relevant domains to enable the mapping of change and early identification of emergent areas of concern.

4. THE PROCESS

Ensuring local relevancy is critical to developing an effective monitoring framework at the operational level. This requires a participatory approach to issue identification and indicator development (Campbell et al., 2001). In the case of RNO, this input came from three sources: one-on-one and group interviews with a cross-section of community stakeholders, the RNO-Community Liaison Committee (CLC) and the RNO management team.

The CLC, in particular, has played a key role in providing information, feedback and validation on a regular basis. Comprising representatives of the local community, NGOs and local government, the CLC was initiated by the com-

pany in early 2002, prior to the commencement of construction. The committee acts as a conduit between the company and community on issues affecting or concerning the community. In the five years since its inception, the CLC has evolved to become a group of well-informed individuals with a sophisticated grasp of the development steps and processes undertaken to bring the RNO project to fruition.

In simplified terms, the process followed to develop the framework has involved:

1. Consultation with a broad cross-section of community stakeholders to identify what they see as the main issues for the region arising from the presence of RNO.
2. A workshop with the CLC to review findings from the consultations and identify priority areas for attention by RNO.
3. Development of a draft framework, organised around the five capitals framework and addressing the priority issues identified by the CLC.
4. Review, validation and endorsement of the draft framework by RNO management and the CLC.

The planning document which sets out the framework is organised as a series of tables, using the format of Figure 2.

The framework draws an explicit distinction between ‘lead’ and ‘lag’ indicators. Building community and regional sustainability is a long term process where the impact of some interventions may not be known for years or even decades. For this reason, it is important to have the capacity to track both the effort which an operation is putting into achieving desired outcomes (the function of ‘lead’ indicators) and the impact, or effectiveness, of these efforts (the realm of ‘lag’ indicators). Well-designed ‘lead’ indicators allow an operation to monitor whether it is ‘on track’ in the implementation of its strategies, whereas ‘lag’ indicators provide feedback about whether these strategies are de-

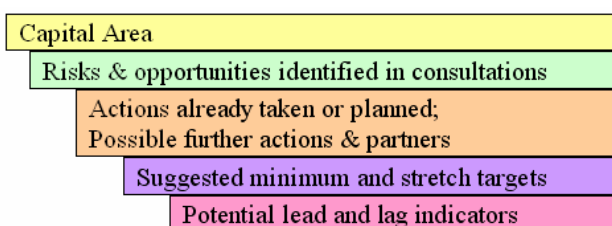


Figure 2: The basic framework.

livering the desired outcomes. Both types of information are critical for the effective management of a sustainability strategy.

An example of how the framework has been populated is provided below in Table 1, in relation to the domain of social capital. (For space reasons, details are not provided on current and proposed management responses in this example).

The next and final stage in the process will be to develop an implementation schedule (indicating what is to be measured, when, how and by whom) and to establish baseline measures. This is already underway, with a community survey scheduled in mid 2007 to begin monitoring trends in social capital, amongst other things. We have also been liaising with RNO management to ensure that, as far as is practical, organisational systems are capturing the data that will be required to support key indicators over time.

5. CONCLUSION

In this concluding section we briefly discuss the learnings from the case study and address the broader issue of transferability and adaptability

Table 1: Social capital: worked example.

Area	Social Capital
Risks	Influx of new people creates distrust; Some groups seen as benefiting more than others from RNO; Established residents exit from the area and existing networks are weakened.
Opps.	New people coming in to town re-invigorate community organisations; New facilities (e.g. school) facilitate social interaction.
Target	Minimum: Local people accept new arrivals Stretch: Community networks strengthened
Indicators	Lead: Participation of employees & families in community welcome programs; Employee and CLC feedback on community response to new arrivals; Level of workforce participation in local community Lag: Depth and complexity of social networks; Number and range of community organisations in the region.

of the approach.

The five capitals model

Overall, we found that the five capitals model worked well as an organising framework. As noted, the model has a strong theoretical pedigree, is intellectually coherent, provides an explicit sustainability focus and is sufficiently broad to capture most types of potential impacts. Moreover, the key concepts appeared to be relatively easily grasped by both management personnel and members of the CLC. There were some categorization issues (e.g. whether jobs be seen primarily as a contribution to human capital or economic capital) but these did not affect the overall integrity of the framework.

For future applications of this approach, we would recommend a more explicit focus on distributional impacts: the framework needs to consider not only the net effect of a project on various forms of capital, but also how benefits, harms, opportunities and risks are distributed amongst different sectors of the community. (For example, an important question that arose in relation to RNO was how the project could contribute to better outcomes for Indigenous people in the region, a group who have been largely marginalized since white settlement). This could be handled either by: (a) including in each of the five capital domains a sub-category that draws attention to distributional issues; or (b) grouping these issues together and addressing them separately as a sixth, cross-cutting, theme.

Lead and Lag Indicators

We found that industry personnel were very comfortable with the language of 'lead' and 'lag' indicators, not the least because this distinction is widely applied in the area of workplace health and safety. Members of the CLC were much less likely to be familiar with these concepts, but once the basic principles were explained to them and some examples provided, they generally understood what was involved.

While the lead/lag distinction makes good intuitive sense, in several instances it was unclear how a particular indicator should be characterised; for example, should 'the level of workplace participation in community organisations' be used as a 'lead' or 'lag' measure of RNO's contribution to social capital? Other contributors

to the indicator literature have made a similar point; what seems neat in theory is often much less so in practice. For this reason, we would recommend using the lead/lag distinction as a heuristic device, rather than as a categorisation to be applied rigidly. However, provided that the indicator makes sense and measures what matters, where it sits in the framework is not critical.

Obtaining Community Input

The RNO monitoring framework was developed with a significant amount of community input, both in the form of direct consultation with community stakeholders and via the mechanism of the CLC. This ensured that the framework was aligned with and took account of community expectations and concerns and also gave legitimacy to the outcomes, by providing for formal community endorsement through the CLC.

Based on this experience, we would strongly recommend the use of a community reference group to drive future exercises of this nature. The two provisos we would place on this are as follows:

1. It is very important to ensure that reference group members have the knowledge base and motivation to participate in a dialogue around sustainability issues. This may necessitate an up-front investment in capacity building and training.
2. The reference group should not be the only point of contact with the broader community. In the case of RNO, we found that the CLC tended to be more sanguine about the potential social impacts of the project than did the wider community. This difference in perspective may have been related to the CLC members' greater level of comfort with the project and their awareness of steps that RNO had taken, or was planning to mitigate these impacts. Had engagement been restricted to the CLC, the extent to which social dislocation was perceived as a risk by the wider community may have been underestimated.

Maintaining Focus

A key challenge for any operation that develops a monitoring framework such as that described here will be to make sure that it actually drives

behaviour, rather than just ending up as ‘yet another planning document’ sitting on corporate shelves.

To date, good progress has been made with RNO in this regard, as there has been a strong level of management interest and support. However, for this focus to be maintained over the longer term, strategies and indicators will need to be integrated into the operation’s core management processes, such as annual planning and budgetary cycles, risk management reviews, information systems and accountability and reporting structures. This will require considerable organisational effort, but the size of the prize - the opportunity to make and document a net positive contribution to the sustainability of the surrounding region - surely warrants such an investment.

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