

Journal of Economic and Social Policy

Volume 13

Issue 2 *Desert Knowledge CRC, Sustainable Desert
Settlements Research*

Article 7

1-1-2010

Negotiating Gender: Experience from Western Australian Mining Industry

Silvia Lozeva

*Curtin University Sustainability Policy (CUSP) Institute/Desert Knowledge Cooperative Research Centre, Sustainable Desert
Settlements Research, silvia.lozeva@postgrad.curtin.edu.au*

Dora Marinova

*Curtin University Sustainability Policy (CUSP) Institute/Desert Knowledge Cooperative Research Centre, Sustainable Desert
Settlements Research, D.Marinova@curtin.edu.au*

Recommended Citation

Lozeva, Silvia and Marinova, Dora (2010) "Negotiating Gender: Experience from Western Australian Mining Industry," *Journal of Economic and Social Policy*: Vol. 13: Iss. 2, Article 7.

Available at: <http://epubs.scu.edu.au/jesp/vol13/iss2/7>

ePublications@SCU is an electronic repository administered by Southern Cross University Library. Its goal is to capture and preserve the intellectual output of Southern Cross University authors and researchers, and to increase visibility and impact through open access to researchers around the world. For further information please contact epubs@scu.edu.au.

Negotiating Gender: Experience from Western Australian Mining Industry

Abstract

Despite its economic benefits, mining can also negatively impact on local communities and the environment. Fundamental problems associated with gender discrepancy and power negotiation can marginalise women and traditional owners of the land where mining operates. The Leonora Western Australian case study reveals a desert mining settlement where population numbers are declining in a period of mining boom. It has become 'a men's town' where fly-in/fly-out mining operations flourish offering limited opportunities to women and the local younger generation. A gender analysis based on ecofeminism and feminist political economy reveals the urgent need for the mining industry to transform itself in order to meet sustainability imperatives.

Keywords

desert, ecofeminism, Indigenous, Leonora, sustainability, women

Cover Page Footnote

ACKNOWLEDGMENT: The work reported here was supported by funding from the Australian Government Cooperative Research Centres Programme through the Desert Knowledge CRC (DK-CRC). The views expressed herein do not necessarily represent the views of DK-CRC or its participants. We want to thank the Leonora residents who shared with us their insightful knowledge about the past, present and future of this desert town. Very valuable feedback was received from the members of DK-CRC's Core Project 4 (including its Project Leader), the participants in the 2008 Desert Knowledge Symposium and Business Showcase in Alice Springs and the 8th Annual Institute of Advanced Studies Science, Technology and Society Conference in Graz, all of whom we want to acknowledge. We are also grateful to the Indigenous people who have looked after Outback Australia for millennia.

Introduction

The Australian outback is unique with its spectacular sights and cultural richness. It is characterised by features that are fundamentally different to any other natural or social environment, such as climate variability, patchy human population, persistent traditional and local knowledge, low primary productivity, and remoteness from markets and decision-making (Stafford Smith, 2008; Stafford Smith et al., 2008).

In recent years, the mining industry has been continuously growing in the Australian outback and rangelands. Factors of global and national significance, such as the demand for resources from China, have shaped this growth but have had limited benefits for the development and maintenance of local communities (Foran, 2007). Western society's preoccupation with extracting resources from the ground for monetary value has long been attacked from a range of perspectives, including environmental and ecological economics (for example, Daly and Farley, 2004; Tietenberg, 2004). In some cases policy makers have tried to reconcile the demands of environmentalists and business. For example, in Australia there has been an arrangement for multiple use of arid zones where nature conservation takes place alongside commercial activities such as exploration and mining (Cohen, 1992). Despite these efforts inadequate attention is being paid to how people who live on the land, including women from Aboriginal and non-Aboriginal backgrounds, are affected.

Ecofeminist research (for example, Merchant, 2005; Plumwood, 2002) argues that there is a special link between women and the natural environment either on a spiritual level or in terms of the social construction of knowledge. Women are deeply affected by developments that are occurring on the land but despite this, their lived realities are rarely subject of investigation (UNEP, 2006; Warren and Cheney, 1991). Australian mining towns in the desert are no exception and the issues that are of concern to, or have an affect on women there, are only just starting to be noticed (Carrington et al., 2010). A recent study on the social impacts of mining development in Australia reveals that the problems associated with the mining boom, such as violence, alcoholism and mental health issues, are largely due to the high population of men in mining camps (Carrington et al., 2010).

There is also a spiritual tie between Aboriginal Australians and the land that goes back to the time of the Dreaming (Maddock, 1974). The land possesses its people and they belong to it (Hamilton, 1982). Connection to country brings a sense of identity and connections to past, land and family, which are essential for Aboriginal health and wellbeing (Thompson and Gifford, 2000). This special

spiritual relationship is felt particularly strongly by Aboriginal women and any dispossession from the land has serious implications for their future.

This paper is an attempt to draw the attention to gender issues related to mining. Three categories of women are the focus of interest: women whose livelihoods are affected by mining, women who work in the mines and those who are miners' wives and partners. While there may be an overlap between these three categories there remains the argument that in the pursuit of economic prosperity, the mining impacts upon gender should no longer be ignored. Mining has a long-established image as a display of human power and masculinity (Gier and Mercier, 2006). It has generated enormous wealth but has also negatively impacted upon the traditional livelihoods of people around the world (WHO, 2005; UNEP, 2007).

This paper presents a brief overview of some of the general aspects related to mining and gender in Western Australia and in the Western Australian mining town of Leonora in particular. The methodology of the study involves a review of ecofeminism debates, literature on mining and development as well as mining industry reports by government, research groups and non-governmental organisations (NGOs). The field research carried out by the authors in Leonora included two trips in 2008 and 2009, during which dozens of interviews were carried out with members of the local community. First-hand observations and visits to main industries (such as mining, education, health and recreational services, shops, library and tourist centres) and residential areas contributed further to the data collection. Communication with key informants, such as local Shire members and representatives of Leonora's Aboriginal community, allowed for continuous interaction with the community during the research project. Thematic analysis was applied to both, primary and secondary research data.

Mining as a Display of Masculinity

A few explanations of the terms used in this paper may be useful, particularly as gender research is still in its infancy and seldom presented in mainstream literature. The term 'gender' refers to the culturally and historically developed concept which explains the power relationship between men and women (Connell, 1987; Maharaj, 1995) and the way it shapes the socioeconomic background of our society. Masculinity refers to the way in which patriarchal values, related to the 'institutionalised male dominance over women and children in the family and the subordination of women in society in general' (Moore, 1998, p. 1), have formed the understanding of science, technology, development and the presence of dominance. Feminism is a stream of thought which has grown as a way of recognising and responding to various forms of oppression that exist in everyday

life and in the history of science, technology and society. It verbalises issues of domination, such as sexism, racism, classism, heterosexualism and so on, in various forms of feminism such as liberal feminism, Marxist feminism, radical and socialist feminism (Marchand and Parpart, 1995; Merchant, 1996). In the context of this paper, feminism is also insightful in relation to Indigenous people, who have experienced various forms of domination despite the fact that they have had by far the longest and most enduring presence in the Australian desert and have looked after its physical environment for millennia (Brown et al., 2008).

Ecofeminism extends these forms of domination to nature. Its viewpoint is that unjustified domination of nature is a feminist issue (Warren, 1996; Warren and Erkal, 1997). Ecofeminism looks at the special connections between women and nature that have developed largely in the context of patriarchy. It is argued that the patriarchal tradition often exacerbates dominance over the environment similarly to dominance over women. The special connection between women and nature is pointed out in the female representation of Mother Earth, in women's biological connection to the lunar circles and in their traditionally perceived role of childbearing and domestic chores (such as providing food and water for the family). Women depend on the natural environment for their survival: 'Women's lives flowed into what they saw as the natural order of the universe' (Neithammer, 1977, p.1). What makes ecofeminism distinct is its viewpoint and theory according to which nature is a feminist issue.

The mining industry is an example of an industry that is entirely dependent on nature. It is probably also the best example of an industry which displays traits of masculinity and dominance, and this has fuelled the strong concerns expressed by ecofeminists. Natural resources, such as ores, minerals, precious stones or coal, and their exploitation facilitated through the development of technology and appropriate infrastructure, have provided employment and income for male breadwinners for centuries. As an expression of human dominance over nature, mining has reinforced the patriarchal power relationships in society. Scott (2007, n.p.) even argues that mining has contributed to a special type of masculinity – 'one of multiple hegemonic masculinities that operate in different contexts to uphold the sex/gender system' in society. This mining-driven masculinity has been important not only to men but to entire communities. It also embodies an ideology of white masculine economy primacy (Scott, 2007) that completely ignores or overrules the connections to the land of women and Indigenous people.

Feminist political ecology, which emerged in the 1990s, deals with the subject of women, nature and society. The concept views gender as a meaning system that is produced not only through economic relations and cultural and social institutions, but also as a result of ecologically-based struggle (Wangari et al., 1996). From a

sustainability point of view, gender allows for power relationships within society to be re-defined in order to achieve the right integration of economic, social and environmental imperatives. This theoretical approach is visualised in Figure 1: in the cross-section of the three circles is where gender is negotiated through the struggle for an ecologically balanced society on the back of economic, cultural and social factors. Gender is also seen as a cross point for those circles because it has the potential to balance and influence the sustainability of a place such as regional Western Australia.

Against this setting, it is interesting to explore how gender is being negotiated in relation to the mining industry globally as well as using evidence from Western Australia.

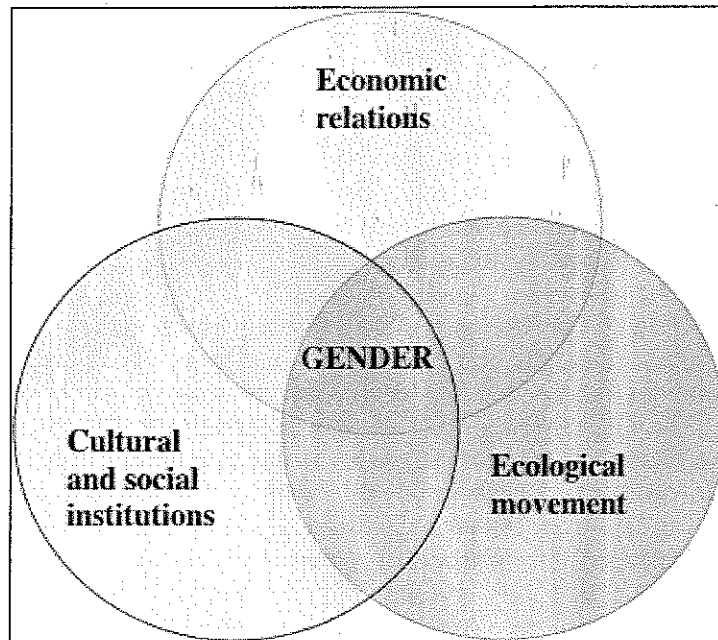


Figure 1: Negotiating gender relationships in society

Gender Impacts and Mining

For many years now, academics and activists as well as local communities around the world have been pointing out the numerous problems related to economic progress and mining development. These problems are recognised in global

campaigns such as Women and Mining (Oxfam, 2008). Oxfam (2008) based its findings on experiences from countries in South-East Asia and Australasia where collective voices from workshops and conferences defined the following major problems arising from the mining industry development and negotiation of gender relationships within communities:

- Mining companies' failure to consult with women when negotiating access to land, compensation and royalties disempowers women and may go against traditional decision-making structures. Payments to men 'on behalf of' families deny women direct financial benefits and encourage economic dependence on men;
- Women's traditional role in providing food and clean water for their families is undermined due to the environmental damage, loss of land or displacement linked to mining. This undermining subsequently leads to increased workload for women. In addition, mining stimulates a shift from subsistence to a cash-based economy, particularly with increased male employment in the mines, and can result in women's diminishing status within society;
- Mining contributes to increasing social and health problems with the decline of traditional mechanisms of social control, the influx of a transient male workforce and the lack of formal employment opportunities for women. Increased alcohol consumption, domestic violence, sexually-transmitted diseases and prostitution are commonly associated with mining;
- Women mine workers face discrimination, limited choice in job opportunities, poor working conditions, low wages and unequal pay for equal work.

According to the Mining, Minerals and Sustainable Development (MMSD) Project (2002, p.212) 'the impact of mining on women has been exacerbated by the failure to identify them as a distinct group of stakeholders in the planning and operation of mine sites and to establish trusted means of communication'. A major difficulty in including women in any negotiations or decision-making is that consultation and communication happen mainly through community leaders who are predominantly male. Women are rarely vocal and their interests tend to be subordinate to or subsumed into the wider goal of employment generation. The MMSD Project (2002) found the relationships between the mine management and the women living in the mining community in Zimbabwe to be lacking trust and mutual understanding. The perception of poor communication by the women were not shared by the mining authorities.

Another major aspect of mining operations that has attracted a lot of concern is the failure to recognise the spiritual and religious connections of Indigenous

people, including women, to their environment and land (Macdonald, 2002). This is felt particularly strongly when people are being displaced, access to the land is being restricted, and/or the health of the natural environment is being negatively affected.

Many of the above issues are relevant to contemporary Western Australian desert settlements and resonate with the traditional owners of the land (Concerned Australians, 2010). The display of masculinity and patriarchy in mining is seen as the central reason for its unsustainability, regardless of whether the mines are in the Goldfields (Kalgoorlie or Leonora), the Kimberley (in the Matsu Ranges) or the Pilbara (Port Headland or Newman) regions. Within this framework, 'patriarchy is treated as a holistic concept that simultaneously addresses the more localised unequal distribution of power embedded in gender relations and the wider relations of dominance and exploitation that sustain the industry' (Emberzon-Bain, 1994, p. 46). The relations of domination apply to many, if not all aspects of mining: economy over environment, men over women, resource exploitation over its preservation, locals over immigrants, white people over indigenous populations and so on. These trends of domination are not new. They derive from the very stem of the patriarchal order embedded deeply not only in politics, decision-making bodies and governance, but are also present in everyday life, in the way we care for the land, in everyday struggle for sustainable livelihoods. Harcourt (1994) questions how mining can result in 'development' if it causes so much social and environmental damage.

According to the MMSD Project (2002, p. 212), 'mining can provide an opportunity for reducing gender disparities through direct and indirect employment and through access to project services'. This however is rarely happening and the challenge is in how the relationships of power and dominance are being negotiated.

Western Australian Mining

Western Australia (WA) is regarded as a resource-rich state. At its highest value, WA's mineral and petroleum industry was estimated at \$53.1 billion in 2007; it represented 15 percent of the world's exploration and contributed a massive 86percent (or \$52.9 billion) towards the State's exports (Department of Industry and Resources, 2007). According to the Department of Industry and Resources (2007), nickel, gold and iron ore are the largest contributors to WA's mining income, representing respectively 30 percent, 19 percent and 10 percent of the State's exports. The strong demand for Western Australian minerals was triggered by China's continuous economic growth described also as 'economic prosperity' (Department of Industry and Resources, 2007, p.2).

Despite its enormous economic wealth, the Western Australian mining industry is strongly susceptible to the volatility in resource prices as demonstrated throughout the years, including the 2008 global financial crisis¹. Many mining operations in Western Australia, affected by this volatility, have put major projects on hold. This situation however does not justify the lack of commitment to long-term sustainability by local mining operations. The probable resurgence of mineral prices in the future will allow mining companies to continue earning economic profits, as was the case in the 1980s and the price of gold (Rola-Rubzen et al., 2008).

The boom and bust track record of mining adds another power dimension to this industry. Economic prowess can easily be transformed into frailty when market demand decreases. In times of boom, the industry expands and job opportunities increase but when the bust comes production slows down or stops increasing insecurity amongst people. This volatile cycle takes a heavy toll on communities (Doukas et al., 2008). From a community and women's point of view, only a holistic understanding of the place of mining can protect the exploitation of the environment and prevent the destruction of the social fabric within society.

The Western Australian mining industry needs to constantly examine its modus operandi and contribution to the functioning and future of desert settlements where the bulk of its operations are located. An integrated and balanced approach between economic potential, ecological protection and the development of social and cultural capacity could allow for the power relationships to be negotiated differently. The current approach exposes the weaknesses of an industry that has been driven predominantly by profit-making opportunities with very little responsibility towards the ecological and social dimensions of its existence. Below the economic surface, there are much more powerful social processes that take place and the display of masculinity affects both nature and communities.

According to Doukas et al. (2008, n.p.), in periods of a mining boom '(h)ost communities benefit from a jump in jobs, infusions of cash, and investment in infrastructure' but this may not be the case in WA. The WA mining operations have some unique characteristics which add another layer of fragility and uncertainty when it comes to the role of gender relationships. This relates to its fly-in/fly-out (FIFO) practices.

Nearly 20 years after the introduction of the FIFO in the majority of mines in WA, it has become clear that bringing a labour force for shift work from the city

¹The price of nickel, for example, fell from \$50,000/tonne in May 2007 to \$18,000/tonne in August 2008 or a drop of 64 percent (BBC News Market Data 2008)

to remote locations is exacerbating the complex gender relationships with respect to mining (Watts, 2004). According to the fly-in/fly-out jobs website, the mining work is 'usually carried out by someone who lives in the city area and 'Fly's In' to the work site, carries out their roster and 'Fly's Out' (Fly In Fly Out, n.d.). In order to maintain efficient productivity, such sites operate 24 hours a day, 7 days a week, with a roster of workers, engineers and other professionals working long shifts (for example, 12 hours) each day for a number of continuous days (for example, 2-3 weeks) followed by an extended period of rest (for example, 1 week) spent back in the city. Watts (2004, p.26) defines the fly-in/fly-out phenomenon as 'circumstances of work where the place of work is sufficiently isolated from the worker's place of residence to make daily commute impractical'. Such a mode of operation adds enormous pressure on communities where mining operates (Storey, 2001).

The Western Australian case study of Leonora discussed later in this paper is an example of a desert mining settlement which relies heavily on FIFO mining operations. The stable local mining workforce provided by Leonora residents is 320 people (ABS, 2007b). A study of workforce turnover in FIFO mines estimates 'the cost of "average" employee turnover at an open-cut FIFO mine of 300 employees would be in the order of \$2.8 million' (Beach et al., 2003, p.31). This is the equivalent of around \$9-10,000 per employee per year of money for recruitment, hiring and employment termination of staff that could have been invested in a smarter way. Examined from another perspective Leonora's desert population is saving the mining companies operating in its locality the equivalent of \$3 million per year.

Despite the benefits of local employment, the negotiation of gender issues within this community need to be determined as do the lessons from the experience of Western Australian mining in desert settlements. The effects from mining development also need to be determined.

Experience from Leonora, Western Australia

The mining sector in Australia overwhelmingly employs male workers. The latest census data shows a total of 106,896 employees, of whom 90,833 or 85 percent are male compared to only 16,063 or 15 percent female employees (ABS, 2007a). The situation in WA is no different – the share of male workers in the mining sector is 86 percent (or 15,135 males) compared to 14 percent (or 2,524) of female employees (ABS, 2007c).

Leonora is a township of just above 1400 people, 13 percent of whom identified as Indigenous Aboriginal decent. It is located in the Western Desert within the Goldfields-Esperance region of Western Australia, approximately 833 kilometres northeast of the state capital Perth, and 237 kilometres north of the city of Kalgoorlie (Rola-Rubzen et al., 2008). Mining provides the main employment opportunities in Leonora. In this small desert settlement, the total value of minerals and petroleum for 2007 was \$2.7 billion (Department of Industry and Resources, 2007). Out of 820 employed Leonora residents in 2006, 320 (or 38 percent) work in the mining industry with the share of female workers being slightly higher than the national and State averages at 18 percent (or 52 women compared to 259 men) (ABS, 2007b). The influence of mining employment on Leonora is significant compared to the WA employment share of only 8 percent and national share of a meagre 1 percent.

The total female labour force of Leonora is only 33 percent compared to 43 percent in WA and 46 percent nationally. The FIFO mining operations around Leonora further intensify male mining presence bringing more workers from the city, including a disproportionately higher proportion of males. The 2001 Australian Census estimated that only 18 percent of the people employed with the mining industry in Leonora were local residents, the remaining 82 percent being FIFO workers (ABS, 2003). As Leonora's population has been rapidly diminishing with an annual decrease of around 4 percent between 1996 and 2006, its mining operations have been expanding (Rola-Rubzen et al., 2008). The presence of the FIFO predominantly male workforce has been shaping the gender relationships creating a place which can be described as: (1) 'a men's town'; (2) where 'people stay together but live apart'; and (3) where there are no working women with young children employed in mining (Lord, 2008).

All of the above issues are deeply affecting women. Some of them can be looked at from an infrastructure perspective, others from an organisational management perspective, but discussions around these perspectives do not account for the biases of patriarchal hierarchy. These biases have been established through years and centuries of exploitation and dominance of masculine values, such as economic profit over social and environmental development (Merchant, 1996). There may be situations in really remote places where FIFO operations could be the only way to access resources; however in the case of Leonora where a community already exists mining should be contributing to its sustainability.

The evidence from Leonora points to the opposite. The sections to follow present some observations, including quotes from interviews with Leonora residents, conducted by the authors in June 2008 and July 2009, and relate them to other similar experiences in Western Australian mining desert settlements.

'It's a Men's Town'

Recent research carried out in Western Australia draws attention to women and their place in relation to the mining industry; to the fact that women are very connected to their communities and experience the need to come home every night to a place where they can raise their children and feel secure (Lord, 2008; Watts, 2004). While women are increasingly starting to take part in the mining workforce, the mine sites still remain a masculine and uncomfortable work environment for them. A study carried out for the Minerals Council of Australia (Lord, 2008) shows that FIFO often exacerbates the masculine cultures women struggle with and consequently their employment in the sector is much more likely to be short-term. Lord (2008) reported that women in this study found that FIFO arrangements were inflexible and often lacked sensitivity to women's intrinsic needs. The survey also showed that women will survive, at least for a period of time, but not thrive; so their full potential, skills and experience are lost to the sector. As with other desert mining settlements, this describes very well the situation in Leonora.

A recent study on the social impact of the mining industry in WA reveals that mining camps are fuelled with violence, alcoholism, prostitution and problems with mental health (Carrington et al., 2010). This problem is exacerbated by the high population of men in the camps. Carrington et al. (2010) also notes that sex workers operated in limousines parked in nearby car parks.

Another factor affecting gender relationships is that the FIFO practices by the mining companies in Leonora do not allow interaction with local residents, which in turn brings hostility, does not stimulate economic opportunities for local residents and triggers population decrease. The employees of the mining companies are not even visible to the people who live in Leonora:

'Where are they? You never see them! When they fly out they probably even bring back the toothpaste with them'.

Mining development often remains disconnected from the social and environmental problems associated with it. For example, the opportunities for mothers to bear and raise their children in settlements located close to the mine sites remain poor due to lack of infrastructure development, limited opportunities for education (for example, only a primary school) and limited commitment from the mining companies to community development. Thus the mine sites and the associated settlements remain largely masculine places, where a distinctive segregation exists between mineworkers, local residents and – in some cases like Leonora – tourists. Segregation between the different groups is so sharp that

mining camps are closed to outside visitors for meals, and the Leonora leisure centre is hired exclusively for mineworkers excluding any opportunity for interaction with local residents. Mineworkers in easily distinguishable work-provided vehicles drive through the streets of Leonora. In contrast, local residents, both from Aboriginal and non-Aboriginal background, can be seen walking and interacting with each other in a variety of public spaces, such as parks, footpaths, benches and outside of shops. The few pubs remain the rare points of contact for male miners confirming the fact that 'it's a men's town'.

This newly established and artificially diverse environment between local residents and FIFO workers creates tensions on a local level in the town itself, in the families and in the lives of women and children. FIFO promotes the unsustainable practice of bringing qualified personnel to a place which already has the potential to develop its own human resources. In doing so, it deprives the local communities from developing their own skills and building their own future. The obvious solution to the problem is for the mining industry to provide local training. According to a male resident of Leonora:

'The mining community needs to develop the human resources potential which is already here... It only makes sense to invest in your local resources, and the most important of those resources is the human capital'.

'A men's town' is not a place where most people would want to live and work, now and in the future. These gender perspectives are important as women play essential role in building the sustainability of settlements and providing the most needed balance between nature, nurture and work. Women need to express their ways of life, to articulate their needs and to be at the heart of the decision-making processes in a mining settlement, including the negotiations of mining operations and the provision of services (UNEP, 2006). Aboriginal women in particular need to be provided with the opportunity to say what their community needs are and to express their cultural values if they are to be addressed. It is often the case, that because of their values and cultural norms, women are interested in satisfying not simply personal needs, but also the needs of the entire community. This means that if the mining industry and government are prepared to listen to them and to assist in solving problems associated with mining and women, they are already solving wider problems within the community.

For example, women who are not positive about future prospects for their children gaining employment with the mining companies, located some 50-60 kilometres from the settlement, are less likely to settle in the town. Therefore, lack of opportunities to find suitable employment may play an essential part in desert settlements not being sustainable. Lack of opportunities does not necessarily mean

lack of facilities as mining companies have well established training facilities for their staff, including FIFO workers, located near the mine sites, which could provide grounds for future training of local residents. However, very few efforts are made in this direction. The dominance of mining masculinity and patriarchy is yet to be addressed.

'Staying Together, Living Apart'

A prime reason for workers to be employed in the mining industry is the financial benefits (Clifford, 2008; Sibbel, 2008). The average age of Leonora mining workers is 36.5 years (36 for men and 38 for women) (ABS 2007b). For those of them who are in a relationship, deciding for a lifestyle of FIFO also means a commitment to staying together and living apart. The most common FIFO roster is 14/7 (14 working days followed by 7 days of holiday). As a rule, the partner and any children are based in the city and see the person who works in the mine every fortnight for a week.

It appears that money is more attractive to men than it is for women (Lord, 2008), as is career advancement (Watts, 2004). Therefore the mine sites largely display masculinity and alienation. One of the revealing recommendations coming from the 'Best of Both Worlds?' report by Watts (2004, p.116) is that 'particular attention should be given to Valentine's Day and Christmas as opportunities to enable workers with partners living a long distance away, to maintain and enhance personal contact'. In fact, Watts herself has engaged in selling Valentine's cards to FIFO workers in mining camps in order to remind and encourage them to communicate with their loved ones in the city.

Wives of FIFO workers also report greater family dysfunction compared to non-FIFO partners (Bradbury, 2008). Children in FIFO families miss the opportunities to spend time, share thoughts and activities with their fathers and, as one of them says: 'I miss my father from the bottom of my heart' (Bradbury, 2008).

Children and partners rarely visit the mine sites. By comparison with other desert mining settlements, Leonora offers a more inviting environment for visitors as it is also a tourist town. The mining camps however do not provide any hospitality or sense of homeliness. In fact, FIFO workers are discouraged from developing a sense of belonging to the place. Computer programs generate a new room number each time the workers return from the period of rest and any personal belongings are kept in storage during this time. This lifestyle encourages loneliness and isolation, abandonment of parental and partner responsibilities, guilt at leaving the loved ones, family dysfunction, sense of grief and loss, depression and possible substance abuse (Watts, 2004).

Some of the positive experiences of FIFO workers identified by Watts (2004), such as the growth of personal independence and freedom, bonding and mateship, and strengthening of coping skills, in many ways reaffirm the difficulties of 'staying together, living apart'. In fact, the majority of FIFO workers in Leonora see their employment as a temporary solution until they develop a serious relationship with a partner:

'This is good money and the work is technologically challenging. It is good for me. I am young and single now'; or until children in such a relationship are being born: 'The previous engineer left. His wife had a baby and he wanted to be with his family'.

'No Working Women with Young Children in Mining'

Lord (2008) makes the observation that desert settlements associated with the mining industry are an unwelcoming place for women with young children. This has been explained by a combination of reasons, including the overwhelming power of materialism, which takes over concerns about health, emotions and care for the family; the patriarchal status of the mining industry itself; the long tradition of being locked in a materialistic cycle and the challenges associated with living a normal life after a period of employment in mining.

Leonora as a host environment for mining operations provides a range of facilities for women and families with young children. This includes childcare and a district school from pre-primary to year eleven with a modern science workshop area, crayfish farm and many outdoor activities aimed at stimulating active learning. The teaching curriculum of the school has been carefully designed following a series of meetings among teachers to develop a better education and to promote self-motivation among the students of Leonora. In 2008, the school adopted a values framework (LDHS, 2008) where environmental responsibility, preservation of the Australian cultural heritage and sustainability are major components. These good opportunities are in strong contrast with mining industry's preferences to offer FIFO employment. In fact, the number of children in the school has not increased, not even by one, during the recent period of mining boom.

The mining industry is not providing enough opportunities for local young people either. According to one resident:

'Next step after school should be traineeship, and if that is not secured, than what future do the kids have?'

'Nothing goes forever and the mines are probably going to be closed one day. Then we should build the capacity to rely on our own skills and abilities by developing other meanings of livelihoods'.

Community voices like this demand the transformation of this sector and the mining industry needs to respond to them.

Negotiating Gender Aspects in the Mining Industry

In 2008-2009 the importance of gender issues was recognised within the mining industry (Strongman, 2008; MCA, 2009). Some of the events which drew attention to the crucial role of engaging women at all levels within the mining sector and their potential for transforming the mining industry were brought up at the 2008 Gender and Sustainable Livelihoods Workshop in Canberra (ANU, 2008), the 2008 Desert Knowledge Symposium in Alice Springs (Desert Knowledge, 2008) and the 2009 World Bank's Extracting Industries Week in Washington (WBCOCP, 2009). The mining sector itself started to draw attention to the role of gender and the Mineral Council of Australia (MCA)'s October 2009 workshop in Adelaide, South Australia was an attempt to examine gender in the mining sector. A former mining advisor with the World Bank questioned the unequal distribution of benefits and risks between men and women based on mining examples from Peru. The advisor suggested that the potential benefits, such as employment opportunities and control over family and community income, were distributed largely to men while the disadvantages were borne by women (Strongman, 2009). Disadvantages largely associated with women include loss of land, contamination of water and air quality, increased time to reach pastures and collecting water, increased domestic violence and greater proportion of health-related problems such as HIV due to increased prostitution (Strongman, 2008).

Among the recommendations for the improvement of the practice of mining operations was to determine women's views through separate consultations with them (Strongman, 2009). Although such an approach is a step forward in recognising the need for engaging women in negotiating and decision making in mining, this process should have much better policy foundations.

Women are not a separate unity that should be isolated from the rest of the groups of people and stakeholders whose interests are linked to the mining industry. Looking at women's needs as a separate and isolated problem bears the potential danger of exclusion, and producing a segregation image. Women's interests are

unique, but they are inevitably linked to the interests of those of mine workers, company directors, NGOs, community and government.

Secondly, working towards social sustainable development in the mining sector includes working at all levels, from the individual to the organisational and governmental level. Ensuring that women are engaged in every stage of decision-making within the industry is an everyday continuous process which does not end with the consultation meetings. It penetrates the entire development and *raison d'être* of the mining industry in economic, social and environmental terms.

Thirdly, ensuring equal pay for equal work is only the beginning of such a process (Broderick, 2009). It continues with opening up more employment opportunities for women at different stages and levels of expertise and flexible work hours which allow for them to accommodate family needs and those of especially young children.

Mining sites today are inherently unsustainable. They use energy from non-renewable sources, often they are built isolated from the rest of the community and produce high levels of waste and pollution (Mudd, 2009). These practices need fundamental change and ways of catalysing those changes is by involving women, to incorporate traditional knowledge of indigenous women and to meet the needs of the families of mine workers, especially those with young children.

It is important to bear in mind that 'by and large, mining companies have not "voluntarily" become progressive: they have been forced to improve their performance by international pressure and stakeholder conflict' (Whiteman and Mamen, 2002, p.50). The pressure from community, academics, NGOs and government need to continue until the model of power negotiation which puts women and Indigenous people as direct players in the negotiation process with mining (see Figure 2) becomes a daily-lived reality.

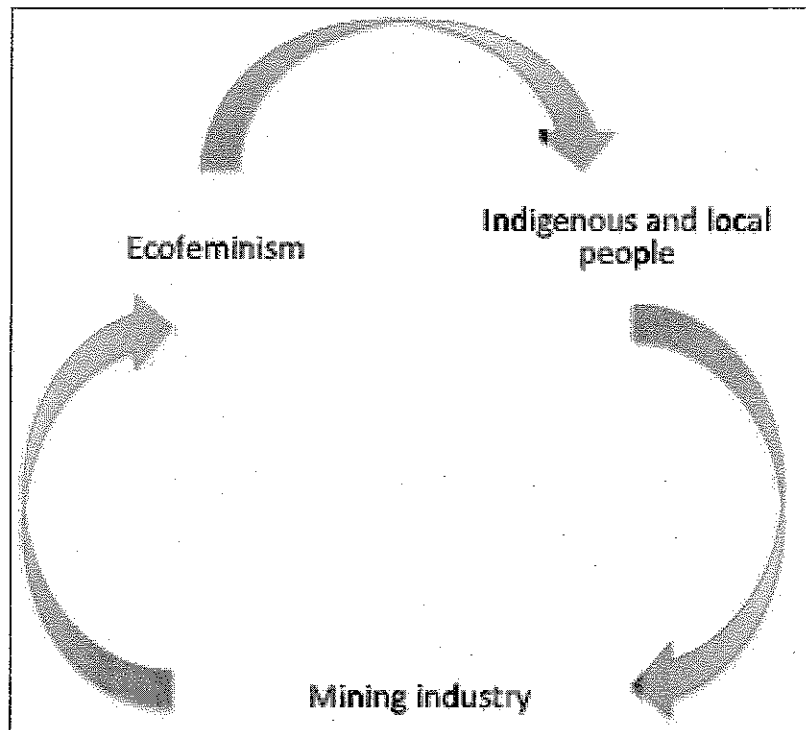


Figure 2: Negotiating gender relationships in mining

Conclusion

Mining has been the most masculine of all industries (Gier and Mercier, 2006). Women by large have benefitted less from development and particularly from mining development. They are, however, those who provide care for the young, old and sick, who process and prepare food for home consumption. Women's active participation, including that of Indigenous women, in socio-economic activities, decision-making and negotiation of power relationships has benefits that reach far beyond women and extend to their children and communities.

"The Australian Indigenous Women's message to both mining companies and governments is: changes must take place, the women are saying let us decide what programs should be financed. Acknowledge our ability to make our own decisions within our own discrete areas. Make it possible for us to meet under our own terms to discuss our own issues and to develop our own programs. We need to look at our families and how we keep

our children safe, healthy, to grow them up in a loving environment, to foster their own ambition and aspirations. Support us, the women, to keep and retain our 'power', our strength".
(Kopusar, n.d.)

Literatures on gender and on mining exist scattered through policy reports, NGO activities and academia as well as in discussions in various networks, workshops, conferences and other organised events. The topic of women and mining however is often isolated from other problems and is not seen as a mainstream discussion. It has been specifically secluded to those focused only on gender. Unfortunately such an approach poses the danger of disconnecting it from the rest of the problems associated with the social and environmental impact of mining.

In the case of Western Australia, the mining industry exposes some fundamental problems associated with gender discrepancy, power interrelations and community development. The most common issues related to mining development are described as barriers to women's employment, strong industry support for FIFO practices and the dominance of patriarchal values. The mining industry itself, aimed at extracting resources from the ground for material and monetary value, is a reproduction of patriarchal values, thus reinforcing industry's own traditions. This paper aimed to reveal important gender and power impacts on local communities. The gender-related analysis of the relations of patriarchy and mining shows the well overdue need for transformational change which will contribute towards the sustainability of desert settlements. More research is needed to integrate the gender-based models of power negotiation into policy frameworks that work.

Acknowledgement: The work reported here was supported by funding from the Australian Government Cooperative Research Centres Programme through the Desert Knowledge CRC (DK-CRC). The views expressed herein do not necessarily represent the views of DK-CRC or its participants.

We want to thank the Leonora residents who shared with us their insightful knowledge about the past, present and future of this desert town. Very valuable feedback was received from the members of DK-CRC's Core Project 4 (including its Project Leader), the participants in the 2008 Desert Knowledge Symposium and Business Showcase in Alice Springs and the 8th Annual Institute of Advanced Studies Science, Technology and Society Conference in Graz, all of whom we want to acknowledge. We are also grateful to the Indigenous people who have looked after Outback Australia for millennia.

References

- Australian National University (2008). *Empowering Communities: Mining, Gender and Sustainable Livelihoods Workshop*. Accessed 12 October 2010
<http://empoweringcommunities.anu.edu.au/workshop.php>
- Australian Bureau of Statistics (ABS) (2003). *Western Australian Statistical Indicators. ABS Catalogue Number 1367.5*, Canberra.
- Australian Bureau of Statistics (ABS) (2007a). *2006 Census of Population and Housing: Industry of Employment by Age by Sex, Australia. ABS Catalogue Number 2068.0*, Canberra.
- Australian Bureau of Statistics (ABS) (2007b). *2006 Census of Population and Housing: Industry of Employment by Age by Sex, Leonora. ABS Catalogue Number 2068.0*, Canberra.
- Australian Bureau of Statistics (ABS) (2007c). *2006 Census of Population and Housing: Industry of Employment by Age by Sex, Western Australia. ABS Catalogue Number 2068.0*, Canberra.
- BBC News Market Data (2008). *Nickel Cash Unofficial Confirmed \$/m tonne*. Accessed 17 December 2008
newsvote.bbc.co.uk/2/shared/fds/hi/business/market_data/commodities/11662/twelve_month.stm
- Beach, R., Brereton, D., and Cliff, D. (2003). *Workforce Turnover in FIFO Mining Operations in Australia: An Exploratory Study*. Centre for Social Responsibility in Mining, Sustainable Minerals Institute, University of Queensland: Brisbane, Australia. Accessed 19 December 2008
www.csrmi.uq.edu.au/docs/TURN_FINAL.pdf
- Bradbury, G. (2008). *Children and the Fly-in/Fly-out Lifestyle: The Psychosocial Implications of Occupational Parental Absence*. Unpublished PhD thesis, Curtin University of Technology, Perth, Australia.
- Broderick, E. (2009). *Accumulating Poverty: Women's Experiences of Inequality over the Lifecycle*. Australian Human Rights Commission. Accessed 22 November 2009
http://www.hreoc.gov.au/about/media/speeches/sex_discrim/2009/20090915_accumulating_poverty.html
- Brown, D., Taylor, J., and Bell, M. (2008) 'The demography of desert Australia.' *The Rangeland Journal* 30(1), pp. 29-41.
- Carrington, K., McIntosh, A., and Scott, A. (2010). 'Globalization, frontier masculinities and violence: Booze, blokes and brawls.' *British Journal of Criminology* 50(3), pp. 393-413.
- Clifford, S. (2008). *Impacts of Fly-in/Fly-out Commuting and Extended Working Hours on the Stress Levels, Lifestyles and Health of Western Australian Mining Employees and Partners*. Unpublished PhD thesis, University of Western Australia, Perth, Australia.
- Cohen, B. (1992). 'Multiple use and nature conservation in South Australia's arid zone.' *The Rangeland Journal* 14(2), pp. 205-213.
- Concerned Australians (2010). *This Is What We Said: Australian Aboriginal People Give their Views on the Northern Territory Intervention*. Concerned Australians, Melbourne, Victoria.
- Connell, R. W. (1987). *Gender and Power*. Polity Press, Cambridge.

- Daly, H. E., and Farley, J. (2004). *Ecological Economics: Principles and Applications*. Island Press, Washington.
- Department of Industry and Resources (2007). *Western Australian Mineral and Petroleum Statistics Digest*. Government of Western Australia, Perth. Accessed 16 December 2008 www.doir.wa.gov.au/documents/statsdigest07.pdf
- Desert Knowledge (2008). *2008 Desert Knowledge Symposium and Business Showcase*. Accessed 12 October 2010 <http://www.desertknowledge2008.com/>
- Doukas, A., Cretney, A., and Vadgama, J. (2008). *Boom to Bust: Social and Cultural Impacts of the Mining Cycle*. The Pembina Institute, Calgary, Canada. Accessed 17 December 2008: pubs.pembina.org/reports/boombust-final.pdf
- Emberzon-Bain, A. (1994). 'Mining development in the Pacific: Are we sustaining the unsustainable?' In Harcourt, W. (Ed.) *Feminist Perspectives on Sustainable Development*. pp. 46-59. Zed Books, London, in association with Society for International Development, Rome.
- Fly In Fly Out (n.d.). *About Us*. Accessed 11 August 2010 <http://www.flyinflyout.com/>
- Foran, B. D. (2007). 'Sifting the future from the past: a personal assessment of trends impacting the Australian rangelands.' *The Rangeland Journal* 29(1), pp. 3-11.
- Freed, J. (2008). 'Counting the cost of nickel's wild ride.' *Business Day* August 11. Accessed 17 December 2008 business.smh.com.au/business/counting-the-cost-of-nickels-wild-ride-20080810-3t09.html
- Gier, J. J., and Mercier, L. (Eds) (2006). *Mining Women: Gender in the Development of a Global Industry, 1670 to 2005*. Palgrave Macmillan, New York.
- Hamilton, A. (1982). 'Descendent to father, belonging to country: Rights to land in the Australian Western Desert'. In: Leacock, E., and Lee, R. (Eds) *Politics and History in Band Societies*. pp. 85-108. Cambridge University Press, Cambridge.
- Harcourt, W. (Ed.) (1994). *Feminist Perspectives on Sustainable Development*. Zed Books, London, in association with Society for International Development, Rome.
- Kopusar, P. (n.d.). *What is life? Australian Indigenous Women's Perspective*. Accessed 19 December 2008 www.worldbank.org/INTOGMC/Resources/336099-1163605893612/kopusarwhatislife.pdf
- Leonora District High School (LDHS) (2008). *Values Framework*. Accessed 22 July 2008 www.leonoradhs.wa.edu.au/policies/Valuespercent20Frameworkpercent202008.pdf
- Lord, L. (2008). *Women and FIFO: Take it or Leave it?* Unpublished Research, Graduate School of Business, Curtin University of Technology, Perth, Australia.
- Maharaj, Z. (1995). 'A social theory of gender: Connell's 'Gender and Power''. *Feminist Review* 49, pp. 50-65.
- Macdonald, I. (2002). 'Introduction: Women's rights undermined'. In Macdonald, I., and Walker, C. (Eds) *Tunnel Vision: Women, Mining and Communities*. pp. 4-7. Oxfam Community Aid Abroad, Melbourne. Accessed 16 December 2008 www.oxfam.org.au/campaigns/mining/docs/tunnelvisionreport.pdf

- Maddock, K. (1974). *The Australian Aborigines: A Portrait of Their Society*. Allan Lane, Sydney.
- Marchand, M. H., and Parpart, J. L. (1995). *Feminism/Postmodernism/Development*. Routledge, London and New York.
- Merchant, C. (1996). *Earthcare: Women and the Environment*. Routledge, New York.
- Merchant, C. (2005) (2nd ed.). *Radical Ecology: The Search for a Liveable World*. Routledge, New York.
- Mineral Council of Australia (MCA) (2009). *Sustaining Our Social Licence*. Adelaide Convention Centre, South Australia. Accessed 22 November 2009
<http://www.sd09.com.au/registration/esatchel/86-epresentations>
- Mining, Minerals and Sustainable Development Project (MMSD) (2002). *Breaking New Ground*. Earthscan, London.
- Moore, C. (1998). 'Australian masculinities: Guest editorial'. *Journal of Australian Studies* 56, pp. 1-16.
- Mudd, G. (2009). *The Sustainability of Mining in Australia: Key Production Trends and Their Environmental Implications for the Future*. Monash University. Accessed 11 August 2010 <http://civil.eng.monash.edu.au/about/staff/muddpersonal/rr5/>
- Neithammer, C. (1977). *Daughters of the Earth: The Lives and Legends of American Indian Women*. Collier Books, New York.
- Oxfam (2008). *Women and Mining*. Accessed 16 December 2008
www.oxfam.org.au/campaigns/mining/women/
- Plumwood, V. (2002). *Environmental Culture: The Ecological Crisis of Reason*. Routledge, London and New York.
- Rola-Rubzen, M. F., Marinova, D., Singleton, G., Altangerel, D., and Lozeva, S. (2008). *Sustainability of Desert Settlements: The Case of Leonora*. CP4 Profile Working Paper, Desert Knowledge Cooperative Research Centre: Alice Springs, Australia. Accessed 17 December 2008
www.desertknowledgecrc.com.au/forums/default.aspx?g=posts&t=771
- Scott, R. (2007). Dependent masculinity and political culture in pro-mountaintop removal discourse: Or how I learned to stop worrying and love the dragline. *Goliath Business News*. Accessed 10 December 2008
goliath.ecnext.com/coms2/summary_0199-7822672_ITM
- Sibbel, A. (2008). *When the Dust Settles, How Do Families Decide: FIFO or Residential*. Unpublished PhD thesis, Edith Cowan University, Perth, Australia.
- Stafford Smith, M. (2008). 'The 'desert syndrome' – causally-linked factors that characterise outback Australia'. *The Rangeland Journal* 30(1), pp. 3-14.
- Stafford Smith, M., Moran, M., and Seemann, K. (2008). 'The 'viability' and resilience of communities and settlements in desert Australia'. *The Rangeland Journal* 30(1), pp. 123-135.
- Strongman, J. (2008). *Gender Mainstreaming in the Mining Sector and Mining Communities*, World Bank. Accessed 22 November 2009
http://empoweringcommunities.anu.edu.au/documents/JStrongman_Thepercent20Casepercent20forpercent20GM.pdf
- Strongman, J. (2009). *Sustaining the Social License: Enduring Challenges, Evolving Solution*. Accessed 22 November 2009

- <http://www.sd09.com.au/images/stories/ePresentations/johnpercent20strongman.pdf>
- Storey, K. (2001). 'Fly-in/fly-out and fly-over: Mining and regional development in Western Australia'. *Australian Geographer* 32(2), pp. 133-148.
- Thompson, S.J., and Gifford, S.M. (2000). 'Trying to keep a balance: The meaning of health and diabetes in an urban Aboriginal community'. *Social Science & Medicine* 51(10), pp. 1457-1472.
- Tietenberg, T. (2004) (4th ed.). *Environmental Economics and Policy*. Pearson Addison Wesley, Boston.
- United Nation Environmental Programme (UNEP) (2006). *Message of Dr. Ahmed Djoghlaif, the New Executive Secretary of the Convention on Biological Diversity, to the Women of the World*. Convention on Biological Diversity Secretariat, UNEP. Accessed 26 December 2010 <http://www.cbd.int/doc/speech/2006/sp-2006-03-08-women-en.pdf26>
- United Nations Environment Programme (UNEP) (2007). *Global Environment Outlook 4: Environment for Development*. United Nations Environment Programme, Nairobi, Kenya.
- Wangari, E., Rocheleau, D. E., and Thomas-Slayter, B. P. (1996). *Feminist Political Ecology: Global Issues and Local Experiences*. Routledge, London and New York.
- Warren, K. (1996). *Ecological Feminist Philosophies*. Indiana University Press, Bloomington.
- Warren, K. J., and Cheney, J. (1991). 'Ecological feminism and ecosystem ecology.' *Hypatia* 6(1), pp. 179-197.
- Warren, K., and Erkal, N. (1997). *Ecofeminism: Women, Culture, Nature*. Indiana University Press, Bloomington.
- Watts, J. (2004). *Best of Both Worlds? Seeking a Sustainable Regional Employment Solution to Fly-in Fly-out Operations in the Pilbara*. Pilbara Regional Council, Karratha, Western Australia.
- Whiteman, G., and Mamen, K. (2002). *Meaningful Consultation and Participation in the Mining Sector? A Review of the Consultation and Participation of Indigenous Peoples within the International Mining Sector*. The North-South Institute, Ottawa, Canada.
- World Bank's Oil, Gas, and Mining Policy Division (WBCOCPO) (2009) *Extractive Industries Week: Improving Extractive Industries Benefits for the Poor*. Accessed 12 October 2010 http://siteresources.worldbank.org/INTOGMC/Resources/EI_week_agenda_0223.pdf
- World Health Organisation (WHO) (2005). *Eco-systems and Human Well-being. Millennium Ecosystem Assessment*. World Health Organisation. Accessed 23 December 2010 <http://www.who.int/globalchange/ecosystems/ecosys.pdf>

