

The environmental regulation of mining: an international comparison

by

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CERTIFICATION OF DISSERTATION

I certify that the ideas, experimental work, results, analyses, software and conclusions reported in this dissertation are entirely by own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

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ABSTRACT

Over the past 15 years, significant sectors of the mining industry have undertaken the Global Mining Initiative. This was followed by an extensive program called the Mining, Minerals and Sustainable Development Project. These self regulatory mechanisms require 'beyond compliance' environmental behaviour, whether companies are operating in the developed or the developing world. Reviewing case studies of gold mines operated by the 'top tier' transnational mining companies in Queensland, Papua New Guinea and Tanzania, this thesis addresses whether these and other self regulatory mechanisms are more important than formal legislation in motivating compliance with environmental laws for these mining companies.

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ONE

SCOPE AND OBJECTIVES

1.1 Introduction

This thesis examines the mix of regulatory tools impacting on the environmental aspects of mining¹ activity on a comparative basis in three jurisdictions. One of these jurisdictions, Queensland, is relatively mature in terms of the age and stability of its constitutional and institutional structures and the degree to which its economy is integrated with global markets. The other two jurisdictions - Tanzania and Papua New Guinea - are far less developed in these terms,² yet have similar regulatory processes and statutory principles. The purposes of this examination is to test which form of regulation is more important – self regulation, or formal legislation (Acts and Regulations passed by the relevant government), in motivating compliance with environmental laws by major mining corporations and whether there is any difference in the approach or response of such companies when operating in developed and developing countries. The examination will be confined to looking at the motivations of the ‘top tier’³ mining companies and will be undertaken by use of case studies of companies operating in these jurisdictions.

Environmental regulation is often predicated on international standards, international benchmarks and international policies and all of these regulatory influences are themselves conditioned by often contending social, political, economic and philosophical ideas. Some of these contending ideas will be touched upon in this thesis as they relate to the broader issues of compliance. The principle focus of this work however is the effectiveness of regulation and self-regulation.

The analysis will examine the relative impact on corporate behaviour of two factors: formal regulation and self regulation. Formal regulation is essentially a product of the standards, benchmarks and policies mentioned above and has largely been subsumed into the legal jurisdictions of both developed and developing countries. Self-regulation has emerged as a compliance response and sometimes a beyond-compliance response, by major corporations to the fact that many forms of previously sacrosanct economic activity – mining, fisheries, power generation and so on – are now socially and politically assessed, in the west in particular, from ethical standpoints.

¹ ‘Mining’ has been defined by Cedric Gregory, *A Concise History of Mining*, AA Balkema Publishers, The Netherlands, 2001, xv, as “the process of extracting minerals of economic value from the earth’s crust for the benefit of mankind. ... the earth’s crust refers to the outer surface of the earth extending to a varying depth of about 20 miles, including the oceans, lakes and rivers, embraced by the surrounding atmosphere.” The legal definition of mining in each jurisdiction will be referred to later in the thesis.

² Western-style institutions derive from the colonial period in each instance. Integration with the global economy is similarly at an early stage and currently mediated, in large part, by the World Bank and the International Monetary fund.

³ All case study companies are members of the 14 member Council of the International Council on Mines and Minerals. Brereton notes that the mining industry (in Australia) can be roughly divided into three sectors: (1) a ‘top end’ of large, mostly multi-national, companies; (2) a diminishing number of medium-sized, Australian-owned operations; and (3) a junior sector comprised of numerous small companies involved in exploration and development activities: Brereton D, “Self-regulation of environmental and social performance in the Australian mining industry” (2003) 20 EPLJ 1 at 1.

Corporations may be much more likely to respond to negative perceptions in an era of instant communication, active NGOs, and where their own stakeholders are increasingly prepared to make personal investment decisions based on such an assessment, than to direct regulation. The issue considered here is not whether corporations have become, or indeed ever have, the capacity to become ethical institutions as a consequence of these pressures⁴ but that their behaviour may have become, at the very least, more circumspect and perhaps at best, that some corporations are now genuinely more conscious of their social, inter-generational and global responsibilities.

A factor that may put mere circumspection or genuine environmental concern into perspective is the comparative context in which corporate behaviour is analysed in this work viz. in developed and developing economies.

Two principal issues could be at play. First, corporations of whatever ilk are of necessity driven by the need to maximize profit and to increase shareholder value. This is an imperative in a capitalist system. Profit maximisation might best be achieved when total operating costs are low and since environmental management costs increasingly figure in total costs, when these are also low. This is particularly the case for site reclamation. Should the authorities in less developed countries be prepared to turn a 'blind eye' to environmental deficiencies then such costs may be lower and the net return for a given project correspondingly higher. Second is the understandable desire of governments in developing countries to maximize their own returns from indigenous resource projects, to generate employment or maintain internal political stability. These and other factors could result in their willingness to facilitate development at more or less any cost.

1.2. The Policy Problem

The mining industry contributes substantially to the world economy. Whilst it is a important component of the Queensland economy, it is even more important in terms of percentage of export earnings in Papua New Guinea and Tanzania, as shown in Table 1.1:

⁴ Indeed such a corporation, if it ever existed, may be destined to have a short, though exemplary, life. See for example: Moran A, "Self Regulation of Business: Oil or Grit in the Wheels of Commerce" *Institute of Public Affairs Review*, December 2003 at 29.

Table 1.1 – Contribution of Mining to the Economy

| | Queensland | Papua New Guinea | Tanzania |
|---|---------------------------------|--------------------------------|---------------------------------|
| Annual value of mining & minerals processing industries | US\$12,207 million ⁵ | US\$551.8 million ⁶ | US\$671.5 million. ⁷ |
| % of gross state /national product | 7% ⁸ | 15% ⁹ | 3.2% ¹⁰ |
| No. full time jobs per year | 84,000 ¹¹ | 117,237 ¹² | 29,223 ¹³ |
| % contribution to export earnings | 36.5% ¹⁴ | 52% ¹⁵ | 49% ¹⁶ |

The externalities of mining may also vary across jurisdictions, especially if production practices, regulations and compliance regimes vary.

Both surface and underground mining can have severe environmental impacts by disrupting the landscape, removing vegetation and topsoil, contaminating the air with dust and toxic substances and causing toxic compounds in mining spoils to percolate into the groundwater.¹⁷ Mineral processing also has environmental impacts. Most deposits generally contain less than 30 percent, and often contain less than 1 percent, of the desired metal. Hence large quantities of materials must be extracted and processed to get a much smaller quantity of minerals; inevitably there are large amounts of waste materials left over.¹⁸ A Table of

⁵ Department of Natural Resources, Mines & Water, Quantity and Value of Minerals Produced in Queensland 2004-05, http://www.nrm.qld.gov.au/mines/pdf/mineral_table.pdf (accessed 4 September 2006). A\$16.02 billion, converted at the 30/06/05 exchange rate of 0.7620.

⁶ This is a 2002 figure. 2,149 million kina – av exchange rate to US\$ in 2002 was 3.8952. Source: Asian Development Bank, *Country Reports, Papua New Guinea, Key Indicators*, 333, 337 at http://www.adb.org/Documents/Books/Key_Indicators/2005/pdf/PNG.pdf (accessed 5 September 2006).

⁷ This is the 2004 figure: Government of Tanzania, *Economic Survey 2004* at

<http://www.tanzania.go.tz/economicsurvey1/2004/tables/table57.html> (accessed 5 September 2006).

⁸ Australian Bureau of Statistics, *Year Book Australia 2006*, Australian Government, Canberra, 2006, chapter 16. This figure is for the financial year 2003-04.

⁹ 2002 figure: Papua New Guinea, Department of Mining, *Mining Information Paper, November 2003*, 1.

¹⁰ Government of Tanzania, *The Economic Survey 2004*, “Developments in different Sectors of the Economy” at <http://www.tanzania.go.tz/economicsurvey1/2004/part4/mining.htm> (accessed 4 September 2006). 2004 figure.

¹¹ Department of Natural Resources, Mines and Water, “Mining in Queensland Factsheet, March 2006, 1-2.

¹² 2000 figure: National Statistical Office of Papua New Guinea, “Labour Status – 2002 and 1990” at http://www.spc.int/prism/country/pg/stats/Pop_Soc_%20Stats/Social/Labour%20Force/Employment.htm (accessed 5 September 2006) and Papua New Guinea, Department of Mining, *Mining Information Paper, November 2003*, 1.

¹³ Persons employed in the mining and quarrying industry in the 2000-01 year: National Bureau of Statistics, *Integrated Labour Force Survey, 2000-01 – Analytical Report*, Dar es Salaam, Tanzania, 27.

¹⁴ Department of Natural Resources, Mines and Water, above n 11, 1-2.

¹⁵ 2002 figure: Papua New Guinea, Department of Mining, *Mining Information Paper, November 2003*, 1.

¹⁶ Government of Tanzania, *The Economic Survey 2004*, “Developments in different Sectors of the Economy” at <http://www.tanzania.go.tz/economicsurvey1/2004/part4/mining.htm> (accessed 4 September 2006). 2004 figure. Of this figure, gold exports were valued at US\$499 million. Total exports were US\$1,334.9 million: Bank of Tanzania Database and national Bureau of Statistics (*Economic Survey, National Accounts*), at http://www.bot-tz.org/Publications/EconomicIndicators/Economic_Indicators.htm (accessed 5 September 2006).

¹⁷ Beder, Sharon, *The Nature of Sustainable Development*, Scribe Publications Pty Ltd, Victoria, 1993, 27.

¹⁸ *Ibid*, 27–29.

potential impacts of mineral exploration and development is included at **Appendix 1-1**. A history of the awareness of environmental impacts of mining is included at **Appendix 1-2**. Licences routinely include conditions in relation to air pollution, in particular due to dust emissions and emissions from processing plants; noise pollution from the operation of a mine and processing plants; drainage of contaminated waters from the mine site and acid mine drainage¹⁹ from disturbed soils coming into contact with water and air. Further details about the forms of pollution covered by mining licence conditions are included at **Appendix 1-3**.

Formal legislation attempting to deal with various forms of pollution, primarily for public health reasons, is not a recent phenomena. An early case of environmental regulation in Europe was enacted in the reign of Augustus Caesar, when restrictions were placed on the felling of trees around Rome, which were being consumed in large numbers in iron-making.²⁰ Similar laws were passed in Great Britain in the 4th century.

In 1272, King Edward I prohibited the use of ‘sea-coal’ (a soft bituminous coal mined off the northeast coast of England) because the fumes were considered detrimental to human health.²¹ In 1388 a statute²² prohibited the throwing of dung and other filth into rivers and ditches close to any towns and villages.²³ By the 1560s, London was bathed in sulphurous smoke.²⁴ The witches in Shakespeare’s *MacBeth* chant “Fair is foul, and foul is fair: Hover through the fog and filthy air”.²⁵ In the next century, King Charles II, infuriated by the palls of coal smoke that hung perpetually over London, prohibited the use of coal-fired hearths. All such measures, perhaps understandably, appear to have been largely ignored by the population.

John Evelyn’s essay, “Fumifugium” in 1661, has been described as “an early, if not the earliest, example of environmental lobbying”.²⁶ He describes the noxious effects of the sulphurous smoke in London, tracing its cause to industry and suggesting laws to banish polluters from the city:

[h]er inhabitants breathe nothing but an impure and thick Mist accompanied with a fuliginous and filthy vapour, which renders them obnoxious to a thousand inconveniences, corrupting the lungs, and disordering the entire habit of their bodies; so that catharrs, phthisicks, coughs and consumptions, rage more in this one city, than in the whole Earth besides.²⁷

The focus on air pollution and similar piecemeal legislation enacted up until the 1960s, such as the *Clean Air Act 1956* in the UK, was not on the protection of the environment for its own

¹⁹ This is also known by the more neutral term, ‘acid rock drainage’, which presumably seeks to distance it from mining.

²⁰ Institution of Mining and Metallurgy, *Minerals, Metals and the Environment*, Elsevier Applied Science, London, 1992, v.

²¹ Urbinato, David, “London’s historic ‘pea-soupers’”, *EPA Journal*, Summer 1994, Vol 20 Issue 1/ 2, 44. Anyone caught burning or selling the coal was to be tortured or executed. The first offender caught was summarily put to death. This generally wasn’t a deterrent, as the alternative was to burn wood, which few could afford.

²² 12 Ric 2c 13.

²³ Bates G, *Environmental Law in Australia*, 5th ed, Butterworths, Sydney, 2002, 8.

²⁴ Wall, Derek, *Green History: A Reader in environmental literature, philosophy and politics*, Routledge, London, 1994, 44.

²⁵ *Macbeth*, Act 1, Scene 1.

²⁶ Wall, above n25, 44.

²⁷ Evelyn J, *Fumifugium or The Inconvenience of the Air and Smoke or London Dissipated*, University of Exeter edition, United Kingdom, 1976, 5.

intrinsic value, but rather focussed on the impact on human health. Apart from the Clean Air Act, immediate post-war legislation was limited, though there was a notable increase in legislative activity from the 1960s and 70s, with environmental legislation, designed primarily to protect human health, enacted in the United States, United Kingdom, Europe, Japan and other industrialised countries.

Whilst this legislation was not specifically designed with mining in mind,²⁸ it was aimed at large industrial sources of water and air pollution. Gunningham notes that these regulatory approaches generally followed the United States model of ‘command and control’ regulation, that is, the legislatures proscribed certain behaviour and set up a regulatory agency to monitor and police compliance with the legal standards.²⁹ In other words the conceptual approach was a substantive legal one, having similarities to the enactment of local laws on parking or garbage collection. This approach had certain advantages, particularly that issues could be addressed as they arose and with a degree of regulatory efficiency.

Whilst acknowledging the role that command and control regulation can play in dealing with environmental degradation,³⁰ much has been written about the limitations of this model as the sole tool to deal with pollution.³¹ Alm notes that shortfalls with command and control regulation include a focus on point source pollution, the time lag in drafting legislation and the cost of regulations.³² Further problems arise in developing countries, where the regulatory agency may be under-resourced and unable or unwilling to adequately enforce the legislation.

There may therefore be arguments for using a variety of regulatory tools. Gunningham speaks of this in terms of ‘smart regulation’,³³ Tailoring the instrument to the situation. Ayres and Braithwaite argue the case for ‘responsible regulation’. They emphasise the use of self regulation whereby regulatees develop their own compliance program, which is then subject to approval by regulatory authorities and ‘regulatory republicanism’ where an enlightened private sector and an informed public, through deliberation and constructive participation, can contribute productively to the regulatory process.

This work looks at the range of regulatory tools that are available for environmental protection specifically in the context of the mining industry. Using the case study methodology, it undertakes an examination of the *reality* of regulation on the ground, as distinct from a merely normative or reflective examination of the principles of regulation as evidenced by the statutes and other pieces of subordinate legislation.

²⁸ Eggert Roderick G, *Mining and the Environment: International Perspectives on Public Policy*, Resources for the Future, Washington DC, 1994, 2.

²⁹ Gunningham N & Grabosky P, *Smart Regulation*, Oxford University Press, Oxford, 1998, 5.

³⁰ *Ibid*, Ch 1, notes 12 and 13.

³¹ See the work by Keith Hawkins, Neil Gunningham, Ian Ayres, John Braithwaite and Peter Grabosky. For example: Hawkins K, *Law as last resort: prosecution decision-making in a regulatory agency*, Oxford University Press, New York, 2002; Hawkins K, *Environment and Enforcement: regulation and the social definition of pollution*, Clarendon Press, Oxford, 1984; Gunningham N & Sinclair D, *Leaders and laggards: next generation environmental regulation*, Greenleaf Publications, Sheffield, 2002; Braithwaite J, *Regulatory Capitalism: how it works, ideas for making it work better*, Edward Elgar, Cheltenham, 2008; Braithwaite J, *Global business regulation*, Cambridge University Press, Cambridge, 2000.

³² Alm Alvin L, “A need for new approaches”, *EPA Journal*, May/June 92, Vol 18 Issue 2, 6.

³³ See Gunningham & Grabosky, n 30 above, 10.

1.3. Research problem and objectives of the thesis

As has been proposed, without efficient regulation, the environmental impacts of mining are potentially severe.³⁴ If damage is to be avoided, there is a need for countries to have adequate standards in place and possibly both incentives and sanctions that will encourage or force companies to comply. However, the words on the statute books are not enough. It is also necessary to address whether and how these standards are enforced in practice. This thesis addresses the role that formal regulation and self-regulation play in encouraging compliance with environmental laws by mining companies. It is limited to an examination of several of the ‘top tier mining companies’ (the world largest mining companies)³⁵ operating in three jurisdictions – one developed economy and two transitional economies. The hypothesis is that self regulatory mechanisms are the most important factors in motivating compliance with environmental laws, in developed, but particularly in developing countries, with formal government regulation playing a useful, but secondary role.

As has been noted, there are many definitions/ understandings of the term ‘self regulation’. This thesis will accept a broad definition of the term, to encompass:

- ‘voluntary’ self regulation, which involves an industry or profession establishing codes of practice, enforcement mechanisms and other mechanisms for regulating itself, entirely independent of government; together with
- self regulation activated by external institutions. Gunningham notes that government may directly engage in the self-regulatory process by jointly negotiating targets and strategies, and providing, if necessary, external verification and ratification.³⁶ In the mining industry, the main external institutions that have been influential have been United Nations bodies and the World Bank, rather than national governments.

Non-government organisations create a prudential framework around the self regulatory activities of corporations. In other words, NGOs have effectively created a public environmental ethos which has direct and indirect effects on corporations to the same, or arguably greater, extent than its effects on the general public. Through direct engagement and indirectly through their ability to generate widespread, adverse publicity, NGOs are now a critical component of self regulatory mechanisms impacting on the mining industry.

“Compliance” with environmental laws will not only be considered in a formal ‘legal’ context, that is, there is deemed compliance if the companies are not prosecuted, either through the criminal system, or by government or third parties civilly. It will also be considered in the context of a social and political ‘licence to operate’: ie where there exists a general acceptance by the local communities and NGOs that the operation is legitimate or illegitimate and of value or of little or no net value. In testing this proposition, it will be necessary to consider:

- the differences between formal regulatory regimes and actual enforcement in both developed and developing countries. This is relevant in the context of discussing whether the same standards can and do apply in such countries.

³⁴ An overview of the environmental impacts of mining is included as Appendix 1-1.

³⁵ Brereton, n 3 above, 1.

³⁶ Gunningham & Grabosky, n 30 above, 55.

- whether governments in developing or developed countries can dictate terms to transnationals, or whether transnationals can set the regulatory agenda. It is for this reason that the thesis will examine the regulation of mining in both developed and developing countries.
- whether the sophisticated environmental concerns of transnational mining companies, derived from their home jurisdictions and from industry created International Mining Initiatives, are translated and consistently applied in constitutionally and economically less sophisticated regimes.

1.4. Structure of Thesis

Chapter 1 sets out the research problems and objectives of the thesis. It explains the rationale for the choice of the jurisdictions to be examined and justifies the use of a comparative basis of assessment. It indicates significant issues relating to the interplay between mining and environmental regulation in each jurisdiction as exemplified, subsequently in specific case studies – which is the methodological framework utilised in this thesis.

Chapter 2 provides an historical explanation, and literature review, of the self regulatory mechanisms impacting on the environmental regulation of mining. In order to understand the current self regulatory mechanisms, it is necessary to consider the origins of an environmental consciousness in respect of mining, and, in particular, the impact of specific international conferences on the environment and mining, which are the sources of many of the codes of conduct which guide the industry today. This chapter will also discuss the other protagonists in the ‘regulatory mix’. This includes non-government organisations, which, depending on their philosophy, may act as a ‘defacto’ regulatory agency through the use of various tools at their disposal, such as negative publicity, or, alternatively, work closely with industry to achieve compliance. It also includes agencies such as the World Bank, which, in the case of Tanzania and PNG, is a significant source of aid for legislative facilitation projects and institution building.

Chapter 3 provides an historical explanation, and literature review, of the formal legislation regulating the mining industry in the chosen jurisdictions. This chapter will examine the historical attempts of legislation to moderate the environmental effects caused by mining. It will also review the different legal systems in the case study jurisdictions to determine how this impacts on formal regulation. Specific legislation seeking to regulate the environmental impacts of mining, including the third party enforcement provisions, if any, of such legislation will also be considered.

As this thesis is seeking to test its hypothesis in both developed and developing economies, it is important to look at the different political contexts in each of these jurisdictions. The mining companies being considered are all transnational corporations – indeed some of the largest companies in the world, with turnovers greater than that of the countries in which they are operating. Chapter 4 therefore considers the effectiveness of formal regulation, in terms of whether TNCs have a preference for operating in developing countries, due to perceptions of low regulation. It also reviews the role of corruption/ facilitation payments as a political reality of doing business and the influence that this has on regulatory enforcement.

Chapter 5 utilises a range of case studies to test the hypothesis that self-regulation is more important than formal regulation in both developing and developed legal systems.

The case studies chosen have a number of aspects in common:

- they involve major private sector transnational corporations
- though the specific mineral may vary, the mines considered in Australia and Papua New Guinea utilise strip mining techniques
- they all have the potential to cause significant adverse environmental impacts
- the central focus of all mines is gold and/or copper mining, which involves similar environmental issues – acid mine drainage, tailings disposal/ containment, cyanide use.

1.5. Study Sites

This section provides an overview of the jurisdictions, and the mines, that will be discussed in this thesis. While there are many differences between the administrative arrangements of developed and developing countries, there are also many similarities, at least in terms of administrative structures and legislative principles. A justification for the jurisdictions chosen, and an overview of the case studies in each jurisdiction follows.

1.5.1. Jurisdictions

Queensland is a developed economy, with a developed legal system and administrative institutions. As Table 1.1 illustrates, Queensland's economy has a high dependency on mining. It has a common law legal system, like the other jurisdictions chosen. However unlike the other jurisdictions, the environmental regulation of mining is dealt with by an Environmental Protection Agency, rather than the Department of Mines and Energy (DME).³⁷ The DME, however, remains responsible for the grant of mining tenements. As a consequence, both Departments, and both Ministers, are involved in the aggregate approval process. The direct involvement of an environmental protection agency is unique in Australia and arguably, in the words of the Environment Minister's second reading speech, it may constitute "one of the most significant environmental reforms introduced by the present Labor Government".³⁸

Papua New Guinea is a developing country,³⁹ a neighbour of Australia, and has an economy heavily dependent on revenue derived from mining.⁴⁰ It has also been chosen since it has a common law legal system and hence its regulations are more directly comparable with Australia. It is of further interest because, though it shares many common institutions with its developed neighbour, Australia, the State and its agencies have many constraints, including challenges to legitimacy, limits to administrative reach and corruption.

Tanzania is another example of a developing country. It can provide further evidence to test whether transnationals adhere to different standards in the developing world. With a

³⁷ The regulatory processes were transferred as from 1 January 2001.

³⁸ Speech by the Hon RJ Welford, *Hansard*, 4 October 2000, 3385.

³⁹ 'Developing', 'under developed' or, in the words of Paul Ehrlich, 'never-to-be-developed' country. The choice of adjective can reflect a writer's optimistic, realistic or cynical mindset respectively.

⁴⁰ See Table 1.1 on page 4 of this Chapter which details the economic significance of mining to each jurisdiction that will be considered in this thesis.

population of approximately 33 million,⁴¹ an annual per capita income of US\$251⁴² and an estimated 50 percent of the population living below the poverty line,⁴³ Tanzania is one of the poorest countries in the world. It is, however, resource rich. It therefore has significant economic need to exploit its resources, particularly gold and gems. As a former British colony, it has a common law legal system, which provides, at least notionally, a set of institutional structures and judicial norms more or less in common with Australia and PNG. The implementation and enforcement of these standards is critically reviewed.

1.5.2. Case Studies

As noted previously, all of the case study mines discussed in this thesis are operated by ‘top tier’ transnational mining companies. More specifically, they have been chosen because the companies operating in both the developed country case study also operate in one of the developing countries, hence giving a direct analysis of the motivators for environmental compliance in different jurisdictions. The mines and operating companies are as follows:

Table 1.2 – Overview of Case Studies

| Queensland | Papua New Guinea | Tanzania |
|--|---|---|
| Cannington Mine Operator: BHP Billiton | Ok Tedi Mine Ltd Operator: BHP Billiton | Geita Mine Operator: AngloGold Ashanti |
| Osborne Mine Operator: Barrick | Lihir Gold Ltd Operator: Rio Tinto | Bulyanhulu Mine Operator: Barrick |

Two case studies have been chosen from Queensland. The first is the Cannington Mine, a silver, lead and zinc mine in north-west Queensland. Cannington is owned and operated by BHP Billiton Ltd. The second is the Osborne Mine, a copper/ gold mine, also in north-west Queensland. Osborne is operated by Barrick Gold Corporation Ltd. Both mines were developed in the 1990s and both are underground mines. These mines have particularly been chosen because they are operated by companies discussed in the Papua New Guinea and Tanzania case studies, respectively.

Two case studies have been chosen from Papua New Guinea. The first is the Ok Tedi mine, which was developed and operated by the Australian owned BHP, until its withdrawal in February 2002. Of particular relevance for this thesis are the reasons for withdrawal by BHP, the conflict over closure with the PNG Government, and the withdrawal package negotiated with the PNG Government. Ok Tedi also highlights a central concern of this thesis which is whether the concern for the environment by transnational companies, derived from their home jurisdictions, are necessarily translated and consistently applied in constitutionally and economically developing regimes.⁴⁴

⁴¹ 2002 estimate.

⁴² per capita Gross Domestic Product – 2001 estimate.

⁴³ Statistics sourced from the United Republic of Tanzania National Website – <http://www.tanzania.go.tz/profile/html> (accessed 24 September 2002).

⁴⁴ A similar concern was expressed by British Prime Minister Tony Blair in his address on the principles of sustainable development, aid and corporate governance, to the Johannesburg Summit, 2 September 2002.

The second case study is Lihir Gold Ltd, which was, from its inception until 2006, operated by Rio Tinto. A comparatively new mine⁴⁵, Lihir is illustrative of current mining practice by transnational corporations in PNG in that the environmental management process is heavily influenced by its ISO14000 accreditation – a voluntary international standard.

Two case studies will be reviewed from Tanzania. The first is the Bulyanhulu Gold Mine, which, like the Osborne mine in Queensland, is owned and operated by Barrick. While the Bulyanhulu mine is underground and the Osborne mine is open cut, similar environmental problems arise, such as disposal of the overburden, waste materials used in processing of the ore and disposal of tailings and rock drainage. Specifically, this enables an analysis to be made of the standards maintained by one company operating in different regulatory environments. The second case study is another gold/ copper mine, the Geita Mine operated by Geita Gold Mining Ltd, a company owned by AngloGold Ashanti Ltd.⁴⁶

1.6. Scope of Thesis

Any system of state regulation, and environmental regulation is merely one particular sub-system of regulation and should never be considered in isolation from the political and economic realities which give rise to it and which condition it on an ongoing basis. Indeed, to the extent that attempts are sometimes made to prescribe global approaches and global solutions to problems without an appreciation of the local context in which they are to be implemented, they are almost always doomed to failure.

The economic and political realities which will be dealt with in this thesis and which, it will be argued, condition the effective implementation of these global solutions have their genesis in the age-old dynamic of the strong and the weak, the powerful and the relatively powerless. Paradoxically perhaps, this dichotomy may find expression in the case of underdeveloped countries having a market advantage if considered in purely economic terms. Equally, it may find its expression in much higher levels of environmental degradation suffered as a price for this economic advantage. Conversely, regulatory regimes in which prescriptive aspects are effectively enforced may become the economic casualties in a global search by transnational corporations for the lowest unit cost of production. In summary this phenomenon is known as “regulatory flight”.

The world is replete with examples of major corporations (and many more minor ones) which take advantage of lower hourly rates, lower regulatory impositions, transposed capital risk⁴⁷ and lower taxation regimes. As part of this mix mining companies in particular may also take advantage of lower environmental protection costs and the absence of any compulsion or inclination to provide for the reclamation of mined sites. The danger in this area however appears to be simplicity. Major mining corporations of the type considered in this work are sophisticated, complex organizations whose assessment of economic advantage is balanced by a corresponding assessment of risk.

⁴⁵ Mining at Lihir commenced in 1995, with the first gold poured in 1997.

⁴⁶ This is a joint venture between the South African based AngloGold (one of the major gold producers in the world) and the Ghanaian company, Ashanti Goldfields Co Ltd.

⁴⁷ By means of, for example, so-called Nike contracts in which the capital cost of the production facility is passed on to indigenous investors in return for a relatively short term production contract at a fixed rate of return.

The prospect of minimal environmental oversight of companies' operations may well be a significant factor in the assessment of the total cost of production, but a decision to invest in a particular mine is always going to be more a reflection of the value and richness of the resource combined with an examination of aggregate risk. Aggregate risk means the totality of economic and non-economic factors which ultimately bear down upon the operation and which, in combination, give rise to a perception that a project should or should not be undertaken. The economic factors in such an investment calculation are relatively easy to assimilate and to quantify. The non-economic factors however are rather more diffuse and essentially non-quantifiable but experience indicates they may be as important, in many instances, as purely financial factors⁴⁸.

These factors which operate together to make transnational mining potentially a "wicked problem", to use Rittel and Webber's phrase,⁴⁹ relate to the social and political milieu in which the operation is to be carried out. They include the existence of a developed system of contract and commercial law, a constitutional system with an emphasis on private rights, an impartial judiciary and, above all, a systemic and institutional commitment to the rule of law.⁵⁰ Consequently, it may be decided that, although costs of production in one country may be considerably lower than another, on balance, and when viewed in the expanded context of this "institutional risk", a decision should be made in favour of the higher cost jurisdiction. It is, accordingly, somewhat simplistic to suggest that major corporations invariably site their operations in countries which are able to generate the lowest unit costs and such a proposition is not assumed in this work.⁵¹ Nevertheless economic factors are perhaps the major input into the criteria for decision and environmental compliance, or the absence of a regulated compliance regime, can be a significant factor in the aggregate assessment of risk with the "value" of environmental compliance influenced by the perception that it is merely an "add-on" cost and fundamentally unrelated to a true or accurate calculation of production cost or investment return.

As a consequence this thesis does not assume that strict environmental regulation necessarily equates to the loss of capital projects, increased unemployment and lower economic growth. Equally however, high environmental compliance costs may be a factor which tips an investment decision in one direction rather than another even given marked variations in institutional risk. Amongst other issues this thesis sets out, *inter alia*, to test the relative impact of such compliance costs by examining the actual behaviour of similar corporations (and sometimes the same corporation) in differing political and economic contexts. If environmental compliance is now seen as a "global mining initiative" and not as a mere add-on cost then compliance standards between developed and under-developed countries should be identical or, at least, very similar. Conversely, to the extent that they are dissimilar this writer suggests that environmental compliance is still tending to be perceived in economic terms, that regulatory flight is a potential factor and that a genuinely holistic approach to global mining has yet to emerge.

⁴⁸ The experience of CSR Ltd in Bougainville is illustrative. See: Denoon, D. *Getting under their skins: The Bougainville Copper Agreement and the Panguna Mine*, Melbourne University Press, 1999.

⁴⁹ Rittel, H.W.T and Webber, M.W. *Dilemmas in a general theory of planning* (1973) 4/3 *Policy Sciences*. Problems become "wicked" when the social and behavioural factors intersect the decision making process.

⁵⁰ These factors, in combination, are described subsequently as "institutional risk factors".

⁵¹ For a rejection of this conclusion see: Wynia GW, *The politics of Latin American Development*, Cambridge University Press, 1978. He places TNC activity within a broader context of "western economic imperialism".

1.7. Contribution of the Thesis

Attitudes to large transnational corporations have been influenced by particular and well-publicised incidents, from the 19th century to the present.⁵² Mention need only be made of the activity of Malaysian timber companies in PNG and the Solomon Islands⁵³, to the activity of the Shell company in Nigeria which has cut across and exacerbated tribal animosities within an authoritarian state and to the example of BHP at Ok Tedi that this thesis will consider.

The range of incidents means the activity of transnational corporations is viewed suspiciously by large sections of the population and in both developed and undeveloped economies. This suspicion however is not merely a function of historical examples but is also response to an amalgam of other factors which have their origins in the experience of colonial exploitation, fears of globalization or the assumption that corporations everywhere, as capitalist structures, are and always will be, enervated by the bottom line. Nevertheless, and despite the continuation of environmental degradation, international corporations, and particularly mining companies, must now function in an increasingly transparent world. This is a direct function of technology and the media, but also changing expectations with regard to safety and environmental protection.

In response to this now concerted ability on the part of the media, NGOs and stakeholders to seek and find and interpret the “truth” (and perhaps also to the necessity to secure a licence to operate and long term investment returns in any event) many transnational companies have become very proactive in stressing their new commitment to environmental sustainability.⁵⁴

This thesis therefore seeks to answer a simple but highly important question. What role does formal legislation play in encouraging selected corporations to become ‘good corporate citizens’ and whether other self regulatory factors are as, or more, important in encouraging such behaviour? Indeed, is their ongoing behaviour merely a part of corporate advertising or have they, in fact, responded to the emerging realities in a positive and constructive manner, or is it both? For the reasons given earlier, a comparison of their behaviour in contrasting developed and developing countries may come close to answering this question. Obviously it is not possible to derive a general principle of corporate behaviour from an analysis such as this. But a more limited principle viz that the behaviour of major TNCs is increasingly being conditioned by broader, and indeed global, environmental concerns is deducible from the evidence.

⁵² See: http://www.worldproutassembly.org/archives/2005/12/liberia_firesto.html (accessed 21 March 2008) for an examination of Firestone’s operations in Sierra Leone.

⁵³ See: <http://www.forestalert.org/forest.php?lang=en&id=46> (accessed 21 March 2008) for an examination of Malaysian timber companies operating in PNG and the Solomon Islands.

⁵⁴ BP is, currently, a prime example. BP is styling itself ‘Beyond Petroleum’ and declaring that it’s ‘thinking outside the barrel’. Katherine Mangu-Ward in “The Age of Corporate Environmentalism”, *Reason*, Vol 37, Issue 9, p 34 describes their behaviour in the following terms: “BP’s Environmental Team has crafted an elaborate advertising campaign and rebranding effort, recently expanded to the Web. Its goal: to convince the world that a company that sucks dead dinosaurs out of the earth, turns them into gasoline, and delivers that gas to SUVs can also be environmentally friendly enough to use a green and yellow sunburst (or is it a flower?) as its logo.”

TWO

REVIEW OF SELF REGULATORY MECHANISMS

2.1. Introduction

In Chapter 1, the thesis considered the reasons for the choice of the various mines and jurisdictions and examined the risk and opportunity factors that condition mining activity in both developed and developing countries. This Chapter considers the rise of environmental consciousness and the role played by United Nations agencies, the World Bank and its associated institutions and non-government organisations in transmitting environmental considerations into development in general, and mining in particular. It also looks at the self regulatory mechanisms that are specific to the mining industry. This thesis adopts a broad definition/ understanding of the term 'self regulation'. It encompasses initiatives, such as codes of practice, that are developed by industry without government intervention, through to forms of 'co-regulation' in which government or other bodies, such as the World Bank or even non-government organisations are involved in negotiating and in some instances, verifying standards.

2.2. The Importance of Self Regulatory Mechanisms

Voluntary, or self regulation, as a form of regulation, is not without its critics. Grabosky and Braithwaite opine a criticism thus: "If self regulation worked, Moses would have come down from Mt Sinai with the 10 guidelines".⁵⁵ Lexchin states that "voluntary codes tend to be reactive, they lack transparency, they omit large areas of concern, and they lack effective sanctions".⁵⁶ In reviewing the history of self regulation, Blumrosen reflects that industry has used the concept to "ignore the public interest, to engage in 'cosmetic compliance' and to delay, if not to avoid, satisfying public concerns".⁵⁷

Nevertheless, proponents of self regulation note that it can lead to fewer complaints, lower compliance costs, as well as a reduced stream of litigation.⁵⁸ They also note that laws can prescribe technological solutions but do little to foster fluid systems that learn and adapt to change and maximize efficiencies. By definition, it is impossible to legislate requirements to go 'beyond compliance',⁵⁹ yet voluntary codes can do so.

⁵⁵ Grabosky P & Braithwaite J, *Of Manners Gentle: Enforcement Strategies of Australian Business Regulatory Agencies*, Oxford University Press, Melbourne, 1986, 184.

⁵⁶ Lexchin, Joel, "Voluntary Self-Regulatory Codes: What Should We Expect?" *American Journal of Bioethics*, Summer 2003 Vol 3 No 3, 49.

⁵⁷ Blumrosen, Alfred W, "Six Conditions for Meaningful Self-Regulation", Vol 69 *American Bar Association Journal*, September 1983, 1264-1269 at 1264.

⁵⁸ Moran Alan, "Self-Regulation of Business: Oil or Grit in the Wheels of Commerce?" *Institute of Public Affairs Review*, December 2003, 28.

⁵⁹ Gilbert Sean, "The Transparency Evolution", *The Environmental Forum*, Environmental Law Institute, Washington DC, November/ December 2002, 21.

Sethi notes that the mining industry – and its leadership – has been cognizant of the rising public hostility and has undertaken a variety of initiatives to respond to public criticism.⁶⁰ Indeed, one of the case studies of this thesis, the Ok Tedi mine, has generated much adverse publicity, and directly driven changes in BHP Billiton generally and more particularly at its Cannington mine in Queensland.

This thesis examines the contention that corporate reputation, the role of NGOs and general public perception are important components of the regulatory mix. Indeed, the Mining, Minerals and Sustainable Development Project's publication, *Finding the Way Forward*, notes that pressures other than regulatory scrutiny (such as consumer and investor desires) often drive voluntary activities in companies, and in this sense few such initiatives can be deemed to be truly 'voluntary'.⁶¹ It is in this context that this chapter will first consider how this general environmental consciousness arose. Given the importance of NGOs in particular, it will next consider the growth of NGOs, and in particular, the various modes of engagement that have been adopted between NGOs and the mining industry.

As noted in Chapter 1, the range of industry initiated mechanisms in the mining industry has been largely a result of international 'soft law'. Various United Nations international conferences, beginning with the Stockholm conference in 1972, and more recently, specific global mining initiatives, have directly influenced the range of self regulatory tools that have been developed internally by the major mining companies, or more usually, in partnership with NGOs. This chapter will review these major international initiatives, before discussing a range of self regulatory tools that impact on the activity of the 'major' miners. Before that, however consideration must given to the rise of a general environmental consciousness in the western world. It is argued that it is this consciousness which ultimately conditions the debate on the efficacy or otherwise of self-regulation.

2.3. The Growth of Environmental Consciousness

An environmental consciousness is now seen as a 'main stream' issue. Indeed all of the case study companies report at least annually on their sustainability outcomes. This next section will trace the history of this growth of environmental consciousness to provide a context to the uptake of these principles by the United Nations, which in turn has been translated into domestic policy and legislation in each jurisdiction considered by this thesis.

⁶⁰ Sethi, S Prakash, "The effectiveness of industry-based codes in serving public interest: the case of the International Council on Mining and Metals", *Transnational Corporations*, Vol 14 No 3 (December 2005), 57.

⁶¹ Walker J & Howard S, *Finding the Way Forward*, International Institute for Environment and Development, London, 2002, vii.

2.3.1. The origins of environmental consciousness

Environmentalism is intellectually and politically influential. Environmentalism is more than an idea or set of ideas, more than a mere intellectual disposition and certainly more than a simple emotional concern about an increasing number of perceived local or international problems. Yet, these dispositions, ideas and concerns form an intrinsic part of an ever-expanding conception without borders, a 21st century world-view which establishes a diffuse, often unbounded assessment system within which fundamental questions in economics, social science, law and even medicine are now called upon to be reviewed.⁶² Concepts such as the environment, sustainability and others now form part of the popular conversation in many western societies.

Though this position has been arrived at in a relatively short period of time, unlike other profound changes in western thought, it is impossible to attribute its rise to any one single event. Newton's work in thermodynamics and gravitation represent possible starting points in the history of physics. Similarly the publication of Darwin's *On The Origin of Species*, Freud's work in psychopathology, Einstein on relativity and Marx in political and economic theory largely define the commencement of new periods of profound intellectual change. Ideas which may have been in general circulation at the time were suddenly crystallized to form the basis for new intellectual paradigms.⁶³

In contrast, the origins of environmentalism, which is as much a social phenomenon as an intellectual one, reflect the convergence of a multitude of social, economic, historical and other factors. It may owe something to the disaffection of youth in the 1960s and to the soulful reflection of a generation that had only recently emerged from the cauldron of World War II. It may also owe something to the decline of organised religion and the search for a focus in a world where God was dead,⁶⁴ the activism of flower power and the certitude of middle class children who had never experienced want but had seen it on TV.

Given these disparate influences, the terminology of environmentalism remains in open to interpretation. Indeed a literature has arisen concerning the meaning of some of the discipline's fundamental concepts including 'environmental consciousness' and 'the environmental movement'. This includes questions such as whether the environmental movement is the same as the green movement, and whether 'environmentalism', 'ecologism' and 'green' are synonymous. For instance, Bookchin unfavourably contrasts 'environmentalism' with 'ecology' on the basis that the former "does not bring into question the underlying notion of the present society that man must dominate nature"; rather that it seeks to facilitate that domination by

⁶² See, for example, *Integrated Planning Act 1997* (Qld), s 1.2.1.

⁶³ For an examination of the Marxist attitude to "suffering" under capitalism see Popper, K, *The Open Society and its Enemies*, Routledge, London, 1962, 320-321.

⁶⁴ Altizer, Thomas JJ, *The Gospel of Christian Atheism*, Philadelphia., Westminster Press, 1966.

developing techniques for diminishing the hazards caused by the domination.⁶⁵ Such disagreements reflect the ideological range within environmentalism–ecologism.⁶⁶

Accordingly, this thesis accepts Hay’s view that these terms are commonly regarded as interchangeable and that “it seems hardly necessary to drive wedges of pedantry betwixt terms that, in any case, shimmer with political resonance”.⁶⁷ In other words the view adopted in this work is that “environmentalism” is an umbrella concept which encompasses a set of unifying principles – the ecological necessity of protecting biodiversity, inter and intra-generational equity and sustainability.⁶⁸

Though we have now reached a degree of concern in western societies which, as indicated above, seeks to assimilate most areas of human conduct into a broad canvas of ‘the environment’, environmental awareness, of some form or another, is not new. Plato, for example, described soil erosion in 4th century BC Attica:

In comparison with what then was, there remains only the bones of the wasted body ... all the richer and softer parts of the soil having fallen away, and the mere skeleton of the land being left ... the land reaped the benefit of the annual rainfall, not as now losing the water which flows off the bare earth into the sea.⁶⁹

A few centuries later, the Roman writer Lucretius, commenting on the same problem, noted that ‘ancient ploughmen’ already shake their heads and sigh over the easier, more productive fields that their fathers had tilled.⁷⁰ Other examples of environmental degradation in ancient times, and reactions thereto, have already been mentioned briefly in Chapter 1 and what follows represents a very brief overview of the main currents of thought which arose from the start of what could loosely be described as the ‘modern period’, commonly viewed as having started with Columbus’s findings of the Americas in 1492.⁷¹

Thomas notes that the predominant view in the West from the 16th century reflected the ideas of the Greek Stoics, who thought that the Earth had been designed for humans alone. The Tudors and Stewarts were sure that domestic animals were there to labour and wild animals to be hunted. The animals were to minister to humans as humans were, by divine right, to serve the King. Human domination was God-given and complete even if the relationship between man and nature could occasionally be elaborated as stewardship.⁷²

⁶⁵ Bookchin Murray, *Toward an Ecological Society*, Black Rose Books, Quebec, 1980, 59.

⁶⁶ Bookchin, for example, describes himself as an “eco-Marxist” – see the Introduction to *Toward an Ecological Society*, Ibid, where Bookchin explains his philosophy.

⁶⁷ Hay Peter, *Main Currents in Western Environmental Thought*, University of New South Wales Press, Sydney, 2002, 1.

⁶⁸ Hundloe, T. *From Buddha to Bono: seeking sustainability*, JoJo Publishing, Victoria, 2008, 8.

⁶⁹ cited in Wall, above n 24, 3.

⁷⁰ Ibid, 3.

⁷¹ Worster provides the pessimistic analysis that “Columbus’s discovery opened a long era of global destruction, when native peoples everywhere would fall before the European onslaught, before an aggression that was at once biological, political, and cultural, when the entire planet’s fabric of life would be torn asunder in a frenzy of greed, lust, noble ambition, and high-minded idealism”. Worster Donald (ed), *The Ends of the Earth: Perspectives on Modern Environmental History*, Cambridge University Press, Cambridge, 1988, 4.

⁷² Simmons IG, *An Environmental History of Great Britain: From 10,000 years ago to the present*, Edinburgh University Press, Edinburgh, 2001, 118-119. There were, of course, some counter currents.

By the latter part of the 18th century, the transformative impact of early industrialism became apparent. For the first time, an ‘ecological impulse’ found wide-spread expression.⁷³ Hay describes the rise of the so-called ‘romantic movement’ as a reaction against the ‘Age of Enlightenment’ exemplified by Descartes in the previous century.⁷⁴ Paintings began to depict green fields and farming valleys as sources of beauty and moral inspiration and such ideas found ready expression in the romantic poetry of Shelley, Wordsworth and Keats. The appreciation however was usually anthropocentric reflecting the relationship between man and nature rather than the intrinsic value of the woodland, the tree or the open space and in particular nature’s spiritual and restorative value to humans.

Equally, the gradual rise of environmental consciousness cannot be considered in isolation from developments in science which, throughout the 19th century began to present a view of nature which was curiously contradictory. On the one hand the developing scientific perspective suggested that nature was a thing of beauty and integrity comprising a set of laws that must be obeyed and an order that had to be respected and protected. It should also be preserved so it could be studied for its own sake. This view saw the development of bodies, such as the Royal societies for the protection of various animals, who were to become important in conservation thinking. On the other hand, science began to hint at the sheer power and energy which lay immanent, dormant or inchoate in the natural world. This power lay waiting for human ingenuity to set it free.⁷⁵ Such discoveries in physics were paralleled by the development of far more sophisticated systems of classification.

Indeed 19th century scientific thought was largely dominated by the process of classification across broad areas of science. For example, the early modern naturalists developed a way of looking at order in the natural world, a new system of classification and one which was more detached, more objective, less man centred than that of the past. This was demonstrated by the replacement of plant and animal classification according to human use with new categories based on intrinsic structural characteristics.⁷⁶ To this period we also owe the concept of geological periods, the classification of elements by atomic weight, the emergence of geography as a discipline equipped to study deforestation, extinction and pollution⁷⁷ and many other conceptual frameworks within which the natural world could now be more adequately explained, examined and dissected.

The impact of the emerging concept of ecology⁷⁸ can be discerned in the writings of a number of naturalists and philosophers from the mid 1800s. For some, like Thoreau, it provided the basis for an eco-centric consciousness in which animals and every other aspect of the natural world were ‘fellows and neighbours’ – members, in other

Local laws were enacted against bear baiting in Chester in 1596 and against cock-fighting in 1654 though enforcement of such laws was not always rigorous.

⁷³ Hay, above n 67, 4.

⁷⁴ Ibid, 4.

⁷⁵ Worster Donald (ed), *The Ends of the Earth: Perspectives on Modern Environmental History*, Cambridge University Press, Cambridge, 1988, 18.

⁷⁶ Thomas K, *Man and the Natural World: Changing attitudes in England 1500-1800*, Allen Lane, London, 1983, 89.

⁷⁷ As exemplified by the work of Somerville, Reclus and Marsh.

⁷⁸ The branch of science which deals with the relationship between organisms and their environment.

words, of his community with no apparent hierarchy or discrimination.⁷⁹ He believed that nature “has an order, a pattern, that we humans are bound to understand and respect and preserve”.⁸⁰ He was one of the first Americans to perceive inexhaustibility as a myth⁸¹ and was horrified at the environmental degradation which he saw everywhere about him. In exasperation he would once state, “Thank God, men cannot as yet fly, and lay waste the sky as well as the earth”.⁸²

The writings of Charles Darwin (1809-82) – his concepts of evolution and competition - were especially influential in the late 19th century and his idea of the descent of man indirectly challenged those of religion.⁸³ Darwinism, as Roderick suggests, “took the conceit out of humanity by putting humans back into nature. ... No more special creation in the image of God, no more ‘soul’, and, it followed, no more hierarchy, domination, or expectation that the rest of nature existed to serve one precocious primate”.⁸⁴ Man, in the Darwinian conception, became an aspect of ecology. Of course, the rise of a popular environmental consciousness would not have been possible without the general acceptance of such ideas. This developing consciousness has occurred over two broad time periods. The first wave from the 19th century up to World War II and the second wave from the 1950s onwards.

2.3.2 Developing environmental consciousness: The first wave

The first wave saw the development of an integrated view of nature and its value. An important contributor at the beginning of this period was the intense interest by the middle classes of the 18th and 19th centuries in the scientific study of animals, birds and vegetation. This resulted in the establishment of numerous natural history societies whose championing of nature reserves for scientific and other utilitarian purposes was instrumental in establishing the concept of national parks. In America, Yellowstone was established in 1872 and Yosemite in 1890.⁸⁵ These parks were also preserved for the anthropocentric reasons of giving aesthetic pleasure and recreational opportunities. Out of the debate at the time arose a conflict between two individuals, John Muir, the founder of the Sierra Club, and Gifford Pinchot. Essentially this debate concerns the value of two conflicting environmental paradigms. Muir took an ecocentric stance, where compromise was inconceivable (identified as preservation)

⁷⁹ Thomas K, *Man and the Natural World: Changing attitudes in England 1500-1800*, Allen Lane, London, 1983, 37.

⁸⁰ Wall, above n 24, 104. Post Thoreau there have been graduations in the totality of this position – some less comprehensive deep ecologists demand justice only for all sentient creatures and their ecologies, others restrict it even further to the higher animals.

⁸¹ Nash Roderick, *The Rights of Nature: A History of Environmental Ethics*, Primavera Press, Sydney, 1990, 36.

⁸² Mark Sagoff finds support in the writings of Emerson, Melville, Whitman and Jefferson, as well as Thoreau, for the view that “nature has sublime qualities that can be read or at least translated into the American national character”: Sagoff Mark, *The Economy of the Earth*, Cambridge University Press, Cambridge, 1988, p 135. (Incidentally, this book is dedicated to his “father who gave me my first copy of Thoreau’s *Walden*”).

⁸³ Simmons, above n 72, 183.

⁸⁴ Nash, above n 82, 42.

⁸⁵ It is sobering to note that Yellowstone National Park – the first and oldest national park in the world, is now included on the World Heritage in Danger List pursuant to the World Heritage Convention.

and also reflecting the ideas of George Perkins Marsh⁸⁶, Aldo Leopold⁸⁷ and Kropotkin. Pinchot's approach was an anthropocentric one where balance, proportion and sustainability are key factors (identified as conservation) and reflecting the ideas of even the President of the USA, his good friend Theodore Roosevelt. To some extent this debate still resounds today, exemplified by the sometime antagonism between the so-called "dark greens" and the broader environmental movement.

Muir has been described as the 'high priest' of the preservation movement in the United States.⁸⁸ He devoted his life to convincing Americans to preserve wilderness, and, as a political activist, inspired the first great preservationist movement.

The term 'conservation' was coined in the United States by a forester, Gifford Pinchot, during President Roosevelt's administration (1901-09).⁸⁹ Originally a close friend of John Muir, the two fell out whilst jointly preparing a Forestry Commission survey of woodland that merited protection. For Muir, this meant preservation, in perpetuity, from commercial exploitation. In contrast, for Pinchot this meant 'wise management', the concept of 'sustainable yield' (which he coined) and a philosophy of 'use in perpetuity, for human consumption'.⁹⁰ Writing in 1901, Pinchot notes that:

Conservation has captured the Nation. Its progress during the last 12 months is amazing. Official opposition to the Conservation Movement, whatever damage it has done or still threatens to the public interest, has vastly strengthened the grasp of Conservation upon the minds and consciences of our people. Efforts to observe or belittle the issue have only served to make it larger and clearer in the public estimation. ... [The Conservation Movement] has taken firm hold on our national, moral sense, and when an issue does that, it has won. ...⁹¹

As mentioned before, the debate between preservation and conservation still reverberates today. It is reflected for some in a search for harmony between human beings and nature, which can only be achieved through total preservation⁹² and others who believe that environmental effects can often be *managed*. In philosophical terms it is the essence of the debate between anthropocentrism and ecocentrism which has already been alluded to. The experience and application of these developing ideas varied between counties in the west though the overall thrust was similar.

The first national park in Australia, for example, was The National Park, south of Sydney. It was set aside in 1879 to "bequeath to the people of this State, a national domain for rest and recreation". It was the familiar restorative function again though another reason given by historians is that "by establishing The National Park, and by vesting the mineral rights in the Trustees, the expansion of the operations of the

⁸⁶ Marsh GP, *Man and Nature*, (ed D Lowenthal), University of Washington Press, 2003

⁸⁷ Leopold A, *A Sand County Almanac*, Oxford University Press, 1949

⁸⁸ Hay, above n 67, 14.

⁸⁹ Scheffer, Victor B, *The Shaping of Environmentalism in America*, University of Washington Press, Seattle, 1991, 3; Smith Paul M and Warr Kiki (eds) *Global Environmental Issues*, Hodder & Stoughton, London, 1991, 208.

⁹⁰ Hay, above n 67, 14.

⁹¹ Pinchot Gifford, *The Fight for Conservation*, Harcourt Brace, New York, 1901, 133 cited in Wall, above n 24, 231.

⁹² and who consider the very notion of sustainable mining as anathema (and its supporters in the environment movement as execrable).

Metropolitan Coal Mining Company could be thwarted". In contrast, England had few wilderness areas, so similar movements were directed to the components of nature that it had – animals, especially domesticated ones.

The first national species protection legislation in England was the *Sea Bird Preservation Act 1869*, which protected 33 species of bird between April and August. During this period, the sport of 'battue' had been conducted at Flamborough Head on the east Yorkshire coast, whereby groups of 12-30 men were rowed out to the cliffs where they fired indiscriminately into the roosting and nesting bird colonies. Concerns over the use of animals – and to a lesser degree plants – lead to the creation of several societies in the late 1800s and early 1900s aimed at the protection of animals and plants.⁹³

In the first half of the 20th century the development of a broad consensus on environmental issues was severely restrained by a number of factors most of which were political. The Soviet obsession with industrial development relegated environmental concerns to last place in a race to prove the inherent historical superiority of their system⁹⁴ and the rise of fascism once again, despite a romantic and thoroughly teutonic attachment to "forest-murmurings"⁹⁵, placed man and his will at the centre of creation.⁹⁶ Both of the highly industrialised world wars compounded the problem.

2.3.3. Developing environmental consciousness: The second wave

The second wave saw the development of a more widespread, popular environmental consciousness. This began with the focus on human health concerns from environmental impacts and developed into a recognition of protecting the environment for its intrinsic worth. In 1952, Murray Bookchin (under his pseudonym Lewis Herber) published what was to become a seminal paper on the problems that pesticides and other synthetic products created for food.⁹⁷ As well as being interested in the chemistry of pollution, Bookchin also wrote about the social origins of such problems – human attitudes, values and institutions. In 1963 Bookchin again explored the interface between human ideas and environmental quality in his work *Our Synthetic Environment*, though Rachel Carson's *Silent Spring* (1962) had stolen much of Bookchin's thunder.

In *Silent Spring*, Carson argued that humankind was fatally tampering with nature by its reckless misuse of chemical pesticides, and that humankind was arrogant in its dealings with the natural world.⁹⁸ The book set off a chain reaction in public awareness of the horrors of environmental destruction caused by industrialisation⁹⁹

⁹³ These societies are discussed further in Section 2.4.

⁹⁴ For a general overview see Ziegler CE, *Environmental Policy in the USSR*, University of Massachusetts, Amherst, 1987.

⁹⁵ In the German, "Waldesrauschen".

⁹⁶ Lehmann E, *Biologischer Wille. Wege und Ziele biologischer Arbeit im neuen Reich*, Munich, 1934.

⁹⁷ Herber Lewis, "The Problems of Chemicals in Food" (1952) *Contemporary Issues* 3, 206-241.

⁹⁸ Lear Linda, "Rachel Carson and the Awakening of Environmental Consciousness", National Humanities Centre, George Washington University, <http://www.nhc.rtp.us:8080/tserve/nattrans/ntwilderness/essays/carson.htm> (accessed 8 August 2003).

⁹⁹ Parayil Govindan, "Sustainable Development and the Environment" in Wehrmeyer Walter and Mulugetta Yacob (eds), *Growing Pains*, Greenleaf Publishing, Sheffield, 1999, 271.

and single-handedly brought a significant environmental issue (the threat posed by DDT) into everyday parlance.

The work of Norwegian philosopher, Arne Naess led to the development of what is called “deep ecology”.¹⁰⁰ Naess placed ecological awareness in a much broader, holistic context of self realisation (both human and otherwise). In his conception all manifestations of the natural world have, in principle, equal rights to exist and flourish. In the case of mankind this necessitated, amongst other things, a behaviour vis a vis the natural world which mitigated against harm and in which actions which could *potentially* cause harm were not undertaken. It was perhaps the earliest expression of what became known as the “precautionary principle”.

In 1967-68, two classical environmental texts were published – Lyn White’s *The Historical Roots of our Ecologic Crisis*, and Garrett Hardin’s *Tragedy of the Commons*. White’s thesis was that the Judeo-Christian world view was largely responsible for the current ecological crisis. Hardin argued that people would inevitably exploit common pool resources to the point of degradation. This led to the conclusion of the need for strong regulation, although some later writers saw the concept as implying the need for secure property rights. Public awareness of the impacts of humans on the environment was also raised by the dire predictions of Paul Ehrlich’s *Population Bomb* in 1968 which looked at the connection between human population, resource exploitation and the environment.¹⁰¹

Dramatic pollution incidents also served to raise the public’s environmental consciousness. In 1969, an explosion on an oil platform six miles off the coast of Santa Barbara, California, spilt 200,000 gallons of crude oil and created an 800 mile oil slick that affected 35 miles of the California coast. Incoming tides washed the corpses of dead seals and dolphins on shore and nearly 3,700 birds are estimated to have died. In the same year, the Cuyahoga River in Cleveland, Ohio caught fire due to chemical contamination, dramatically demonstrating the threats of unregulated toxic chemical use and disposal.¹⁰²

The energy crisis of 1973-74 alarmed the public, threw western economies into recession and dramatically highlighted the emerging problem of fuel consumption.¹⁰³ Paradoxically, the crisis also consigned the environment to a minor place on the political agenda while seemingly confirming the Club of Rome’s predictions. The Club of Rome in its famous study, *The Limits to Growth* (1972), had sought to predict how long the known global reserves of 16 critical metals would last in each of three alternative futures.¹⁰⁴ They concluded that, gold, silver and mercury would become

¹⁰⁰ Naess, Arne *Ecology, Community and Lifestyle*, Cambridge University Press, New York, 1989, 1-4.

¹⁰¹ Writing with the benefit of hindsight in 1994, Bookchin notes that “despite the hoopla that surrounded the publication of that book, population growth has been strangely wayward in conforming to Ehrlich’s predictions”: Bookchin Murray, *Which Way for the Ecology Movement*, AK Press, Scotland, 1994, 5-6.

¹⁰² US Environmental Protection Agency, Superfund 20th Anniversary Report, Chapter 1: Continuing the Promise of Earth Day, 1.1 at <http://www.epa.gov/superfund/action/20years/ch1pg1.htm> (accessed 8 August 2003).

¹⁰³ Mid-Ohio Regional Planning Commission, “The Environmental Movement”, <http://www.morpc.org/MORPC.htm> (accessed 8 August 2003).

¹⁰⁴ Meadows Donella H, Meadows Dennis L et al, *The Limits to Growth: A Report for the Club of Rome’s Project on the Predicament of Mankind*, Universe Books, New York, 1972, 56-60.

‘economically extinct’ in less than 50 years; iron and chromium in less than 500 years. The average predicted lifetimes of all reserves were, at the current rate of use, 94.2 years; at an exponential rate based on five times the known reserves, 79.8 years; at an exponential rate paralleling the current per capita use, only 37.3 years.

The Club of Rome was an informal, non-political, international group of scientists, humanists, economists, educators, bankers and industrialists, who shared a “deep concern about the problems threatening human society”. The fundamental problem, they explained, was that growth of world population and of industrial output were both exponential.¹⁰⁵ Though the most extreme of their predicted scenarios did not eventuate, their report had a major impact on thinking in its day.

Shortly after, in 1974, Dennis Pirages and Paul Ehrlich in *Ark II* stated that current projections indicated an average increase of 4 to 5 percent in the use of minerals for the foreseeable future. If this rate of growth continued, they argued, “By the first years of the 21st century, total mineral demand will be more than four times that now being met. Petroleum consumption is projected to double every 18 years, with an average annual increase in consumption of approximately 3.9 percent”.¹⁰⁶ They provided the following table to illustrate their argument:

Table 2.1 - Estimates of Year of Depletion for Key Minerals

| Mineral | Constant Consumption Levels | Exponentially Increasing Consumption | With 5x Known Reserves |
|-------------|-----------------------------|--------------------------------------|------------------------|
| Aluminium | 2070 | 2001 | 2025 |
| Copper | 2006 | 1991 | 2018 |
| Iron | 2210 | 2063 | 2143 |
| Lead | 1996 | 1991 | 2034 |
| Manganese | 2067 | 2016 | 2064 |
| Mercury | 1983 | 1983 | 2011 |
| Nickel | 2120 | 2023 | 2066 |
| Tungsten | 2010 | 1998 | 2042 |
| Zinc | 1993 | 1988 | 2020 |
| Petroleum | 2001 | 1990 | 2020 |
| Natural gas | 2008 | 1992 | 2019 |

Source: Pirages Dennis C and Ehrlich Paul R, *Ark II: Social Response to Environmental Imperatives*, WH Freeman & Co, San Francisco, 1974, 26.

Pirages and Ehrlich do note that various factors, such as increase in the price of the resources, new technologies and better use of resources could chronologically temper

¹⁰⁵ Smith Paul M and Warr Kiki (eds) *Global Environmental Issues*, Hodder & Stoughton, London, 1991, 234. The alternative view is that population growth is “logistic” which generated a curve far more consistent with the potential long term growth in food production. In other words, population, given ready availability of food and social stability tends to grow in proportion to population. For a criticism of the Club of Rome’s methodology, see Kahn H, *The next 200 years: a scenario for America and the World*, Morrow, New York, 1976.

¹⁰⁶ Pirages Dennis C and Ehrlich Paul R, *Ark II: Social Response to Environmental Imperatives*, WH Freeman & Co, San Francisco, 1974, 25.

these dire predictions though, ultimately, in a closed system entropy will ultimately prevail.¹⁰⁷

A consensus on at least some potential environmental problems was developing and was gradually forcing legislatures to act. In 1969, the US Congress passed a *National Environmental Policy Act*, requiring environmental impact assessment for federally funded projects that might ‘significantly’ affect the environment. The instituting of this process, in which the environment, as a construct could inform decision-making, carried with it one novel and, in retrospect, profound consequence namely, that for the first time a project, development scheme or even a broad political vision could be delayed or even abandoned for the long term good of the environment. On the back of this movement also came the creation of public interest law firms committed to protecting the environment.¹⁰⁸

By the 1970s ideas, concepts and terminologies had developed to such an extent that a consensus could now be said to exist as to the ambit of environmentalism. During the same period, a generalised concern also began to be expressed, not just by professionals in the field but by broad coalitions of citizens, that nature itself was under threat and that, if something were not done, the future of man on the planet would eventually also come under threat.

Hardin’s ‘Tragedy of the Commons’¹⁰⁹ is indicative of the eco-catastrophist mode of thinking. Though concerned in the main with the overpopulation, he argued that unrestrained private rights (to breed, to increase a herd, to fish etc) would inevitably lead to the extinguishment of that right if necessary through the extinguishment of that individual or the resource. Mankind, through the pursuit of private interest in a socially stable system, would bring about its own downfall.¹¹⁰

While Hardin was suggesting that the ‘invisible hand’ of the market would not be able to control the devastating affects of self interest and Bookchin was further elaborating his eco-anarchist vision of a social ecology, a movement arose, initially in America, which was to have a profound influence on the development and reception of ecological ideas throughout the next 20 years. This was the ‘hippy’ culture of the late 60s and 70s. In its environmental focus the movement echoed the wilderness romanticism of the 19th and early 20th centuries and it galvanised a large and active portion of disaffected youth in many western countries whose collective activity in forests, streams and field generated consistent media coverage for 20 years.¹¹¹

It is quite outside the scope of this thesis to trace every single development in the rise of environmental movement even over the last decade. **Appendix 2-1** provides a tabular representation of the major environmental milestones from 1970 to the end of the 1990s, contrasted with the ‘mainstream’ political/ economic/ social events that

¹⁰⁷ Ehrlich is less famous for his prediction that by the early part of the 21st century the earth would be experiencing an ice-age.

¹⁰⁸ Barrow, CJ, *Environmental Management: Principles and Practice*, 1999, 154.

¹⁰⁹ Hardin, Garrett, “The Tragedy of the Commons” (1968) 162 *Science* 1243-48.

¹¹⁰ Social stability is a condition of the analysis. In the absence of such a factor war and strife would solve the environmental problem by the simple expedient of reducing population.

¹¹¹ It is only in the latter years of the 20th century that the problems faced by the planet were accepted as so serious that they could not realistically be left in the hands of children.

were taking place in the world during this time. Suffice to say, it was the aggregate effect of all these strands of thought which gave rise to two additional phenomena which are now discussed viz. the rise of Non Governmental Organizations (NGOs) and the role of transnational political processes, agreements and institutions which were a consequence of a series of international conferences. These two factors have borne down most directly on the ongoing activity of mining companies.

2.4. The Rise of Non-Government Organisations

This thesis accepts that Non-Government Organisations (NGOs) are an important part of the 'self regulatory mix'. They have had an important impact in drawing world-wide attention to environmental and social issues by highlighting pollution incidents in remote locations, as well as what they consider to be inappropriate examples of corporate behaviour. NGOs play particularly important, and varied, roles in relation to the mining industry and the development of mining policy and standards. This section looks at the rise of NGOs in general, and then specifically in terms of the mining industry, and in particular some of the thesis' case study mines.

2.4.1. The origins of Non-Government Organisations

As the previous section has shown, the development of a new form of environmental consciousness was as much a social phenomenon as anything else, and as such its impetus was diffuse and potentially unfocussed. How it became focussed, developed political credibility, and eventually created a constituency with sufficient depth to attract the attention of politicians, regulators and even the mining sector is the subject of this section.

One of the main ways public concern has expressed itself is through the formation of private, non-government organisations which draw their membership from those who are enervated by a particular issue, a particular plant or animal, a wilderness or environmental problems in general. The structure and approach of these organisations varies from those with only a few members, to 'transnational' organisations with many thousands of members, from the activism of Greenpeace to the philosophical perspectives of Naess. For the purposes of this thesis, all such environmental organisations will be referred to by the standard name of NGOs.¹¹² Many so called 'environmental' NGOs have broader remits than just the environment. This is particularly true in the South, where nearly all environmental NGOs direct their attention at development problems within which an environmental aspect can be one of several concerns.¹¹³

¹¹² However, it should be remembered that NGOs can be formed for purposes that have nothing to do with the environment (The Australian Sporting Shooters Association for example is an NGO recognised by the UN). David Robertson believes that the term NGO is a misnomer, "because most NGOs are funded, at least in part, by government agencies": in "Setting the Record Straight – Free Trade, NGOs and the WTO", *Policy*, Spring 2000, 19-23 at 21.

¹¹³ Potter David (ed), *NGOs and Environmental Policies: Asia and Africa*, Frank Cass, London, 1996, 2.

As indicated above, the motivations of the people joining NGOS are as various as the organisations themselves – ranging from protection of the environment for anthropocentric,¹¹⁴ or ecocentric¹¹⁵ reasons, to NIMBYs¹¹⁶ protesting against a particular development because of perceived threats to their local environment or personal financial position.¹¹⁷ So great is the zeal with which some approach their ‘protest’ that the environment has become the ‘new religion’ for many.¹¹⁸ For example, in promoting direct action (physical obstruction) to hinder/ stop development, Queensland Barrister Stephen Keim, SC notes:

Direct action in support of the environment or some other deeply held value can buy political influence and, sometimes, significant victories. Such influence is, however, purchased at considerable personal cost.

This price is, however, one that most Australians can, if they so choose, afford to pay. Most people, even if they have demanding jobs, can find some time on holidays or other leave to lie in front of trucks. The fines are not likely to be much more than a couple of hundred dollars. Even if one cannot pay the fine, one is not likely to spend more than a couple of weeks in gaol.¹¹⁹

This view would not be held by the more moderate members of the public irrespective of their degree of environmental consciousness. Indeed, the culture of some young adults, at least in the view of their opponents, moving from protest site to protest site to campaign against developments is largely deplored by that part of the environment movement which is focussed on best practice environmental management.

Whilst, as the following brief overview of the rise of such organisations will show, there have always been disagreements and often divergent views among environmental groups, their influence in driving corporations to meet or exceed environmental standards has been significant and it continues to grow in importance. Pronounced differences in emphasis and sometimes ideology can sometimes be masked by sheer activity and energy. One fundamental point of difference, however, continued to arise. This was the debate between conservation and preservation.

¹¹⁴ For example, one of the earliest NGOs formed in England in 1873 was the National Health Society. A Committee of this Society was the Smoke Abatement Committee, which is still in existence today as the National Society for Clean Air.

¹¹⁵ For example, the Society for the Preservation of Nature Reserves, formed in England in 1912. This Society was established in response to the growing concern that species would be rendered extinct due to “building, drainage, disafforestation or in consequence of the cupidity of collectors”: Simmons, above n 72, 178.

¹¹⁶ ‘Not In My BackYard’, which is often a response to concern over local amenity issues or land valuation.

¹¹⁷ Significant protest campaigns in Australia by local groups concern mining at Roxby Downs, the Sydney Ocean Outfall, and the Koala Protection League (who protested against the development of a tollroad through koala habitat south of Brisbane, and contributed in no small part to the fall of the Goss Labor Government).

¹¹⁸ At a time when attendance at the ‘traditional’ Christian churches is falling dramatically, the numbers involved in environmental organisations is on the increase: Hussey Stephen and Thompson Paul (eds), *The Roots of Environmental Consciousness: Popular tradition and personal experience*, Routledge, London, 2000, 1.

¹¹⁹ Keim Stephen, “The Civil Action for an Injunction to Prevent Direct Action Aiming to Protect the Environment: Some Tentative Thoughts” (1996) 13 EPLJ 209 at 211. There is no indication that Mr Keim himself has so preferred the prison option that he has “spent a couple of weeks in gaol”.

2.4.2. Modern Non-Government Organisations

Along with the extraordinary interest in the environment which arose in the 1960s and 1970s, and which has been discussed in section 2.2, this period also saw the formation of distinctive pressure groups, like Friends of the Earth (formed in 1970 after splitting from the more traditional Sierra Club¹²⁰) and Environmental Defence and Environmental Action (formed in the US), which openly preached more direct political involvement. Their message echoed the thinking of the Russian anarcho-syndicalist Prince Peter Kropotkin almost a century before who believed that the only way to prevent environmental and ecological catastrophe was to fundamentally change the values which underpinned all industrialized societies which would, in turn, fundamentally change human nature.¹²¹

Most emerging NGOs during the period, however, developed closer to a political mainstream and adopted methods of influence that were generally less confrontational. It is their descendants who are now the principal contenders in the global battle for the environment. Indeed, as will be seen in the following case studies, many have directly engaged with mining companies in order to mutually work towards better environmental outcomes.

NGOs operating in the environmental area today come in various forms but they all share a common commitment to at least some of a set of environmental values which they define in particular ways. Not all of them will agree on the importance of particular environmental values and not all of them will agree with a process of engagement with the corporate world. This last factor is illustrated by the divergence of views of the North Queensland Conservation Council Inc in relation to the Cannington mine. This will be discussed subsequently.

Some NGOs are single issue organisations, with the sole emphasis on such matters as the preservation of the sea otter in Southern California, the protection of a particular endangered species or the preservation of a wilderness area.¹²² Others, for example Greenpeace, with substantial resources, are internationally based and are able to cover the field, as at least engage with a number of issues. The amount of political influence that they have, and the amount of influence they have on the corporate world, varies from issue to issue, from group to group and from political system to political system. It is impossible to generalise as to the ability of some groups to galvanise a constituency again varies with the issue and the drive and initiative of the group. One notable quality of some however, and it is particularly noteworthy in the case of international groups such as Greenpeace has been their ability to utilize the mass media in creative and sometimes extravagant ways. Often this has left their opponents, and this includes TNCs, flatfooted.¹²³

¹²⁰ Elkington John, *Cannibals with Forks*, Capstone Publishing Ltd, London, 1997, 49.

¹²¹ For a recent overview which accepts Kropotkin's overall thesis, see Albert M and Hahnel R, *Political Economy of Participatory Economics*, Princeton University Press, 1991.

¹²² Examples include the Australian Koala Foundation Inc and the Fraser Island Defence Organisation.

¹²³ One notable example was the Greenpeace campaign against Shell over residue in the Brent Spar platform. Greenpeace were eventually proven wrong and indeed apologised but the retraction gained far less media attention than the original campaign. Shell could be forgiven for feeling aggrieved.

2.4.3. The role of NGOs in the international arena

Though the major international policy documents concerning the environment are canvassed in section 2.4, it is salient to note that NGO involvement in international environmental decisions had been encouraged and endorsed from an early period. As McAuslan has noted “participation” is now one of the prevailing ideologies of planning and environment law.¹²⁴

Article 71 of the 1945 UN Charter, for example, states explicitly that:

the Economic and Social Council may make suitable arrangements for consultation with non-governmental organisations which are concerned with matters within its competence. Such arrangements may be made with international organisations after consultation with the member of the United Nations concerned.

In a similar fashion the 1987 Brundtland Report, from the UN spinoff World Commission on Environment and Development, stated:

At the national level, governments, foundations, and industry should also greatly extend their co-operation with NGOs in planning, monitoring, and evaluating as well as carrying out projects when they can provide the necessary capabilities on a cost-effective basis. To this end, governments should establish or strengthen procedures for official consultation and more meaningfully participation by NGOs in all relevant intergovernmental organisations.¹²⁵

Agenda 21, still one of the most important international policy documents also advocated that the UN system:

design open and effective means to achieve the participation of non-governmental organisations, include those related to major groups, in the process established to review and evaluate the implementation of Agenda 21 at all levels and promote their contribution to it; [and] take into account the findings of review and evaluation processes of non-governmental organisations in relevant reports.¹²⁶

The literature on NGO advocacy and environmental policy is mostly Northern in orientation, and written in the North.¹²⁷ This may, or may not give rise to an ideological, or cultural, perspective which is specific to Northern developed societies. Whether this northern orientation reduces the effectiveness of NGO activity in developing economies is difficult to assess. What is apparent however is that NGOs are becoming more organised and their influence is strengthening, as will be discussed in the following section.

¹²⁴ McAuslan Patrick, “The Ideologies of Planning Law”, *The Modern Law Review* Vol 44, No 1, 1981.

¹²⁵ World Commission on Environment and Development, *Our Common Future*, Oxford University Press, Oxford, 1987, 328.

¹²⁶ United Nations Conference on Environment and Development, *Agenda 21*, UN Doc A/CONF.151/4 (Pt III) (1992) at 52.

¹²⁷ Potter, above n 113, 7.

2.4.4. The move towards professionalism

In line with their expanding role in international and domestic politics and decision-making, over the past 20 years, many of the larger NGOs have become increasingly professional and formalised.¹²⁸ Despite the fact that most of the groups remain reliant on voluntarism, they began to employ administrators and activists to lobby government.¹²⁹ As a result, some enterprises have become equally professional, in some cases almost eco-corporations. NGOs now set the environmental agenda at the forefront of the public psyche, and have not only gained greater notoriety, but also have established an international power and bargaining base concomitant with a healthy bank balance.

As an example, Greenpeace had grown from a movement organising a protest campaign in a Vancouver church basement in 1971 to an organisation with an income of over US\$100 million per year, offices in 21 countries and over 100 campaigns around the world by the mid-1980s.¹³⁰ Greenpeace has a larger budget than the entire United Nations Environment Program.¹³¹ In the calendar year of 2001, Greenpeace Australia Pacific reported earnings growth, with profits increasing by 15.5 percent to \$2,275,200.¹³²

There is now an informal network of a professional elite operating in the environment movement, and often cross-membership of professionals between organisations. For example, one person employed as a professional in one movement organisation often holds elected, 'honorary' positions in several others.¹³³ John Elkington notes that:

It is no surprise today to see leading environmentalists and social activists wearing pin-stripes, rather than jeans and 'Save-the-Rainforests' T-shirts. And they are just as likely to be carrying the *Financial Times* or the *Wall Street Journal* as the *Co-Evolution Quarterly*, *Ecologist* or *Utne Reader*. Have the powers of Mammon turned watchdogs into lapdogs – or have the revolutionaries taken the castle? The answer is a bit of both.¹³⁴

It is this aspect of NGOs – their increased professionalism and their involvement in the mainstream political agenda that makes them an important component, even de facto regulator, in the mining sector today. The examples detailed below and in section 2.4.5 illustrate this point.

¹²⁸ Doyle Timothy and Kellow Aynsley, *Environmental Politics and Policy Making in Australia*, MacMillan, Melbourne, 1995, 105.

¹²⁹ Major Australian campaigns where professionals were used by NGOs to lobby government, with mixed success include uranium mining at Kakadu (resulting in the creation of the Nuclear Disarmament Party in 1984 fronted by Peter Garrett (former President of the Australian Conservation Foundation, now Federal Minister for the Environment, Heritage and the Arts), attempts to stop wood chipping in old growth forests, and the creation of a world park for Antarctica.

¹³⁰ Moore Patrick, "Environmentalism for the Twenty-first Century" (2000) (September) *IPA Review* 3, 3-4.

¹³¹ Wilson William, "Environmental Law as Development Assistance" (1992) 22 *Environmental Law* 953 at 966. By way of further example, in 1992 the budgets of Greenpeace and World Wildlife Fund were roughly \$100 million and \$200 million respectively. UNEP's budget was roughly \$75 million.

¹³² Webb Christopher, "Tax free gain to paint big end of town green", *The Age*, 17 September 2002 at Business 4.

¹³³ Doyle and Kellow, above n 128, 105.

¹³⁴ Elkington, above n 120, 42.

The National Strategy for Ecologically Sustainable Development, 1992

Following a decade of State/ federal conflicts over the environment in the 1980s,¹³⁵ a meeting was convened by the then Prime Minister, Bob Hawke, with representatives from industry, unions, conservation and farming groups to develop a ‘rational strategy’ on the environment. The first meeting, on 7 December 1989 was attended by the Prime Minister, The Hon John Kerin (Minister for Primary Industry and Energy), Senators Peter Cook (Resources), Graham Richardson (Environment) and John Button (Industry), Simon Crean (representing the ACTU), representatives from the National Farmer’s Federation, the Australian Mining Industry Council, the National Association of Forest Industries, the Australian Conservation Foundation (ACF), the Wilderness Society, the Ambassador for the Environment, Sir Ninian Stephen and the Chief Scientist, Ralph Slatyer.

This meeting agreed that there would be a discussion paper produced within three months to develop an agreed definition of sustainable development, as part of Australia’s response to the Brundtland Report. This timetable that later blew out, being interrupted by the federal election in March 1990. Thereafter, working groups were to be established to investigate how the principle could be applied to various industries. The number of working groups expanded from five to nine. Mining was one of these working groups.¹³⁶ Four environmental NGOs were invited to nominate delegates to the working groups – ACF, the Wilderness Society, Greenpeace and the World Wide Fund for Nature (WWF). The working groups were to report by June 1991.

All four environmental organisations initially refused to nominate delegates, however after some concessions made by then Environment Minister, Ros Kelly, especially the setting of greenhouse targets, ACF, WWF and Greenpeace agreed to participate. The Wilderness Society refused to take part, however, citing recent decisions to allow logging in National Estate forests in New South Wales and sand mining in Queensland as the reasons for its decision to continue campaigning in the community rather than participating in the sustainable development process. Greenpeace later withdrew for a time, but then re-entered the process. As has been noted before, and reiterated by Doyle and Kellow in this example, this illustrates the diversity and dilemma that exists within the environmental movement: “part of it is able to resist being co-opted totally by the establishment, while other parts of it play mainstream politics”.¹³⁷

In March 1992, the environmentalists warned that the process had been ‘highjacked’ by the bureaucracy and then withdrew. However, after direct assurances by Prime Minister Keating, the three groups re-entered the process again.¹³⁸ *The National*

¹³⁵ For example, conflicts between Tasmania and the Commonwealth over the Tasmanian Dams and Southern and Lemonthyme Forests and between Queensland and the Commonwealth over the listing of the Wet Tropics World Heritage Area. Each of these conflicts resulted in High Court challenges: see *Commonwealth v Tasmania* (1983) 46 ALR 625; *Richardson v Forestry Commission* (1988) 164 CLR 261; *Queensland v Commonwealth* (1988) 62 ALJR 291.

¹³⁶ The other groups were energy production, energy use, manufacturing, transport, fishing, agriculture, forestry and tourism.

¹³⁷ Doyle and Kellow, above n 128, 268.

¹³⁸ *Ibid*, 269.

Strategy for Ecologically Sustainable Development (NSES) was eventually signed in December 1992. The NSES is an important policy document and is now one of the “standard criteria” in the *Environmental Protection Act 1994* (Qld), ie the matters that must be considered when the Environmental Protection Agency is deciding whether mining activity should be authorised, and the conditions attached thereto. It is discussed further in Chapter 3.

2.4.5. NGOs and the Mining Industry

While the NSES provides a striking example of the range and issues associated with NGO involvement in the development of a broad policy document, it is also instructive to consider a couple of examples of the direct involvement of environmental groups with the mining industry in general, or with a specific company. One such example has been the review by WWF in 1999 and 2000 of the environmental reports of 11 Australian mining companies.¹³⁹ The WWF reports were prepared pursuant to the 1996 version of the Australian Minerals Industry Code of Environmental Management. (The Code is discussed further in Chapter 3).

In January 2001, WWF released the “Mining Certification Evaluation Project: Independent Certification of Environmental and Social Performance in the Mining Sector”, a discussion paper that was the outcome of a WWF Australia and Placer Dome Asia Pacific project to evaluate whether and how independent third party certification can be applied to the mining sector.¹⁴⁰ Indeed, of the ‘major’ NGOs operating in Australia, it is presently WWF that is currently the most involved in direct engagement with the corporate sector.¹⁴¹ WWF’s Corporate Program is given in **Appendix 2-2**.

The role now taken by the WWF has brought the philosophical differences between various NGOs into even sharper focus. To the activist and more ecocentric groups such as Greenpeace, the behaviour of the WWF is clear evidence that they have been co-opted by the various industries that they should be calling into account. To the more pragmatic groups the activities of Greenpeace have led to a reduction in the credibility of the entire environment movement and though they may have served a purpose for a time in order to galvanize the youth of western democracies they are today often seen as counter-productive.

In one case, the direct engagement with industry created such conflict within the NGO involved that it was close to splitting. An audit was conducted by the North Queensland Conservation Council Inc (NQCC) of one of the case study mines of this thesis, BHP Billiton’s Cannington mine. The NQCC is the peak regional conservation group for North Queensland, covering an area of more than 40,000 km². This area ranges from Tully in the north to Proserpine in the south and across to the

¹³⁹ WWF, “Ore or Overburden?”, 1999 and WWF, “Ore or Overburden II?”, 2000.

¹⁴⁰ WWF, “Mining Certification Evaluation Project: Independent Certification of Environmental and Social Performance in the Mining Sector, WWF Mineral Resources Unit, January 2001, 1.

¹⁴¹ Walker Cam, “Greening Corporations or Scoring Greenbacks?” *Arena Magazine* Vol 59, June-July 2002, 44-46 at 44.

Northern Territory border, and also includes the marine environments of much of the Gulf of Carpentaria and the Great Barrier Reef region. Its office is in Townsville.¹⁴²

The NQCC appraised Cannington's environmental performance within 13 different categories, including the natural environment, social and cultural issues. It addressed Cannington's performance both on site as well as at the ports and other infrastructure. In each category, NQCC outlined its ESD-focused expectations for company performance, made a general judgement about its performance against legislative, company and ESD standards, noted evidence of sound environmental performance, including beyond compliance behaviour, noted deficiencies or reservations and made recommendations. The report provided a third party view of Cannington's operations. A summary of NQCC's recommendations is included as **Appendix 2-3**.

Some NGOs have even drafted legislation. One of the main Tanzanian-based NGOs that has activities focused on the mining industry in the country is the Lawyers' Environmental Action Team, Tanzania (LEAT). LEAT is the first public interest environmental law organisation in Tanzania. It was established in 1994. Its mission is "to ensure sound natural resource management and environmental protection in Tanzania".¹⁴³ LEAT carries out policy research, advocacy and selected public interest litigation. LEAT has drafted an Environmental Protection Act, which has not been enacted. Indeed, Tanzania still does not have an Environmental Protection Act. Further details of this draft are included in Chapter 3. Specifically in relation to mining, LEAT has focused on environmental, but more particularly, human rights issues at Barrick's Bulyanhulu mine. These activities are extensively dealt with in Chapter 5.

A range of international and local NGOs have been involved in drawing world attention to a further case study mine, the Ok Tedi Mine in Papua New Guinea. Indeed, it is arguable that without NGO involvement in galvanising action by landowners, and also in publicising the environmental impacts of the mine, that the world would never have heard of the Ok Tedi mine. This even included civil actions taken by landowners against BHP in Australia, which resulted in out of court settlements, and ultimately BHP's withdrawal from the mine, will be discussed in Chapter 3. For the purposes of this chapter, it is sufficient to say that NGO involvement has ranged from outright opposition to mining in PNG by the Mineral Policy Institute,¹⁴⁴ to constructive engagement by other organisations, such as the PNG based NGOs – the National Environmental Watch Group and the PEACE Foundation Melanesia. The World Wide Fund for Nature was engaged by OTML in 2000 to inspect the mine and report on the impact of closure on the local communities. Its report, "BHP & Ok Tedi: The Twist in the Tailings", will be discussed further in Chapter 5.

NGOs have and will continue to change in response to emerging needs and to changing perceptions of environmental responsibility both at the state and corporate levels. These changes, in turn, have been, more often than not, the result of the

¹⁴² North Queensland Conservation Council Inc, *Broadening Our Horizons*, Townsville, June 2000, 1.

¹⁴³ "Lawyers' Environmental Action Team" at <http://www.lead.or.tz> (accessed 24 April 2007).

¹⁴⁴ The Ok Tedi website notes that the Mineral Policy Institute has "been one of OTML's most staunch critics": see Ok Tedi Mining, "Perspectives and Links" at <http://www.oktedi.com/perspectives> (accessed 1 May 2007).

articulation of global environmental values at a series of, now famous, international conferences.

In part, and perhaps even a large part, these meetings have tended to set the agenda for the future and to crystallize ongoing concerns at the international level. Indeed, many of the international reporting standards, such as the Global Reporting Initiative, the Global Compact and the Equator Principles have arisen from these forums, and have become important 'self regulatory' tools impacting on the major mining companies in both the developed and developing countries. They therefore represent a very important second factor impinging on the activity of mining companies and are discussed in the next section.

2.5. The development of an international environmental law framework

Environmental law is unlike most other areas of law. As a discipline it does not exist solely in jurisdictional isolation whereas criminal law, taxation and to a large extent commercial law clearly can. Since all global issues in environment law have their genesis at the local level and local issues often resound in the international sphere¹⁴⁵ the field could correctly be viewed as a sub-set of public international law.¹⁴⁶

Accordingly, environmental laws and regulations in any jurisdiction cannot be viewed in isolation from international factors. Policy pronouncements by the United Nations and bodies acting under the auspices of the United Nations influence and directly impact on the policy documents, legislation and industry practice in the domestic context¹⁴⁷, to the extent that they are ratified by the participating states.

An understanding of these policies impacting on environmental law in general and the environmental regulation of mining in particular, is essential to understand the theoretical base on which domestic legislation is based and to predict future legislative trends. It is also important as these policies have spawned a number of 'voluntary' initiatives which have been taken up by transnational mining companies. In order to appreciate the importance of international policies in environmental law, it is necessary to briefly review the history of main United Nations institutions and policy documents.¹⁴⁸

¹⁴⁵ The annual burn-off of tropical forests in Indonesia is a good example.

¹⁴⁶ The natural affinity between environment law and human rights law bears this out.

¹⁴⁷ A complete listing of international environment conventions is given in **Appendix 2-4**.

¹⁴⁸ The following discussion is necessarily limited to purely international processes under the auspices of the UN. Multi-lateral and bi-lateral agreements (which can be formally registered with the UN) are of continuing importance (the interlinked multi and bi-lateral environmental agreements within the EU are a case in point). They are however outside the scope of this work.

2.5.1 Pre-Stockholm (pre-1972)

While individual environmental treaties date back to the early 20th century,¹⁴⁹ the environment is a relatively new field of formal international law. Early cases involved cross-border impacts. A famous example of an international environmental dispute was the *Trail Smelter Arbitration*, which began in 1927 when the United States complained that sulphur dioxide emissions from a smelter located across the Canadian border damaged apple orchards in Washington State. This dispute was settled in 1941 by the International Arbitral Tribunal, with orders for the payment of compensation by the Smelter, together with the imposition of substantial modifications to the plant.¹⁵⁰ The decision affirmed that no state has the right to use its territory or permit it to be used so that its emissions cause damage on the territory of another State or to the property of persons in another State.

In 1949, the International Court of Justice affirmed that no State may utilise its territory contrary to the rights of other States.¹⁵¹ In the *Lake Lanoux* case¹⁵² in 1956 the International Arbitral Tribunal alluded to the invasion of the rights of foreign States which may result from pollution of boundary waters. Kiss and Shelton state that “these precedents furnish the legal basis for development of the first environmental era”.¹⁵³

Motivated primarily by the same concern as in the *Lake Lanoux Case* viz. transboundary pollution in the form of acid rain, in 1968 Sweden suggested an international conference be called to address global environmental problems. The Conference was convened by General Assembly Resolution 2398 (XXIII) 1968. This resolution noted, inter alia, that there was “an urgent need for intensified action at national and international level to limit and, where possible, to eliminate the impairment of the human environment”.¹⁵⁴

The preparatory committee was established by UN General Assembly Resolution 2581 (XXIV) 1969. It decided that the Declaration “should be a document of basic principles calling mankind’s urgent attention to the many varied and interrelated problems of the environment, and to draw attention to the rights and obligations of man and state and the international community in regard thereto”.¹⁵⁵

¹⁴⁹ For example, the Treaty for the Preservation and protection of Fur Seals, 7 July 1911, 37 Stat 1542, a treaty between Russia, and United Kingdom, Japan and the United States aimed at curbing the slaughter of northern fur seals.

¹⁵⁰ The Trail Smelter, now owned by Teck Cominco Limited, continues to operate and causes major environmental problems both within British Columbia and in Washington State: see Glavin T, “Toxic Chemical Worries Straddle the Border”, *Vancouver Sun*, 19 November 1991.

¹⁵¹ *Corfu Channel Case (United Kingdom v Albania)*, Merits, ICJ Rep [1949] 4.

¹⁵² *Lake Lanoux Case (France v Spain)* 12 UNRIAA 281 (1957).

¹⁵³ Kiss A and Shelton D, *International Environmental Law*, Transnational Publishers Inc, New York, 1991, 36.

¹⁵⁴ Hillier T, *Sourcebook on Public International Law*, Cavendish Publishing Ltd, London, 1998, 795-796.

¹⁵⁵ UN Doc A/Conf. 48/PC/6, para 27 (1970).

Encapsulating the issues that had been raised by *The Limits to Growth*, the then UN Secretary General, U Thant stated in 1972:¹⁵⁶

I do not wish to seem overdramatic, but I can only conclude from the information that is available to me as Secretary General, that the Members of the United Nations have perhaps 10 years left in which to subordinate their ancient quarrels and launch a global partnership to curb the arms race, to improve the human environment, to defuse the population explosion, and to supply the required momentum to development efforts. If such a global partnership is not forged within the next decade, then I very much fear that the problems I have mentioned will have reached such staggering proportions that they will be beyond our capacity to control.

Sweden agreed to host the conference in 1972 which became known as the United Nations Conference on the Human Environment.

Hunter, Salzman and Zaelke¹⁵⁷ note, however that in the years leading up to the Stockholm Conference, developing countries were also facing other issues and problems – underdevelopment, over population, and stagnant economies, while at the same time feeling squeezed out of western markets. Most had not yet enjoyed the benefits – and the resultant problems – of industrialisation. Indeed, many of the countries had only recently received their independence and were interested in defending their newly won independence and protecting the right to follow their own development paths. The numerical superiority of the developing countries in the UN General Assembly “emboldened them to sponsor a number of General Assembly Resolutions.¹⁵⁸ The G-77 (the group of 77 developing countries, not aligned with either of the Cold War superpowers) passed a series of resolutions in the late 1960s and early 1970s affirming their right to development, their sovereignty over natural resources, and the need to handle environmental policies at the national level.

Six months prior to the Stockholm Conference the same consensus led the developing countries to pass a resolution on development and the environment specifically aimed at influencing the outcome of the Conference. This provided, inter alia, that the action plan and the action proposals to be submitted at the Conference should:

1. Recognise that no environmental policy should adversely affect the present or future development possibilities of the developing countries.
2. Recognise further that the burden of the environmental policies of the developed countries cannot be transferred, directly or indirectly, to the developing countries.
3. Respect fully the sovereign right of each country to plan its own economy, to define its own priorities, to determine its own environmental standards and criteria, to evaluate its own social costs of production, and to formulate its own environmental policies, in the full understanding that environmental action must be defined basically at the national level, in accordance with

¹⁵⁶ cited in Smith Paul M and Warr Kiki (eds) *Global Environmental Issues*, Hodder & Stoughton, London, 1991, 234.

¹⁵⁷ Hunter D, Salzman J and Zaelke D, *International Environmental Law and Policy*, Foundation Press, New York, 1998, 281.

¹⁵⁸ *Ibid*, 281.

locally prevailing conditions and in such a manner as to avoid producing harmful effects on other countries.¹⁵⁹

The resolution clearly reflected the concern of the participant states that having never enjoyed the benefits of industrialisation and economic development that had flowed in historical times to the affluent west they nevertheless would be called upon to address, as they saw it, a set of environmental problems which had been created and defined by the developed nations and that in doing so their own development would be severely constrained. The wording of the resolution could be seen as enabling such states to justify calls for environmental restraint by the industrialised west.

2.5.2. United Nations Conference on the Human Environment (Stockholm, 5-16 June 1972)

The first UN Conference held specifically to consider problems of the environment was attended by 113 States.¹⁶⁰ Some 6,000 people, including representatives of nearly every large intergovernmental organisation, 700 observers sent by 400 NGOs, invited individuals, and approximately 1,500 journalists participated. Interestingly, the Conference took place against the background of the worst international recession of the post-1945 period,¹⁶¹ Yet started to take actions that could lead to constraining convention production. The Conference adopted a Declaration on the Human Environment, 109 recommendations forming an 'Action Plan' and a long resolution recommending institutional and financial implementation by the United Nations.

It represented a formal acknowledgment (by industrialised countries in particular) of the importance of multilateral efforts to deal with transboundary environmental problems¹⁶² and eventually became a catalyst for the development of a wide range of international responses to global and regional environmental problems.

Principle 5 is of particular relevance to mining. It provides that:

The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.

In turn, the concerns of the underdeveloped nations were only partially taken up in Principle 21 which provided:

¹⁵⁹ Development and Environment, UN General Assembly Resolution, A/RES/2849 (xxvi), 17 January 1972. The vote in favour of the resolution was 85-2-34, with the United States and the United Kingdom opposing, and virtually all other developed countries abstaining.

¹⁶⁰ The USSR and most of the Eastern Bloc of Socialist States boycotted the Conference because of the Western Powers' refusal to admit East Germany. For the purposes of this thesis, it is relevant to note that the Conference was attended by Australia and the United Republic of Tanzania. (Papua New Guinea was not an independent country at the time of the Conference).

¹⁶¹ The bastions of economic growth of the 1980s – Germany and Japan – were in severe recession. Government estimates were that nearly 20 million Europeans were unemployed.

¹⁶² Elliott Lorraine, *The Global Politics of the Environment*, MacMillan Press Ltd, London, 1998, 7.

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Despite the reservation contained in the last sentence, Principle 21 was clearly so open ended as to be able to permit anything and prohibit nothing. In fact no serious attempt was made in any of the principles drafted at the Conference to characterise international environmental concepts in terms of duties, once again in deference to the demonstrated sensitivity of the developing nations. Of equal weight was the pre-eminent value placed on national sovereignty by the developed nations. Nevertheless, the Conference led directly to the creation of the UN Secretariat at Nairobi and the Governing Council of the United Nations Environmental Program (UNEP),¹⁶³ this was possibly the “more important consequence” of the Conference.¹⁶⁴

2.5.3. The Brundtland Report

The Brundtland Report (1987) is significant for its formal linkage of the issues of environment and development. However, this was not the first forum in which this linkage was made. The Founex Report on Development and Environment, which was issued in 1971 after a seminar organised by the Secretariat in preparations for the Stockholm Conference, concluded that environmental problems resulted not only from the development process itself, but also from lack of development.

In the period following the Stockholm Conference, the United Nations set up some notable Commissions in order to progress the environmental agenda. One of these was established by the General Assembly of the UN in 1977 as the Independent Commission on International Development Issues, chaired by the former West German Chancellor, Willy Brandt. This Commission delivered two reports (in 1980 and 1983), but was disbanded in 1983. Calvert notes that conclusions of this Commission, inter alia that the North transfer more funds to the South (a target of 1% of GDP was first proposed), failed to win the support of the Northern states.¹⁶⁵

In that same year, the General Assembly set up a new World Commission on Environment and Development (WCED). The Commission was an independent body linked to, but outside, the UN system. It is known as the Brundtland Commission after its chairperson Gro Harlem Brundtland, then Prime Minister of Norway (and former Norwegian Environment Minister). The Commission comprised 23 members from 22 countries, each serving in their independent and expert capacities.¹⁶⁶

¹⁶³ Gormley W Paul, *Human Rights and Environment: The Need for International Co-operation*, AW Sijthoff International Publishing Company BV, The Netherlands, 1976, 121.

¹⁶⁴ Calvert, P & S, *The South, The North and the Environment*, Pinter, London, 1999, 183.

¹⁶⁵ Calvert, P & S, *The South, The North and the Environment*, Pinter, London, 1999, 184-85.

¹⁶⁶ More than half the members of the Commission – 13 of the 22 if one includes the Vice-Chair, came from developing countries, ranging from China, India and Brazil to the Ivory Coast, Guyana and Zimbabwe. Those from the developed world included individuals from most, but not all of the G7 countries (there was no-one from France or the UK), as well as from the then socialist bloc. Most had backgrounds in politics, academia or international public service (and sometimes all three).

The Commission was asked to do a number of things, including:

- to propose long term environmental strategies for achieving sustainable development¹⁶⁷ by the year 2000 and beyond;
- to recommend ways that concern for the environment may be translated into greater co-operation among developing countries and between countries at different stages of economic and social development and lead to the achievement of common and mutually supportive objectives that take account of the inter-relationships between people, resources, environment and development;
- to consider ways and means by which the international community can deal more effectively with environmental concerns, and
- to help define shared perceptions of long term environmental issues and the appropriate efforts needed to deal successfully with the problems of protecting and enhancing the environment, a long term agenda for action during the coming decades, and aspirational goals for the world community.¹⁶⁸

The Brundtland Report concluded that at the heart of the environmental problems were:

- dramatically increasing world population; and
- powerful technologies which enabled the over-exploitation of the world's resources.

Such findings were in keeping with the work of Ehrlich and the Club of Rome, which have been discussed in section 2.3. The Brundtland Report emphasised that environment and development are no longer separate concerns and if sustainability is to be achieved, institutional reform would have to be followed. In relation to legal issues, it stated:

Governments now need to fill major gaps in existing national and international law related to the environment, to find ways to recognise and protect the rights of present and future generations to an environment adequate for their health and well-being, to prepare under UN auspices a universal Declaration on environmental protection and sustainable development and a subsequent Convention, and to strengthen procedures for avoiding or resolving disputes on environment and resources management.¹⁶⁹

¹⁶⁷ 'Sustainable development' was defined as "to ensure that humanity meets the needs of the present without compromising the ability of future generations to meet their own needed": *Our Common Future*, above n 125, 8.

The first major international document to use the term 'sustainable development' was the World Conservation Strategy, published by the IUCN in 1980, with the assistance of UNEP. Elliot notes, however that it was a concept limited to the arena of conservationist dialogue, rather than making inroads into the discourse of governments and aid agencies, at this time: Elliot, above n 161, 179. William M Lafferty notes that since the Brundtland Report, the concept of 'sustainable development' has achieved a popularity approaching that of 'democracy'. "Just as every country and ideology after the Second World War wished to profile itself as 'democratic', we find the same trend today with respect of 'sustainable development'. ... Pity the politician, the party programme, the long-term plan, or the international agreement that does not pay respect to the idea" in "The Politics of Sustainable Development: Global Norms for National Implementation", Dryzek John S and Schlosberg David, *Debating the Earth*, Oxford University Press, 1998, 265.

¹⁶⁸ *Our Common Future*, above n 125, ix.

¹⁶⁹ *Ibid*, 21.

The Idea of a universal declaration found fertile ground in a global institution such as the UN and, gaining momentum, led to the passing of a series of General Assembly resolutions in subsequent years. It was the impetus that resulted in domestic environmental legislation in Australia and, through the facilitation of the World Bank, environmental legislation in Papua New Guinea and Mining legislation that included environmental provisions in Tanzania.

2.5.4. UN Conference on Environment and Development (1992)

Following the publication of the Brundtland Report, on 22 December 1989, the UN General Assembly adopted a number of resolutions on the global impact of environmental degradation. Especially significant were the following:

- Resolution 44/207 – Protection of the Global Climate for Present and Future Generations of Mankind – that emphasised a need to address with urgency the question of climate change.
- Resolution 44/224 – International co-operation in the monitoring, assessment and anticipation of environmental threats and in assistance in cases of environmental emergency – which declared that “one of the main global problems facing the world today is the deterioration of the environment”
- Resolution 44/228 – United Nations Conference on Environment and Development – that expressed “deep concern” at the “continuing deterioration of the state of the environment and the serious degradation of the global life-support systems, as well as by trends that, if allowed to continue, could disrupt the global ecological balance, jeopardise the life-sustaining qualities of the Earth and lead to an ecological catastrophe, and recognising that decisive, urgent and global action is vital to protecting the ecological balance of the Earth”. This Resolution called for the convening of the UN Conference on Environment and Development, “which shall be of two weeks’ duration and shall have the highest possible level of participation, to coincide with World Environment Day, on 5 June 1992”.

In keeping with Resolution 44/228, the UN Conference on Environment and Development, known as the Earth Summit, was held in Rio de Janeiro in 1992 and was attended by over 100 government leaders, representatives from 170 countries, and some 30,000 participants. There, they formally recognised the need to integrate economic development and environmental protection into the goal of sustainable development.

The Earth Summit also affirmed the growing importance of international environmental law as a mechanism to help codify and promote sustainable development. It saw terms such as the precautionary principle, intergenerational equity and the need for environmental impact assessment incorporated into an international ‘soft law’. These terms have since been incorporated into a least the objectives of domestic legislation and policy documents. They have also been incorporated into mining industry specific policy documents that will be discussed further in section 2.7 below.

Not all commentators believe that the Earth Summit represented a water shed in the environmental agenda. For example, Kennedy notes:

In attempting to arrive at a recipe for sustainability in the face of rapid planetary demise, the Summit offered around a few band-aids at best but otherwise rubber stamped global business as usual.¹⁷⁰

Nevertheless, four main formal documents came out of this Summit and have certainly, at least at the policy level, set an agenda which is still current and topical. These documents are the Rio Declaration, Agenda 21, the Convention on Climate Change and the Convention on Biological Diversity. All have contributed to the growing international consensus and each will be examined in turn.

The Rio Declaration

The Rio Declaration is a Statement of 27 principles to guide the international community in achieving sustainable development. For example, it includes such principles as:

- regard must be had to the developmental and environmental needs of future, as well as present, generations;¹⁷¹
- unsustainable patterns of production and consumption must be reduced;¹⁷²
- the precautionary principle;¹⁷³ and
- the polluter-pays principle.¹⁷⁴

The focus is on the capacity of sustainable development to improve the human condition. Principle 1 of the Rio Declaration states that “Human beings are at the centre of the concerns for sustainable development.” According to this anthropocentric approach, the protection of wildlife or other natural resources is not a goal in itself, but rather a necessity for ensuring a higher, sustained quality of life for humans. The ecocentric approach was explicitly rejected at the Earth Summit.

Principle 10 provides that “environmental issues are best handled with the participation of all concerned citizens” which opened the way for an even more extensive involvement of NGOs generally.

The Rio Declaration has been criticised for not elaborating anything new – just collating and codifying existing principles and statements. It has also been criticised¹⁷⁵ on the basis that governments cannot look to the Declaration for guidance

¹⁷⁰ Kennedy Danny, “Going down to Rio” *Polemic* 3(2) 1992, 78 at 79.

¹⁷¹ Rio Declaration on Environment and Development, principle 3.

¹⁷² Ibid, principle 8.

¹⁷³ Ibid, principle 15. The Declaration provides that “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing *cost-effective* (my emphasis) measures to prevent environmental degradation. The version that has been incorporated into Australia’s *National Strategy for Ecologically Sustainable Development* leaves out the words “cost-effective”, a point raised by Ron Brunton, “Here’s Humpty, dressed in Green”, *The Courier Mail*, 12 February, 2000.

¹⁷⁴ Ibid, principle 16.

¹⁷⁵ Elliott Lorraine, *The Global Politics of the Environment*, MacMillan Press Ltd, London, 1998, 22. Singhvi however notes that the philosophical principle underlying the Rio Declaration was the

as to the content of legislation, as the principles contained within it are lofty and philosophical. The following is given as an example:

The environment and natural resources of people under oppression, domination and occupation shall be protected.¹⁷⁶

Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.¹⁷⁷

There are serious risks in incorporating such statements principally that, being so casually ignored on a regular basis, they effectively dilute the seriousness of the central environmental message. How little the environmental consequences of warfare in Iraq, Afghanistan, or in the Balkans is or were considered as serious matters that could moderate military action at a tactical level should be apparent to most.¹⁷⁸

Nevertheless, although acknowledging that UN documents are always the result of compromise, and hence diluted in impact from the original draft, the mere fact that it is the result of an international forum attended by both developed and developing countries sets a benchmark/ policy basis for further enactments. The following principles of international law are said to have emerged from these Earth Summit documents:

1. the obligation of all states to conserve the environment and its natural resources.
2. the need for states to assess potential and monitor actual environmental impacts.
3. the need for international cooperation to conserve the environment, both within and beyond areas of national jurisdiction.

Agenda 21

Another document from the Earth Summit, Agenda 21 is an action plan And, like the Rio Declaration, it is a non-binding agreement. It comprises over 40 Chapters, grouped together in a preamble and four sections. It covers the following areas:

- section 1 – Social and economic dimensions for achieving sustainable development. This has chapters on combating poverty, changing consumption patterns, managing demographic dynamics, human health and human settlements.
- section 2 – Conservation and Management of Resources for Development. This has chapters on atmosphere, land resources, deforestation, desertification and drought, sustainable agriculture and rural development, biodiversity, biotechnology, oceans, freshwater resources and various aspects of waste management.

principle of harmony and not adversarial confrontation with, or forcible conquest, of Nature. “It seemed to me that this was a fundamental cultural concession by the West in its interaction with the East, or perhaps the West has rediscovered St Francis of Assisi after a long and tortuous journey”: Singhvi LM, “A Tale of Three Cities” (1996) *Australian International Law Journal* 15-35 at 22. Singhvi’s premise is in reality as incorrect as it is silly. Given the prospect of economic growth, the East has displayed the self-same attitude and behaviour as the West.

¹⁷⁶ Rio Declaration on Environment and Development, principle 23.

¹⁷⁷ Ibid, principle 24.

¹⁷⁸ The destruction of Mostar’s 16th century bridge still took place in 1993 despite the UN declaration.

- section 3 – Strengthening the role of the ‘major groups’, ie women, children and youth, indigenous peoples, NGOs, local authorities, trade unions, business and industry, science and technology and farmers.
- section 4 – Means of Implementation, which covers financial resources and mechanisms, technology transfer, institutional arrangements and legal instruments, as well as chapters on science, education and capacity building.

Agenda 21 was to be a blueprint for action in all areas relating to sustainable development of the planet until the 21st century. Once again, the final document was the result of compromise and negotiation. Nevertheless, it has had wide ranging implementation, overseen by the UN Commission on Sustainable Development, of which Australia is a founding member. Local Agenda 21s have been prepared in both developed and developing countries, and for small local authorities¹⁷⁹ to whole country plans¹⁸⁰. Agenda 21 is still of international significance and has been given prominence at the Johannesburg Summit.¹⁸¹

Conventions on Climate Change and Biodiversity

As previously mentioned, two framework Conventions were formulated at the Earth Summit. A detailed analysis of the provisions of these framework Conventions, and the Protocols issued thereunder, is beyond the scope of this thesis. The Convention on Climate Change has led to the development of a range of international institutions, such as the Intergovernmental Panel on Climate Change. Governments in Australia, Tanzania and PNG have reacted to the global warming/ climate change¹⁸² debate, at least at the policy level. The mining industry’s reaction, in the form of various ‘clean’ initiatives, such as Green Lead/ Clean Coal, will be canvassed in the case studies in Chapter 5. However, at this point in time, it is far too early to predict what effect, if any, the Climate Change Convention and the Kyoto Protocol will have on international mining, though presumably restrictions on CO₂ outputs will have a significant impact on certain areas of mining and could substantially increase costs.

If the above conferences, resolutions and conventions illustrate anything it is the momentum that environmental issues developing. Perhaps vague conceptions from the 19th century taken together with ideas of conservation or preservation in the early part of the 20th century and environmental activism in the latter part of the 20th century are in some way coalescing into a degree of international consensus – which led to further meetings and further declarations. In a chronological sense the next great international meeting occurred at Johannesburg.

¹⁷⁹ For example, South Sydney Council, a local authority in Sydney, New South Wales has prepared a local agenda 21.

¹⁸⁰ For example, see the People’s Republic of China, Agenda 21, which provides for the implementation of Local Agenda 21 in each province, at <http://www.acca21.org.cn/english/index.html> (accessed 15 July 2008).

¹⁸¹ A formal round of reporting against Agenda 21 principles was subsequently held in April 1997 in New York, known as Earth Summit+ 5, it unfortunately had little ongoing significance.

¹⁸² The terms are used interchangeably. If the weather is unseasonably hot, ‘global warming’ is used, whereas if the weather is unseasonably cold, the media and politicians adapt seamlessly to the term ‘climate change’.

2.5.5. The Johannesburg Summit

The next major international Conference of note, particularly in relation to its engagement with industry, including the mining industry was the Johannesburg Summit, or Earth Summit + 10. This was held in South Africa between 26 August and 4 September 2002. Once again, the Summit expressed the lofty aims of “overcom[ing] the obstacles to achieving sustainable development and to generate initiatives that would deliver results and improve people’s lives while protecting the environment.”¹⁸³ The Summit was intended to “fill some key gaps” that have “impeded” the implementation of Agenda 21, rather than renegotiate its terms.¹⁸⁴

It was preceded by many preparatory meetings at national, regional and global levels. The results of national and regional meetings were channelled into the four global Summit Preparatory Committees. These were used, inter alia, to establish the agenda for the Summit.¹⁸⁵ The Johannesburg conference was attended by more than 10,000 delegates representing 193 countries and intergovernmental organisations and, significantly, over 8,000 representatives of non-governmental organisations, business and other civil society groups.¹⁸⁶ One hundred world leaders addressed the Summit. Business groups placed a significant and some would argue pivotal, role in the Summit.¹⁸⁷

The ‘outcomes’ of the Conference were as follows:¹⁸⁸

- a universal reaffirmation of the commitment to the full implementation of Agenda 21 and the Millennium Development Goals – a set of eight targets aimed at reducing poverty and promoting sustainable development. Governments adopted a Political Declaration and a Plan of Implementation detailing the priorities for action.
- strengthening of the concept of sustainable development and the important linkages between poverty, the environment and the use of natural resources.
- the emergence of partnerships – by and between Governments, civil society and the private sector – as a viable mechanism to pursue sustainable development in a way that complements government action. More than 300 partnership initiatives were announced during the Summit, committing more

¹⁸³ World Summit on Sustainable Development, *The Road from Johannesburg: What Was Achieved and The Way Forward*, United Nations Department of Public Information, 2003, 1.

¹⁸⁴ *Ibid.*, 1.

¹⁸⁵ The First Global Summit Preparatory Committee ([PrepCom 1](#)) was held at the United Nations Headquarters in New York from 31 April to 2 May 2001. The Second Summit Preparatory Committee ([PrepCom 2](#)) was held from 28 January to 8 February 2002 in New York, followed by the Third Summit Preparatory Committee ([PrepCom 3](#)), also in New York, from 25 March to 5 April 2002 and the final PrepCom ([PrepCom 4](#)), at the Ministerial level, was held in Bali, Indonesia from 27 May to 7 June 2002.

¹⁸⁶ Or, as Mike Nahan expressed it, “the unelected outnumbered the elected by ten to one”: Editorial, *Institute of Public Affairs Review*, September 2002, Vol 54, No 3, 2.

¹⁸⁷ For example, Jim Green states that “with Rio Tinto on the British government delegation, BHP Billiton on the Australian government delegation and Anglo-American a major sponsor of the summit, three of the largest mining houses in the world are in the perfect position to ensure that the summit does not effect ‘business as usual’: in “Australia Undermines Earth Summit” *Green Left Weekly*, 4 September 2002.

¹⁸⁸ World Summit on Sustainable Development, above n 183, 2.

than US\$200 million in new and additional resources. This process is ongoing.

The partnership initiative is one of the more practical outcomes of the Summit. A typical project might bring together two or more UN agencies, government departments in affected countries, NGO (such as charities or trade unions) and private corporations. Commenting on the role of the private sector, McBeth and Linley however strike a cautionary note:

[a]s private entities ... undertake such basic human rights and sustainable development initiatives, so that matrix of human rights responsibility expands. The danger for the international community is the possibility that national governments will use this newly emerging private sector responsibility as an opportunity to abdicate their own fundamental duty to protect and promote human rights.¹⁸⁹

The promotion and protection of human rights is, of course, of most concern in the South. Indeed, the Johannesburg Summit has been seen as shifting the concept of sustainable development from an environmental perspective to a more humanitarian one.¹⁹⁰

In the minerals and mining grouping, four partnerships/ initiatives had been proposed by 30 June 2003. The leading partners encompassed both developed and developing countries and included Indonesia, South Africa, Canada and France. By way of example, the project initiated by the Ministry of Environment of Indonesia, "Sustainable Development in Mining Activities" proposes the involvement of governments, industry and NGOs in the ASEAN region. The purpose of the project is stated as to "improve environmental performance and management of the mining industry through harmonisation of environmental standards within the ASEAN countries which produce mining products."¹⁹¹ The project notes that "funding for the implementation of the partnership/ initiative is obtained from the national budget [of Indonesia], major mining industries, and mining associations amounting to US\$6 million over 3 years duration ie 2003 to 2005."¹⁹² It remains to be seen, of course, whether the laudable objectives of this project are met. A recent review of the website indicates that the project is now open-ended, the funds have not yet been disbursed and no 'progress reports against targets' have been submitted.¹⁹³

¹⁸⁹ McBeth Adam and Kinley David, "After Johannesburg: can human rights be privatised too?" (2002) *Alternative Law Journal* 292-294 at 292.

¹⁹⁰ Walker Paul, "Ecological Sustainability under IPA – Post Johannesburg Earth Summit" (2002/03) 8(38) *Queensland Environment Practice Reporter* 128-138 at 128.

¹⁹¹ United Nations Division for Sustainable Development, "Sustainable Development in Mining Activities", Partnership Initiatives Information Sheet, 9 June 2003, at <http://www.un.org/esa/sustdev/partnerships/Minerals.htm> (accessed 24 July 2003).

¹⁹² *Ibid.*

¹⁹³ Sustainable Development in Mining Activities, Partnerships for Sustainable Development, at <http://webapps01.un.org/dsd/partnerships/public/partnerships/240.html> (accessed 24 April 2007).

2.6. The World Bank¹⁹⁴

The United Nations conferences were important in the development of an international environmental framework. Whilst developed countries, such as Australia have subsequently implemented the concepts espoused at these Conferences in policy documents such as the *National Strategy for Ecologically Sustainable Development* and state and federal legislation, implementation of similar legislation in Tanzania and Papua New Guinea has been a direct product of World Bank involvement. The World Bank has some 185 states as members (although voting rights are dominated by the United States). It is one of the largest lenders to developing countries¹⁹⁵ and its significance is also felt in that its approval serves to assure other lenders. Because of its ability to attach far-reaching conditions to loans, the large sums of money involved, and the fact that its support is essential to mobilise other resources, the World Bank is the most powerful development agency.¹⁹⁶

The World Bank has a mixed record in terms of the environmental outcomes of the projects it has financed¹⁹⁷ and consequently has had a 'rocky relationship' with NGOs. From the early 1980s, NGOs have targeted the World Bank for lending to projects that have had adverse environmental consequences. Many of these projects involved logging of virgin forests, such as in the Brazilian Amazon and parts of Papua New Guinea and Indonesia.

A landmark shift took place in the World Bank after James Wolfensohn became President in 1995.¹⁹⁸ Adopting a more holistic approach to development, Wolfensohn insisted that environmental performance be considered as an essential ingredient in the assessment of projects and moved the bank's focus from the financing of grandiose national projects to specific developments which could more clearly generate value for local communities and the national economies of the recipient states. As part of this approach an Environmental and Social Review Procedure for funding was set up in December 1998 and finances various educational initiatives targeted specifically at developing countries, such as the *Pollution Prevention and Abatement Handbook*. This shift in the World Bank's policies and procedures took place in the context of the United Nations developments, such as the 1992 Earth Summit, which have been previously discussed.

Similarly the World Bank (via the IFC) took the initiative to establish a set of guidelines to the financial services industry "to take a leadership role on global

¹⁹⁴ The body known generally as the 'World Bank' is both the International Bank for Reconstruction and Development, which was created in 1945 and the smaller International Development Association, which was created in 1960. The 2 organisations share offices and staff. As well as these 2 organisations, the 'World Bank Group' also includes the International Finance Corporation and the Multilateral Investment Guarantee Agency.

¹⁹⁵ Other agencies include the African Development Bank and its Asian equivalent.

¹⁹⁶ Kolk Ans, "Environmental Management and Organisational Change: The Impact of the World Bank" in Wehrmeyer Walter & Mulugetta Yacob (eds), *Growing Pains*, Greenleaf Publishing, Sheffield, 1999, 257-258.

¹⁹⁷ Miller Marian, *The Third World in Global Environmental Politics*, Lynne Rienner Publishers, London, 1995, 140.

¹⁹⁸ Kolk, above n 196, 257.

environmental and social issues”.¹⁹⁹ Subsequently known as the “Equator Principles” they are self-enforcing and introduce guidelines in which participating companies agreed not to lend money for a project unless the borrower completed a detailed environmental assessment that explains how it would meet criteria for sustainable development and other social goals.²⁰⁰

Work on the Equator Principles commenced in October 2002 and they were officially released on 4 June 2003. Fifty-one of the world’s largest financial institutions have now agreed to be bound by these principles.²⁰¹

The Principles adopt the IFC Guidelines of December 1998, which provide that the risk of a project is categorised in accordance with internal guidelines based on the environmental and social screening criteria of the IFC. For Category A²⁰² and B²⁰³ projects, an environmental assessment is required and issues that are to be addressed are specified. For all Category A and appropriate Category B projects, an environmental management plan that addresses mitigation, action plans, monitoring and management of risks is to be prepared. Where appropriate, this is also to include a decommissioning plan and independent environmental expert verification. The guidelines only apply to loans with a capital cost of more than \$50 million.²⁰⁴

It is too early to tell whether the adoption of the Guidelines by commercial banks will have any impact on lending, and whether the aims stated in the Preamble to the Equator Principles are met, ie:

adherence to these principles will allow us to work with our customers in their management of environmental and social policy issues relation to their investments in the emerging markets.²⁰⁵

However, Filas and Fohlen, who have been involved with mining projects in West Africa in 1997 and 2000 (before and after the IFC Guidelines were introduced) note that:

it is probably a misnomer to suggested that the World Bank emphasis on environmental and social programs has shifted. Perhaps it is more accurate to say that the emphasis has expanded, and expanded considerably. All the evaluations and

¹⁹⁹ Woicke Peter, statement to Equator Principles Press Conference, Washington DC, 4 June 2003.

²⁰⁰ Ignatius David, “Corporate Green”, *Washington Post*, 11 May 2005, A17.

²⁰¹ Details correct as at 1 May 2007.

²⁰² A proposed project is classified as Category A if it is likely to have significance adverse environmental impacts that are sensitive, diverse or unprecedented. A potential impact is “sensitive” if it may be irreversible or affect vulnerable groups or ethnic minorities, involve involuntary displacement or resettlement, or affect significant cultural heritage sites.

²⁰³ Category B projects are those where potential adverse environmental impacts on human populations or environmentally important areas – including wetlands, forests, grasslands and other natural habitats – are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. A proposed project is Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further environmental assessment action is required.

²⁰⁴ This cap has been criticised by NGOs on the basis that many projects, particularly smaller scale mining projects, can cause significant environmental harm. The IFC has received a large amount of negative coverage for its support of smaller mining operations. : Nelthorpe Tom, “Principled Finance”, *Project Finance Magazine*, June 2003 Cover Story.

²⁰⁵ Equator Principles: An industry approach for financial institutions in determining, assessing and managing environmental and social risk in project financing, Preamble, 4 June 2003.

analyses that were important in the 1990s will continue to be equally important into the 21st century. It is simply that the list of what must be addressed and at what level of detail has become longer and more detailed. ... This new approach complements what major mining companies are trying to achieve in their operations worldwide.²⁰⁶

Specific examples of World Bank involvement in each of the studied mines in Tanzania and Papua New Guinea are included in Chapter 5. In these instances, The World Bank has extended its role beyond a financier into domestic social issues and environmental protection and in the course of doing so, could be seen to be acting as a 'defacto' government, or at the very least an important part of the 'regulatory' mix.

2.7. Global Initiatives Concerning the Environmental Impacts of Mining

The United Nations Conferences discussed above, and in particular the Johannesburg Summit, provided the impetus for the mining industry itself to develop self regulatory, sustainability policies and procedures. These key international initiatives have directly involved the TNCs discussed in this thesis and impact on their responses to regulation.

2.7.1. The Global Mining Initiative

The project that spear-headed the major global initiative which addressed, inter alia, the environmental aspects of mining, was initiated by the industry itself. There was an acknowledgement that:

in the past, the industry has made mistakes. Accidents have occurred. Often the industry has not been the best advocate in its own cause. In the future it must be prepared to respond better to criticism.²⁰⁷

It is significant to note that despite the international initiatives addressing environmental problems in general that stem from at least 1972, and the direct involvement in projects by the World Bank and other external pressures, it took until 1998 for industry to formally organise itself to undertake these steps. One of the reasons given for the timing²⁰⁸ was that the minerals industry was expected to participate in the Johannesburg Summit and would there be required to report on "the sector's evolving understanding of sustainable development; the practical outcomes of its commitment to improved social and environmental performance; and on strategies to increase the sector's contribution to sustainable development at community, national and international levels". It could be argued, however, that there was a

²⁰⁶ Filas BA and Fohlen DW, "World Bank Group Policies and Guidelines (Did Someone Move the Goalposts?)", Malhotra Deepak (ed), *Politics of Mining: What they don't teach you in School*, Society for Mining, Metallurgy and Exploration Inc, Colorado, 2001, 117.

²⁰⁷ Littlewood George, Consultant to WMC Resources Ltd, "The Global Mining Initiative", address to Mining 2000, Melbourne, 20 September 2000.

²⁰⁸ IIED, "Facing the Future: The Report of The MMSD Australia Project", May 2002, 14.

concern that if industry itself didn't take these steps, they would be taken by government, often at the insistence of NGOs. Therefore if industry devised their own action plan, it would be on their terms.

Consequently in 1998, the CEOs of 10 global mining and metals companies,²⁰⁹ all transnational corporations, met in London. Prior to this meeting, there had been no international forum for the mining companies to discuss these issues. This was the beginning of such a forum, which eventually led to the Global Mining Initiative. The CEOs discussed the industry's environmental performance and public standing and concluded something had to be done.²¹⁰ Generic problems identified were major challenges around access to land and resources and the industry's social licence to operate. Product prices were continuing to fall and the ability of the industry to internalise the costs of meeting social and environmental expectations were being compromised. Many of the problems associated with mining issues and metals use were exacerbated by the industry's lack of credibility as a responsible player.²¹¹

From this meeting, the Global Mining Initiative (GMI) was conceived. Mr Dick Wells, the Executive Director of the Minerals Council of Australia, which was an invited participant in the GMI, states that:

The GMI is all about the industry listening, learning and engaging with all key stakeholder groups so that the industry better understands the links between mining and sustainable development, and can convert this knowledge into operational principles and practices.²¹²

The GMI consisted of three linked components related to improving the industry's performance and developing a sustainable development model to provide global leadership for the mining and metals industry. They were:

1. an independent process of analysis and consultation on the key issues facing the mining sector – the Mining, Minerals and Sustainable Development (MMSD) project.
2. a global conference on mining, metals and sustainable development to be held in Toronto in May 2002 – Resourcing the Future.
3. an industry association that could focus on sustainable development in the mining, metals and minerals industry and provide a global voice for the industry on these issues – the International Council on Mining and Metals (ICMM).

Each of these components is discussed below.

²⁰⁹ These companies were: Anglo American, BHP, Billiton, Codelco, Newmont, Noranda, Phelps Dodge, Placer Dome, Rio Tinto, WMC.

²¹⁰ Collins R, "Mining and Sustainability – a Contradiction?", *Waste Management and Environment, Mining Supplement*, October 2001 at 3.

²¹¹ Eggleston Peter, Global Mining Initiative Executive and Group Co-ordinator, Sustainable Development, Rio Tinto, "Mining and Metals Sectoral Initiative on Sustainable Development", WBCSD Side Event PREPCOMM IV, Bali, Indonesia, 28 May 2002.

²¹² Wells Dick, "The Australian Minerals Industry – The Way Forward", address to the Native Title Representative Bodies Legal Conference Joint Session with the National Environmental Law Association, Townsville, 30 August 2001.

2.7.2. The Mining, Minerals and Sustainable Development Project

The first step was to examine industry's role in achieving sustainable development.²¹³ However, rather than industry 'auditing' itself, the CEOs thought that it would be best to have other stakeholder involvement, as well as full industry participation. Given the recent history of outright distrust between industry and environmental groups this, in itself, was a remarkable occurrence driven perhaps by the assumed exasperation acknowledgement by industry that they had no alternative if they were to retain their corporate standing in the eyes of the public.

The issues perceived in launching the MMSD project²¹⁴ were how to build greater trust about the industry's intentions and actions in respect of sustainable development. Coupled with this was the need to create an open and transparent process of engagement and debate with the NGOs and international and national agencies concerned with mining's future. Mining had already become a flash point for many NGO interests.²¹⁵ Future issues were how to conduct a review of industry practice which would be seen to be independent, rigorous and professional, and how to ensure that the project led to needed change by the industry and others.

The decision to undertake the MMSD project outside of the industry led to a further two decisions. The first was to commission a feasibility study to flesh out the ideas. This task was given to Richard Sandbrook, the then executive director of the London based NGO, the International Institute for Environment and Development²¹⁶ (IIED). IIED was chosen because it had "no particular expertise in the mining sector and no ambition to retain mining expertise in-house after completion of the MMSD process".²¹⁷ Hence it was thought that IIED could conduct the multi-stakeholder negotiations in a non partisan, collaborative way. This study was provided to the mining CEOs in October 1999 and the proposals therein were accepted.

The second decision was to ask the World Business Council for Sustainable Development (WBCSD)²¹⁸ to act as the agent for the sponsors of the study. The WBCSD's tasks were:

²¹³ See **Appendix 2-7** for an examination of whether mining can be sustainable.

²¹⁴ Littlewood George, Consultant, WMC Resources Ltd, "The Global Mining Initiative", address to Mining 2000, Melbourne, 20 September 2000.

²¹⁵ Luke Danielson, author of *Architecture for Change: An Account of the MMSD Project – History*, Global Public Policy Institute, Germany, 2006, 23-24 notes that at this time, organisations like Partizans (People Against Rio Tinto and its Subsidiaries) in the UK, Project Underground, Mineral Policy Centre (now Earthworks) and Mining Watch Canada in Northern America, Mineral Policy Institute and Community Aid Abroad (Oxfam) in Australia, Labour in Peru and many others were campaigning on a broad range of mining related issues – including human rights abuses, environmental and biodiversity damage, and imbalance of costs and benefits to local communities, at this time.

²¹⁶ The International Institute for Environment and Development has been involved in advising government, donors and agencies on how to evaluate and manage projects with environmental, social and economic implications, particularly in the developing world, for over 25 years.

²¹⁷ Danielson L, *Architecture for Change: An Account of the MMSD Project – History*, Global Public Policy Institute, Germany, 2006, 21.

²¹⁸ The World Business Council for Sustainable Development represents 160 transnational corporations, from more than 30 countries and 20 major industrial sectors. Of the companies that will be considered in the case studies of the thesis, BHP Billiton and Newmont Mining Corporation are members of the WBCSD.

- formation of a sponsorship committee, with representatives of all sponsors, both industry and non-industry
- to convene an ‘Assurance Group’, a distinguished body of about 20 individuals with international reputations in environment, social and economic areas. This group was to act as a peer review group and thereby offer evidence of the project’s independence and integrity
- appoint someone to co-ordinate the study. Richard Sandbrook was appointed by the Project Co-ordinator, and once again the project was carried out by IIED.
- oversee the broad administrative aspects of the project of the sponsors.

The life of the MMSD project was two years, the culmination of which was an international conference to discuss the industry’s way forward and to address the challenges that were laid down in the Earth Summit 10 years earlier.

The MMSD project included four regional partnerships, each with its own governance structure, research priorities and process of consultation: South Africa, South America, Australia²¹⁹ and North America. As well as issuing regional reports, a report on a global review of mining, entitled *Breaking New Ground* was released in May 2002. The key action points raised by the report – for both individual countries and globally, is included as **Appendix 2-5**. As can be expected of such an international document, the key action points were mostly very general in their terms. Nevertheless they placed many items onto the international agenda and formed the basis for the creation of the GMI conference in 2002 and the ICMM.

2.7.3. The Global Mining Initiative Conference, Toronto, 2002

The GMI Conference was held in Toronto, Canada from 12-15 May 2002. It was attended by 570 delegates, representing some 42 countries.²²⁰ At the conclusion of the Conference a declaration outlining initiatives designed to improve the sector’s social and environmental performance was issued. It recognised that:

- successful mining and metals processing operations require the support of the communities in which they operate
- respect for these communities and a serious engagement with them is required to ensure that mining and metals processing are seen as beneficial for the community and the company
- successful companies will respect fundamental human rights, including workplace rights, and the need for a healthy and safe workplace

²¹⁹ The Report of the MMSD Australia project was entitled “Facing the Future”. This document proposed specific actions to enhance the mineral sector’s contribution to Australia’s sustainable development.

²²⁰ “Link”, Monthly newsletter of the Global Mining Initiative, Vol 2 Issue 4, May 2002, 1. The Conference was attended by a diverse range of stakeholders – 19% from industry associations and academia, 17% from national and local governments, 15% from NGOs, 9% labour and other organisations; 40% industry representatives.

- successful companies will accept their environmental stewardship responsibilities for their facility locations.²²¹

2.7.4. The International Council on Mining and Metals

The above principles from the GMI Conference were taken forward and developed by the international governing body for the industry, the International Council for Mining and Metals (ICMM), which had been formed in 2001, prior to the Conference. The members of the Council comprise 18 of the largest mining and metal companies,²²² (which includes all of the companies discussed in the case studies in this thesis) and 30 national mining and global commodities associations.²²³

The ICMM is a self regulatory body for member companies, designed to recognise leadership in sustainable development initiatives. It is controlled from within the industry, being governed by the CEOs of all member companies, two elected representatives from member organisations, and the ICMM President. In keeping with the spirit of independent oversight, the President, Dr R A Hodge, is an academic engineer, and former President of Friends of the Earth, Canada, as well as having extensive mining experience.²²⁴

The purpose of the ICMM is threefold:²²⁵

- Industry performance – development of the ICMM Sustainable Development Framework. This includes developing a library of good industry practices and initiating work to develop operational guidelines and management tools in key areas where guidance is needed
- International policy – in collaboration with the national and commodity associations, monitor long term strategic developments and emerging issues, identifying and addressing gaps in science and data collection and global advocacy
- Catalysing change for sector wide action – undertaking partnerships for action with organisations such as the World Bank on community development management tools, and UNEP’s APELL²²⁶ for Mining, and engage in dialogue initiatives on mining and biodiversity.

The ICMM has now developed a work plan for the implementation of these measures “to help its members meet their sustainable development commitments, and drive performance improvement across the industry as a whole”.²²⁷ One of these

²²¹ International Council of Mining and Metals, *ICMM Toronto Declaration*, 15 May 2002.

²²² Namely Alcoa, AngloGold Ashanti, Anglo American, Barrick, BHP Billiton, Vale, GoldFields, Lonmin, Lihir Gold Limited, Freeport-McMoRan Copper & Gold, Mitsubishi Materials, Newmont, Nippon Mining & Metals, Rio Tinto, Sumitomo Metal Mining, Teck Cominco, Xstrata and Zinifex.

²²³ ICMM Members at http://www.icmm.com/icmm_members.php (accessed 16 July 2008).

²²⁴ Dr Hodge is Kinross Professor of Mining and Sustainability in the Department of Mining Engineering, and Helen and Arthur Stollery Professor of Mining Engineering and Geological Sciences and Geological Engineering, at Queen’s University, Kingston, Ontario, Canada.

²²⁵ ICMM, “ICMM Work programme” at http://www.icmm.com/html/work_prog.php (accessed 18 September 2003).

²²⁶ Awareness and Preparedness for Emergencies at the Local Level.

²²⁷ ICMM work program at http://www.icmm.com/work_prog.php (accessed 24 April 2007).

components is environmental stewardship, which is aimed at enhancing the industry's environmental performance.²²⁸ By stewardship, is meant a commitment to sustainable practice and mitigating environmental damage. The ICMM has adopted the Brundtland Commission's definition of sustainable development and notes that in the mining and minerals sector, this means "that investments should be financially profitable, technically appropriate, environmentally sounds and socially responsible".²²⁹

The ICMM has developed the 10 sustainable development principles,²³⁰ which are as follows:

- 1) Implement and maintain ethical business practices and sound systems of corporate governance.
- 2) Integrate sustainable development considerations within the corporate decision-making process.
- 3) Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.
- 4) Implement risk management strategies based on valid data and sound science.
- 5) Seek continual improvement of our health and safety performance.
- 6) Seek continual improvement of our environmental performance.
- 7) Contribute to conservation of biodiversity and integrated approaches to land use planning.
- 8) Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products.
- 9) Contribute to the social, economic and institutional development of the communities in which we operate.
- 10) Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.²³¹

Members report their performance against the ICMM guidelines, in accordance with the Global Reporting Initiative guidelines. In May 2008, a procedure for independent external assurance of this reporting was introduced.²³² Hence the ICMM principles provide a future example of an industry developed initiative, supported by external verification by independent consultants, rather than formal regulation.

In relation to the contribution of the MMSD/ ICMM process, Brereton comments that:

²²⁸ ICMM Environmental stewardship at http://www.icmm.com/environmental_stewardship.php (accessed 24 April 2007).

²²⁹ "ICMM principles" at http://www.icmm.com/html/work_prog.php (accessed 18 September 2003).

²³⁰ These principles are based on issues identified in the MMSD Project. Additionally, ICMM undertook a 'gap analysis' comparing current standards with relevant conventions and guidelines, for example, the *Rio Declaration*, the Global Reporting Initiative, the Global Compact, OECD Guidelines on Multinational Enterprises, World Bank Operational Guidelines, OECD Convention on Combating Bribery, ILO Conventions 98, 169, 176, and the Voluntary Principles on Security and Human Rights.

²³¹ ICMM, ICMM Principles – Sustainable Development Framework, at http://www.icmm.com/icmm_principles.php (accessed 6 March 2007).

²³² That is, the ICMM Assurance Procedure, which must be implemented by all members in relation to their sustainability reports for the financial year ended December 2009 or March 2010.

Regardless of what happens with the ICMM over the longer term, the engagement process initiated through the MMSD has helped to stimulate ongoing dialogue about sustainable development issues within the between companies, and between the industry, NGOs and international agencies. In addition, the MMSD process has been instrumental in getting leaders of several of the larger companies in the industry to publicly commit their firms to advancing a sustainable development agenda. Having raised expectations, it will be very difficult for the industry to now resile from the commitments that have been made; NGOs, in particular, have made it clear that the performance of the industry will be closely monitored to see if it matches up to the words.”²³³

In other words, the structure will tend to induce compliance. One example of an initiative of the ICMM has been an undertaking by Members “not to explore or mine in World Heritage properties”. The ICMM has also committed itself to work with IUCN and others in developing best practice guidelines to “enhance [the] industry’s contribution to biodiversity conservation, including in and around protected areas”.²³⁴

The inaugural Secretary-General of the ICMM was Dr Jay Hair. This is yet another example of the convergence between industry and NGOs, since Dr Hair was an eminent conservationist. He previously led two of the world’s most prominent environmental organisations: the US National Wildlife Federation and the Switzerland based IUCN (The World Conservation Union). The engagement of the mining industry global with NGOs for preparing its threshold policy documents and initiatives has been mirrored at specific mining sites, for example by engaging NGOs to perform external verification of Sustainability Reports, as will be discussed in Chapter 5.

2.8. Global Reporting Initiative (1997)

Sustainability Reporting, now extensively used by mining TNCs, and corporations in other industries, owes its origins to the Global Reporting Initiative (GRI), rather than formal regulation. The GRI in fact predates both the GMI and the formation of the ICMM. The GRI describes itself as a “multi-stakeholder governed institution collaborating to provide the global standards in sustainability reporting”.²³⁵ It is a not for profit organisation headquartered in Amsterdam. It is governed by a 16 person Board of Directors, comprising industry, professional, government and NGO leaders. The GRI has devised a mechanism whereby companies could, voluntarily, produce credible Sustainability Reports (triple bottom line reporting, rather than only financial reporting). Indeed, the vision statement of the GRI is that “reporting on economic, environmental and social performance by all organizations is as routine and comparable as financial reporting.”²³⁶ It is a key example of a self regulatory

²³³ Brereton, n 3 above, 5-6.

²³⁴ ICMM, Press Release, 20 August 2003.

²³⁵ Global Reporting Initiative, “Who we are” at <http://www.globalreporting.org/AboutGRI/WhoWeAre> (accessed 16 July 2008).

²³⁶ Global Reporting Initiative, “What we do” at www.globalreporting.org/AboutGRI/WhatWeDo (accessed 8 March 2007).

mechanism, whose influence is many sectors, including the ‘major miners’ is increasing. It is a further example of a collaboration between an NGO, UNEP and industry.

The roots of corporate sustainability reporting in its current form date from 1989, when the Coalition for Environmentally Responsible Economics (CERES) (a non-profit membership organisation of investors and various interest groups) released the Valdez Principles – a 10 point code of conduct that included a commitment to reporting on outcomes of implementation. Environmental reporting, the precursor to sustainability reporting, began in earnest in the early 1990s as part of the search for tools for enhanced accountability.²³⁷

Environmental reporting “reached a turning point” in 1997 with the launch of the GRI by CERES. UNEP joined as a partner in 1999, thereby securing a global platform for the GRI. The GRI was an attempt to integrate and unify the many standards in the marketplace into a single, generally accepted sustainability reporting framework, encompassing environmental, social and economic performance.²³⁸

The Exposure Draft of the GRI Sustainability Reporting Guidelines was released in 1999, and by 2000 50 organisations released sustainability reports based on the Guidelines. The most recent version of the Guidelines – G3 – was released in October 2006, following a three year development period that engaged more than 3,000 stakeholders from diverse sectors, worldwide.²³⁹ A further explanation of the Guidelines is included at **Appendix 2-6**.

As previously noted, the Johannesburg Summit had placed corporate responsibility amongst the core issues defining sustainability. The Johannesburg Plan of Implementation recommended that governments take into account “initiatives such as the Global Reporting Initiative guidelines on sustainability reporting”.²⁴⁰

²³⁷ Gilbert, Sean, “The Transparency Evolution”, *The Environmental Forum*, Environmental Law Institute, Washington DC, November/ December 2002, 21.

²³⁸ Ibid, 21.

²³⁹ “G3 Reporting Framework” at

<http://www.globalreporting.org/ReportingFramework/AboutReportingFramework/> (accessed 13 March 2006).

²⁴⁰ UN Department of Economic and Social Affairs, *Plan of Implementation of the World Summit on Sustainable Development*, para 18, which provides: Enhance corporate environmental and social responsibility and accountability.

This would include actions at all levels to:

- (a) Encourage industry to improve social and environmental performance through voluntary initiatives, including environmental management systems, codes of conduct, certification and public reporting on environmental and social issues, taking into account such initiatives as the International Organization for Standardization standards and Global Reporting Initiative guidelines on sustainability reporting, bearing in mind principle 11 of the Rio Declaration on Environment and Development;
- (b) Encourage dialogue between enterprises and the communities in which they operate and other stakeholders;

White believes that the “reporting renaissance (sic) is irreversible”. He notes that, whilst “still in its pre-adolescence, it remains a work in progress characterized by experimentation and learning. Its emergences as a practice among hundreds of companies worldwide in less than a decade is, in a historical context, a development whose rapidity has few peers.”²⁴¹

The GRI has had a direct influence on the creation of a sustainability reporting format in Australia leading to the release of the minerals industry’s *Framework for Sustainable Enduring Value– the Australian Development*, which was produced by the Minerals Council of Australia in October 2004. The framework aligns with the ICMM Sustainable Development Framework Principles,²⁴² the Global Reporting Initiative and the Mining Sector Supplement released as part of the GRI. Its purpose is to give “practical effect to these commitments”.²⁴³

Enduring Value builds on the Australian Minerals Industry *Code for Environmental Management*, which was first released in December 1996, reviewed in 1999 and revised in February 2000. The Code was a list of 7 principles, which signatories to the Code agreed to implement. A summary of Code Obligations was as follows:

- Progressive implementation of the Code.
- Production of an annual public environment report within two years of registration.
- Completion of an annual code implantation survey to assess progress against implementation of Code principles
- Verification of the survey results, by an accredited auditor, at least once every three years.²⁴⁴

The focus of the Code was on environmental issues, whereas the focus of *Enduring Value* has widened, to also include the social aspects of sustainable development, in line with the ICMM principles and following World Bank and United Nations principles.

The case study companies were all signatories to the Code, as well as to the *Enduring Value* Implementation. The signatories to *Enduring Value* commit to:

- Progressive implementation of the ICMM Principles and Elements;
- Public reporting of site level performance, on a minimum annual basis, with reporting metrics self-selected from the GRI, the GRI Mining and Metals Sector Supplement or self-developed; and

(c) Encourage financial institutions to incorporate sustainable development considerations into their decision -making processes;

(d) Develop workplace-based partnerships and programmes, including training and education programmes.

²⁴¹ White Allen L, “New Wine, New Bottles: The Rise of Non-Financial Reporting”, 20 June 2005, p 5 at www.bsr.org (accessed 12 March 2007).

²⁴² See section 2.7.4.

²⁴³ Minerals Council of Australia, *Enduring Value*, October 2004, 3.

²⁴⁴ Minerals Council of Australia, *Code for Environmental Management*, February 2000, 1.

- Assessment of the systems used to manage key operational risks (using either internal or external assessment as appropriate).²⁴⁵

In terms of ‘compliance’, *Enduring Value* has a three-pronged approach. It provides that should a signatory be found to be non-conformant with the Signatory Obligations,²⁴⁶ the Minerals Council of Australia will seek to address these issues through the following process:

1. The MCA Secretariat contacts the designated Signatory Coordinator to discuss the reasons behind the company being out of conformance, to agree a process for ensuring that the company is in conformance as soon as possible, and to identify strategies to reduce the likelihood of future non-conformance.
2. If this isn’t successful within a reasonable timeframe, the MCA Chief Executive will contact the Chief Executive or Managing Director of the company to discuss the above issues.
3. If no progress is being made within a reasonable time, the ultimate sanction is withdrawal as a Signatory to *Enduring Value*.²⁴⁷

This form of exclusion would no doubt lead to significant damage to a corporation’s reputation. The Reports produced by the case study companies in ‘compliance’ with these abovementioned self regulatory mechanisms will be discussed in Chapter 5.

2.9. The Global Compact

The Global Compact is another purely voluntary initiative that has been embraced by many transnational corporations, including the mining companies discussed in this thesis.²⁴⁸ It is a UN initiative to bring companies together with UN agencies, labour and civil society to support universal environmental and social principles. It was launched at the UN headquarters in New York on 26 July 2000.

The Global Compact asks companies to embrace, support and enact, within their sphere of influence, a set of core values in the areas of human rights, labour standards, the environment and anti-corruption.²⁴⁹ They are:

Human rights

1. Businesses should support and respect the protection of internationally proclaimed human rights; and
2. make sure that they are not complicit in human rights abuses

Labour standards

²⁴⁵ *Enduring Value*, n 243 above, 12.

²⁴⁶ This is not defined in *Enduring Value*.

²⁴⁷ *Enduring Value*, above n 243,13.

²⁴⁸ The dates that the case study companies joined the Global Compact are: BHP Billiton – 21/07/03; Barrick – 02/06/05; AngloGold Ashanti Co – 04/08/04; Rio Tinto – 26/07/00.

²⁴⁹ The principles of the Global Compact were derived from the Universal Declaration of Human Rights, the International Labour Organisation’s Declaration on Fundamental Principles and Rights at work; the Rio Declaration and the UN’s Convention Against Corruption.

3. Business should uphold the right to freedom of association and the effective recognition of the right to collective bargaining;
4. the elimination of all forms of forced and compulsory labour
5. the effective abolition of child labour; and
6. the elimination of discrimination in respect of employment and occupation.

Environment

7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies.

Anti-corruption

10. Businesses should work against all forms of corruption, including extortion and bribery.²⁵⁰

The Global Compact has no enforcement mechanism, but “relies on public accountability, transparency and self-interest of companies, labour and civil society to initiate and share substantive action in pursuing the principles upon which the Global Compact is based”.²⁵¹ Nevertheless, it has been adopted by industry and is a further example of a self regulatory mechanism imposing ‘standards’ on industry, particularly those working in developing countries. The effect of the Global Compact on the motivations of the case study companies will be discussed in Chapter 5.

2.10. Conclusion

International mining companies, whatever their size, are now subject to something of an international consensus on environmental matters even if it is only at the level of high principle. This consensus has, as discussed, been the product of a diverse group of factors: ranging from the science, environmental philosophy, environmental politics and developments in the international arena. For whatever reason, the situation faced by such companies today is clearly and quantitatively different from the past. On a daily basis their operations are now influenced by the visionary statements of international conferences, by the activities of NGOs and by the economic aspirations of peoples (or their leaders) to whom the very word ‘environment’ is vague or indecipherable or outright meaningless.

Companies operating are also influenced by the range of self regulatory, industry codes and standards that have been developed, particularly in the last 10 years, such as the ICM Assurances Program (complete with external verification), the GRI, the

²⁵⁰ United Nations Global Compact, “The Ten Principles” at <http://www.unglobalcompact.org/AboutTheGC/TheTenPrinciples/index.html> (accessed 12 March 2007).

²⁵¹ United Nations Global Compact, “What is the Global Compact?” at <http://www.unglobalcompact.org/AboutTheGC/index.html> (accessed 12 March 2007).

Global Compact and, in Australia, the MCA Code. As well as affecting environmental practice at mine sites, they have led to an industry of Sustainability Reporting. The specific impact that this has had on the case study mines will be discussed in Chapter 5.

It is naïve to believe that all countries will behave in a fashion which reflects the reality of an apparent consensus at the international level. Profit has a way of working around restrictions however imposed to find a solution which is the most cost effective and regulation almost invariably adds cost. The capacity of a country to enforce its regulations will also impact on the effectiveness of regulation, and this is a topic that will be addressed further in Chapters 3 and 4.

The apparatus of international environmental law (however “soft”) can, in the main, be said to exist, but the actual regulatory and enforcement mechanisms in particular states are important and the consequent behaviour of mining companies in those states is now to be examined.

THREE

THE NATIONAL REGULATORY SYSTEMS

3.1. Introduction

All the circumstances which were described in the previous chapter gave rise to an apparent international consensus that environmental issues now needed to be addressed on a global scale. This led ultimately to the production of a number of international conventions each dealing with some aspect of global environmental concern. However, the development and implementation of rules and regulations relating to environmental conduct ultimately falls to national, regional and local jurisdictions. It is one thing to state that an international convention constitutes international “soft” law but at the level of positive law, such a statement lacks real content or meaning. There is no “International Environment Court” along the lines of the International Criminal Court which could raise a convention to a definitive class of “hard” law.²⁵² Consequently, whilst national governments could agree to give substance to an international convention, it is only national jurisdictions which can enforce environmental standards and proscribe appropriate behaviour in all circumstances.²⁵³

This chapter will examine how, and in what manner, specific international standards and international norms have been incorporated into the domestic jurisdictions of Queensland, Tanzania and Papua New Guinea.²⁵⁴ Specifically, it will discuss:

(1) The Constitutions of Australia, Papua New Guinea and Tanzania

The first point of reference for any jurisdiction is its Constitution. In Australia, ownership of mineral resources generally lies with the Crown (in practice State, Territory and Commonwealth governments), regardless of who owns the land on the surface.²⁵⁵

²⁵² Though the matter has been raised in international forums. The Biopolitics International Conference held in January, 2001 passed a resolution calling for the establishment of such a court with mandatory powers.

²⁵³ The International Court of Justice does have a jurisdiction in trans-border environmental issues. The Gabčíkovo-Nagymaros Dams dispute between Hungary and Slovakia was referred to the ICJ and the court’s subsequent judgment was routinely ignored by Hungary. Similarly the court’s decision in the *Daimler Chrysler Case* (2001) No 69/2001 may be ignored by the European Union. Though the jurisdiction exists the non-mandatory nature of the decision supports the conclusions reached above.

²⁵⁴ The process of incorporation into national regulation is more or less indicative of the process in general, ie it is reflected in the national jurisdictions of most of the member States of the United Nations.

²⁵⁵ This was not always the case in the Australian colonies, who took their law from the common law of England. Once land was alienated from the Crown, the proprietor was prima facie the owner of all minerals upon or under it, subject to the Royal title to gold and silver, and to any express reservation in the Crown grant forming the root of title: *Rowbotham v Wilson* (1860) 8 HLC 348 at 360; *Case of Mines* (1568) 1 Plowd 310, 75 ER 472. This rule was abrogated by Statutes in each colony. In Queensland, the *Mining Act 1968* stated that all minerals (apart from coal) are the property of the Crown except those contained in land grants made under three statutory provisions: s 22 of *The Crown Lands Alienation Act*

The Commonwealth government is not the principal holder of mineral rights. Since mining is not explicitly mentioned in the Australian Constitution, ownership of minerals found onshore and offshore within the three nautical mile territorial limit defaults to the relevant State or Territory government. Minerals found beyond the three nautical mile limit or in external territories are the property of the Commonwealth government.²⁵⁶ Crown ownership means that the right to explore and exploit mineral resources is issued by the Crown. Exploitation of the resource usually involves the payment of a royalty to the relevant government.

The Australian Constitution, being drafted in the late 1890s, doesn't include any references to protection of the environment. Nevertheless, throughout the last century, the High Court has progressively interpreted the Constitution in such a manner that the Commonwealth has been able to assume a range of legislative power with respect to the environment and in 1999 the Commonwealth government used such powers to pass an overarching piece of environmental protection legislation, the *Environment Protection and Biodiversity Conservation Act 1999* which has cemented its role.²⁵⁷ In contrast, the Constitutions of Tanzania and Papua New Guinea date from the mid-1970s and have different emphases. PNG, for example, specifically refers to environmental protection commitments within the constitution itself, whereas Tanzania's constitution ignores environmental matters and focuses on social conditions. An understanding of the Constitutions are important, as they set the legal parameters within which other legislation is enacted.

(2) Specific influences on the mining environmental protection legislation in each jurisdiction.

Outcomes are also determined by legislative detail and implementation. In all instances, legislation has been preceded by extensive policy documents on which consultation has occurred with the general public, or at least a group of stakeholders. International policy documents have influenced this legislation to some degree, and in Tanzania and PNG the World Bank has played a direct role in driving legislative change. A detailed comparison of the substantive similarities and differences in the legislation between the jurisdictions is provided in the table at the end of this Chapter. In particular, this illustrates the great similarities between Queensland and PNG's legislation – no doubt influenced by the fact that Australians assisted in the drafting of this legislation. The PNG implementation experience with this Australian designed legislation will be discussed in Chapters 4 and 5.

1860, s 32 of *The Crown Lands Alienation Act 1868*, and s 21 of *The Mineral Lands Act 1872*: s 110(2). The previous statutory provision was *The Mining on Private Land Act 1909*, ss 6, 21A. Since 1974, the Crown has the exclusive right to grant leases to mine coal: s 110A, *Mining Act 1968*.

²⁵⁶ There are exceptions to this general division of property rights between the State and Commonwealth governments. The most important of these occurs in the Northern Territory, where the Commonwealth government retained property rights over uranium and other substances prescribed in the *Atomic Energy Act 1953* (Cth) following the granting of self-government to the Northern Territory.

²⁵⁷ As is well known, the High Court has traditionally assented to the use of the external affairs power to justify jurisdiction. It is noteworthy that the Corporations power in s 51(xx) could, in itself, grant a total national reach to future federal environmental legislation.

(3) Third party standing rights

Finally, one of the salient differences in terms of content remains between developed and developing countries, that is the ability of third parties to take actions to restrain environmental offences. This section will also countenance the different procedural remedies available to third parties in Australia and PNG as an illustration of this proposition. This thesis argues that NGO environmental groups act as ‘de facto’ regulators, so a consideration of their ability to bring civil actions is salient.

3.2. The Constitutions of Australia, Papua New Guinea and Tanzania

3.2.1. Australia

Australia is a federal system and accordingly both Commonwealth and Queensland laws may be relevant to the regulation of mining. The environmental regulation of mining in Queensland is governed principally by the *Environmental Protection Act 1994* (EP Act). Mining may also be regulated by the Commonwealth under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).²⁵⁸ The legislative background to the EPBC Act has already been canvassed in Chapter 1. This section will focus instead on an examination of some of the major international ‘pressures’ that have influenced the shape of environmental regulation in Queensland. This necessarily includes an examination of Commonwealth policy documents, as well as Commonwealth legislation, since in many respects a national agenda has been imposed on Queensland. International developments have also impacted on voluntary initiatives that have been undertaken by the mining industry itself, such as the development of the Minerals Council of Australia’s blueprint for sustainable development, *Enduring Value*.²⁵⁹

Unlike some Constitutions, the Australian Constitution does not contain any express or implied rights to life or a healthy and sustainable environment.²⁶⁰ Nor does it include any express powers with respect to the environment. As a result, the Commonwealth approach to environmental issues has been piecemeal and tangential.²⁶¹ Tangential because the Commonwealth has no formal involvement in the management of Australia’s natural resources unless the Parliament of the Commonwealth (and potentially the High

²⁵⁸ Principally if mining is taking place on Commonwealth land, or by a Commonwealth agency, or if it will have a significant impact on a “matter of national environmental significance”: EPBC Act, ss 26, 28.

²⁵⁹ This industry code has been discussed in Chapter 2.

²⁶⁰ For example, the *Constitution of the Republic of South Africa 1996*, s 24 provides, *inter alia*, that everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected for the benefit of present and future generations.

²⁶¹ Only s 100 of the Constitution expressly touches on the environment, and it is a restriction of Commonwealth power, not a grant of legislative competence. Section 100 provides that “The Commonwealth shall not, by any law or regulation of trade or commerce abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation”.

Court) can justify its involvement on the basis of one or more of the heads of legislative capacity in s 51 of the Commonwealth Constitution.²⁶² The heads of power that the Commonwealth has, for the most part, relied on for its involvement in managing the environment are the:

- overseas and interstate trade and commerce power;²⁶³
- trading corporations power;²⁶⁴
- race power;²⁶⁵
- externals affairs power²⁶⁶;
- incidental power.²⁶⁷

The High Court has, over time, taken an expansionist view of these heads of power.²⁶⁸ For example, in *Murphyores Inc Pty Ltd v Commonwealth* (1976) 136 CLR 1, the first ‘environmental’ case that went to the High Court, the Court upheld the decision of the Commonwealth government to refuse export approval for mineral sands mined on Fraser Island in Queensland, though all the necessary development approvals had been obtained under the applicable State legislation. This decision was made on environmental and social grounds, though the legislation in question (the *Customs Act 1901* (Cth)) was based on the trade and commerce power.

From an environmental viewpoint, the watershed case was *Commonwealth v Tasmania* (1983) 158 CLR 1 (*Tasmanian Dams* case). Until this decision, it was unclear whether the subject matter of an international treaty or convention implemented by Commonwealth legislation was required also to be a matter of international concern to come within the external affairs head of power. It is now settled that the subject matter of the international convention need not necessarily be of international concern. The mere fact that an agreement, either bilateral or multilateral, exists between Australia and another state or states is sufficient to give it international character.²⁶⁹ This is particularly significant as a source of federal legislative power, since the scope and substance of

²⁶² Fisher DE, *Australian Environmental Law*, Thomson, Sydney, 2002, 89; Bates GE, *Environmental Law in Australia*, 4th ed, Butterworths, Sydney, 1995, 78.

²⁶³ Commonwealth Constitution, s 51(x). The *National Parks and Wildlife Conservation Act 1975* (Cth) relied on this head of power by encouraging tourism between the states and from overseas.

²⁶⁴ Commonwealth Constitution, s 51(i). This was one of the heads of power relied on in the *Environment Protection Nuclear Codes Act 1978* (Cth) and the *World Heritage Properties Conservation Act 1983* (Cth).

²⁶⁵ Commonwealth Constitution, s 51(xxvi). This was one of the heads of power relied on in the *World Heritage Properties Conservation Act 1983* (Cth).

²⁶⁶ Commonwealth Constitution, s 51(xxix). This was one of the heads of power relied on in the *World Heritage Properties Conservation Act 1983* (Cth).

²⁶⁷ Commonwealth Constitution, s 51(xxxix). It has been argued by Lumb RD and Ryan KW, *The Constitution of the Commonwealth of Australia annotated*, 3rd edition, Butterworths, Sydney, 1981, 218 that the *Environment Protection (Impact of Proposals) Act 1974* (Cth) (EPIP Act) was based on this head of power. However Bates, n 262 above, 79 suggests that the EPIP Act “probably relies on the power over Commonwealth instrumentalities and the public service granted by s 52 of the Constitution”.

²⁶⁸ There is, however nothing illegitimate or even surprising about this. As Windeyer J observed in *Victoria v Commonwealth* (1971) 187 CLR 416 at 485 (*Industrial Relations Act Case*): “In any country where the spirit of the common law holds sway the enunciation by courts of constitutional principles based on the interpretation of a written constitution may vary and develop in response to changing circumstances”.

²⁶⁹ Fisher DE, above n 262, 89; Bates GE, above n 262, 93.

international environmental conventions have increased dramatically over the last decade or so.²⁷⁰

The current dominant federal environmental legislation, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), does not recite the heads of Commonwealth legislative power upon which its constitutional validity is said to rest. It does, however, make express reference to “Australia’s international environmental responsibilities” and to the role and knowledge of indigenous people concerning the protection of biodiversity in Australia in the objects of the Act.²⁷¹ Throughout the Act there are direct and indirect references to a significant number of international treaties and conventions to which Australia is a party.²⁷² Justice Branson therefore concludes that the Commonwealth now possesses extremely wide Constitutional powers over the environment and that the EPBC is within the Commonwealth’s legislative competence.²⁷³

The influence of international law in the form of Conventions/ Treaties can also impact decisions made by the Executive government in Australia, even if the Commonwealth Parliament has not taken steps to implement the Convention via legislation. In Australia it is the Executive, not the Parliament, whose approval is required to give formal assent to treaties, conventions or other forms of ‘soft’ international law²⁷⁴. However whilst it is the role of the Executive to give this formal assent, it is only the Parliament that has the power to enact the principles contained in these forms of international law into Australian domestic law through legislation.²⁷⁵ Nevertheless the majority of the High Court found that:

The fact that the provisions of the Convention do not form part of our law is a less than compelling reason – legitimate expectations are not equated to rules or principles of law. Moreover, ratification by Australia of an international Convention is not to be dismissed as a merely platitudinous or ineffectual act. ... ratification of a convention is a positive statement by the executive government of this country to the world and to the Australian people that the executive government and its agencies will act in accordance with the Convention. That positive statement is an adequate foundation for a legitimate expectation, absent statutory or executive indications to the contrary, that administrative decision-makers will act in conformity with the Convention.²⁷⁶

²⁷⁰ For a listing of global environmental conventions, see Appendix 2-4.

²⁷¹ *Environment Protection and Biodiversity Conservation Act 1999* (Cth), s 3(e), (f), (g).

²⁷² for example, *Environment Protection and Biodiversity Conservation Act 1999* (Cth), ss 12, 16, 34D, 34E, 171, 209.

²⁷³ Hon Justice Catherine Branson, Judge, Federal Court of Australia, “Some Key Constitutional and Administrative Issues”, presentation to the EDO Conference ‘A New Green Agenda’, 14 October 1999.

²⁷⁴ These are legally non-binding instruments, such as non-binding declaration, framework documents, general guidelines and principles of agreement.

²⁷⁵ This principle was expressly reaffirmed by the High Court in *Minister of State for Immigration and Ethnic Affairs v Teoh* (1995) 183 CLR 273 at 286-287 per Mason CJ and Deane J.

²⁷⁶ *Minister of State for Immigration and Ethnic Affairs v Teoh* (1995) 183 CLR 273 at 291 per Mason CJ and Deane J.

It should be noted, however, that the court was careful to distinguish legitimate expectations from rules of law that compel a decision-maker to take a particular action.²⁷⁷ In the court's ruling, legitimate expectation is to be seen only as an avenue to seeking procedural redress. The procedural requirement itself is without prejudice to the outcome and is certainly not meant to guarantee a positive outcome.

It is also significant to note that following the *Teoh* decision,²⁷⁸ the Federal Government issued a statement on 10 May 1995, referring to the High Court's view that a legitimate expectation might be displaced by statutory or executive indications to the contrary and then went on to make such an indication:

... entering into an international treaty is not reason for raising any expectation that government decision-makers will act in accordance with the treaty if the relevant provisions of that treaty have not been enacted into domestic Australian law. It is not legitimate, for the purpose of applying Australian law, to expect that the provisions of a treaty not incorporated by legislation should be applied by decision-makers. Any expectation that may arise does not provide a ground for review of a decision. This is so both for existing treaties and for future treaties that Australia may join.²⁷⁹

Nevertheless, as Bouwhuis points out,²⁸⁰ this reaction by the Executive has not extended to taking action against the use of international law as an aid to judicial decision-making. Whilst the interpretation of *Teoh* in its strictest form would be quite onerous, particularly for local government who can hardly be expected to know the import of every treaty that Australia has entered into, it is valid in its acknowledgement of the role of international law in a domestic context. As Pearson concludes, principles of international law, such as ESD and the precautionary principle, "may still be taken into account in discretionary decision-making, even in the absence of express statutory incorporation".²⁸¹

It should be noted that, as distinct from Tanzania and PNG, Australia operates a federal system, where there is a constitutional give and take between federal and state spheres of influence. The important thing to note from the foregoing discussion of the federal system is that the federal government has the constitutional power now to prohibit any mining activity - either through the simple refusal to grant an export licence (such as in *Murphyores*) or by reference to the various triggers contained within the EPBC Act. The Qld EP Act is in a constitutional sense, supplementary, though its machinery provisions

²⁷⁷ Blay Sam and Piotrowicz Ryszard, "The Teoh Case: Implications for Environmental Law in Australia" (1996) 13 EPLJ 40 at 45.

²⁷⁸ *Minister of State for Immigration and Ethnic Affairs v Teoh* (1995) 183 CLR 273.

²⁷⁹ cited in Blay Sam and Piotrowicz Ryszard, above n 277, 45. A Bill – the Administrative Decisions (Effect of International Instruments) Bill 1995 - was also introduced into the Commonwealth Parliament to provide legislative effect to this statement of the Ministers for Foreign Affairs and Trade and the Attorney-General, however this Bill was not passed through the Senate (only the House of Representatives) and has since lapsed. Following a change of government, the Liberal Minister for Foreign Affairs and the Attorney-General issued a similar statement on 25 February 1997.

²⁸⁰ Bouwhuis Stephen, "International Law by the Back Door?" (1998) 72 ALJ 794 at 797.

²⁸¹ Pearson Linda, "Incorporating ESD Principles in land-use decision-making: Some issues after Teoh" (1996) 13 EPLJ 47 at 53.

and regulations remain highly relevant to mining in the State, since tenures and environmental licenses are the domain of the State government.

In contrast to Australia, the Constitutions of PNG and Tanzania were both drafted in the 1970s and at a time when international environmental consciousness was at least in its embryonic stage. Accordingly, one would expect these Constitutions to make some reference to and provision for environmental protection.

3.2.2. Papua New Guinea

The Constitution of PNG was adopted by Parliament on 15 August 1975, with effect from Independence Day on 16 September 1975. The preamble to the Constitution sets out National Goals and Directive Principles that underlie the Constitution. The Fourth Goal deals with natural resources and environment, and incorporates the ideas of conservationism and also inter-generational equity. It provides:

We declare our fourth goal to be for Papua New Guinea's natural resources and environment to be conserved and used for the collective benefit of us all, and be replenished for the benefit of future generations.

The Directive Principles state:

We accordingly call for –

- (1) wide use to be made of our natural resources and the environment in and on the land or seabed, in the sea, under the land, and in the air, in the interests of our development and in trust for future generations; and
- (2) the conservation and replenishment, for the benefit of ourselves and posterity, of the environment and its sacred, scenic, and historical qualities; and
- (3) all necessary steps to be taken to give adequate protection to our valued birds, animals, fish, insects, plants and trees.

As the Table at the end of the Chapter notes, there is no formal definition of Sustainable Development (SD) or Ecological Sustainable Development (ESD) in PNG's Environment Act. However these Constitutional provisions seem to foreshadow the definition of SD. The PNG's Department of Mining, in a recent discussion paper, stated:

In its application to the mining sector, the Fourth Goal can be read as a call for Papua New Guinea's mineral resources to be used wisely, for the collective benefit of us all, in the interests of our development, and for the benefit of future generations, without compromising the capacity of our natural ecosystems to supply the needs of those future generations.²⁸²

The specific references to resource utilization and the context within which that utilization is to take place is laudable. However these references, even though

²⁸² Department of Mining, *Sustainable development policy and sustainability planning framework for the mining sector in Papua New Guinea*, Green Paper, 1 February 2003, 6.

incorporated in the constitution itself, are only general statements of principle. It is the working out in specific legislation relevant to specific projects that difficulties arise. In Chapter 5 an overview of the Ok Tedi experience illustrates the difficulties which attend when environmental regulation collides with the profit expectations of the regulator who has a significant equity position in the project.

3.2.3. Tanzania

The Constitution of the United Republic of Tanzania was enacted on 26 April, 1977. In terms of sustainability, the Constitution focuses solely on anthropocentric issues, with Chapter One setting out the social rights of individuals. By way of example, Article 9, which sets out the object of the Constitution, provides:

... the state authority and all its agencies are obliged to direct their policies and programmes towards ensuring –

...
(i) that the use of national resources places emphasis on the development of the people and in particular is geared towards the eradication of poverty, ignorance and disease.

The emphasis here is that “resources” are to be utilized to ameliorate social conditions which is further confirmed by Article 27(1) which provides that every person has a general duty to, amongst other things, “protect the natural resources of the United Republic”. Whether the express duty to protect natural resources implies also a general duty to protect the ‘environment’ is highly debatable.²⁸³

3.2.4. Contrast between Papua New Guinea and Tanzania

Despite having been written during the same period, the difference in emphasis within and composition of the Constitutions can be explained in terms of the historical events and perceptions of those events which the two nations had experienced. A brief overview of the respective colonial histories sets in context the constitutions, and to some degree the other legislation, together with other aspects of administration which will be discussed in the following section.

Tanzania experienced a much longer period of economic exploitation than PNG. Concerted European exploration of the interior of Africa began in the mid 19th century. Two German missionaries reached Mt Kilimanjaro in the 1840s. British explorers Richard Burton and John Speke crossed the interior to Lake Tanganyika in 1857.²⁸⁴

²⁸³ Lawyers’ Environmental Action Team, Elements of a Bill for a Tanzanian Environmental Protection Act, 7 at <http://www.lead.or.tz/law/draft/draft.epa.php> (accessed 6 October 2003).

²⁸⁴ The area has been subject to foreign influence for a much longer period. Arab traders visited the coastal area from the 8th century. By the 12th century, traders and immigrants came from as far away as Persia and India. Vasco da Gama explored the East African coast in 1498 on his voyage to India. Assisted by Omani Arabs, the indigenous coastal dwellers drove the Portuguese from the area north of the Rovuma River by the early 18th century. Omani Sultan Seyyid Said claimed the coastal strip and set up his capital in

Formal German colonial rule was established in what is now mainland Tanzania (then known as Tanganyika) in 1891, when a governor was appointed with headquarters at Dar es Salaam on the island of Zanzibar. German domination continued (despite a failed uprising in 1905-07) until after World War I, when the territory passed to the United Kingdom under a League of Nations mandate. After World War II, Tanganyika became a UN trust territory under British control. British colonial rule lasted until 1961, when Tanganyika achieved full independence, following a period of self-government from 1959 under a charismatic populist, Julius Nyerere.

The island of Zanzibar was utilised by Omani Arabs from the early 18th century to carry on their lucrative trade in slaves and ivory. Having established his capital in Zanzibar by 1841, Sultan Said established a ruling Arab elite. The island's commerce fell increasingly into the hands of traders from the Indian subcontinent who Said encouraged to settle on the island. Zanzibar's spices attracted ships from as far away as the United States, with a US consulate established on the island in 1837. The United Kingdom's early interest in Zanzibar "was motivated by both commerce and the determination to end the slave trade".²⁸⁵ The United Kingdom entered into the first of a series of treaties with Sultan Said to curb the slave trade in 1822. Following the Anglo-American agreement of 1890, Zanzibar became a British protectorate. British rule, of Zanzibar as distinct from the mainland, and operating notionally under the local sultan remained largely unchanged from the late 19th century until after World War II. Political movements seeking independence began in the late 1950s and Zanzibar received its independence from the United Kingdom on 19 December 1963, as a constitutional monarchy under the Sultan.

On 26 April 1964, Tanganyika united with Zanzibar to form the United Republic of Tanganyika and Zanzibar, renamed as the United Republic of Tanzania on 29 October 1964. The current constitution was enacted following a merger of various political parties²⁸⁶ on 26 April 1977.

Given the historical impact of the slave trade, it is little wonder, then, that the focus of the Constitution is on personal and political freedoms and nationalism. Nevertheless, as will be discussed in Chapter 5, in relation to NGO criticism of the Bulyanhulu and North Mara mines, the period since independence has seen a number of people imprisoned for criticising the government, despite the guarantee of freedom of speech in the Constitution.

In contrast to Tanzania, most of the colonial involvement in PNG however was social (often in the form of missionaries), rather than economic. The mountainous terrain, thick jungles and tropical climate meant that it was inhospitable to large scale agrarian pursuits. Following first contact with the Portuguese in 1526, New Guinea, "a large, rather daunting place" was "left alone for several centuries, with only the Dutch making any

Zanzibar in 1841. This Sultan encouraged the development of clove plantations, using the island's slave labour.

²⁸⁵ WorldRover, "Tanzania – History" at http://www.worldrover.com/history/tanzania_history.html (accessed 18 November 2003).

²⁸⁶ Namely the Tanganyika African National Council merged with the Afro-Shirazi Party of Zanzibar to form the Chama cha Mapinduzi-CCM Revolutionary Party on 5 February 1977.

effort to assert European authority over the island”.²⁸⁷ In 1824, the Dutch, seeking to shore up their Dutch East Indies empire, formalised their claims to sovereignty over the western portion of the island. Germany took possession over the northern part of the territory in 1884. Three days later, Britain declared a protectorate over the southern region.

In 1906, British New Guinea became Papua, and administration was taken over by Australia. With the outbreak of World War I, Australian troops secured the German headquarters at Rabaul, subsequently taking control of all German New Guinea. In 1920 the League of Nations officially handed it over to Australia as a mandated territory. Post-World War II, the eastern half of New Guinea reverted to Australia and became ‘The Territory of Papua & New Guinea’. Indonesia took control of Dutch New Guinea in 1963 (incorporating it into the Indonesian state as Irian Jaya).²⁸⁸ PNG was granted self-government in 1973 and full independence was achieved on 16 September 1975. From that point “a revolving-door succession of Prime Ministers continue to characterise PNG’s national politics. A plethora of political parties, coalition governments, shifting party loyalties and motions of no-confidence in the leadership all lend an air of instability to political proceedings”.²⁸⁹ Thus while Tanzania and PNG are similar in that they have been exposed to the British tradition of the common law legal system, and attendant institutions, they are different in that Tanzania has subsequently experienced a strong, centralist government, whereas PNG has experienced a series of short term governments. This has implications for issues that will be discussed further in Chapter 5.

3.3. International influences on Australia, Tanzania and Papua New Guinea’s environmental laws

Given the constitutional constraints and the range of available legislative powers in the various jurisdictions, it is now relevant to consider the specific environmental protection legislation of each jurisdiction in the context of which mining is regulated. In particular, this section will look at the domestic regulations which have, largely, been a product of the international influences that were discussed in Chapter 2. It must be noted however that the administration, implementation and enforcement of the legislation may be different where the legislation was drafted in response to international pressure, rather than being drafted in response to whole-of-government endorsement and commitment to implement international obligations.²⁹⁰

²⁸⁷ Lonely planet, “Papua New Guinea – History” at http://www.lonelyplanet.com/destinations/australasia/papua_new_guinea/history/htm (accessed 18 November 2003).

²⁸⁸ Australia voted in the UN De-Colonisation Committee in support of the Indonesian annexation.

²⁸⁹ Worldrover, “Papua New Guinea – History” (taken from US State Department Background Notes) at http://www.worldrover.com/history/papua_new_guinea_history.html (accessed 18 November 2003).

²⁹⁰ This specific issue, the gap between rules and enforcement of rules, will be discussed in Chapter 4, as it has a direct bearing on the role to be played by voluntary mechanisms in the mining industry.

3.3.1. Australia

Whilst the EPBC Act repealed the *Environment Protection (Impact of Proposals) Act 1974* (EPIP), it is relevant to consider Australia's first environmental legislation briefly, for it provides an illustration of legislation which predates most of the international policies/ conventions on the environment.²⁹¹ There were also political reasons peculiar to Australia that prompted the passing of the EPIP Act, together with other environmental legislation. The Whitlam Labor Government, in power from 1972-75, adopted a centralist view of federal responsibilities, reacting against the co-operative federalism that had been a characteristic of governments prior to this time. During the Labor administration legislation concerning national parks and wildlife, the marine environment and heritage protection, as well as the EPIP was passed.

The EPIP commenced on 17 December 1974, but its effective operation was held over until the first administrative procedures were notified in the Gazette on 24 June 1975. Although the EPIP was soundly criticised for many years as being rather ineffectual and applying on an ad hoc basis, often late in the development process,²⁹² it was the first time that a statutory mechanism had been provided for environmental impact assessment in Australia.²⁹³ It must be remembered, as noted above, that it was passed at a time when the legislative competence of the Commonwealth to pass such laws was far from certain.

It is testament to the growth in the environmental consciousness in a couple of decades when one considers the anthropocentric definition of the "environment" that was utilised in s 3 as "all aspects of the surroundings of human beings, whether affecting him as an individual or in his social groupings".²⁹⁴ Whilst there is no one 'standard' accepted definition of the definition of "environment" in Australian legislation, the much more expansive definition in the EPBC Act (see the Comparative Table of Environmental Laws at the end of the Chapter) is now reflective of Australian law.²⁹⁵

The EPBC Act is the product of a process that has taken more than 10 years. Its major provisions are summarised in the Table at the end of this Chapter. However in order to understand why those provisions have been included, the major steps in developing the EPBC Act will be discussed. The origins of the EPBC Act can be traced back to the National Strategy for ESD (NSES).²⁹⁶ A brief history of the NSES was included in Chapter 2 to illustrate the involvement of NGOs in the process. Its relevance to the discussion here lies in the fact that the Australian government embarked on development

²⁹¹ Rather, it uses the National Environmental Policy Act 1969 (US) as a model: Mossop David, "The Scope and Operations of the Environment Protection (Impact of Proposals) Act 1974 (Cth) (1997) 14 EPLJ 194 at 195.

²⁹² For detail of criticisms, see Department of the Environment, *Reform of Commonwealth Environmental Legislation: Consultation Paper*, Commonwealth of Australia, Canberra, February 1998, 8-9.

²⁹³ Fisher DE, above n 262, 16.

²⁹⁴ This definition was also included in the *Environmental Planning and Assessment Act 1979* (NSW), s 4(1) and was amended in 1997, but only so far as so make it gender neutral.

²⁹⁵ Fisher DE, above n 262, 16.

²⁹⁶ Commonwealth of Australia, *National Strategy for Ecologically Sustainable Development*, Canberra, December 1992.

of a National Strategy following the publication of *Our Common Future* in 1987.²⁹⁷ In 1989 the Australian Government released a public discussion paper on a proposal to develop an NSESD and over a period of two years from 1990 to the end of 1992, public consultation and negotiations between key interest groups from industry, the community, conservation groups, scientific organisations and all levels of government took place. Each working group (including the mining industry) developed a comprehensive report which fed into the NSESD. Reports were also prepared on intersectoral issues, such as climate change, biodiversity conservation, urban development, employment, economic diversity and resilience and international considerations. These also provided a basis for the NSESD.

In relation to international considerations, the Australian government has acknowledged:

The links between Australia's NSESD and Agenda 21 are clear. Each seeks to provide a framework for the development of environmentally sound and ecologically sustainable decision-making at all levels. ... The two plans are seen as entirely compatible and complementary, and Australia's commitment to, and implementation of, its own National Strategy fulfils the obligation it entered into in Rio de Janeiro to implement Agenda 21.²⁹⁸

The NSESD was endorsed by all levels of Australian government at the Council of Australian Governments on 7 December 1992, noting however that implementation "would be subject to budgetary priorities and constraints in individual jurisdictions".²⁹⁹ Two reports have been prepared by the Commonwealth into the implementation of the NSESD,³⁰⁰ and whilst it is not relevant to this work to enter into a detailed critique of this document, Dovers' comments on the lack of institutional reform needed for implementation are apposite:

For comparison, consider the vigour, speed, resourcing and institutional underpinnings of the implementation of National Competition Policy against the weak, unsupported and poorly institutionalised implementation of the NSESD. ... ESD has not been afforded the ongoing institutional basis required for maintained implementation or evolution as an integrated, effective field of public policy and administration.³⁰¹

²⁹⁷ Environment Australia, "An overview of the National Strategy for Ecologically Sustainable Development", December 1992 at <http://ea.gov.au/esd/national/nse/d/overview/index.html> (accessed 11 September 2003).

²⁹⁸ Ibid.

²⁹⁹ *National Strategy for Ecologically Sustainable Development*, above n 296, 14

³⁰⁰ Intergovernmental Committee for Ecologically Sustainable Development (Australia), *Summary Report on the Implementation of the National Strategy for Ecologically Sustainable Development*, December 1993; and Intergovernmental Committee for Ecologically Sustainable Development (Australia), *Summary Report on the Implementation of the National Strategy for Ecologically Sustainable Development 1993-95*.

³⁰¹ Dovers Stephen, "The rise and fall of the NSESD, or not?", paper presented to the National Environmental Law Association Conference, Sydney, September 1999. The Commonwealth Environmental Protection and Biodiversity Conservation Act 1999, which commenced on 16 July 2000, has provided a formal mechanism for ESD to be implemented at the Commonwealth level. Nevertheless, calls for further institutionalisation of ESD, in the form of a Commissioner for the Environment, are still made – see for example the policy of the Australian Conservation Foundation in this regard.

The NSESD provides that its goal is:

development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.³⁰²

This ‘Goal’ is translated into the object of the *Environmental Protection Act 1994* (Qld), that is achieving ESD.³⁰³

The ‘principles of ESD’ enunciated in the EPBC Act have their roots in an amalgam of the ‘Core Objectives’ and ‘Guiding Principles’ of the NSESD, which are as follows:

The Core Objectives are:

- To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;³⁰⁴
- To provide for equity within and between generations;³⁰⁵
- to protect biological diversity and maintain essential ecological processes and life-support systems.³⁰⁶

Operationally, the statement of core objectives is of limited utility and indeed there is little to distinguish this list with similar expressions of principle in the Constitutions of PNG and Tanzania. The “Guiding Principles” are meant to be more concrete, though they are still a long way from enabling, for example, a set of performance criteria to be applied in particular cases.

The Guiding Principles are:

- decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations;³⁰⁷
- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;³⁰⁸
- the global dimension of environmental impacts of actions and policies should be recognised and considered;³⁰⁹

³⁰² *National Strategy for Ecologically Sustainable Development*, above n 296, 8.

³⁰³ Environmental Protection Act 1994, s 3 provides “the object of this Act is to protect Queensland’s environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends”.

³⁰⁴ Now incorporated into the EPBC Act as s 3A(c).

³⁰⁵ Now incorporated into the EPBC Act as s 3A(c).

³⁰⁶ Now incorporated into the EPBC Act as s 3A(d).

³⁰⁷ Now incorporated into the EPBC Act as s 3A(a).

³⁰⁸ Now incorporated into the EPBC Act as s 3A(b). Note that the Rio Declaration version which refers to “a reason for postponing cost effective measures” has not been included in either the NSESD or the EPBC Act.

³⁰⁹ This has been reflected in s 160 of the EPBC Act which provides, *inter alia*, that a Commonwealth agency or employee must consider advice from the Minister for the Environment before “(2)(a) the entry by the Commonwealth, under Australia’s foreign aid program, into a contract, agreement or arrangement for the implementation of a project that has, will have or is likely to have a significant impact on the environment anywhere in the world”.

- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised;
- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised;
- cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms;
- decisions and actions should provide for broad community involvement on issues which affect them.³¹⁰

The Strategy does not address the reason why Australia adopted ‘ESD’ rather than the ‘SD’ of the Brundtland Report. The literature generally glosses over this reason as the decision was not made as part of the formal process. However it would seem that ESD was suggested by Dr Craig Emerson, then Economic and Environmental Advisor to the Prime Minister, the Hon R.J.L. Hawke, on the basis ESD emphasises the ecological/environmental aspects of the term.³¹¹ Given the more recent interpretation of sustainable development, however, which emphasises social to the same, or even greater extent than the environment, the use of ESD, rather than SD, is proving a ground for criticism for its overemphasis on the ecological component of sustainability.³¹²

In similar vein, and also highly relevant to environmental legislation and policy in Australia is the Intergovernmental Agreement on the Environment (IGAE) that was signed between the Commonwealth, State and Territory governments and the Local Government Association of Australia in May 1992. The aim of this Agreement was to co-operatively assign responsibility between the three tiers of government for environmental matters, thereby avoiding conflicts and duplications, as well as to set out principles of environmental policy that should guide legislation and decision-making. It is relevant to review the principles that are set out in this document in order to trace their history through to current legislation.

They are as follows:

The parties further agree ... the principles set out below should inform policy making and program implementation.³¹³

- the precautionary principle³¹⁴
- intergenerational equity³¹⁵
- conservation of biological diversity and ecological integrity
- improved valuation, pricing and incentive mechanisms³¹⁶

³¹⁰ *National Strategy for Ecologically Sustainable Development*, above n 296, 8.

³¹¹ Personal communication, Professor Tor Hundloe, 10 August 2004.

³¹² Lowe Ian, “The Many Dimensions of Sustainability”, presentation to the Minerals Council of Australia Value through Sustainable Development conference, Brisbane, 10-14 November 2003.

³¹³ Intergovernmental Agreement on the Environment, clause 3.5.

³¹⁴ Defined as “where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation” – Ibid, cl 3.5.1.

³¹⁵ Defined as “the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations”: Ibid, cl 3.5.2.

Subsequent to the IGAE, in 1997 the Council of Australian Governments (COAG) agreed in principle to the *Heads of Agreement on Commonwealth/ State Roles and Responsibilities for the Environment* and these subsequently became the rubric under which the provisions of the EPBC Act were drafted.³¹⁷ COAG was ostensibly about cooperative federalism, but has become a forum for the Federal Government to pursue a national agenda.

This then was the situation faced by the federal government at the beginning of 1998. In short, the government, under increasing pressure from a variety of sources, undertook to comprehensively review federal environmental legislation with a view to incorporating environment protection (including the enforcement provisions), international convention obligations and substantially upgraded procedural requirements on issues such as legal standing, in one consolidated Act.

Queensland's *Environmental Protection Act 1994* was also influenced by the Brundtland Report's concept of sustainability. However, like the EPBC Act, adopts as its object that achievement of ESD, rather than sustainability development. In contrast to Tanzania and PNG, the environmental regulation of mining is administered by the Environmental Protection Agency (EPA), rather than the Department that is responsible for the facilitation and promotion of the mining industry, the Department of Mines and Energy (DME). This change took place on 1 January 2001, when the environmental provisions concerning mining were inserted into the EP Act by the *Environmental Protection and Other Legislation Amendment Act 2000* (EPOLA Act).

The reason for this administrative transfer can be traced back to the 1994 Criminal Justice Commission Report conducted by Justice Matthews into the improper disposal of liquid waste in southeast Queensland (The Matthews Report). This Commission also took evidence during the course of its investigation on a range of mining issues. It highlighted the "departmental dilemma" caused by the DME's overseeing the environmental control of mining as well as facilitating mining as an industry.³¹⁸ This dual role is said to result in agency 'capture', wherein the regulator becomes captured by the industry that it is both

³¹⁶ These principles are further defined as: environmental factors should be included in the valuation of assets and services; polluter pays, ie those who generate pollution and waste should bear the cost of containment, avoidance or abatement; the users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes; and environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.

³¹⁷ Glindemann R, "Reform of Commonwealth Environmental Legislation" (1998) 26 *Australian Business Law Review* 224; Environment Protection and Biodiversity Conservation Bill 1998 (No 2), Second Reading Speech, Senate, *Hansard*, 12 November 1998, 209.

³¹⁸ Criminal Justice Commission, "Report by the Criminal Justice Commission on its Public Hearings conducted by the Honourable R H Matthews QC into the Improper Disposal of Liquid Waste in South-East Queensland. Volume 1 Report regarding evidence received on mining issues", Brisbane, July 1994, 25.

seeking to regulate and promote.³¹⁹ This Report also recommended the establishment of an independent statutory environmental authority “as a means of lessening of the effects of this dilemma”.³²⁰ Whilst the EPA is not an independent statutory authority in the true sense of having its own Board of Directors, it does allow for separation between the grant of environmental approvals and the grant of mining tenures, as recommended in The Matthews Report.

3.3.2. Tanzania

In contrast to Queensland, Tanzania does not have an Environmental Protection Act. Rather, the environmental regulation of mining is managed through the *Mining (Environmental Management and Protection) Regulations 1999*, issued pursuant to the *Mining Act 1998*. This Act was produced as part of a package of economic reforms and restructuring undertaken by the government from the mid 1980s to the 1990s “which have marked a clear shift in favour of private sector development and market-oriented economic management”.³²¹ The policy underlying these reforms has been stated by the government as redefining its role from owning and operating the mines (a consequence of Nyerere’s nationalisation programme of the 1960s and 1970s)³²² to that of providing clear policy guidelines, stimulating private investment and providing support for investors.³²³

Whilst the Tanzanian government can take part of the credit for these reforms, even more significant is the role of the World Bank. Indeed, the lead role taken by the World Bank shows the influence of such international bodies in acting like defacto governments, by using tied grants to achieve environmental and social outcomes. In September 1990, the World Bank published a *Mining Sector Review* for Tanzania. This review set the tone for the Mineral Sector Development Strategy, which commenced in June 1993.³²⁴ The principal objective of the project was:

...to encourage and expand private investment in mining and other mineral based industries of Tanzania through sector policy and institutional reforms. The project would introduce a legal, regulatory and fiscal framework, which would provide a uniform, competitive and stable environment conducive to private investment in mining. The environmental management, mine safety and the mine workers’ health would be improved through institutional strengthening and capacity building measures supported

³¹⁹ These issues are discussed at length in Briody, M and Prenzler, T, “The Enforcement of Environmental Protection Laws in Queensland: A Case of Regulatory Capture?” (1998) EPLJ 54.

³²⁰ Criminal Justice Commission, above n 319, 25.

³²¹ Tanzania National Website, “Mining”, at <http://www.tanzania.go.tz/mining.html> (accessed 22 September 2003).

³²² It is literally a footnote to history that Nyerere who instigated a wide-ranging socialist programme (and incidentally found the time to invade the Seychelles) on his retirement described his policies as “a mistake”.

³²³ Tanzania National Website, “Mining”, at <http://www.tanzania.go.tz/mining.html> (accessed 22 September 2003). Indeed, the Lawyers’ Environmental Action Team argue that the government has provided too much support to certain transnational corporations.

³²⁴ Approximate costs of the project were US\$14.5 million, of which approx US\$13.1 million was financed by the IDA (World Bank). The balance was financed by the Tanzanian government.

under the project. In addition, the project would help improve the productivity, income and social conditions of small-scale subsistence miners mostly operating in Tanzania's poverty-stricken rural areas.³²⁵

From a legal viewpoint, this project involved engaging consultants from Trans-border Investment Ltd, a British investment firm based in London to review existing laws and regulations (including the environmental aspects of mining) and suggest amendments/changes thereto. These reviews culminated in the enactment of the *Mining Act 1998* and were financed by the World Bank.³²⁶ They also involved the establishment of a mineral titles registration and information system.

The principal Policy documents, and legislation, that were developed as a result of this World Bank facilitated project are discussed below.³²⁷

The first of these documents was the Tanzanian Development Vision 2025 (which is in fact the third of the 'vision' documents that have been prepared in Tanzania).³²⁸ The government started work on Vision 2025 in 1995, when a 'team of experts'³²⁹ were appointed from various sectors in the society by the Planning Commission. 'International' organisations also played a significant role in the development of the Vision.³³⁰ The public were able to participate in the process through "symposia, interviews and dialogue with various people, and meetings which brought together people from various social settings in society. The mass media was also closely involved through publishing special articles and features in newspapers, debates and discussions in radio and television programmes".³³¹ Whilst consultation with an expert group would not be considered public participation in developed countries, the general population does not have the same ability to participate as, say, in Queensland, where literacy is 'taken for granted'.

³²⁵ World Bank, *Tanzania – Mineral Sector Development Technical Assistance Project*, Project ID TZPA2812.

³²⁶ Lissu, Tundu Antiphas, "In Gold We Trust: The Political Economy of Law, Human Rights and the Environment in Tanzania's Mining Industry", Work in Progress, *Law Social Justice and Global Development Journal*, 2001 (2), pt 4.1, <http://elj.warwick.ac.uk/global/issue/2001-2/lissu.html> (accessed 16 September 2002).

³²⁷ Other documents, such as the *National Conservation Strategy for Sustainable Development*, which was prepared by the National Environment Management Council in 1995 and the *National Environmental Action Plan* (1994), were also prepared, however only the ones most relevant to the current environmental regulation of mining are canvassed in the body of this work.

³²⁸ The first national Vision was the *Vision to Achieve Independence*. The second national Vision was the *Arusha Declaration* (1967), which articulated a philosophy of socio-economic liberation based on socialism and self-reliance as the national goal of Tanzanians.

³²⁹ *Vision 2025* doesn't give specifics as to who this includes, save to say that the draft Development Vision "was discussed by various societal groups including the Honourable Members of Parliament, all political parties, leaders of various religious denominations, women and youth organisations, chambers of commerce and industry, farmers, professional associations, renowned personalities in our nation's history and ordinary Tanzanians": Planning Commission, The United Republic of Tanzania, *The Tanzania Development Vision 2025*, v.

³³⁰ The project was supported by the UN Development Programme, the Government of Japan, the European Union and the Government of the Republic of Ireland.

³³¹ Planning Commission, above n 329, x.

Vision 2025 covers the whole of society so it is, of course, much wider than mining. Of interest to this sector, however, is one of the five ‘pillars’ which is “good governance”. The Vision provides:

By 2025, good governance should have permeated the national socio-economic structure thereby ensuring a culture of accountability, rewarding good performance and effectively curbing corruption and other vices in society.³³²

The Vision also recognises the need for a strong economy and focuses on the social – rather than environmental – outcomes that this will bring for the people. Whilst one can understand the need to remain positive in such a policy document, it seems remarkable that one of the biggest problems in Africa today – HIV/ Aids – does not rate a mention in the document.

The mid-1990s also saw the development of more specific policies which impact on resources, viz *The Mineral Policy of Tanzania*, which was finalised in October 1997 and the *National Environmental Policy*, December 1997. The overarching aim of *The Mineral Policy* is “to establish an internationally competitive legal and regulatory framework to attract and sustain foreign and local investment in the mineral sector, and to create a stable and conducive business climate”.³³³ To this end, most of the Policy deals with promotion and development of the industry.

In terms of the environmental impact of mining, *The Mineral Policy* refers to differences in impacts and operations between large and small scale mining. Current environmental problems identified are the unsafe extraction of minerals and unsafe mining methods, which has led to severe environmental damage and appalling living conditions in mining communities.³³⁴ Strategies suggested for protecting the environment are:

- Drawing up comprehensive environmental management programmes for the mining industry;
- Establishing effective environmental regulations and putting in place procedures for monitoring compliance;
- Setting up and strengthening the institutional capacity – especially the field offices (zonal and district mines offices) – for monitoring and enforcing environmental regulations;
- Requiring new projects to carry out baseline environmental studies and prepare environmental impact assessment and environmental action plans;
- Instigating environmental audits to evaluate the performance of existing mines and identify areas for improvement;
- Specifying procedures for determining environmental liability;

³³² Ibid, cl 1.2.3, 4.

³³³ United Republic of Tanzania, *Mineral Policy of Tanzania*, Ministry of Energy and Minerals, October 1997, para 3.3.3.

³³⁴ Ibid, para 3.3.12.

- Providing rules for setting up reclamation funds to reinstate land to alternative uses after mining;
- Setting appropriate guidelines for allowing the conduct of mining in restricted areas such as forests, national parks, sources of water and other designated areas;
- Abating the use of toxic chemicals and pollutants by promoting of mining in restricted areas such as forests, national parks, sources of water and other designated areas.³³⁵

Many of these issues identified as problems remain, such as the unsafe mining techniques practiced by artisanal miners operating at the edge of the Geita Mine, as well as the ability of the regulators to monitor and enforce environmental regulations. Further details are included in Chapter 5.

The Mineral Sector Policy called for the consolidation of all statutes under which the mineral sector operates into one Mining Act, and this has now been achieved. The *Mining Act 1998* is administered by the Commissioner of Minerals. It specifies that the right to take minerals in Tanzania is vested in the United Republic and no one shall take or explore for such minerals without first following the procedures specified by the Act.³³⁶

The policy goal of the Act seems to be the maximum exploitation of minerals. Section 13 provides that a condition precedent to the grant of a mineral right is that the Minister is satisfied that it is the most efficient and beneficial use of the mineral resources of Tanzania. Nevertheless, unlike the 1979 Act that it replaced, environmental considerations are included in the 1998 Act. Section 37(2)(h)(v) provides that applications for mining licenses must include, among other things, “Proposals for the prevention or treatment of pollution, the safeguarding of fishing and navigation (if relevant), the progressive reclamation and rehabilitation of any land disturbed by mining, and for the minimisation of the effects of mining on water areas (if relevant).”

The Commissioner of Minerals has enforcement authority, including power of entry, and the right to enforce against licensees if violating the Act or permit conditions. The Commissioner may also ascertain whether or not any nuisance exists upon any such area, land or mine or in any such premises or workings.

It is also possible for the miner to enter into a mining agreement with the government to establish an additional framework of operations and security in a long-term investment

³³⁵ Ibid, para 3.3.12.1. It is relevant to note that these strategies are similar to strategies that are found in policy documents of developed countries.

³³⁶ However, the Lawyers’ Environmental Action Team notes that “Research indicates that the Mineral Trade Policy suggested that any one can sell minerals without accounting to the Ministry for Minerals. However, based on a legal analysis, the provisions of the Mining Act are the law and are what must be followed for businesses to be considered to be operating legally”: Lawyers’ Environmental Action Team, *Environmental Law Handbook for Businesses*, 2002, at <http://www.leat.or.tz/publications/env.handbook/4.5.c.mining.act.php> (accessed 16 September 2002).

period. In this case, the equivalent of an environmental assessment must be performed for the plan of operations before the agreement can be entered.³³⁷

Further details about the Mining Act are included in the Table at the end of this Chapter.

A further policy document developed was The National Environmental Policy. This document specifically acknowledges the role of international developments in guiding policy development in Tanzania. It states, *inter alia*, “Tanzania is a signatory and has acceded to a number of international treaties on environment. A review of these Treaties will be made with a view to incorporating them into national legislation”.³³⁸ The Policy also refers to general international principles, such as the Brundtland definition of sustainable development and the precautionary principle³³⁹.

The Policy recognises the need for environmental laws, but doesn’t dictate the final form such legislation would take. It states:

The framework environmental legislation shall be designed to organise various agencies of government charged with aspects of environmental protection to promote coordination and cooperation among them, and shall define environmental management tools of general scope that facilitate an even degree of policing and enforcement. Sectoral legislations (sic) shall be designed in such a way as to factor environmental policy objectives in their areas of coverage.³⁴⁰

As noted in Chapter 2, whilst Tanzania doesn’t have an environmental protection Act, one has been drafted by a local NGO, The Lawyers’ Environmental Action Team (LEAT). LEAT is a locally based group of lawyers, who, together with other Tanzanian environmental civil society organisations, known collectively as the Environmental Coalition of Civil Society Organisation (ECO), has been campaigning for several years for the enactment of environmental legislation in Tanzania. The NGOs argue that such law is essential because:

Tanzania is the only East African country without a framework environmental law ... The lack of this law has led to wanton degradation of the environment, mismanagement of natural resources, inaction, conflicting mandates and institutional rivalries of various government departments and agencies charged with management of different spheres of the environment.³⁴¹

LEAT and ECO have drafted the Elements of a Bill for Tanzania Environmental Protection Act. They note that “the Tanzanian government has at least accepted the need

³³⁷ Ibid.

³³⁸ United Republic of Tanzania, *National Environmental Policy*, Vice-President’s Office, December 1997, para 72.

³³⁹ The precautionary principle is explained in the Policy in quite apt colloquial terms, ie “it is better to be roughly right in time, than to be precisely right too late.”

³⁴⁰ *National Environmental Policy*, above n 338, para 70.

³⁴¹ Lawyers’ Environmental Action Team, “Draft Tanzania Environmental Protection Act” at <http://www.lead.or.tz/law/draft/draft.epa.php> (accessed 6 October 2003).

of (sic) the enacting of this law” and that it has hired experts to start drafting this law.³⁴² This Bill proposes the use of the Brundtland Commission’s definition of ‘sustainable development’. As would be expected of legislation proposed by an environmental NGO, it includes a policy of open standing. Given that this draft does not formally (or informally) reflect government policy at the time of writing, it is not proposed to discuss it further.

The above discussion of policy and legislative developments in Tanzania in the mid-1990s begs the questions as to why environmental reforms did not commence prior to this time.³⁴³ As Chapter 2 details, Tanzania has certainly participated in international forums and acceded to environmental treaties before the mid-1990s. The question may be answered, in large part, by considering the political and economic climate that existed in Tanzania prior to this time.

It is sufficient to note that in the period since independence, the political climate has not been conducive to legal reform. Mr Julius Nyerere, as head of the country’s sole political party, the Chama Cha Mapinduzi (CCM), the Revolutionary Party of Tanzania, held the post of President from independence to 1985 and occupied the position of Chairman until 1990. Mr Nyerere’s main objective was the successful application of socialist principles to an African agricultural society and economy. Nyerere’s ideas, particularly the introduction of *ujamaa* (his theory of socialist development), were articulated in the Arusha Declaration.³⁴⁴

Upon Nyerere’s retirement from the Presidency,³⁴⁵ Mr Ali Hassan Mwinyi, former Vice-President and President of Zanzibar was appointed. Mwinyi favoured introducing market forces into the economy and plurality into the political system. Economic reform “proceeded slowly in the face of a large and fairly corrupt state bureaucracy”.³⁴⁶ A multi-party system was endorsed by the National Assembly in 1992, however the strength of the opposition is best demonstrated by the fact that in the elections in 2000, the incumbent President Mkapa won a further five year term with almost 85 percent of the

³⁴² Ibid.

³⁴³ The National Environment Management Council had been established by legislation in 1983 to advise the government on all matters relating to the environment. However, its role appears to have been very limited. Tundu Antiphas Lissu (a member of LEAT) notes in his article “Environmental Impact Assessment of Foreign Investment Projects”, March 1999, “as is well known in Tanzanian environmental management circles, the issue of perceived conflict and or overlap in powers and functions and the ensuing power struggle between NEMC and the Division of Environment (DoE) under the Vice President’s Office has been the subject of great controversy ever since DoE was created in 1990”. (at <http://www.lead.or.tz/publications/foreign.investment> (accessed 16 September 2002).

³⁴⁴ “Tanzania – History and Government”, *Tanzania*, at <http://www.travel-guide.com/data/tza/tza580.asp> (accessed 3 December 2003).

³⁴⁵ Mr Nyerere remained influential in politics behind the scenes following his formal retirement from politics, until his death in October 1999: US State Department Background Notes, Tanzania at http://www.africast.com/country_history.php?strCountry=Tanzania (accessed 3 December 2003).

³⁴⁶ Tanzania – History and Government, above n 344.

vote, while the ruling CCM party took all but 25 of the National Assembly seats.³⁴⁷ Each election has been subject to accusations of vote rigging and electoral fraud.

In an insightful report about the process of legal reform in Africa, W Paatii Ofosu-Amaah, former Chief Counsel for the Africa Region at the World Bank, notes the similarity of many African countries who instituted legal reforms in the immediate post-independence era and then made few major legal reforms until the 1990s. When the reforms were made, they were generally instigated by World Bank involvement.³⁴⁸ In the case of Tanzania, this involvement commenced when the Bank and the Tanzanian government signed Tanzania's Financial and Legal Management Upgrading Project on 4 September 1992. The reality of the 'Cold War' which intervened between the two periods and which allowed post-colonial African states to effectively play the capitalist states of the west off against the Soviet models, may be one contributing factor to the lack of legal development during the period. That this geo-political factor ended around 1989 and that World Bank influence commenced very shortly after is probably not a coincidence.

The reforms discussed above to the environmental regulation of mining were a product of part of the process to reform the legal system and the economy. The effectiveness of this process in terms of the legal system will be discussed further in Chapter 5.

3.3.3. Papua New Guinea

In the same way that has just been outlined for Tanzania, PNG has only recently addressed environmental mining issues in legislation. Like Tanzania, international pressures in the form of the World Bank and other funding bodies, principally the Australian aid agency AusAid, rather than international conventions and policies were directly responsible for this change in circumstances.

As mentioned previously, PNG has had a succession of governments since independence. By way of an illustration as to the state of the country, the then Prime Minister stated in July 2000:

Parliament has not worked as well as it should. In recent years instability within the system has brought about a paralysis in decision-making, and consequently a failure in policy-making, in the implementation of policy, and in the delivery of basic and essential services to the people. ... Politics in Papua New Guinea has been brought into disrepute both at home and overseas. National development has virtually ceased.³⁴⁹

³⁴⁷ The National Assembly (Bunge) has 274 members of whom 232 are directly elected, 37 are reserved for women appointed by the President and 5 are allocated to members of the regional Zanzibar assembly. Executive power belongs to the President, who is directly elected every 5 years.

³⁴⁸ Ofosu-Amaah, W Paatii, *Reforming Business-Related Laws to Promote Private Sector Development: The World Bank Experience in Africa*, The World Bank, Washington, April 2000, 17-18.

³⁴⁹ Explaining the proposed Political Integrity Laws prepared by the Constitutional Development Commission, Waigani, July 2000, Foreword by the Prime Minister, Hon Sir Mekere Morauta, Kt MP.

More recently, the World Bank reported in April 2003 that for the third consecutive year the PNG economy contracted, with real GDP estimated to have declined by about 3 percent.³⁵⁰ It further reported:

There was a resurgence in inflation to 14.8 percent at end-2002, up from 10.3 percent. The current account of the balance of payments which has been weakening since 2000, went into deficit [in 2002] (estimated at -2.7 percent of GDP) due in large part to the poor performance of the mineral economy.³⁵¹

Since 2003, the economy has been growing, with real GDP growth rising to an estimated 3.7 percent in 2006.³⁵² Inflation has declined from 14.7 cent in 2003 to around 4.5 per cent in 2006.³⁵³ However the World Bank Report also notes that poverty remains high, human development indicators weak, the quality of education and health care delivery poor, and the incidence of HIV/ AIDS has increased sharply.³⁵⁴ One of the internal drivers for legislation, then, has been to create a climate where investment is encouraged and in which transnational mining corporations (with the Bougainville Copper experience no doubt uppermost in their mind) believe that the resource is secure and the investment risk manageable.

The Environment Act 2000

Prior to the *Environment Act 2000*, PNG had several pieces of environmental legislation. The most relevant is the *Environmental Planning Act 1978*, which, subject to Ministerial discretion, provided for submission of environmental plans for prescribed categories of development. This Act was the subject of many criticisms, including some from the United Nations Economic and Social Commission for Asia and the Pacific, Development Paper No 21, 2000:

1. The *Environmental Planning Act 1978* allows developers to voluntarily submit an environmental management plan. In such cases, the findings do not have to be published or openly debated, although they may be discussed with the local residents of the development area and inspected at provincial government offices. Most environmental plans that are submitted have been of the 'voluntary' type and therefore not fully debated;

The *Environmental Planning Act* does not compel the incorporation of environmental protection measures in a development scheme. Rather, it only recommends the consideration of environmental protection and management procedures. A decision on

³⁵⁰ The World Bank Group, Papua New Guinea, PNG Half-year update, April 2003 at <http://Inweb18.worldbank.org/eap/eap.nsf/Countries/PNG> (accessed 11 February 2004).

³⁵¹ Ibid.

³⁵² The World Bank, *East Asia and Pacific Update – 10 years After Asia's Financial Crisis*, April 2007 at <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPHALFYEARLYUPDATE/0,,menuPK:550232~pagePK:64168427~piPK:64168435~theSitePK:550226,00.html> (accessed 3 May 2007).

³⁵³ Australian Government, Department of Foreign Affairs & Trade, "Papua New Guinea Country Brief – November 2006" at http://www.dfat.gov.au/geo/png/png_brief.html#econ (accessed 3 May 2007).

³⁵⁴ *East Asia and Pacific Update – 10 years After Asia's Financial Crisis*, above n 352.

whether to implement any or all such schemes is left to the discretion of the National Executive Council, acting on the advice of the responsible Minister;

The major limitation on the effectiveness of the Acts is the lack of financial and human resources. The Department of Mining and Petroleum ... has to compete with the private sector for trained personnel. ... Simply put, there are inadequate numbers of personnel for monitoring and enforcing the environmental regulations. Therefore, to a large extent, mining companies are compelled by the circumstances to engage in self-regulation and monitoring, in order to satisfy the conditions of the Acts.³⁵⁵

Of some potential significance is that Special Agreement Acts, relating to particular developments such as the *Mining (Ok Tedi Agreement) Acts*, were excluded from the operation of this legislation.³⁵⁶

Similarly to Australia and Tanzania, policy documents, influenced by international developments, preceded the introduction of the Environment Act. In 1992 PNG formulated a *Local Agenda 21 for Papua New Guinea*. It committed PNG to “ecologically sustainable developments, or the creation of a process for an ecologically, sustainable, socially equitable society economically”.³⁵⁷

In 1996 a policy was formulated called *Managing Papua New Guinea’s Unique Environment Strategic Directions 1996-98*. This comprised both a short term plan for three years from 1996 to 1998 and a 10 year plan until 2005. It provided policy objectives and outcomes in four program areas – natural resource strategies, environmental conservation regulations, strategic management and support and general watershed management.³⁵⁸

The drafting of the Environment Act was initiated as part of the AusAid funded ‘Department of Environment and Conservation (DECS) Strengthening Program’.³⁵⁹ This program was initiated to not only consolidate the environmental legislation in PNG, but also to restructure the Department. Victorian Environment Protection Agency personnel were contracted by AusAid as consultants for the program to work in conjunction with PNG lawyers and DECS to undertake the reforms. As disclosed in the Comparative Table of Environmental Legislation at the end of this Chapter, it is accordingly very similar to Australian environmental legislation.

³⁵⁵ United Nations Economic and Social Commission for Asia and the Pacific, “Integrating Environmental Considerations into Economic Decision-making Processes: Minerals Sector in Papua New Guinea”, Development Paper No 21, 2000, Pt III C 6.

³⁵⁶ A similar situation exists in Queensland where special purpose acts can be drafted which avoid some of the difficulties caused by local environmental planning schemes.

³⁵⁷ Japan International Cooperation Agency, Planning and Evaluation Department, *Country Profile on Environment – Papua New Guinea*, February 2002, 8.

³⁵⁸ Japan International Cooperation Agency, Planning and Evaluation Department, *Country Profile on Environment – Papua New Guinea*, February 2002, p 8.

³⁵⁹ Personal communications: Mr Nick Notarpietro, AusAid, 9 February 2004; Mr Andrew Taplin, Department of Environment and Heritage, 11 February 2004.

The *Environment Act 2000* was passed in November 2000, but put on hold (not certified by the Speaker or gazetted) pending the completion of the key regulations. It consolidates and repeals the *Environmental Planning Act 1978*, the *Environmental Contaminant Act 1978* and the *National Park Act 1984*. DECS remains responsible for environmental assessments, monitoring and enforcement, while the Department of Mining and Petroleum is responsible for monitoring the mining operations and environmental safeguards.

Similarly to the position in Tanzania, the World Bank has had direct involvement, again acting as a ‘defacto’ government, by providing tied grants to “strengthen institutional capacity within the Department of Mining and the Internal Revenue Commission to administer and regulate exploration and mining projects and to thereby contribute to socially and environmentally sustainable private mineral investment in the PNG mining sector”.³⁶⁰ This project commenced in 2000 and is a 20 year project. Whilst specifics of this project will be considered in Chapter 5, it is relevant to note at this point that several policy documents have been developed from this funding. They are the following Working Papers, which have been developed by a team of primarily Australian consultants:³⁶¹

- Implications of the ‘Mining, Minerals and Sustainable Development’ Project³⁶²
- Benefit Stream Analysis
- Business Development, Training and Employment.
- Public Infrastructure and Cost Analysis.
- Landowner Equity Case Studies.
- Institutional Analysis.
- Analysis of Ten Key Policy Issues.
- International Best Practice in Sustainable Development.

From these policy documents, a Green Paper was issued by the Department of Mining on 1 February 2003. This is currently open for consultation with primary and secondary stakeholders.³⁶³ A White Paper will be produced, which is a statement of government policy and will be accompanied by recommendations for the amendment of legislation.³⁶⁴ The legislative and regulatory apparatus governing the environmental regulation of mining is currently inchoate and this relative disarray is relevant to the specific case studies which will be examined also in Chapter 5 in that, for example, Lihir Gold Ltd provide funding and training for government officials to monitor their compliance with environmental laws.

³⁶⁰ World Bank, *Project Appraisal Document of a Proposed Loan in the amount of US\$10 million equivalent to the Independent State of Papua New Guinea for a Mining Sector Institutional Strengthening Technical Assistance Project*, 5 May 2000, Report No 20266-PNG, 2.

³⁶¹ The team of consultants was led by Dr Colin Filer of the Australian National University.

³⁶² The Mining, Minerals and Sustainable Development Project (discussed at length in Chapter 2) commissioned a report on PNG which was published in October 2001. Details of the report are Banks Glenn, University of New South Wales, *Papua New Guinea Baseline Study*, Unisearch, Australia, IIED Report No 180.

³⁶³ Department of Mining, *Sustainable Development Policy Green Paper*, 5.

³⁶⁴ *Ibid*, 5.

3.4. Third party standing

A detailed Comparative Table of Environmental Legislation, which is included as a Table at the end of this Chapter, shows the many similarities between the jurisdictions' legislation, particularly between Australia and PNG. One of the distinguishing features between the Australian and developing countries' legislation is however the lack of third party standing in Papua New Guinea and Tanzania. Third party standing is seen as a necessary requirement for a developed democracy and as a way of providing a check on industry's activities when governments fail to take action.

This thesis argues that the involvement of NGOs, both within and outside the formal legal system acts a de facto regulator in encouraging compliance with environmental laws. However without a direct right to bring the alleged breach to the attention of a court in the jurisdiction, third parties may have to resort to other avenues. By way of illustration, this section will contrast the ability for third parties to take action in Australia with the steps that villagers affected by the Ok Tedi Mine undertook to complain about the actions of BHP, given no third party standing in PNG. This legal action, taken by affected villagers against Ok Tedi Mining Ltd in Australia, rather than in PNG, provides a graphic illustration of perceived difficulties with the rule of law in PNG. (The closest example of NGO involvement in challenging the operations of a mine in Tanzania relates to the action by LEAT and other NGOs to the eviction of miners from the Bulyanhulu Mine lease. Here the appeal was not to the government or a court, but to Office of the Compliance Advisor Ombudsman, which is part of the World Bank group. This action is discussed further in Chapter 5.2.1.)

In looking at Australia, this section will briefly trace the development of third party standing at both common law and incorporation into statute, which has only been achieved over the last two decades, together with the main practical fetter on any open standing provision – the possibility of an award of costs, which can have the effect of undermining formal rights of access to the courts for environmental groups.

3.4.1. Standing at common law in Australia

In Australia, standing was developed by accretion at common law, before being recognised, to varying degrees, in the *Environmental Protection Act 1994* (Qld) and more liberally in the Commonwealth's EPBC Act. Given that third party provisions have been included, to varying degrees, in Australian legislation, it is appropriate to consider the common law position in this jurisdiction in order to understand the momentum that developed for its incorporation in legislation – a momentum that appears lacking in both Tanzania and Papua New Guinea.

For most of the last century, the predominant view was that if it were in the public interest that a matter be pursued, the appropriate person to take the action was the Attorney General. This reflected the position in England, as explained by Buckley J in the much cited decision of *Boyce v Paddington Borough Council* [1903] 1 Ch 109 at 114:

A plaintiff can sue without joining the Attorney General in two cases: first, where the interference with the public right is such as that some private right of his is at the same time interfered with; ... and, secondly where no private right is interfered with, but the plaintiff, in respect of his public right, suffers special damage peculiar to himself from the interference with the public right.

The first time the Australian High Court had to consider whether to allow a third party to bring an action, challenging the decisions of various Ministers, including the Minister for the Environment to grant permission for Iwasaki Sangyo Company (Australia) Pty Ltd to develop a resort in Yeppoon, central Queensland was in *Australian Conservation Foundation v Commonwealth* (1980) 146 CLR 493. In this case, the Australian Conservation Foundation (ACF) argued that it was the pre-eminent environmental group in Australia, that its objects concerned preservation and conservation of the environment and that it had lodged a submission pursuant to the administrative procedures issued under the EPIP Act. On appeal from the application to strike out the statement of claim on the ground that ACF had no standing to bring the action, Gibbs J (in the majority) stated:

I would not deny that a person might have a special interest in the preservation of a particular environment. However, an interest, for the present purposes, does not mean a mere intellectual or emotional concern. A person is not interested within the meaning of the rule, unless he is likely to gain some advantage, other than the satisfaction of righting a wrong, upholding a principle or winning a contest, if his action succeeds or to suffer some disadvantage, other than a sense of grievance or a debt for costs, if his action fails. A belief, however strongly felt, that the law generally, or a particular law, should be observed, or that conduct of a particular kind should be prevented, does not suffice to give its possessor locus standi.³⁶⁵

What constitutes a 'special interest' was again looked at by the High Court in *Onus & Another v Alcoa of Australia Limited* (1981) 149 CLR 27. In this case a group of aboriginals sought injunctions against Alcoa to restrain mining activities. The group claimed that they were custodians of various relics that were of spiritual and cultural importance to them and sought an injunction to restrain Alcoa from contravening s 21 of the *Archaeological and Aboriginal Relics Preservation Act 1972 (Vic)*.³⁶⁶

Referring to and accepting the test of standing in *ACF v Commonwealth*, now Chief Justice Gibbs stated:

The rule is obviously a flexible one since, as was pointed out in that case, the question what is a sufficient interest will vary according to the nature of the subject matter of the litigation. ... It seems to me that the appellants have an interest in the subject matter of the present action which is greater than that of other members of the public and indeed greater than that of other persons of aboriginal descent who are not members of the Gourditch-jmara people. ... The position of a small community of aboriginal people of

³⁶⁵ *Australian Conservation Foundation v Commonwealth* (1980) 146 CLR 493 at 530.

³⁶⁶ Section 21 provided that a person who wilfully or negligently defaced or damaged or otherwise interfered with a relic or carried out an act likely to endanger a relic should be guilty of an offence.

a particular group living in a particular area which that group has traditionally occupied, and which claims an interest in relics of their ancestors found in that area, is very different indeed from that of a diverse group of white Australians associated by some common opinion on a matter of social policy which might equally concern any other Australian.³⁶⁷

The Federal Court has, however, taken a more liberal view of standing. To illustrate by way of one example, the ACF was granted standing in *ACF & Anor v Minister for Resources & Anor* (1989) 76 LGRA 200. In this case, Davies J granted standing to ACF to challenge a decision of the Minister to grant licences to Harris-Daishowa (Australia) Pty Ltd.³⁶⁸ to export woodchips. The woodchips were to be obtained from State Forests that were listed as part of the National Estate under the *Australian Heritage Commission Act 1975* (Cth). In granting ACF locus standi to bring the proceedings (although making no order for judicial review), Davies J referred to the test of Gibbs J in *ACF v Commonwealth* (1980) 146 CLR 493 and stated:

I do not accept ... that *ACF v Commonwealth* laid it down as a matter of law that the ACF has no standing in a case such as the present. What has to be examined is whether or not ACF has a special interest in the subject matter of the application. ... the present issue is not a local issue ... And, in the decade that has passed since [the 1980 case] public perception of the need for the protection and conservation of the natural environment and for the need of bodies such as the ACF to act in the public interest has noticeably increased, as is demonstrated by the growth of the ACF itself since [1980]. ... the ACF is the major national conservation organisation in Australia and was established with a view, *inter alia*, to reconciling the use and exploitation of resources with the conservation of the natural environment. ... The ACF does have a special interest in relation to the South East Forests that are National Estate. The ACF is not just a busybody in this area. It was established and functions with governmental financial support to concern itself with such an issue. It is pre-eminently the body concerned with that issue. If the ACF does not have a special interest in the South East Forests, there is no reason for its existence.³⁶⁹

It is perverse that the very reasons why a third party was refused standing a decade previously were the reasons why the same third party was granted standing around 10 years later.

Queensland Courts tended to follow the High Court's restrictive interpretation of standing, rather than the more liberal interpretation by the Federal Court.³⁷⁰ For example, third parties were refused standing in *Central Queensland Speleological Society Inc v Central Queensland Cement Pty Ltd* [1989] 2 Qd R 513. In this case, a local

³⁶⁷ *Onus v Alcoa of Australia Limited* (1981) 149 CLR 27 at 35-37.

³⁶⁸ The issue of woodchip export licences from 'old growth' forests was a potent environmental issue in Australia in the 1980s and 1990s and spawned a range of judicial review applications. By way of example, see also *Tasmanian Conservation Trust Inc v Minister for Resources* (1995) 85 LGERA 296; *North Coast Environment Council v Minister for Resources* (1994) 85 LGERA 270.

³⁶⁹ *Australian Conservation Foundation & Anor v Minister for Resources & Anor* (1989) 76 LGRA 200 at 204-206.

³⁷⁰ Dixon Nicolee, "The More Things Change, the More They Stay the Same: Standing and the Judicial Review Act 1991 (Qld)" (1994) *The Queensland Lawyer* 51 at 53.

environmental group sought an injunction to restrain the action of Central Queensland Cement to blow up a cave for limestone deposits because the cave was inhabited by ghost bats during part of the year. They claimed that even if the cave was blown up when the bats had migrated elsewhere, this would amount to a ‘taking’ of protected wildlife, which is an offence under the *Fauna Conservation Act 1974*. Whilst the majority of the Court of Appeal gave some support to this argument, on the threshold issue they refused standing to the environmental group on the basis that they didn’t have a special interest for the following reasons:

In this case, the interest to the appellant in the preservation of the cave barely surpasses the “mere intellectual or emotional concern” which Gibbs CJ held to be insufficient in *ACF v Commonwealth* at 530. If successful in preserving the cave, what advantage would this appellant secure, beyond the satisfaction of righting what it perceives to be a wrong, upholding a principle, or winning a contest? In my opinion, the appellant would gain no sufficient additional advantage.³⁷¹

It wasn’t until 2000 that the test of standing was substantially altered by Chesterman J in *North Queensland Conservation Council Inc v Executive Director, Queensland Parks & Wildlife Service* [2000] QSC 172 (14 June 2000). In determining that the NQCC was a ‘person aggrieved’ within the meaning of the *Judicial Review Act 1991*, His Honour referred to Gibbs J’s test in *ACF v Commonwealth* (quoted above) and stated “This passage seems, with respect, to describe what is not a special interest but provides no real assistance in determining what is”.³⁷² His Honour concluded:

The conventional approach to this enquiry is to determine whether the interest of NQCC is greater than that of an ordinary member of the public and is something more than a mere emotional or intellectual commitment to the belief that the law should be observed. If I were obliged to apply this principle I would conclude that NQCC does have a sufficient special interest to make it ‘person aggrieved’ ... I would, however, prefer to approach that question slightly differently by asking whether NQCC’s concern with the litigation is such that its application is not an abuse of process. This in turn involves an enquiry into the nature of the legal proceedings, the nature and extent of NQCC’s interest in those proceedings and their outcome, and whether any person will be put to expense or inconvenience as a result of the proceedings.³⁷³

Haigh notes that, while Chesterman J’s ‘abuse of process’ test is in line with the recommendations of the Australian Law Reform Commission’s 1996 Report on standing, this test unsettles, rather than strengthens, the law on standing in public interest

³⁷¹ *Central Queensland Speleological Society Inc v Central Queensland Cement Pty Ltd* [1989] 2 Qd R 512 per Derrington J at 534. Standing was also refused to a local environmental group in *Friends of Castle Hill Inc v Queensland Heritage Council* (1993) 81 LGERA 346 for similar reasons. It was not until 19 December 2003 that the *Nature Conservation Act 1992* (Qld) was amended to introduce open standing for declarations and enforcement orders and extended standing for judicial review (which uses the same criteria as the *Environment Protection and Biodiversity Conservation 1999* (Cth)).

³⁷² *North Queensland Conservation Council Inc v The Executive Director, Queensland Parks and Wildlife Service* [2000] QSC 172 at [10].

³⁷³ *Ibid* at [32]- [34].

matters.³⁷⁴ However Fisher more optimistically argues that “while the traditional requirement for proof of a special interest remains the law, there are emerging different approaches to its application.”³⁷⁵

The “emerging different approach” is clearly the current possibility of examining standing within a much narrower context of “abuse of process”. It is, arguably, far more difficult to prove an abuse of process than to prove a lack of special interest. Standing recognised in Australian statutory law

The liberalisation of standing that was occurring in the courts was reflected, to varying degrees, in both Queensland and Commonwealth legislation.

3.4.2. Environmental Protection Act 1994

As noted in Chapter 1, the EP Act had a long gestation period which included a number of rounds of public consultation. The amendment to the Act to incorporate the environmental regulation of mining included further rounds of public consultation and focussed stakeholder consultation.³⁷⁶

As the Table states, the provisions specifically relating to mining provide for the general public to object to the mining application, including the environmental authority, and for third parties, with the leave of the court, to seek restraint orders.

Restraint orders

The need for third party participation to be incorporated into environmental protection legislation in Queensland was specifically enunciated in the Commission of Inquiry into the Conservation, Management and Use of Fraser Island and the Great Sandy Region Report. Despite its name, the Inquiry made much broader recommendations about environmental regulation in Queensland. In relation to public participation, it recommended, *inter alia*:

Increased opportunities be provided for direct public participation at suitable points in policy formulation and decision-making processes.

³⁷⁴ Haigh David J, “Case Note: North Queensland Conservation Council v Executive Director, Queensland Parks and Wildlife Service” (2000) 17 EPLJ 237 at 240.

³⁷⁵ Fisher DE, above n 262, 450.

³⁷⁶ Even before the *Environmental Protection and Other Legislation Amendment Act 2000*, the EP Act applied to mining since some mining activities required a licence under the EP Act. However from 1 January 2001, the process was ‘streamlined’ and rationalised, with the EP Act applying to the environmental aspects of mining and the Mineral Resources Act 1989 applying to the tenure.

Funding be provided to community organisations to participate in policy formulation and decision-making processes, and in the avoidance, management and resolution of public issue disputes subject to the [various specified conditions].³⁷⁷

These recommendations were incorporated into the first public consultation paper on the new legislation, *Environment Protection Legislation – Cleaning Up Our Act*, which stated:

Proposed Content

4.11 Any person should be able to seek injunctions from a judge of the Planning and Environment Court.

Comments

4.11 The present legislation does not provide for injunctions and this has restricted satisfactory response in the past to deal with certain environmental problems.³⁷⁸

However, by November 1993 when an Environmental Protection Bill and Commentary was released for public consultation, this provision was not included. Rather, cl 142(1) provided that only “the administering authority may bring a proceeding in the Supreme Court for an order to remedy or restrain an offence, or a threatened or anticipated offence” against the Act.³⁷⁹

Following extensive lobbying from the green movement, including the Environmental Defender’s Office, standing provisions were re-inserted, albeit “severely limited rights of civil enforcement of the EPA”³⁸⁰ Thus in the Second Reading Speech, the Minister was able to optimistically state “All Queenslanders will have the right to seek injunctions, regardless of financial interest or personal damage”.³⁸¹ However, in debate Mr Bredhauer provided justification for qualifying third party standing of the basis that “The court can also require a security deposit for costs if it wishes. This is to prevent someone bringing an action to financially damage someone else. The result of these ‘filters’ is to ensure only genuine cases will be heard.”³⁸²

In fact, these ‘filters’ have been so effective, that no actions have been commenced by a third party under this provision since the Act commenced on 1 March 1995!

³⁷⁷ Queensland Government, *Commission of Inquiry into the Conservation, Management and Use of Fraser Island and the Great Sandy Region*, May 1991, 128.

³⁷⁸ Queensland Department of Environment and Heritage, *Environment Protection Legislation – Cleaning Up Our Act*, 1991, 28.

³⁷⁹ Queensland Department of Environment and Heritage, *Environmental Protection Bill and Commentary*, November 1993, cl 142.

³⁸⁰ Tan Poh-Ling, “The Queensland Environmental Protection Legislation” (1995) 1 (1) QEPR 1 at 2.

³⁸¹ Queensland Legislative Assembly, *Hansard*, 9 September 1994, 9538.

³⁸² Queensland Legislative Assembly, *Hansard*, 15 November 1994, 10220.

Mining appeals

Contrastingly, open standing for objections to the grant of mining leases was a feature of the *Mineral Resources Act 1989*. It was a policy commitment of government that when environmental regulation of mining was transferred to the Environment Protection Agency that existing public notification and objection rights for all tenures will remain unchanged.³⁸³ Under the new regime, both the grant of tenure and the grant of the environmental authority to operate the mine must both be issued for the mine to proceed and the conditions of both may be challenged by the public. Objections and appeals are however now lodged with the Land Court, rather than with the Mining Warden.

3.4.3. Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act extends the meaning of a ‘person aggrieved’ for the purposes of the *Administrative Decisions (Judicial Review) Act 1977* (Cth). As the Comparative Table of Environmental Laws at the end of this Chapter provides, this applies to both natural persons and associations (whether incorporated or not). The Explanatory Memorandum to the EPBC Bill notes:

A person or organisation will have standing under these provisions only if the person or organisation has engaged in a series of activities (including research) for the protection or conservation of the environment. There must be a genuine and consistent pattern of such activities for there to be ‘a series’ of activities.³⁸⁴

Whilst not addressing this provision specifically in the Second Reading Speech, Dr Stone stated that the Act would:

Increase transparency and public involvement. For example, there is: increased public notification; more opportunity for public comment in the environmental assessment and approval process; and requirements for public consultation on making bilateral agreements and bioregional plans. Proponents will be consulted on conditions to be attached to environmental approvals.³⁸⁵

This provision was first tested in *Booth v Bosworth* [2000] FCA 1878 (13 December 2000) (interim injunction); [2001] FCA 1278 (20 July 2001) (full hearing). Known colloquially as the ‘Flying Fox case’ or even more colloquially as the ‘BBQ Bats case’, action was taken by Dr Booth, a conservationist, against a farmer, Mr Bosworth, seeking an injunction to prevent the use of electric grids which were used at a certain time during the year to protect his lychee crop against flying foxes. Dr Booth argued that the use of such grids electrocuted a substantial number of flying foxes such that the action was

³⁸³ Queensland Environmental Protection Agency & Department of Mines and Energy, *Stakeholder Briefing Paper on: Environmental Protection and Other Legislation Amendment Bill 2000*, March 2000, 2.

³⁸⁴ Commonwealth and Australia, Senate, EPBC Bill, Explanatory Memorandum, 1998, cl 487.

³⁸⁵ Stone Dr Sharman MP, Parliamentary Secretary to the Minister for the Environment and Heritage, 29 June 1999, Second Reading Speech – EPBC Bill 1999, House of Representatives.

having a ‘significant impact on a matter of national environmental significance’ and hence amounted to a breach of s 12 of the EPBC Act. Relevantly for the present discussion, Dr Booth was granted standing to bring the action for the following reasons:

It is apparent from the material that the applicant is concerned about the well-being of the flying fox population in the Wet Tropics World Heritage Area (the Heritage Area), as well as the well-being of the environment in the Heritage Area. It appears, from the evidence before me, that Dr Booth is currently employed as the Gulf Regional Policy Officer of the Worldwide Funds for Nature Australia and, in addition, does voluntary work for the North Queensland Conservation Council and is secretary of the Magnetic Island Nature Care Association. Amongst other activities she has cared for young flying foxes that have been orphaned, with the caring being directed at their return to the wild. I am satisfied that the requirements of s 475(6) of the Act are fulfilled and that the applicant has standing.³⁸⁶

Chapple notes that, although the Act hasn’t introduced open standing, this “has not proved to be a substantial barrier in proceedings under the Act in its first year”.³⁸⁷ Whilst the number of injunctions sought by third parties has been limited,³⁸⁸ this still holds true. As Chris McGrath, Counsel for Dr Booth notes, “it is clear that the operation of the new EPBC Act presents a new range of legal challenges and opportunities for public interest litigation and environmental management in Australia”.³⁸⁹

3.4.4. Costs

Any discussion about third party standing rights would be hollow, however, without a consideration of how the Courts treat the issue of costs.

Environmental Protection Act 1994

It is significant to note that the restraint provision – s 505 - addresses the issue of costs and an undertaking as to damages, as follows:

- (4) The Court may grant leave subject to conditions, including, for example –
 - (a) a condition requiring the person to give security for the payment of costs of the proceeding that may be awarded against the person; or
 - (b) a condition requiring the person to give an undertaking about damages.

- (10) The Court must order a plaintiff to pay costs if the Court is satisfied the proceeding was brought for obstruction or delay.

³⁸⁶ *Booth v Bosworth* [2000] FCS 1878 per Spender J at [5].

³⁸⁷ Chapple Sophie, “The Environment Protection and Biodiversity Conservation Act 1999 (Cth): One Year Later” (2001) 18 EPLJ 523 at 537.

³⁸⁸ No doubt due to reasons that are canvassed in the following section on ‘Costs’.

³⁸⁹ McGrath Chris, “The Flying Fox Case” (2001) 18 EPLJ 540 at 560.

Whilst it has not yet been tested, it would appear that the Planning and Environment Court would have a discretion to award costs against an unsuccessful public interest litigation.³⁹⁰ This issue has not yet arisen in case law.

The Land Court has an ‘own costs’ rule,³⁹¹ unless it considers that an award of costs is appropriate.³⁹²

Environment Protection and Biodiversity Conservation Act 1999

Despite the relaxation of standing under the EPBC Act that has been discussed above, Chapple notes that “the greatest remaining barrier to public interest litigation is the potential liability for costs if the action is unsuccessful.”³⁹³ This is because the EPBC Act hasn’t abrogated the ‘normal rule’ that costs follow the event.³⁹⁴

Sometimes, courts that have an unfettered discretion to award costs, such as the Land and Environment Court in NSW, have adopted the view that only in “exceptional circumstances” should costs be awarded.³⁹⁵

A recent High Court decision in *Oshlack v Richmond River Council* (1998) 96 LGERA 173 has considerably relaxed the dangers that environmental third parties are at risk of costs where not protected by statute. *Oshlack* depends on the concept of “public interest litigation”. The case concerned the *Land and Environment Court Act 1979* (NSW), in which costs were discretionary. The High Court overturned the NSW Court of Appeal which relied on *Latoudis v Casey* (1990) 170 CLR 534 and rejected the floodgates argument.³⁹⁶

³⁹⁰ Nicholls David, “Standing at the Crossroads: Public Enforcement under the Environmental Protection Act 1994 (Qld)” (1995) 1 (4) QEPR 111 at 119. This is contrary to the general position under the *Integrated Planning Act 1997*, s 4.1.23, where parties will generally bear their own costs, except in defined circumstances, which include frivolous and vexatious conduct and delay and obstruction.

³⁹¹ *Land Court Act 2000* (Qld), s 20(2).

³⁹² *Land Court Act 2000* (Qld), s 20(1).

³⁹³ Chapple Sophie, “The Environment Protection and Biodiversity Conservation Act 1999 (Cth): One Year Later” (2001) 18 EPLJ 523 at 537.

³⁹⁴ For an example, see *Latoudis v Casey* (1990) 170 CLR 534.

³⁹⁵ Land and Environment Court (NSW), Practice Direction 1993, cl 10; see also *McDonald Industries Ltd v Sydney City Council* (1980) 43 LGERA 428 at 445.

³⁹⁶ Of particular significance to the High Court in *Oshlack* were the following:

- (a) Notwithstanding the traditional rule that costs should follow the event of litigation, there is a need to distinguish applications to enforce public law obligations which arise under environmental laws, otherwise the relaxation of standing in legislation [here the *Environmental Planning and Assessment Act 1979*, s 123] have little significance.
- (b) The characterisation of proceedings as “public interest litigation” with the prime motivation being the upholding of the public interest may be a factor which contributes to the finding of special circumstances, but it is not of itself enough to constitute special circumstances warranting departure from the usual rule. Something more is required.
- (c) The appellant’s pursuit of the litigation was motivated by his desire to ensure obedience to environmental law and to preserve the habitat of the koala. He had nothing to gain from the litigation other than seeking the observance of environmental law and the preservation of endangered fauna.

Nevertheless, *Oshlack* is no guarantee of protection against a costs order for losing third parties. For example, in *Timbarra Protection Coalition v Ross Mining NL and Tenterfield Shire Council* (1998) 98 LGERA 211, the Coalition was ordered to pay the costs of all three respondents by Talbot J in the New South Wales Land and Environment Court.³⁹⁷

Oshlack was considered and distinguished by the Full Court of the Federal Court in *Friends of Hinchinbrook Society Inc v Minister for the Environment* (1998) 99 LGERA 140. The concept of public interest litigation was not a magic formula to avoid costs where a broad discretion existed. Costs were awarded against the Friends and in favour of the federal Minister and the State of Queensland.

The unhelpful conclusion is that the decision to award costs where a court has discretion depends upon the facts. Certainly, the floodgates have not been opened. Public interest litigation must be subjected to stringent tests before costs orders will not be made where statute does not contain a “no costs” rule. Accordingly the pressures that can be brought to bear on mining companies outside the formal legal system remains very relevant in Australia.

In Australia, this issue of costs still effectively places many contentious issues outside the scope of the legal system. Where this factor is not present or in cases where a costs order is unlikely to be capable of enforcement, formal legal action can be practicable. The graphic illustration of this is the action against BHP in respect of the Ok Tedi mine.

3.4.5. Papua New Guinea

In this instance the action was commenced, not in Papua New Guinea, but in Victoria, Australia. The jurisdictional nexus for this action was that BHP, then the majority shareholder in Ok Tedi, holding 52 percent of the mine, had its registered office in Melbourne. Also relevant to the choice of forum was no doubt the fact that the law firm

(d) A significant number of members of the public shared the stance of the appellant. Indeed the litigation had originally been commenced by the appellant on behalf of the Lismore Greens. However, this group later dropped out of the litigation.

(e) The basis of challenge was arguable and had raised and resolved significant issues as to the interpretation and future administration of statutory provisions relating to the protection of endangered fauna and relating to the future administration of the subject development consent. These issues had implications for the council, the developer and the public.

³⁹⁷ Points that allowed Talbot J to identify absence of special circumstances were:

(a) Sufficient public interest (newspaper articles, press releases, protest action etc) could be shown in *Timbarra*, but this does not by itself establish that proceedings should be categorised as exceptional.

(b) The case by the coalition did not raise important or unique features such as identified by Stein J in *Oshlack*.

(c) *Oshlack* concerned costs in favour of a public authority. Ross Mining NL, the developer, was seeking costs in *Timbarra*. To allow the Coalition to escape developer’s costs would be to make an exception into a general rule.

who took the class action on behalf of the villagers, Slater & Gordon had an office in Melbourne, but much to the chagrin of the PNG Government, didn't have an office in PNG.³⁹⁸ This action was taken in 2 stages:

1994-96

In 1994, Slater & Gordon filed an action against OTML on behalf of 30,000 landholders harmed by downstream pollution from the mine.

This action was settled in June 1996, with a settlement, the value of which is estimated at roughly US\$350 million to US\$450 million.³⁹⁹ The terms of the settlement called for BHP to:

- stop mine tailings from entering the Ok Tedi/Fly River system – note however the BHP agreed only to submit its favoured tailings disposal option to a PNG government inquiry, and to implement the option if it proves feasible;
- dredge the Ok Tedi River to relieve the effects of flooding, erosion and deposition of sediment on riverside land caused by the many years of dumping into the River; and
- pay a total of US\$120 million to affected villagers.⁴⁰⁰

It has been noted that the villagers were coerced into settling by the *Mining (Ok Tedi Restated Eighth Supplemental Agreement) Act 1995*, allegedly drafted by BHP's lawyers,⁴⁰¹ which in its initial draft made it a crime to bring suits against resource companies in foreign courts.⁴⁰² This Act gave effect to the Restated Eighth Supplemental Agreement between the government and all parties in OTML made on 4 August 1995. This Agreement is annexed to the Act. A consideration of recital E to the Agreement gives an understanding of the flavour of the legislation, and an example of the power of the transnational corporation. It provides, *inter alia*:

Notwithstanding the Company's (OTML's) ongoing programme of compliance with its obligations ... a number of writs have been, or were sought to be, issued against the

³⁹⁸ Statement to Parliament by the Prime Minister, Rt Ho Sir Mekere Morauta, Kt MP, "On a court action in Australia relating to the Ok Tedi Mine", 11 December, 2001, where Sir Morauta stated: "This foreign law firm – which does not even have an office in Papua New Guinea – has interfered in the actions of the sovereign state of Papua New Guinea".

³⁹⁹ Multinational Monitor, Editorial, "BHP's Dirty Deeds", September 1996 Vol 17 No 9, as <http://multinationalmonitor.org/hyper/mm0996.02.html> (accessed 5 November 2003).

⁴⁰⁰ Ibid.

⁴⁰¹ In ABC Radio National's Business Report of 18 August 1995, "BHP and the controversial Ok Tedi compensation bill", it was reported that "BHP's general manager for Papua New Guinea, Kipling Uteri said while BHP had been consulted over the legislation, the company had no control over its final content" – at <http://www.abc.net.au/rn/talks/8.30/busrpt/bstories/br180801.htm> (accessed 5 November 2003).

⁴⁰² In the abovementioned Radio National interview, Mines Minister the Hon John Giheno, MP, when asked by reporter Tim Latham: "Will the final agreement still contain criminal penalties for people who pursue further litigation against Ok Tedi?" replied "Yes. It will restrict some form of a right, but it will be done in order to protect the larger community, then this is allowed." The Act was later redrafted to make this a civil, rather than a criminal sanction.

Company and BHP, in Papua New Guinea and elsewhere, seeking damages, exemplary damages, injunctions and declarations in connection with the effect of the Company's operations on the environment. Foreign lawyers have been active in connection with this litigation or attempted litigation and have raised unrealistic expectations among persons affected by the Company's operations as to the compensation which those persons might expect to receive. This litigation or attempted litigation, if allowed to run its course, is likely to take an extremely long time to resolve and to be very expensive for everyone involved in it. Significant social unrest and disharmony would be likely to result. It is contrary to the national interest of Papua New Guinea for this to be allowed to happen.

This Act also set out the details of and administrative procedures for the compensation package and provided that the compensation paid was a tax deductible expense in the current tax year.⁴⁰³ An NGO has suggested that BHP was willing to settle because of a constitutional challenge to the law (in PNG courts) which was dropped as a condition of the settlement.⁴⁰⁴

2000

In April 2000 the landholders began fresh legal action in the Supreme Court of Victoria alleging that BHP had failed to implement a tailings mitigation system in accordance with its obligations under the settlement agreement. The landholders alleged that BHP was still dumping up to 90,000 tonnes of waste in the Fly River each day.⁴⁰⁵ The landholders also met with Australian environmental groups to gain support for their campaign.

The landholders cited a World Bank Risk Assessment Report, which stated that, from an environmental standpoint, the mine should be closed immediately. However from a social standpoint, the Bank asserted that this would result in a potentially disastrous situation because there is no preparedness for mine closure.⁴⁰⁶ This provides a graphic illustration of the difficulties in seeking to balance the often irreconcilable limbs of sustainable development (even without considering the economic limb).

Action had again been instigated by Slater & Gordon on behalf of landholders in 2000, seeking unspecified damages and an order for a reasonable tailings mitigation scheme. As part of the withdrawal by BHP from Ok Tedi, a 9th Supplemental Agreement between the parties was signed, which required 149 Villages to sign Community Mine Continuation Agreements. These Agreements offer individual and community compensation and release BHP and OTML from any further liability in the current Victorian Supreme Court proceedings. Under the Agreements, landowners forfeit common law rights to enforce the 1996 settlement, as well as future legal rights to sue

⁴⁰³ See, for example cl 5.5 of the Restated Eighth Supplemental Agreement.

⁴⁰⁴ Multinational Monitor, above n 399.

⁴⁰⁵ Mineral Policy Institute, "BHP's Ok Tedi mine", Ok Tedi 2, Slater and Gordon Media Release, 11 April 2000 (http://www.mpi.org.au/oktedi/slater_gordon11april.html) (accessed 5 November 2003).

⁴⁰⁶ Molloy Fran, "BHP Abandoning Ok Tedi – PNG to clean up", Reportage, Australian Centre for Independent Journalism, 3 October 2001, at <http://www.reportage.uts.edu.au/stories/2001/03oktedi.html> (accessed 5 November 2003).

OTML for damages.⁴⁰⁷ An injunction, initiated when 138 of the 149 villages had signed the Agreements sought to prevent further Agreements being signed and for OTML to withdraw consent to the 9th Supplemental Agreement. The legal action led to a stinging attack by the PNG Prime Minister:

The action in the Supreme Court of Victoria is, like the case brought by a group of Bougainvilleans in the United States, an attack on the legal system and the sovereignty of Papua New Guinea. Such cases belong in the courts of Papua New Guinea. No foreign court has the right or the competence to make judgements about the extremely complex social, cultural, economic and political issues surrounding Ok Tedi.⁴⁰⁸

The 9th Supplemental Agreement was passed by the PNG Parliament on 11 December 2001 by 58-2 votes. Pursuant to the Act, BHP transferred its 52% interest to the Singaporean based company called, with delicious irony, PNG Sustainable Development Program Limited. The Canadian Inmet Corporation continued its involvement with the mine. Further issues about the Ok Tedi mine will be canvassed in Chapter 5.

3.5. Conclusion

Various international influences that were detailed in Chapter 2 have, in one way or another, played a part in shaping the environmental laws in both developing and developed jurisdictions. Australia, as an example of a developed country, has been directly influenced by the international commitments, agreements and Conventions to which it has been a party. The international treaty obligations are cited as a legislative basis upon which the EPBC Act is based. Contrastingly, the economic pressures to create an environment with a sound regulatory base, and in keeping with international environmental standards, have played a greater part in driving environmental legislation in Tanzania and PNG, rather than the international policy documents *per se*. Of more significance, in the case of both Tanzania and PNG has been the role of the World Bank, and, in the case of PNG, Aus-Aid, that has provided the funding for the drafting of the legislation and the institution building frameworks to administer this legislation. Accordingly, its importance, as part of the ‘mix of regulators’ in developing countries is highly significant.

The legislation, and environmental protection commitments included in Tanzanian and PNG legislation when it has been enacted, however, largely mirror the environmental protection commitments in Australian legislation. For example, as the following Comparative Table of Environmental Legislation illustrates:

⁴⁰⁷ See, for example, cls 12-14 (Communities’ Releases) and cls 15-16 (Supreme Court Proceedings) in the Community Mine Continuation Agreement Middle Fly, which is annexed to the *Mining (Ok Tedi Continuation) (Ninth Supplemental) Agreement) Act 2001*.

⁴⁰⁸ Statement to Parliament by the Prime Minister, Rt Ho Sir Mekere Morauta, Kt MP, “On a court action in Australia relating to the Ok Tedi Mine”, 11 December, 2001. Sir Morauta also referred to Slater & Gordon’s actions against Ross Mining (now Delta Gold) of Australia in relation to a gold mine in the Solomon Islands, resulting in an award of costs against the firm by the Solomon Islands High Court of at least A\$6 million.

- Australia, Queensland and PNG have similar definitions of “environment”;
- Australia, Queensland and PNG make reference in one form or another to ecologically sustainable development;
- Queensland and PNG both refer to the public having an environmental duty of care;
- all jurisdictions have a range of administrative and criminal sanctions that can be utilised against polluters;
- all jurisdictions provide that directors may be personally liable for the actions of their corporations;
- all jurisdictions provide for some form of environmental impact assessment prior to the approval of mining activities.

Whilst the form of the legislation may be similar, particularly between Australia and PNG, the acid test is in the execution of this legislation – does the bureaucracy enforce, or even have the capacity to implement legislation that has been imported from another jurisdiction, where conditions differ markedly? Can industry make, and indeed are they required to make ‘facilitation payments’ in order to do business in the jurisdiction? Are there any/ adequate incentives in the legislation to encourage industry to not only comply, but to go beyond compliance? These questions will be answered via a range of case studies in Chapter 5.

Comparative Table of Environmental Legislation

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|-----------------------------|---|--|--|--|
| Definition of “environment” | <p>s 8 – “environment includes –</p> <p>(a) ecosystems and their constituent parts, including people and communities; and</p> <p>(b) all natural and physical resources; and</p> <p>(c) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and</p> <p>(d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in</p> | <p>s 528 – “environment includes:</p> <p>(a) ecosystems and their constituent parts, including people and communities; and</p> <p>(b) natural and physical resources; and</p> <p>(c) the qualities and characteristics of locations, places and areas; and</p> <p>(d) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b) or (c).</p> | <p>s 2 – “environment” includes –</p> <p>(a) ecosystems and their constituent parts including people and communities and including human-made or modified structures and areas; and</p> <p>(b) all natural and physical resources; and</p> <p>(c) amenity values; and</p> <p>(d) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and</p> | <p>Nil</p> |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|--|--|---|---|--|
| | paragraphs (a) to (c). | | (e) the social, economic, aesthetic and cultural conditions which affect the matters stated in paragraphs (a) to (d) of this definition or which are affected by those matters. | |
| Definition of “ecologically sustainable development” | s 3 – “protect Queensland’s environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends”. | s 3A – Principles of ESD: decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations; (b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation; (c) the principle of inter- | Not expressly defined, however s 4(b) provides that one of the objects of the Act is “to protect the environment while allowing for development in a way that improves the quality of life and maintains the ecological processes on which life depends”. | Nil |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|----------------------------|---|---|---|--|
| | | <p>generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;</p> <p>(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;</p> <p>(e) improved valuation, pricing and incentive mechanisms should be promoted.</p> | | |
| Environmental duty of care | s 319(1) – “a person must not carry out an activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the | no | s 7(1) – “a person shall not carry out an activity that causes or is likely to cause an environmental harm unless the person takes all reasonable and practicable measures to | Nil |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|--------------------------|---|---|--|---|
| | “general environmental duty”). | | prevent or minimise the environmental harm”. | |
| Administrative remedies | s 358 – environmental protection order (can require remediation/ clean up) - infringement notices (various sections) s 467 – an emergency direction | s 497 – infringement notices s 498 – publicising contraventions ss 499/ 500 – person can be liable to remedy environmental damage, or pay an award of damages. | s 101 - environment protection order s 103 – a clean-up order s 106 – an emergency direction | reg 19 – licensing authority can request audit and validation from independent third party or consultant. |
| Civil penalties/remedies | s 505 – restraint orders can be sought by (1)(c) “someone whose interests are affected by the subject matters of the proceeding” or (1)(d) “someone else with the leave of the court” – see further discussion in relation to Third Party Standing. | <ul style="list-style-type: none"> • ss 475-480 – specified persons can seek prohibitory or mandatory injunctions. • The Act provides that certain conduct renders persons liable to either a civil penalty or a criminal penalty. The contravention of a civil penalty provision is not an | None | None |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|--------------------|--|---|---|--|
| | | offence, but instead leads to liability for a pecuniary penalty (ss 481-486). | | |
| Criminal penalties | <p>3 tiers of offences:</p> <ul style="list-style-type: none"> • s 437 – causing serious environmental harm⁴⁰⁹: - wilfully and unlawfully: penalty max 4,165 penalty units⁴¹⁰ or 5 years gaol - unlawfully: penalty max 1,665 penalty units⁴¹¹. • s 438 – causing material environmental harm⁴¹² | <p>criminal provisions in relation to “actions” which affect matters of “national environmental significance” (ss 15A, 17B, 18A, 20A, 24A). S 15A is an example of such provisions: (1) A person is guilty of an offence if: (a) the person takes an action; and (b) the action results or will result in a significant</p> | <p>3 tiers of offences:</p> <ul style="list-style-type: none"> • s 11 – unlawfully causes serious environmental harm⁴¹⁹ Penalty: corporation – max K250,000; individual max K125,000 or 5 years gaol or both. Default penalty: max K15,000. | <p>reg 20 – penalty for breach of any regulation or failure to implement a direction under reg 12⁴²⁰ or failure to take measures or adopt procedures agreed with the licensing authority under reg 19(2)⁴²¹: (a) be guilty of an offence and be liable on conviction to a fine not exceeding 1,000,000 shillings or 6 moths gaol</p> |

⁴⁰⁹ Defined in s 17.

⁴¹⁰ 1 penalty unit = A\$75. Therefore maximum penalty is \$312,375 for an individual and \$1,561,875 for a corporation. (pursuant to the *Penalties and Sentences Act 1992* (Qld), s 181B, if a penalty has not been otherwise prescribed for a corporation, the relevant penalty is 5 times that specified for an individual).

⁴¹¹ \$124,875 for an individual and \$624,375 for a corporation.

⁴¹² Defined in s 16.

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|--|---|--|--|--|
| | <p>- wilfully and unlawfully: penalty max 1,165 penalty units⁴¹³ or 2 years gaol</p> <p>- unlawfully: penalty max 835 penalty units⁴¹⁴.</p> <ul style="list-style-type: none"> • s 440 – causing environmental nuisance⁴¹⁵ <p>- wilfully and unlawfully: penalty max 835 penalty units⁴¹⁶</p> <p>- unlawfully: penalty max 165 penalty units⁴¹⁷</p> | <p>impact on the world heritage values of a declared World Heritage property.</p> <p>(2) A person is guilty of an offence if:</p> <p>(a) the person takes an action; and</p> <p>(b) the action is likely to have a significant impact on the world heritage values of a declared World Heritage property and the person is reckless as to that fact.</p> <p>(3) An offence against</p> | <ul style="list-style-type: none"> • s 12 – material environmental harm Penalty: corporation – max K100,000; individual max K50,000 or 2 years gaol or both. Default penalty: max K5,000. • s 13 – environmental harm Penalty: max fine K20,000. | <p>or both.</p> <p>(b) be deemed to be in material breach for the purposes of s 57(1) of the Mining Act 1998. This creates the condition precedent to the cancellation of a Mineral Right.</p> <p>Pt VI applies to artisanal and small scale mining. Reg 42 states that any person who contravenes any provision under Pt VI shall be guilty of an</p> |

⁴¹⁹ “Serious environmental harm”, “material environmental harm” and “environmental harm” are all defined in s 2.

⁴²⁰ Limit of discharge of pollutants – either exceeding licence conditions, or breaching certain specified standards.

⁴²¹ Reg 19(2) provides “If, as a result of the third party audit and validation or of the licensing authority’s own investigations, the monitoring arrangements or response procedures are, in the opinion of the licensing authority, inadequate or insufficient, the licensing authority shall notify the holder of the authorisation. On such notification, the holder shall, within one month, take such additional measures or adopt appropriate procedures as agreed with the licensing authority.”

⁴¹³ \$124,875 for an individual and \$624,375 for a corporation.

⁴¹⁴ \$62,625 for an individual and \$313,125 for a corporation.

⁴¹⁵ Defined in s 15.

⁴¹⁶ \$62,625 for an individual and \$313,125 for a corporation.

⁴¹⁷ \$12,375 for an individual and \$61,875 for a corporation.

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|--|--|---|---|--|
| | | subsection (1) or (2) is punishable on conviction by imprisonment for a term not more than 7 years, a fine not more than 420 penalty units, or both. ⁴¹⁸ | Default penalty: max K2,000. Note: all are offences of strict liability, ie “there is no requirements to prove that the person intended” the harm: ss 11(2), 12(2), 13(2). | offence and liable to a fine – max 50,000 shillings or 3 months gaol or both. |
| General defence provisions | s 436(2) “it is a defence to a charge of unlawfully causing environmental harm to prove – (a) the harm happened while an activity (that is lawful apart from this Act) was being carried out; and (b) the defendant complied with the general environmental duty”. | No general defence specified. | | No general defence specified. |
| Liability of Directors of Corporations | s s 493 – liability of “executive officers” | s 494 provides civil penalties for “executive | s 126 – liability of “executive officers” | s 113 – “Where an offence which has been |

⁴¹⁸ Pursuant to s 4B(3) Crimes Act 1914 (Cth), a court can fine a body corporate up to 5 times the maximum amount the court could fine an individual. 1 penalty unit = \$110.

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|----------------------|--|---|---|--|
| | “(2) If a corporation commits an offence against a provision of this Act, each of the executive officers of the corporation also commits an offence, namely, the offence of failing to ensure the corporation complies with this Act.” | officers” and s 495 provides criminal liability for executive officers provided, in both instances, certain offences are conducted by the corporation and: “(b) an executive officer of the body knew that, or was reckless or negligent as to whether, the contravention would occur; and (c) the officer was in a position to influence the conduct of the body in relation to the contravention; and (d) the officer failed to take all reasonable steps to prevent the contravention.” (ss 494, 495). | “(3) Where a corporation commits an offence against a provision of this Act, each director and executive officer of the Corporation who has – (a) aided, abetted, counselled or procured the contravention; or (b) been knowingly concerned in, or party to, the contravention, is also, subject to subsection (4), guilty of an offence of failing to ensure the corporation complying (sic) with this Act.” | committed by a body corporate is proved to have been committed with the consent or connivance of, or to be attributable to any neglect on the part of, a director, manager, secretary or other similar officer of the body corporate, or of any person who was purporting to act in any such capacity, he, as well as the body corporate, commits an offence and shall be punished accordingly.” |
| Third party standing | For mining – public have right to submit an objection, thereby becoming a “dissatisfied person” who then has a right of appeal to | Close to open standing. Applicants for injunctions (s 475) and applicants seeking a review of administrative decisions (s | None | None |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|--|---|--|-----------------------------------|--|
| | <p>the Land Court (ss 216-218, 520, 524).</p> <p>Third parties can also seek restraint orders to restrain an offence or threatened or anticipated offence, but need leave of the Planning and Environment Court – s 505(1)(d), (2).</p> | <p>487) will have standing if:</p> <p>“487(2)(a) the individual is an Australian citizen or ordinarily resident in Australia or an external Territory; and</p> <p>(b) at any time in the 2 years immediately before the decision, failure or conduct, the individual has engaged in a series of activities in Australia or an external Territory for protection or conservation of, or research into, the environment”. OR</p> <p>“487(3)(a) the organisation or association is incorporated, or was otherwise established, in Australia or an external Territory; and</p> <p>(b) at any time in the 2 years immediately before the decision, failure or</p> | | |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|-------------------------|--|--|---|---|
| | | <p>conduct, the organisation or association has engaged in a series of activities in Australia or an external Territory for protection or conservation of, or research into, the environment; and</p> <p>(c) at the time of the decision, failure or conduct, the objects or purposes of the organisation or association included protection or conservation of, or research into, the environment.”</p> | | |
| <p>Appeal processes</p> | <p>For mining – appeal from EPA’s decision to the Land Court who makes a recommendation to the Minister administering the Environmental Protection Act. The Minister decides the application after considering</p> | <p>s 487 – the Minister</p> | <p>s 68 – appeal from Director of Environment’s decision to the Environment Council (merit review) then to the National Court (on a question of law).</p> | <p>The Commissioner of Minerals decides a range of disputes listed in s 101. Commissioner’s orders can be lodged with any civil court within the local limits of the jurisdiction for</p> |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|---|--|--|--|---|
| | this advice/ advice from other relevant Ministers. (ss 219-226; 523-530). Summary of process is detailed in s 197. | | | enforcement: s 102. Appeal decision of the Commissioner to the High Court: s 103. |
| Environmental impact assessment process | Yes – for mining activities (non-standard) – ss 198-199, 246-249. | Yes – ss 101-105. | Yes - for level 2 and level 3 activities – ss 47-59. | Yes – reg 4 - an environmental impact statement and an environmental management plan must accompany applications for Mineral Rights in the following categories: <ul style="list-style-type: none"> • all special mining licence applications • mining licence and gemstone mining licence applications specified in Regs, Sch 1. |
| Government body responsible for administration of Act | Environmental Protection Agency, Queensland. | Department of Environment and Heritage | Department of Environment and Conservation | Ministry of Energy and Minerals |

| | Environmental Protection Act 1994 (Qld) | Environment Protection and Biodiversity Conservation Act 1999 (Cth) | Environment Act 2000 (PNG) | Mining Act 1998; Mining (Environmental Management and Protection) Regulations 1999 (Tanzania) |
|---|---|--|---|---|
| Exemption provisions in the legislation | The mining licensing provisions don't apply to mining projects established under their own legislation. There are 15 such projects, which are defined in the Act as "special agreement Acts". | | s 3(2) – "The provisions of this Act may apply to projects to which the Mining (Bougainville Copper Agreement) Act, Mining (Ok Tedi Agreement) Act and Petroleum (Gulf of Papua Agreement) Act apply to the extent that those Acts provide for the application of this Act. | s 3(1) "Having given due consideration to the objectives of these Regulations and the nature of the proposed mine, the Minister may direct that – (a) A particular application is exempt from these Regulations; (b) A particular application requires consideration of environmental information and is subject to these Regulations. (2) Subject to regulation (1) such a directive shall be accompanied by an explanation by the Minister, stating the reasons for his decision, which shall be available for public scrutiny." |

FOUR

GEO-POLITICAL BACKGROUND

4.1. Introduction

As Chapter 2 illustrates there are a plethora of multilateral and bilateral international conventions and treaties which detail a range of, often putative, environmental obligations and commitments. These have been signed off by both developed and developing countries.

⁴²² Meanwhile, the major transnational mining companies have initiated their own sustainable development agenda on a global scale which ostensibly treats both developed and developing countries on a similar basis. This has been done for a variety of reasons that have already been discussed, including pre-emption of further regulation, the increased scrutiny by NGOs, the growth of environmental consciousness in the developed west, the instantaneous transmission of images and opinions via the internet and mass media and potential third party actions.

As Chapter 3 indicates, while the impetus for legislation may vary between developed and developing countries, the end products, on the face of the statutes of the jurisdictions considered, are similar and echo the global environmental commitments of sustainable development, ecologically sustainable development, the precautionary principle and environmental impact assessment. However, the acid test of any regulatory system is in its implementation.

In order to assess the environmental performance of transnational corporations operating in developed and developing countries, and to determine which factors are tending to drive corporations in meeting, or exceeding, (or failing to meet) declared environmental standards, this Chapter will briefly sketch the geo-political factors which have a profound bearing on corporate behaviour.

4.2. The Economic Context and the North-South Divide

One of the pivotal concerns of this work is to examine the environmental regulatory structures in both developed and developing countries in order to access the drivers for environmental performance of transnational mining companies. The ‘drivers’ for environmental performance that have been discussed already – the rise of environmental consciousness, the international influence of the NGO movement and the general and industry specific international meetings and agreements. However the theoretical basis of this thesis would not be complete without an overview of the political realities and tensions between developed and developing countries – often referred to as the ‘north-south’ divide.⁴²³

⁴²² Australia’s refusal to sign the Kyoto Protocol (until the election of the Rudd government in 2007, who ratified the Protocol) is a rare example of a developed country refusing to fall into line. The USA, of course, is and remains a special case.

⁴²³ The ‘North’ is used as a synonym for First and Second World, industrial, or developed countries. The ‘South’ is used as a synonym for Third World, or developing countries. David Korten in *Getting into the 21st Century*, Kumarian Press, Connecticut, 1990, 7 notes that the North/South terminology presents a greater symmetry than the First World/ Third World terminology because “there is less implication that one advances by becoming more like the other”.

The reality of doing business in poor countries versus rich ones, given their capacity to enforce the legislation and the sometimes institutional corruption, is a critical factor in any attempt to assess the environmental performance and the credibility of the mining sector.

Implicit in this issue is one of the most neglected ‘components’ of the definition of sustainable development – intra-generational equity. Whilst international conferences, and even domestic policy documents,⁴²⁴ focus on various components of sustainable development, such as the precautionary principle and inter-generational equity, *intra-generational equity* is often passed over.⁴²⁵ Yet as is commonly understood today, environmental problems are the first truly international problem, with trans-boundary pollution, greenhouse emissions, acid rain and the like not recognising state boundaries.

The developed countries of the world include, inter alia, the United States and Canada, Europe, the former Soviet Union, Japan, Australia and New Zealand. Although not all of these countries are located in the north, the term ‘North’ is generally used to refer to these industrialised, or developed, countries. Significant disagreements do of course exist between these countries.⁴²⁶ However, they share many characteristics that can be generalised. The North is relatively wealthy; the level of economic development is relatively high; social factors such as literacy rates and health indices are strong and environmental concerns have typically been on the national agendas of these countries for several decades. The North generally has a highly organised civil society, including successful and effective environmental organisations. It was also, until recently, the primary consumer of natural resources and the primary polluter.⁴²⁷ It is also usually more powerful in foreign affairs. For these reasons, Hunter, Salzman and Zaelke state that “the North typically sets the international agenda with respect to global environmental issues”.⁴²⁸

Developing countries are termed the ‘South’. They are less wealthy in economic terms; many have large populations that are poor, barely surviving at or below the poverty level. Illiteracy, lower life expectancies and famine plague many countries in the South. However, the South contains much of the world’s natural wealth, such as the largest standing tropical forests, most of the world’s biodiversity and the highest concentrations of many of the world’s most valuable minerals.

Whilst the World Commission on Environment and Development spoke of “Our Common Future”, debate did at that time, and still does, rage as to whether developed countries should be required to make substantial reductions in things such as their rates of natural resource depletion and their emissions before developing countries assume obligations to do likewise. Should the North commit in advance to pay to the South the incremental costs of reduction in pollution and resource depletion and, if so, who should decide what those incremental costs are? Should the developing countries have preferential access to Western technologies on non-commercial terms to help their economies develop in a more sustainable manner? Implicit in this debate is the question whether developing countries are expected to tread the

⁴²⁴ for example, Australia’s *National Strategy for Ecologically Sustainable Development*, which was discussed in Chapter 3.

⁴²⁵ As it is, for example, in the *Integrated Planning Act, 1997* (Qld).

⁴²⁶ For example, the different positions taken by Australia and the United States and the European Union over ratification of the Kyoto Protocol.

⁴²⁷ China is predicted to become the world’s largest emitter of CO₂ by 2010 and India is not far behind.

⁴²⁸ Hunter D, Salzman J and Zaelke D, n 156 above, 277.

same historical path of the already developed nations or whether ready access to developed technologies could transect this apparent historical equation.

Although these questions are easily answered in the environmental context, given the political dimension, they may often be insoluble. For example should countries like the United States and Australia be persuaded to make their technologies which are more environmentally and economically efficient available to, say, the People's Republic of China, who may well be a major competitor?

Clearly, achieving unity among developing countries can be difficult. Whilst many of the developing countries have signed off on the 'foundation' international policy documents which have been discussed in Chapter 2, obtaining consensus on more specific environmental issues, such as reduction of greenhouse gas emissions, has proven difficult.

The 'bargaining power' of various developing countries also of course differs and countries such as the People's Republic of China (because of population and economic might) and India (because of its population and increasing economic power) can have greater bargaining power than some of the smaller countries. For example, Elliott notes that the impact of sea-level rises on low-lying island states often translates into less, rather than more, political leverage, especially if such countries have little to offer by way of bargaining chips.⁴²⁹

Additionally, the smaller, poorer developing countries often have a limited range of technical, scientific, legal and economic expertise upon which to call. Expertise is therefore likely to be quite thinly stretched.⁴³⁰ This has a direct effect on the ability of such developing countries to structure and enforce their environmental laws to the standard of a developed country such as Australia.

Various international declarations have attempted to address this issue. The Stockholm Declaration 1972, for example, stressed that in developing countries, most of the environmental problems are caused by underdevelopment, and that, therefore, developing countries needs included access to aid, technology and other assistance (principles 9-12). It also acknowledged, in principle 23, that the standards set by industrialised countries might not be appropriate for developing countries.

Likewise, the Rio Declaration 1992 reaffirmed the right to development in principle 3, emphasised the importance of eradicating poverty in principle 5 and required that the 'special needs' of developing countries be given priority in principle 6. Principle 7 also restated the idea of "common but differentiated responsibilities" and noted the special responsibility that developed countries had "in view of the pressures their societies place on the global environment and of the technologies and financial resources they command".

Many of the chapters of Agenda 21 reflected, in their generalities if not in their specificity, developing country concerns.⁴³¹ Thus there are chapters on the importance of eradicating poverty, on changing consumption patterns (with an emphasis on action in the North), on

⁴²⁹ Elliott Lorraine, n 161 above, 172.

⁴³⁰ For example, at the early meetings of the Intergovernmental Panel on Climate Change (IPCC), only 11 of the G77 countries were able to send climatological experts, restricted by cost and expertise. That number increased to 33 by February 1990 after the IPCC established a Special Committee on the Participation of Developing Countries, intended specifically to 'promote the full participation' of developing countries in IPCC activities.

⁴³¹ Elliott Lorraine, n 161 above, 175.

financial resources and mechanisms and technology transfer – although, as mentioned above, these are highly contentious issues.

These general principles in Agenda 21 have been reasserted in a number of other environmental agreements.⁴³² The Montreal Protocol 1990, for example, acknowledged in the preamble that ‘special provision is required to meet the needs of developing countries’ for substances that might be ozone-depleting and provided, under article 5, for a 10 year grace period for developing countries to comply with restrictions as long as certain requirements are met. The Framework Convention on Climate Change emphasises the right for a country to determine its own development priorities and acknowledges, in article 3.2 that “the specific needs and special circumstances” of developing countries “should be given full consideration”. It recognises the need for equitable burden-sharing and for developed country parties to mobilise financial resources, and to provide “new and additional” financial assistance to assist vulnerable developing countries to meet their obligations and to prepare for and adapt to adverse effects of climate change.

Whether any of the above suggestions are practical remains to be seen. Almost certainly however their implementation in a wholehearted manner would require a massive shift of investment capital to under developed regions and this is something which western capital markets (who remain quite independent of sovereign governments) have yet to be convinced is in the interests of their shareholders. In the absence of the ability to independently develop ie to utilize locally available sources of investment capital (or easily access overseas sources) underdeveloped countries may be forced into the role of suitors and in this role they may be subject to marked disadvantages which may include being the focus of significant environmental harm.

4.3. The political environment

There is a simple fact which underpins the assumptions in this thesis, namely that nation states vary in the degree of sophistication of their institutions, in their attachment to fundamental principles such as the rule of law, in their commitment to transparency and fair dealing and in many other ways.

It is not the function of this work to provide a detailed analysis of the historical, cultural or political factors which have created such relative divisions between states over time. However some reference should be made to the issues which now make such perceptions relevant to any analysis of the behaviour and motivations of TNCs across a spectrum of nation states.

This spectrum is self-evident in the case of the states under consideration here. Tanzania could, perhaps optimistically, be called a “transitional” state (at least in the mind of the World Bank) now that the socialist heritage of Nyerere has been supplanted by a new-found belief in the value of free markets and globalization. PNG on the other hand is at risk of becoming a “failed” state where the reality of declining government revenue, inadequate foreign investment, increasing law and order problems and decaying institutions combine to render the state essentially ungovernable. Both states lack, in varying degrees, the essential

⁴³² Ibid, 175.

elements which, in the case of Queensland, have coalesced to form a stable basis for a civil society under law.

The core question however is not the reality of these perceptions and divisions, as indicated above but what, if any, obligations can and should be placed on TNCs carrying on business in such states. There are three factors which *could* combine to create the basis for a return to the old patterns of “frontier” capitalist behaviour in which all matters, the environment included, become subservient to return on total assets and where the pursuit of profit displaces other values.

These factors are:

1. The reality of global competition in a global economy
2. The significance of corruption
3. The power and influence of TNCs

4.3.1. Global competition in the global economy

Largely as a result of international bodies such as the World Bank, the IMF and subsidiary bodies such as the African and Asian Development Banks, transitional economies such as Tanzania and PNG have been defined *into* the global economy. With few avenues available for aid and infrastructure capital, and with the collapse of the bipolar political landscape typified by the Cold War, they have had little option but to play by the definitional rules established by the developed western economic systems. Membership of the global economy often means increased access to western extractive industries but with restricted (or no) access to western agricultural markets particularly in the US and the EU.⁴³³

It also means however that such states are in a constant round of competition with other less developed economies for capital and investment. As Richardson has pointed out, “[all] Third world nations are constrained by their position in the global economic system”.⁴³⁴ International investment activity by TNCs is conditioned by many factors but uppermost in the list remains a calculation of traditional return on investment and a calculation of aggregate risk, the latter including an assessment of the political and institutional predictability (or risk) of the host country.

Paradoxically, for a transitional economy, both these factors may tend to point in opposite directions. For example, in response to the first factor the host state may be tempted to dilute environmental requirements to assist an investment decision in its favour. In response to the institutional factors which were developed in Chapter 3, however they will be tempted, in fact forced, to adopt western paradigms of environmental regulation. Given this dichotomy, the tension then could be said to exist between domestic reality and institutional perception.

⁴³³ Agricultural subsidies in just the US, the EU and Japan represent 80% of the world total: Tanaka Maki, “Bridging the gap between Northern NGOs and southern Sovereigns in the Trade – Environment Debate: The Pursuit of Democratic Dispute Settlements in the WTO under the Rio Principles” (2003) 30 *Ecology Law Quarterly* 113 at 131 (fn 96).

⁴³⁴ Richardson BJ, “Environmental Law in Post Colonial Societies: Straddling the Local-Global Institutional Spectrum” 11 *Colo J International Law & Policy* 1

Of course similar pressure can come to bear even in respect of developed economies such as Australia, however the institutional maturity of such countries which can bring independent anti-corruption agencies to bear and which encompass organized pressure groups and a sophisticated media, tend to make wholesale regulatory trade-offs a much more difficult thing to manage.

In the absence of such developed and enforced legal strictures, the risk is of a “race to the bottom” where environmental standards are progressively weakened by already weak states in an effort to attract illusive foreign investment particularly in the minerals sector. Tanaka has summarized the potential dynamic as follows:

If national environmental standards were applied only to domestic production processes, industries would migrate into countries with loose environmental standards to take advantage of lower compliance costs. In response, Northern governments would relax national standards to attract investments, while “pollution havens” would emerge in the South.⁴³⁵

In fact the response of “Northern” governments to the threat of losing investment to low compliance cost states has not followed this predicted pattern. Northern states have, to an extent unforeseen by the early commentators, become the creatures of their own developed environmental consciousness. Their regulatory and legislative apparatus, reflecting a more or less sophisticated public opinion, is simply no longer capable of responding to an economic challenge in the predicted fashion. The downside of this inability is mediated somewhat by more complex economic factors associated with the realities of global trade. Though, for example, the recent decade has seen a net loss of ‘Northern’ investment and employment in favour of countries such as China and Mexico, some 60% of all manufactured goods exported from those countries to the US are produced by US owned corporations. Economic benefits and detriments are consequently much more difficult to calculate.

However the first part of Tanaka’s concern continues to be highly relevant. As an indication of the pressure on governments in transitional economies, the official website of the Tanzanian High Commission in London lists five “competitive grounds” which are presumably attractive to international mining companies. Competitive ground number four states that the government offers:

A simplified investment approval procedure with a favourable regulatory framework and a competitive package of fiscal incentive (sic) for Mining investment.⁴³⁶

To be fair, most governments, including those in developed economies, are wont to use similar expressions and to offer “favourable regulatory frameworks” in their role as suitors to large scale investors. This may take the form of preferential rail freight rates, exemptions from a range of taxes, heavily subsidized power supply and such like. The closest such “competitive packages” come to a diminished concern for or enforcement of environmental standards *could* be the use of specific legislation which bypasses the conventional, statutory planning processes. This process could be described as ‘facilitation’ and as an inevitable element of any capitalist system – a form of generating investment benefits. To be legitimate however there must be a direct relationship between public cost (infrastructure or the

⁴³⁵ Tanaka M, “Bridging the Gap Between Northern NGOs and Southern Sovereigns in the Trade-Environment Debate” 2003, 30 Ecology Law Quarterly 113 at 119.

⁴³⁶ Tanzania High Commission, “Competitive Investment Climate” at <http://www.tanzania-online.gov.uk/MiningPolicy.htm> (accessed 23 March 2004).

extraction of a public resource) and public benefit (royalties, employment and taxes). If private benefit transects the equation then it becomes corruption.⁴³⁷

Having said this however there is equally little doubt that transitional economies with borderline revenue are far more pressured and perhaps far more susceptible to seemingly attractive inducements than their competitors in the developed world, especially where scrutiny is limited and citizens are less informed. This potential susceptibility, a direct function of their inclusion in a global economic system, merges with the other factors, corruption and the power of TNCs to create a cocktail of doubt on environmental matters.

4.3.2. Corruption

It is a common-place observation that one of the banes of post-colonial Africa is the scourge of corruption. There is little scope in a work such as this to canvass the deplorable and depressing legacy that corruption has left in its wake since the independence wave of the 1960s.

The important point to stress is the obvious one, namely that corruption at the level experienced in many African countries during this period is quite antithetical to the very idea of the nation state. This, of course, is institutional corruption where the borderlines between public and private avarice are so indistinct to be meaningless and where all the niceties of western drafted legislation are eroded to an irrelevance.

There are many reasons for it. Oko, writing specifically about the Nigerian experience (though his observations are equally applicable to Tanzania⁴³⁸ and PNG) gives four reasons for its rise: the lack of honest leadership, economic adversity, government control of the economy and ethnic loyalties. He comments:

Corruption is prevalent in Nigeria not simply because public officials lack appreciation of ethical standards or are unable to control their greedy tendencies. Rather, public officials engage in corrupt activity for a variety of reasons, including financial hardship, persuasion by friends and colleagues, desire to please kinsman, and, most importantly, because existing institutions and social practices encourage, promote, and celebrate corruption.⁴³⁹

Volumes have been written, and will continue to be written,⁴⁴⁰ about this phenomenon but the direct concern here is the potential effect of such endemic corruption on the enforcement of environmental standards generally. On this point there is a clear consensus, both in the west and in the transitional economies themselves. An all-pervading climate of corruption will inevitably undermine all good intentions and the existence of sophisticated, western derived, environmental regulation is of little consequence if 'dash' is a ready substitute for compliance.

⁴³⁷ Arguably, the allocation of shares in Comalco to Ministers in the Queensland government in the 1970s came very close to meeting this definition.

⁴³⁸ See the Annual Report of the Prevention of Corruption Bureau, Tanzania Government Website, <http://www.tanzania.go.tz/pcb/corruption> (accessed 26 March 2004).

⁴³⁹ Okechukwu Oko, "Subverting the Scourge of Corruption in Nigeria: a Reform Prospectus" 34 NYUJ International Law & Policy 397.

⁴⁴⁰ For the role of elites in post-colonial Africa see Lynch OJ, "Legal Challenges Beyond the Americas: Indigenous Occupants in Asia and Africa" 9 St Thomas Law Review 93 at 94 and specifically on environmental regulation in post-colonial states, see note 2 commencing at page 2.

Out of this consensus a change has occurred in attitudes to corruption in such states. Largely gone is the western leftist apologia so prevalent in the last four decades which attempted to justify corruption as a natural post-colonial phenomenon after a century of colonial oppression.⁴⁴¹ In its place there is now a far more sophisticated understanding of the exploitative role of civil and military elites and the price which has been paid by the poor for the greed and avarice of their local oppressors. This, to anthropologist David Hyndman, is the *real* post-colonial reality.⁴⁴²

The casualties of corruption are the indigenous peoples themselves. It is they who pay the price for a discredited and partial legal system, an economy going backward and an environment despoiled. The factor around which this litany of misfortune is centred is not, of course, the environment but rather human rights, and it is this factor, admittedly in company with the environment that now conditions western attitudes to many of these states.

Because aid monies, investment capital, technology and markets are largely western sourced it follows that it is western sensitivities and western ideas which, in the main (though not totally), determine the agenda. This is not to say however that western inspired programs of reform or the conditionality of western aid is universally deplored by local peoples. On the contrary, often a large portion of the population, both educated and uneducated, have despaired at the situation in their countries and are prepared to welcome most sincere albeit outside attempts to address the problems.⁴⁴³

The following are the principal mechanisms now being used to address the issue of corruption and/or the environment in so-called client states.

- a) Extra-territorial enforcement
- b) Institution building
- c) Integrity Pacts

A fourth factor, Industry Codes of Practice has already been considered in detail in Chapter 2 .

Extra-territorial enforcement

Two Acts of the US Congress at least open the possibility of prosecuting corporations in their home jurisdiction for tendering bribes in foreign territory on the one hand and for human rights abuses on the other. These are respectively *The Foreign Corrupt Practices Act* (FCPA)⁴⁴⁴ and *The Alien Tort Claims Act* (ATCA).⁴⁴⁵

⁴⁴¹ See Clark HR, "Sustainable Economic Development: What The World Owes Africa, and What Africa Owes Itself" (2003) 7 J Gender Race & Justice 75.

⁴⁴² Hyndman David, *Ancestral rain forests and the mountain of gold: indigenous peoples and mining in New Guinea*, Boulder, Westlaw Press, 1994. See also Nader L, "The Life of the Law: A Moving Story" 36 Val UI Rev 655.

⁴⁴³ Debate still continues however on whether for example some of the World Bank programs are directed at the appropriate levels. The local dimension appears often to be overlooked in favour of "national" schemes. See Richardson BJ, n 421 above, for a detailed critique and a positive outline for local participation. For the local dimension in PNG see: Telesetsky A, "The Viability of International Conservation Easements to Protect Papua New Guinea's Declining Biodiversity" 13 Geo Int'l Envtl L Rev 735.

⁴⁴⁴ 15 USC 78dd 1, 2, 3, 1977.

⁴⁴⁵ 28 USC 1350, 1982.

Questions of space preclude a detailed examination of either statute. Suffice it to say however that both Acts contained significant procedural difficulties. In the case of the ATCA environmental damage must be able to be encompassed under the jurisdiction of international human rights law⁴⁴⁶ and, in the case of the FCPA, definitional confusion has created difficulties for companies trying to ascertain the correctness or otherwise of particular corporate actions. The lack of case law in both instances merely confounds the problems.⁴⁴⁷

At common law in at least some jurisdictions an action in nuisance could lie provided a sufficient nexus can be established to found jurisdiction. The *Ok Tedi Case* brought in Victoria is a case in point.⁴⁴⁸

Overall however US attempts to create some form of *regnum americanum* in international law have foundered in their courts on issues such as comity, and the non-existence of international environmental torts generally mediates against concerted attempts to enforce environmental standards (or indeed human rights) extraterritorially.

Institution Building

Global institutions such as the World Bank together with the various aid organisations of contributing states have invested large sums, particularly in the last decade, for what has been termed ‘institution building’. As a policy it has its genesis in the exasperation long experienced by the international lending institutions and donor states at the waste and corruption in recipient states.⁴⁴⁹ While the Cold War raged little could be done. However, once it had been won a concerted attempt at ‘value inculcation’ could commence.

There are two levels of assumptions, both intermixed, which motivate these programs. At a micro level, the establishment of a commitment to the rule of law and a consistent application of internationally agreed norms in commercial law will contribute to overall economic growth. At a macro level, the assumption is that the eventual establishment of genuinely democratic political institutions in the recipient countries will contribute to the protection of environmental values. Again, it is not the purpose of this work to enter wholeheartedly into this debate. The following short comments however can be made.

First, it is doubtful whether significant values such as the rule of law can really be inculcated in a week long session of lectures.,⁴⁵⁰ Second, there is only a loose cognitive assumption that adherence to democratic values and the creation of democratic political institutions will enhance environmental protection.

⁴⁴⁶ Bridgeman N, “Human Rights Litigation under the ATCA as a Proxy for Environmental Claims” (2003) 6 Yale Hum Rts & Dev LJ 1.

⁴⁴⁷ For an examination of the *Foreign Corrupt Practices Act* see Posandas A, “Combatting Corruption Under International Law” 10 Duke J Comp & Int’l L 345 and Randall LH, “Mutilateralization of the Foreign Corrupt Practices Act” 6 Minn.J.Global Trade 657. For an overview of *The Alien Tort Claims Act* see Osofsky HM, “Human Rights Under the Alien Torts Statute: Redress For Indigenous Victims of Multinational Corporations” 20 Suffolk Transnat’l L Rev 335.

⁴⁴⁸ This action has been discussed in Chapter 3.

⁴⁴⁹ Successive Australian governments have experienced this problem in respect of aid to PNG. It is because of the threat of corruption that Australia now insists on “tied” or “program” grants of aid.

⁴⁵⁰ An alternative might be to simply triple the salaries of members of the judiciary. This is the approach which has been adopted, perhaps redundantly, in Singapore.

The implicit correlations appear to be as follows: adherence to the rule of law will create the preconditions for more democratic institutions to emerge, a democratic political structure will create more wealth, the combination of wealth and democracy will ultimately enhance environmental values throughout the country. Intuitively these assumptions appear to be correct and there is some analysis that suggests they are.⁴⁵¹ Unacknowledged however is the reality that the developed, wealthy, democratic west continues to contribute the world's largest proportion of waste and pollution as a direct function of wealth and consumption. Consequently, given the success of such programs at a micro and ultimately at the macro level it is still possible that although some aspects of the local environment could improve (eg sanitation) other areas (eg biodiversity) could, even more rapidly, degrade.⁴⁵²

Integrity Pacts

A relatively recent initiative of London-based NGO, Transparency International, an Integrity Pact, results from the mutual and public acknowledgment by both the national government and the private sector contracting party that neither will have recourse to or seek bribes, and that the bidding process will be conducted on the basis on honesty and transparency.

Seven African states, including Tanzania have mutually agreed to incorporate such a program into their bidding practices. Their request however to the World Bank for an Integrity Pact to be agreed to by that institution was rebuffed. The Bank continues to feel that significant reform of governance standards in the participating states is required before such a program could claim a degree of legitimacy.⁴⁵³ Almost certainly the World Bank fears that nominal participation in such a program could be used as a surrogate for genuine reform at the institutional level.

Despite this the Integrity Pact framework is likely to be increasingly utilised particularly in the area of public utility contracting where the state has a degree of flexibility in managing those arrangements.⁴⁵⁴

4.3.3. The Power and Influence of TNCs

All the mechanisms considered above are merely attempts to address the continuing problem of corruption in transitional states. If corporations can obtain licensing approvals by means of bribes then subsidiary issues such as EIAs, compliance and reclamation may also be addressed in a half-hearted manner by local authorities. It has to be acknowledged however that part of the perception concerning the likely behaviour of international mining companies in these situations within many NGOs is unsophisticated and decidedly unsubtle. To condemn an entire industry on the basis of historical 19th century examples (say, the behaviour of the Nestle company in West Africa in the 19th century) or because of ideological objections to capitalism per se, is neither objective or fair. Equally, in an era of instantaneous

⁴⁵¹ The experience of Russia after communism may be a (provisional) case in point.

⁴⁵² Matthews E and Mock G "More Democracy, Better Environment?", World Resources Institute at http://www.earthtrends.wri.org/conditions_trends/feature_selec (accessed 14 June 2004).

⁴⁵³ See George BC and Lacey KA "A Coalition of Industrialized Nations, Multilateral Development Banks, and NGOs: A Pivotal Complement to Current Anti-Corruption Initiatives" (2000) 33 Cornell Int'l LJ 547.

⁴⁵⁴ They have recently been used in Ecuador, Panama and Argentina. However, most large-scale public utility projects in developing states are managed by either the donor state organisation or by the lending institution who invariably will run their own external tendering process.

communication and a pervasive mass media, to simply assume that such companies are so environmentally cavalier as to put their international reputations at risk at each and every (or any) point for some perceived monetary advantage is questionable..

In one sense, beyond the legal fiction of corporate personality, TNCs can hardly be said to exist, being merely a group manifestation of aggregate opinions, perceptions, aspirations and actions. They are collections of individuals who come together for a collective purpose and many of those individuals may have opinions on environment matters as least as strongly held as those in various NGOs.

Having said that, it would be equally naive to imply that corporations may not break the law or that individuals within those corporations, under pressure from superiors, budgets or corporate goals, may not see local regulations as an obstacle in the way of achieving an above-average performance appraisal and a substantial salary increase. Corporations are human institutions and humans, as exemplified by recent experiences in Enron, WorldCom and Parmalat, are inherently fallible.

Perhaps the principal factor behind the ongoing suspicion directed at TNCs by the environment movement in general is their sheer size. This seems to imply a degree of omnipotence in their dealings with transitional states. An ability to manipulate, coerce and generally get their own way. Whether, of course, this is correct is the subject of this thesis though limited to a small number of corporations and to two transitional states.

The graphs below give a picture of the disparity in size between the TNCs which figure in the case studies and the recipient states.

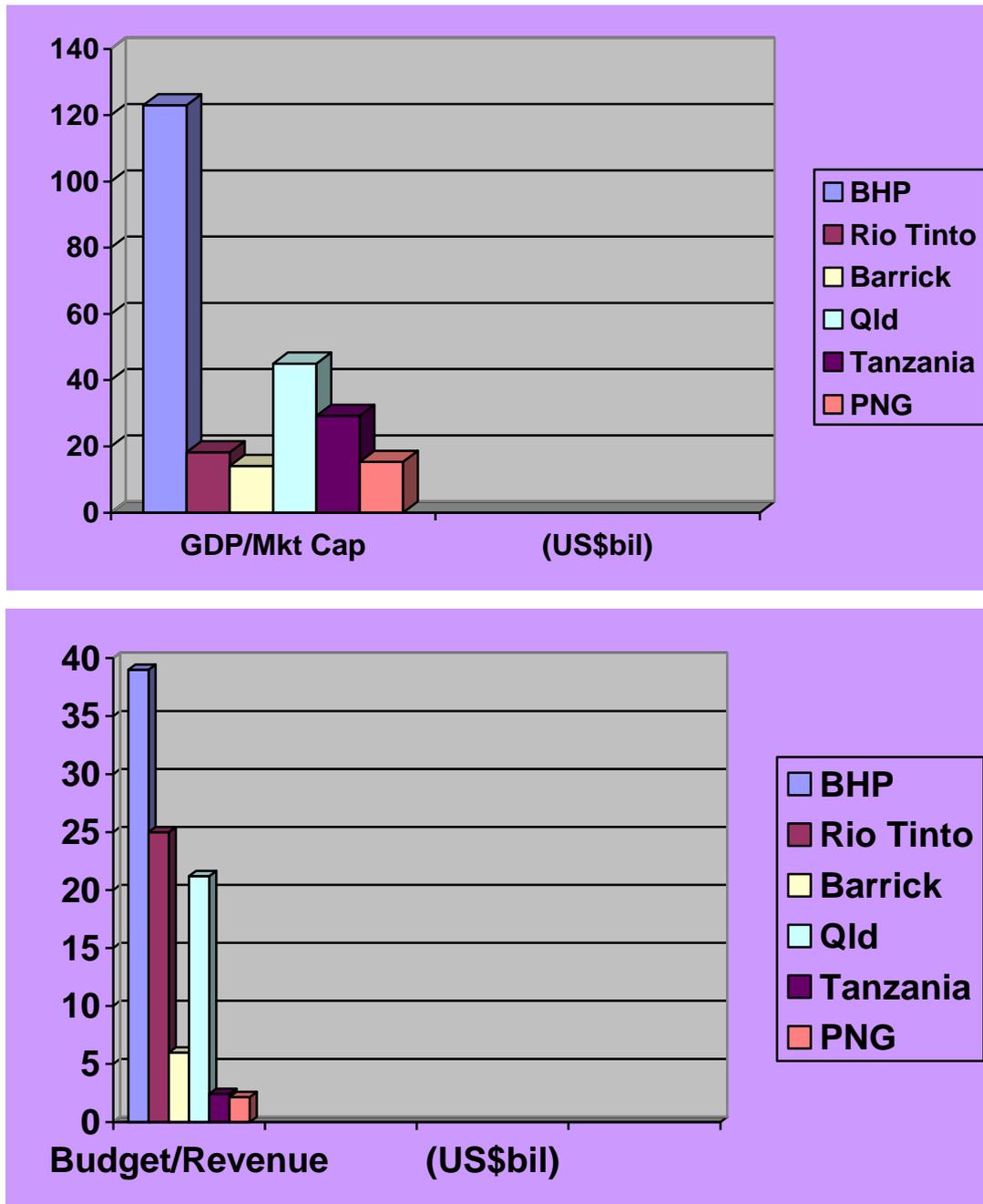


Figure 4.1A - Comparison of the GDP of Queensland, Tanzania and PNG with the market capitalization of BHP Billiton, Rio Tinto and Barrick.

Figure 4.1B – Comparison of the budget of Queensland, Tanzania and PNG with the revenue of BHP Billiton, Rio Tinto and Barrick.

The analysis is indeed startling. The annual revenues of BHP Billiton alone exceed the combined annual budgets of Tanzania and PNG by a factor of eight and their combined market capitalization is twice the combined GDPs of Tanzania and PNG. Only in the case of Queensland does some sense of symmetry emerge although even here the market capitalization of BHP Billiton exceeds the entire net worth of the State.⁴⁵⁵

⁴⁵⁵ Figures from “The World Factbook” Central Intelligence Agency, <http://www.cia.gov/cia/publications/factbook/geos/>.

Leighton and Castaneda provide an interesting summary of the relative size of TNCs:

... yearly revenues of the largest TNCs now exceed the gross domestic product of whole countries, and in fact, whole regions. Of the 100 largest economies in the world, 51 are corporations; and only 49 are countries.⁴⁵⁶

Analysis could continue along these lines but to no real purpose. Suffice it to say TNCs are metaphorically the 800lb gorilla. The question is whether they can really do what they like.

Opinions differ. Mayer, for example, can state rather blandly that, "... many TNCs do seem to have significant influence or power relative to governments of developing nations" but in the footnote to the quotation concedes that, "It is beyond the scope of this article to definitively and empirically defend this claim".⁴⁵⁷

4.4. Conclusion

Mayer's honest concession points, in fact, to the problem. TNCs may well be part of the problem (though objective evidence rather than hyperbole is significantly absent) but they are also, as Brietzke suggests, demonstrably part of the solution.⁴⁵⁸

TNCs are increasingly aware of this debate, as are the other global interest groups. However the issue seems to resolve itself to two simple propositions: viz if continued sanguinity is the only valid response to the issue of governance in Africa and PNG then the TNCs may, in fact, be the only solution to the problem of ongoing environmental and ecological degradation.

TNCs as a group acknowledge the position they are in. If undeveloped nations cannot govern themselves effectively then corporations doing business in those countries must be clearly seen by locals and the broader western public as behaving in a responsible manner in western terms – hence the increased importance of the role of self regulatory mechanisms.

There is certainly a moral obligation on their part not to undermine the fledgling environmental protection processes in the host states and there is probably even a further obligation to assist those counties to enhance those protection processes. The Global Mining Initiative and the role played by the industry during the Johannesburg Earth Summit⁴⁵⁹ typify the current response of the industry to the demands being placed upon it.

⁴⁵⁶ Leighton M and Castanada E, "Civil Society Concerns in the Context of Economic Globalization" (2002) 15 *Transnat'l Law* 105.

⁴⁵⁷ Mayer DO, "Corporate Governance in the Cause of Peace: An Environmental Perspective" (2002) 35 *Vand. J. Transnat'l Law* 585.

⁴⁵⁸ Brietzke PH, "The Politics of Legal Reform" (2004) 3 *Wash U Global Stud L Rev* 1.

⁴⁵⁹ See the discussion in Chapter 2.

FIVE

CASE STUDIES

5.1. Introduction

Case studies in Tanzania, Papua New Guinea and Queensland will be examined in order to review the environmental issues at the mine sites and the drivers for environmental performance. Conclusions will then be drawn about whether, in the context of these case studies, and in the context of the overarching political realities, self regulatory mechanisms are more important than formal legislation in motivating compliance with environmental laws for the TNC mining companies.

As Chapter 1 notes, this thesis accepts a broad definition of ‘compliance’ to include the absence of formal prosecutions for breach of licence conditions, the lack of adverse publicity from NGOs and the existence of a general ‘licence to operate’ from the host community. These issues will be addressed in the case study companies, together with examples where the company appears to have gone beyond the standards required by the formal legislation, and the reasons why this has been undertaken.

5.2. Tanzania

The background to the development of the *Mining Act 1998* and the environmental regulations issued thereunder has been discussed in Chapter 3. A Table of Provisions impacting on the environmental regulation of mining is included at the end of this Chapter.

In the course of reviewing the Tanzanian case studies, various stakeholders, including environmental consultants, company environmental officers, and NGOs have commented on the general effectiveness of the environmental mining laws, and it is instructive to firstly consider these views in order to set the context for discussion of the case studies. In summary, the comments mainly relate to the administration of the legislation, rather than the laws themselves and there are clear and obvious reasons why this should be the case in a developing society such as Tanzania. Some of these reasons are mentioned subsequently.

Consultant to the Geita Gold Mine and to the Government, Dr Wilson Mutagwaba, has highlighted the following as issues of concern:⁴⁶⁰

⁴⁶⁰ Mutagwaba Wilson, “Analyses of the Benefits and Challenges of Implementing Environmental Regulatory Programmes: Tanzania Case Study” (2004) *Journal of Cleaner Production*, forthcoming issue, 6-8 of copy provided by author on 12 June 2004.

- Human resources – the Ministry has a section responsible for all mining environmental matters, directed by the Head of Environmental Management and his assistant. Over the last 10 years, the Ministry has trained four people in environmental related fields, although these people no longer work in this section. “Given the high rate of growth of the mining sector and the enormous number of issues related to mining and environment, it is difficult to see how the enforcement of the regulations can be effective. Every Zonal Office has a Mine Inspector, most of whom are mining engineers or geologists. The majority of these engineers and geologists lack mining experience due to lack of exposure in working mines, and none has had any environmental training per se”.
- Financial capacity – the Minerals Division of the Ministry of Energy and Minerals is probably one of the well-financed departments, as it enjoys retention of a percentage of collected revenue. “As such, if properly used, the department has adequate financial resources to enforce mining environmental regulations”.
- Working facilities – Many regional offices lack basic facilities, such as computers, which makes the processing of most data/ information manuals tedious and potentially inaccurate. Mine inspectors depend on the mine owners to provide them with safety equipment while executing their regulatory duties.

Dr Mutagwaba does however acknowledge that the new laws themselves have had some positive impacts.⁴⁶¹ For example:

- environmental management programs – almost all of the operations that commenced prior to the *Mining Act 1998* now have in place environmental management programs in line with the requirements of the new regulations.
- environmental impact assessment – the requirement to conduct EIAs and the process associated therewith has facilitated capacity building with local communities to help improve understanding and address environmental issues of their own concern.
- all mining companies with environmental management programs have a department or section dedicated to the implementation of that program. This has in turn created employment for local graduates specialising in environmental engineering and related fields.

Mr Mutagwaba sees the following “challenges” with the system:

The problems that limit effective enforcement of the regulations are a result of the weaknesses inherent within the legislation itself, and those associated with the system responsible for its execution. As a result, environmental management in the mining projects is more dependent on corporate responsibilities of mineral right owners who have international reputations to protect and/or are obliged by conditions of their financiers.⁴⁶²

⁴⁶¹ Ibid, 8-9.

⁴⁶² Ibid, 9.

From an NGO perspective, Mr Tundu Lissu has stated that, in his view, the laws are fairly comprehensive in terms of environmental management and protection. In particular, the requirement to undertake an EIA before mining commences is mandatory, which Mr Lissu considers to be an important safeguard. In relation to practice, Mr Lissu stated:

Even though the law is recent, we can tell the directions within which the practice is going. The law is not being followed. Requirements for EIA before the project is approved is ignored. LEAT has investigated the big five mines, and in each case EIAs were carried out after the indigenous people were evicted and their settlements were destroyed. The law is a sop – it is not concerned with the social impacts of the projects over the past five years.⁴⁶³

Problems with the administration of the legislation, rather than the formal legislation itself, have also been highlighted by Knol, Michael and Mwaipopo,⁴⁶⁴ all executives of the Geita Mine. They note as follows:

The Tanzanian Mining Act (1998) and Regulations (1999) are comprehensive regulations compiled on behalf of the Tanzanian government by World Bank-sponsored consultants. The Act and Regulations are based on policies, strategies and legislation from around the world, customized to suit Tanzanian conditions. ...

Unfortunately most government officers lack the experience and expertise to enforce these regulations. While the government has invested time and money to train its personnel, its capacity to enforce closure planning and other environmental regulations in an immature industry depends to a large degree on the good corporate citizenship of mining operators. The government remains exposed to the risks of avoidance by unscrupulous operators and inadequate supervisions and enforcement by its own inexperienced regulators.

Accordingly, despite the fact that the country has recent Mining legislation, and has participated in the World Bank funded institution strengthening program, enforcement remains a problem for the reasons discussed in Chapter 4. Further perspectives on the operation of the legislation within the context of two specific mines will be considered below.

⁴⁶³ Personal communication, Mr Tundu Lissu, 11 March 2004. Most of Lissu's criticisms relate to the period when the Bulyanhulu mine was operated by Sutton Resources Ltd.

⁴⁶⁴ Knol R Michael H and Mwaipopo A, "Mine Closure: A National Concern", paper presented to the 26th Annual Mineral Council of Australia Environmental Workshop, 2001.

5.2.1. The Bulyanhulu Mine



The Bulyanhulu Gold Mine is an underground mine located within the Victorian Greenstone Belt in Northern Tanzania, about 50 km south of Lake Victoria and 3 degrees south of the equator. The climate is semi-arid with two distinct rainy seasons that produce short duration, high intensity storms. The annual rainfall is in the order of 1,200 mm. The mine has an elevation of 1,200 metres above sea level.

The mine is owned and operated by Kahama Mining Corporation Ltd (KMCL), a wholly owned subsidiary of the Canadian Barrick Gold Corporation. KMCL⁴⁶⁵ was granted mining rights to Bulyanhulu in September 1994. Construction of the Mine commenced in 1999 and it was commissioned in March 2001. It is the largest underground gold mine in Tanzania. During 2005, the operation had an average of 1,500 employees and 400 contractors on site. Its parent views the Bulyanhulu Mine as a springboard for building up a dominant position in the Lake Victoria Gold Belt.⁴⁶⁶ In 2005, gold production totally 311,000 oz. While gold production is Barrick's core business, silver and copper

⁴⁶⁵ Kahama Mining Corporation Ltd was then owned by Vancouver-based Sutton Resources Ltd. It was acquired by Barrick Gold in March 1999 for US\$280 million.

⁴⁶⁶ Barrick Gold, Speech by Alan Hill to Bulyanhulu Mine Tour Presentation, 9 February 2001. Barrick has since announced that it has received a Development Agreement from the Tanzanian government for the Tulawaka project on 29 December 2003 and will now proceed with the construction of a new mine. Tulawaka is a 70/30 joint venture between Pangea Goldfields Inc, a wholly owned subsidiary of Barrick and Northern Mining Explorations Ltd. The site is approximately 1,000 kilometres from Dar es Salaam and 100 kilometres from the Bulyanhulu Mine. (Source: Barrick Gold Corporation, Press Release, Toronto, 5 January 2004).

deposit are also found in the ore. For example, in 2002 the gold bearing ore additionally yielded 243,000 ounces of silver and 9,300,000 pounds of copper.⁴⁶⁷ The mine's operational statistics, over a 6 year period to 2006, are included as **Appendix 5-1**.

The Bulyanhulu mine provides a striking example of the role played by the World Bank group in investigating complaints made by NGOs and others at the mine site. It is also a useful case study as Barrick also owns and operates the Osborne Mine in Queensland.

In terms of obtaining an environmental approval, the Mining Act 1998 requires the preparation and approval of an environmental management plan (EMP). This was prepared in June 1999 and submitted to the government for formal assessment and approval. The EMP described the environmental management and monitoring strategies which would be implemented by KMCL during the construction and operational phases of the mine. During 2001 the EMP was supplemented through the development of a structured environmental management system (EMS) "to ensure the operation is complying with the EMP and is effectively managing the perceived environmental impacts of its operations". The EMS is based on, although not certified to, the ISO14001 standard. The EMS was not required by the Mining Act, but is an example of mining best practice.

KMCL developed a Reclamation and Closure Plan (RCP) for the Bulyanhulu Mine in July 2002, as required by the legislation. The company notes⁴⁶⁸ that the RCP is consistent with the relevant provisions of the environmental impact statement, the EMP and the Bulyanhulu Social Development Plan.⁴⁶⁹ As presented, the RCP and associated plans satisfy the applicable Tanzanian regulations, including the *Mining (Environmental Management and Protection) Regulation*, Pt IV (Reclamation Requirements) and have been drafted in accordance with the *World Bank Environment, Health and Safety Guidelines – Mining and Milling/ Underground*. Although the mine still has a significant life remaining, rehabilitation in accordance with the RCP is proceeding on a regular basis, with a number of areas revegetated with native tree species.

Barrick has expressed its corporate philosophy as follows:

We believe that good citizenship is more than a matter of corporate altruism. In a global environment where companies' reputations precede them, opening doors for some that remain closed to others, good citizenship is good business as well.⁴⁷⁰

Presumably, good citizenship in this context should entail a high degree of beyond compliance behaviour in the environmental management area although its extent will

⁴⁶⁷ Kahama Mining Corporation Ltd, *Bulyanhulu Gold Mine - Annual Environmental Monitoring Report*, April 2003, 6.

⁴⁶⁸ Ibid, 45.

⁴⁶⁹ The Social Development Plan details the infrastructure and services which will remain after the closure of the mine.

⁴⁷⁰ Barrick Gold, "Environmental Leadership" at

http://www.barrick.com/5_Corporate_Responsibility/5_01_Environmental_Practices.asp (accessed 11 March 2004).

vary depending on the regulatory efficiency of the jurisdiction. Such behaviour, to the extent that it occurs, is treated throughout this thesis as being intrinsically self regulatory, for the simple fact that it literally goes beyond the regulations, or any other legislative framework. In KMCL's 2003 Annual Environmental Monitoring Report (the last available Environmental Monitoring Report) the company is specific in their claim to be acting beyond compliance. KMCL claims the following:

- First, the development of an EMS to complement, and go beyond, the requirements of the mandated EMP. Development of an EMS to ISO14001 specifications is in accordance with the environmental policies of parent company, Barrick Gold.⁴⁷¹
- And second, the introduction of waste management practices beyond the applicable legal standard. In this regard it cites the receipt of a Certificate of Merit under the Presidential Environmental Excellence Award (Mining) for its initiatives in waste management during the 1 March 2002–28 February 2003 year of operation.⁴⁷²

Related to this issue of beyond compliance behaviour is the overarching role of the World Bank, and specifically of the World Bank's many environmental management policies which were largely developed under the reign of a previous Chairman, Dr James Wolfensohn. These policies are clearly not domestic laws which must be obeyed, however they certainly constitute a commercial reality since not even TNC mining companies wish to antagonize the World Bank. When implemented, World Bank inspired prudential standards in environmental management often result in specific behaviours which can genuinely be categorized as 'beyond compliance' in the context of the applicable domestic legislation.

Since the involvement of the World Bank, and its specialized agencies, is an essential part of the self regulatory mix, along with the role of NGOs and public opinion generally, an overview of the Bank's involvement as a defacto regulator of the Bulyanhulu mine is merited.

In 1998, the then owner of the mine, Sutton Resources (a 'junior' miner, also a Canadian company) approached the International Finance Corporation (IFC), a World Bank agency, for funding, and in September 1998 IFC sent an environmental and social appraisal mission to the site. In April 1999, Barrick acquired Sutton Resources, and with this acquisition, its subsidiary, KMCL. Barrick's acquisition ended IFC's potential involvement in the project, as IFC financing was no longer necessary. The process is mentioned for two reasons. First, access to IFC financing is clearly more important for junior miners than for TNCs and second, even in the case of junior miners, one of the first steps undertaken by the IFC is to conduct an environmental and social impact study as a necessary complement to their financial analysis of the project.

In July 1999 Barrick sought political risk insurance from the Multilateral Investment Guarantee Agency (MIGA), also a World Bank agency. In August 2000 MIGA

⁴⁷¹ Kahama Mining Corporation Ltd, n 454 above, 8.

⁴⁷² Ibid, 34-35.

announced that it had issued a guarantee against political risks totalling US\$115.8 million to Societe Generale SA as ‘an agent for a syndicate of international banks’ for their loan to KMCL. A further guarantee of US\$56 million was also issued to Barrick.⁴⁷³ Canada’s Export Development Corporation co-insured the project with MIGA.⁴⁷⁴ The MIGA and EDC guarantees cover the investment against the risks of transfer restriction, expropriation and war and civil disturbance.⁴⁷⁵

The Office of the Compliance Advisor Ombudsman (CAO) is an independent body established by the World Bank which is charged with carrying out impact assessment resources on IFC and MIGA guaranteed projects. On 11 February 2002, the Lawyers Environmental Action Team (LEAT) filed a complaint on behalf of the Small Scale Miners Committee of Kakola, Tanzania in relation to the Bulyanhulu mine. In summary, this complaint related to some environmental, but mainly social concerns in three periods:

- Displacement of people prior to and including 1996⁴⁷⁶
- displacement of people in 1998,⁴⁷⁷ and
- the due diligence process undertaken by MIGA as it prepared to finalise the 1999/2000 guarantee.

In relation to the IFC’s involvement, the CAO found that an environmental impact assessment had been prepared for the mine by Norecol Dames & Moore in compliance with the Government of Tanzania’s regulations and that it did in fact comply with these regulations. However, the IFC team noted at the time of review that there were a number of areas where the EIA didn’t satisfy IFC/ World Bank requirements. Accordingly, it stated that a number of additional elements would be required and that measures in response to some issues would have to be upgraded.⁴⁷⁸ The IFC recommended an addendum to the EIA be prepared. This was not completed since IFC’s involvement with the project ceased.

⁴⁷³ Now totalling US\$172 million, it was the largest guarantee MIGA had made at that time: World Bank, Extractive Industries Review Final Report, “Striking a Better Balance”. Africa Workshop, Vol IV, 26 November 2003, 4.

⁴⁷⁴ The role of the TNC’s national government in essentially co-guaranteeing an entire mining project in another country, is an increasing phenomenon. The Australian government provided a similar guarantee in respect of the Lihir Gold mine in Papua New Guinea.

⁴⁷⁵ Multilateral Investment Guarantee Agency, “Tanzania: Bulyanhulu Mining Project”, Press Releases, 26 September 2001, 4 April 2002 at <http://www.miga.org/screens/projects/guarant/regions> (accessed 16 March 2004).

⁴⁷⁶ This was the time of the first Government of Tanzanian ordered resettlements of small scale miners from the area now leased to KMCL. These families were resettled to villages in the Kahama region.

⁴⁷⁷ A further round of resettlements took place in 1998. These families were moved to outside the mine’s perimeter, but still within the mining lease.

⁴⁷⁸ Specifically, the upgrade of the road was not covered in the EIS; the water pipeline to be constructed from Smith Sound to the mine needed to be more thoroughly explored; and the issues of resettlement and compensation relating to the pipeline, the tailings dam area and the mine, would all have to be dealt with; and that the EIS did not address the past issues of land clearance.: Office of the Compliance Advisor/ Ombudsman, *Assessment Report Summary Complaint regarding MIGA’s guarantee of the Bulyanhulu Gold Mine, Tanzania*, 2002, 8.

When MIGA became involved with the project, informal discussions were held between staff of IFC and MIGA. MIGA also reviewed IFC's back-to-office report on the mine, which itemized issues of concern to IFC. MIGA sought assurances from Barrick about issues of resettlement and past events, and felt comfortable with Barrick's assurances on these matters.⁴⁷⁹ Whilst the CAO did not find that the complaints had been made out, it was critical of MIGA, noting:

The CAO is concerned that MIGA did not carry out a more thorough review of the project following IFC's pre-appraisal visit. Simply reviewing documents without a site visit, especially with changes in the project and with a gap in time between IFC's and MIGA's reviews, is inadequate. ... To date no environmental or social specialist on contract to MIGA has visited Bulyanhulu.⁴⁸⁰

In the course of its report, CAO made the following observations about the mine since Barrick's involvement:

- MIGA has been well served by a mine and a project sponsor that appear to be committed to best practice. It is for this reason and not as the result of the supervision or due diligence by MIGA that the mine is performing to environmental and social standards that are in line with those expected of an investment of the World Bank Group.
- The CAO does not believe that the project merits a compliance audit and was impressed with the way in which the mine was developing its social and environmental capacity.
- Without guidance from MIGA, Barrick Gold has established meaningful partnerships with international aid and development organisations to reinforce its social development activities and these should be supported and their development impact monitored.⁴⁸¹

MIGA has confirmed to the author that MIGA has been monitoring this project, including a site visit in 2003. However, in accordance with MIGA's Disclosure Policy, the *monitoring* reports submitted to MIGA are not made public and do not form part of the compliance assessments, which are made public.⁴⁸²

In 2001, the MIGA due diligence report drew a rather stark contrast between the behaviour of the Barrick group on a variety of grounds and the behaviour of the previous mine owners. It stated:

Prior to KMCL's [Barrick's] and MIGA's involvement in the project, artisanal miners on the site commonly worked in violation of safe mining standards, digging shafts too close together and constructing unsafe scaffolding that regularly led to the mines collapse and the death of miners. Asphyxiation due to lack of ventilation underground also led to

⁴⁷⁹ Office of the Compliance Advisor/ Ombudsman, n 465 above, 9.

⁴⁸⁰ Ibid, 10.

⁴⁸¹ Ibid, 10.

⁴⁸² Email communication from Harvey Van Veldhuizen, Ph.D, Lead Environment Officer, MIGA, hvanveldhuizen@worldbank.org, 17 March 2004.

deaths. In addition, the project site faced many social and environmental problems, including, for example, child labour, deforestation, mercury contamination⁴⁸³ and poisoning, and lawlessness.

The report continued, describing the turnaround as significant, and made the following observations:

- All mining is now conducted in accordance with international environmental and social standards
- 900 permanent jobs have been created, and another 600 contractors are employed. Indirect employment is conservatively estimated at more than 7,500.
- extensive staff training has been provided (costing US\$6.3 million), even though the mine has been in operation for only a few months.
- a new \$1 million medical centre serves not just employees and their families but the local community as well. The company is also refurbishing a nearby dispensary and is partnering with the African Medical and Research Foundation to develop, fund, and staff public health educational programs regionally.
- the project is making reliable, clean water available to the area's 30,000 residents, many for the first time.
- a scholarship program maintained by Barrick – which to date has invested US\$6.4 million globally – will also provide financial support to the children of Bulyanhulu employees for post-secondary education. The project has recently entered a million-dollar partnership with CARE International to develop education facilities in the communities around the project site.
- the project is sponsoring the country's first private sector housing program, providing interest-free loans to employees for the construction of up to 600 new houses
- more than US\$15 million has gone into the construction of a power line, in cooperation with the Tanzania Electric Supply Company, to bring power to the region. Roads are being upgraded, and financial support is going to rail facilities and ports.⁴⁸⁴

These laudatory comments should be read in the light of CAO's statement that at this time, MIGA had not even performed a site visit and that their entire assessment had been conducted on the documents.

A contrary view of the operations of the mine is advanced by one of the main Tanzanian-based NGOs, LEAT. Mr Tundu Lissu, one of the principal lawyers with LEAT, has written extensively about mining in Tanzania and about the Bulyanhulu Mine in

⁴⁸³ This conclusion that small scale gold miners using mercury in the gold extraction process in northern Tanzania has caused contamination of the environment and risks to human health was supported by a study of van Straaten Peter, "Human exposure to mercury due to small scale gold mining in northern Tanzania", *The Science of The Total Environment*, Vol 259, Issues 1-3, 2 October 2000, 45-53. van Straaten tested for human exposure to mercury in populations in and around small scale gold mining camps in the Shinyanga, Kahama and Bukombe Districts of northern Tanzania, by means of human hair and urine surveys in 1997. He found that 36% of the gold miners working with amalgam exceeded the World Health Organisation guideline concentration of 50 µg Hg/g creatinine.

⁴⁸⁴ Multilateral Investment Guarantee Agency, "MIGA Statement on Bulyanhulu Mine in Tanzania, Press Release, 26 September 2001 (<http://www.miga.org/screens/news/press092601.htm> (accessed 16 March 2004)).

particular.⁴⁸⁵ Whilst LEAT has some concerns about environmental operations of the mine – for example that the EIA wasn't done in accordance with World Bank standards - most of LEAT's concerns relate to social issues/ alleged human rights abuses concerning the removal of indigenous miners from the site at the time when the mine was operated by Sutton Resources. One of the allegations by LEAT, MiningWatch Canada and other NGOs was that as many as 52 people were buried alive in 1996 in their mine shafts when they refused to leave the mine site.⁴⁸⁶ These allegations were followed by a, surprisingly belated, NGO⁴⁸⁷ 'fact-finding' mission to Tanzania on 23-31 March 2002 which, despite being impressed by "the intensity and seriousness in the telling of the stories of the alleged evictions, violence and brutality of the police and mining officials ..."⁴⁸⁸ was unable to verify any of the alleged facts. It is noteworthy in their response that despite newspaper utterances on the topic by many NGOs, the one NGO group that actually visited the mine felt unable to use the words 'killing', 'killed' or 'murder' in their actual report.

As has been noted, these allegations were investigated by the CAO, which also conducted a field trip to the mine site. The CAO noted that "there is no compelling evidence to support the version of events alleged by LEAT" and went on to state that. ... "the repetition of unsubstantiated allegations was not serving the best interests of local people living close to the mine."⁴⁸⁹

As part of the World Bank Group's Extractive Industries Review in 2003, submissions were again taken from LEAT and other 'witnesses' to the alleged atrocities.⁴⁹⁰ Rather than make findings on these specific allegations, the African Consultation Workshop, which is part of the Extractive Industries Review, drew

⁴⁸⁵ See for example Lissu TA, "Conducive Environment for Development?: Globalisation, National Economy and the Politics of Plunder in Tanzania's Mining Industry" (copy supplied by author); Lissu TA, "Environmental Impact Assessment of Foreign Investment Projects: A Study in the Law, Policy and Governmental Decision-Making in Tanzania", LEAT Research Report No 2, LEAT/WRI Dar es Salaam and Washington DC, August 2000; Lissu TA, "In Gold We Trust: The Political Economy of Law, Human Rights and the Environment in Tanzania's Mining Industry", first draft, July 2001 (copy supplied by author).

⁴⁸⁶ MiningWatch Canada, "What Really Happened at the Barrick Gold Mine in Tanzania?", News Release, Montreal, 16 April 2002.

⁴⁸⁷ The group was comprised by Paula Butler, representing MiningWatch Canada, Steve Herz from Friends of the Earth, US, Stephen Kerr a student newspaper editor, Kathleen Mahoney, Professor of law, University of Calgary and Chairperson of the Board of Directors of the Montreal-based Rights and Democracy, Mattias Ylstra, videoproducer. The group was accompanied by LEAT's Vincent Shauri and Tundu Lissu.

⁴⁸⁸ MiningWatch Canada, n 473 above.

⁴⁸⁹ CAO, "Ombudsman Office Releases Summary Report on Bulyanhulu Mine, Tanzania", Press Release, 29 October 2002. It should be noted that this Report also recommended that MIGA strengthen its due diligence and supervision procedure to ensure that it has independent sources of information on the progress of investments where it holds a guarantee. It suggests that "more effort be made to ensure that local people benefit from such a sizeable foreign direct investment".

⁴⁹⁰ Lawyers' Environmental Action Team, Tanzania, "Robbing the poor to give to the rich: human rights abuses and impoverishment at the MIGA-backed Bulyanhulu gold mine, Tanzania", Submission to the Extractive Industries Review of the World Bank, Maputo, Mozambique, 13-17 January 2003.

some general conclusions on lessons for the World Bank Group in relation to large-scale mining projects.⁴⁹¹

As a postscript to this discussion, it should be noted that on 24 November 2001, Tanzanian police arrested Mr Rugemeleze Nshala, President of LEAT and Mr Augustine Mrema, the National Chairman of the Tanzanian Labour Party. The men were taken from their homes and charged with sedition. A warrant was also issued for Mr Tundu Lissu, who was out of the country at the time.⁴⁹² As has been noted above, Mr Lissu has since returned to his home country of Tanzania and is currently involved in opposition politics. He has advised that, while he is not in gaol, the charges have not been dropped, but rather are “held over his head”.⁴⁹³

Reviewing the Bulyanhulu Case

It can be seen that the regulatory mix in respect of this mine comprises three sometimes interlinked facets. First, the administrative and regulatory apparatus of the Tanzanian government. Second, the prudential oversight of project underwriters and financiers, and third, the aggregate activity of international and local NGOs.

In relation to the first element, Tanzania became the beneficiary of a variety of ‘Rolls Royce’ models of environmental regulation, imported from English, Canadian and Australian sources. This is not to say, of course, that anything less than a Rolls Royce model should be tolerable in a developing country merely because it is developing per se. Rather, high-end models, to be effective in the field, require high-end maintenance and this, in turn, must place the emphasis on the supply of highly qualified environmental managers. To have one without the other, as is the case in Tanzania, is perhaps to put the ‘cart before the horse’, but in reality there seems little alternative. As indicated in this section, the number of government environmental inspectors and regulators is very limited indeed and staffing numbers would be considered inadequate in a developed country.

Second, as indicated earlier, the necessity for a large mining company to achieve underwriting of the sovereign risk involved in the undertaking, necessarily involves international bodies such as IFC and MIGA. Both these agencies of the World Bank require the applicant mining company to pay due diligence to a range of environmental and social issues stipulated in the various policies and plans of the World Bank. As a matter of practical reality, adherence to these due diligence items by the applicant corporation must be considered an imperative. Overall project financing or underwriting will often depend upon the compliance. The important point to note here is that compliance with the prudential standards of international institutions is discretionary in the sense that the corporation can either elect to comply, or elect not to comply with the

⁴⁹¹ World Bank Group, Extractive Industries Review, “Striking a Better Balance”, Africa Workshop, Vol IV, 26 November 2003, 59-60.

⁴⁹² MiningWatch and Halifax Initiative, “Trade and Primary Resource Extraction Bulyanhulu Mine Tanzania: Arrest of NGO Activists”, Media Release, 28 November 2001.

⁴⁹³ Personal communication, Mr Tundu Lissu, 11 March 2004.

World Bank requirements, and suffer the commercial consequences. In either case, however, a compliance response is not a function of any formal state based regulatory apparatus.

Third, particularly in the case of the Bulyanhulu mine, and particularly before the acquisition of the mine by Barrick, a number of NGOs sought to focus international media attention on what they alleged to be the notorious activities of various mine owners. The media, of course, is an essential arm of any NGO. Although the internet is one part of a global information system, issues tend to develop a constituency when they are exposed in the print or electronic media. In the end result, the participating NGOs, ranging from MiningWatch Canada and Friends of the Earth to LEAT successfully, it seems at times, managed to focus this attention. At the end of the day, however, little if any evidence was able to be found to support their more serious allegations and indeed in this era of instant communication and the internet, it is difficult to imagine that the deaths of 52 miners anywhere in the world would go unreported, and fail to prompt an NGO site visit for a period of six years. It is doubtful in the case of the Bulyanhulu mine, that any NGOs who were involved, and who continue to be involved in the mine⁴⁹⁴ played any responsible role. The broader issue at this point may well be the question of oversight of the NGOs themselves. No conclusions can be reached on this point in this work though the question must remain open and is intrinsically, important.

⁴⁹⁴ LEAT and Lissu continue to be active critics of Barrick, alleging in 2005 that their security operatives at the North Mara mine have employed 'naked violence' by shooting 6 villagers who illegally entered the mine site. It is argued that the killings are part of a strategy to silence mine critics. These issues have now been taken up by Canadian NGO Corpwatch. See Corpwatch, "Barrick's Dirty Secrets: An Alternative Annual Report, May 2007, 5 at http://protestbarrick.net/downloads/barrick_report.pdf (accessed 27 November 2007).

5.2.2. Geita Gold Mine



Source: AngloGold Ashanti, *2006 Company Report – Geita, Tanzania*, 20 March 2007.

The Geita Gold Mine is Tanzania's largest gold mine and the largest gold producer in Africa, outside of South Africa. Gold production in 2005 totalled 613,000 oz (production details are given in **Appendix 5-2**). Unlike the Bulyanhulu Mine, it is an open pit mine. It is also in a more environmentally sensitive area of Tanzania, being located 20 kilometres from the southern shore of Lake Victoria, next to the Nyamalembu River which drains into Lake Victoria. The Lake borders on Uganda, Kenya and Tanzania. The mine employs some 3220 people (2043 employees and 1,177 contractors).⁴⁹⁵ The mine is located about 4 kilometres west of Geita township in the Mwanza region of north-western Tanzania. The population of the town has increased from 30,000 in 1999 to nearly 120,000 in 2002 (the date of the last population census in Tanzania).

The mine currently comprises three pits. The main pit is the Nyankanga pit. The two other pits are nearby Lone Cone (actually a series of three pits with current development centred on Lone Cone Central), and Kukuluma, a satellite deposit consisting mainly of oxide material which is roughly 18 km to the east of the processing plant. The mine was developed by the Ghanaian company, Ashanti Goldfields Co Ltd and produced its first gold in June, 2000. It has an expected life of about 14 years. In April that year Ashanti signed an agreement to sell 50 percent of Geita to South African-based AngloGold, the world's largest gold producer.⁴⁹⁶ This agreement was finalised in December 2000.⁴⁹⁷

⁴⁹⁵ Average work force during 2006: AngloGold Ashanti, *Country Report 2006 – Geita*, 20 March 2007, 4.

⁴⁹⁶ Ashanti Goldfields was forced to sell half of its assets in order to relieve debt incurred partly from its hedging strategies – about 100 percent of its gold production – about 1.5 million ounces – was reported to

The parties entered into a joint venture agreement which governed the joint operation of the Geita project.⁴⁹⁸ AngloGold subsequently merged with Ashanti, effective from 26 April 2004.⁴⁹⁹ The new entity is called AngloGold Ashanti Limited.

In terms of obtaining environmental approvals, the EIS was submitted for approval in January 1999, prior to the *Mining Act 1998* becoming operational. A South African company undertook the EIS, and all relevant local authorities and agencies were consulted. Since the mine is located in the Lake Victoria Basin catchment area and inland drainage system, it is a particularly sensitive project. In addition, a river, which cuts across the old Geita tailings dam,⁵⁰⁰ contains background levels of certain metals, close to those stipulated in the regulations. As a result, discharge of any hazardous chemicals including cyanide into the river was not permitted.⁵⁰¹ Both the engineering design of the mine and the EMP took account of the topography, geology and distance of the mine perimeter from the lake (26 km). Monitoring of groundwater around the tailings dam and the processing plant was a critical aspect of the EMP, and necessitated the sinking of monitoring boreholes.⁵⁰²

The licensing authority approved the EMP, once it was satisfied by the Plan's efficacy in protecting and management the environment, including the biodiversity of the Lake Victoria Basin. Measures to be taken to prevent seeping or spillage and possible cyanide contamination included diversion of a river from both the old tailings dam and the newly designed tailings dam, recycling of tailings dam water back to the processing plant, and lining of the tailings dam with a high density plastic liner to prevent seepage and leakage in the event of poor civil construction or seismic activities. The mine operators have established a monitoring system at Geita Mine, which includes boreholes around the tailings dam and a decant facility. Initially samples were collected and analysed every two weeks, but this is now done on a monthly basis. Two Inspectors of Mines based at Geita carry out supervision for the Ministry of Energy and Minerals. They monitor

be hedged in 2000. Barrick Gold, AngloGold and Gold Fields all tendered to buy the stake: Mineweb, "Ashanti poised to announce Geita winner", 4 April 2000 at <http://www.mips1.net/MGCurve.nsf/0/42256803004869EEC12568B700581034?OpenDocument> (accessed 23 March 2004). In February 2000 some shareholders had taken court action aimed at overhauling the board. During this time, two directors announced their resignation. David McKay, writing on Mineweb, has noted "one London analyst suggested that the plan to usurp part of the Ashanti board was conducted 'with more than a nod and wink' of the Ghanaian government." The unnamed analyst suggests that the aim of the action is to unseat Ashanti CE Sam Jonah from the board, since Jonah has political ambitions. (<http://www.mips1.net/422567CB004DBB8F/UNID/DMKY-4GKQ7T?OpenDocument> (accessed 23 March 2004)). Notwithstanding this statement, Johan is still the chief executive of Ashanti.

⁴⁹⁷ AngloGold, "Finalisation of Geita Sale", Press Release, 15 December 2000.

⁴⁹⁸ AngloGold, "AngloGold Limited/ Ashanti Sign Geita Project Agreement, Press Release, 26 June 2000.

⁴⁹⁹ AngloGold Ashanti Limited, "Completion of merger of AngloGold Limited and Ashanti Goldfields Company Limited", News Release, 26 April 2004.

⁵⁰⁰ The mine was previously worked between 1930-1963.

⁵⁰¹ Any discharge of cyanide in the river leading to Lake Victoria would, of course, attract worldwide attention and consternation in the same way as it did with the Esmeralda mine in Romania. Lake Victoria is, inter alia, the source of the multi-million dollar Nile perch fishery.

⁵⁰² OECD Global Forum on International Investment, *Environmental Impacts of Foreign Direct Investment in the Mining Sector in Sub-Saharan Africa*, Conference on Foreign Direct Investment and the Environment: Lessons to be Learned from the Mining Sector, Paris, 7-8 February 2002, 18.

mining activities, inspect and enforce the environmental management and protection regulations, and occupational health and safety regulations.⁵⁰³

Geita is not linked to the national power grid and has to generate its own power. CEO Peter Turner stated: “We have our own power station on site with a capacity of 39 MW, although the current demand [2002] is 23 MW. We believe that the mine is, in fact, the biggest single user of electricity in the country”.⁵⁰⁴

Another significant feature of the mining lease is that it includes part of the Geita Forest Reserve, an area of approximately 100 square kilometers. The forestry was established (to provide timber) by the Germans and British who had conducted underground mining on the site from about 1930-1963. It is government policy to keep the forest intact, and settlements are not permitted in the forest. However it is under extreme pressure from organized, illegal logging, charcoal-making⁵⁰⁵ activities and illegal clearing for cattle grazing.⁵⁰⁶ The area of Forest Reserve which falls within the lease is regularly patrolled by the mine’s security guards in conjunction with forest officers to stop this activity. The company reports that during 2006, activities in the portion of the reserve managed by the mine were reduced to a minimum, making this, according to the company, the only part of the reserve where the forest is thriving.⁵⁰⁷

One of the environmental/ human issues on and near both the Geita lease and the Bulyanhulu mine is the impact of artisanal and small scale miners. These miners often use unsafe methods of tunneling, mining and indeed processing (often with the use of mercury). UNEP notes that:

Artisan mining has been a major source of income, increasing the wealth of rural populations.⁵⁰⁸ ... [However] inadequate regulation and enforcement in the artisan mining sector has, however, led to serious environmental problems and risks to humans. Toxic chemicals [especially mercury] are sometimes used in the extraction of minerals, such as gold, which end up in the rivers. Toxins bioaccumulate in fish and wildlife, which are sources of food for the same communities. Other environmental problems include deforestation, soil erosion, silting of rivers, landslides and mining accidents. It is estimated that the rate of occurrence of fatal accidents in small mining activities is six times higher than it is in larger operations.⁵⁰⁹

⁵⁰³ Ibid, 18.

⁵⁰⁴ Tassell Arthur, “Geita on a growth path”, *African Mining Magazine*, 2002, at <http://www.mining.co.za/Geita.htm> (accessed 23 March 2004).

⁵⁰⁵ Logs are felled, set alight and then buried, to produce charcoal, which is then used as a fuel for cooking.

⁵⁰⁶ Personal communication, Graeme McIlveen, former HSE Manager, 2002-04, Geita Gold Mine on 4 June 2007.

⁵⁰⁷ AngloGold Ashanti Ltd, *Country Report 2006 – Geita, Tanzania*, 29 March 2007, 18.

⁵⁰⁸ The Tanzanian Chamber of Minerals and Energy estimates that there are between 500,000 and 1 million artisanal miners in Tanzania (2004 estimate): <http://www.chamberofmines.com> (accessed 25 May 2004).

⁵⁰⁹ United Nations Environment Program, “Environmental and resource management, environmental economics and sustainable development – Economic change in Africa at http://www.eoearth.org/article/Economic_change_in_Africa (accessed 6 June 2007). Indeed, two major disasters have occurred in Tanzania – one in June 2002 when at least 32 miners died of suffocation in northern Tanzania after an air compressor failure in a tanzanite mine. Another occurred in April 1998 where about 100 miners died after torrential rains flooded 14 mineshafts in Mererani: Trade Union

Geita's response both illustrates a TNC playing a role in environmental/ social issues beyond the mine lease, and the reliance of the Tanzanian government on the assistance of TNCs in dealing with domestic issues.

In April 2005, approximately 7,000 artisanal miners invaded the Geita lease area after word spread that a large nugget of gold had been found by artisanal miners. The majority of the miners left of their own accord after appeals from management to vacate the lease area. Police removed those who resisted.⁵¹⁰ Another 2,500 artisanal miners invaded the lease area in early 2006, and would not move until police from Geita town and staff from the Mine Inspector's Department intervened.

The Tanzanian government requested Geita to assist with the management of artisanal mining and the mine is now the site of a pilot project. The company has, in conjunction with the UK's Department for International Development, run workshops in 2005 and 2006 for artisanal miners with a view to providing more information on topics like access to small business loans, technology, safe working conditions and better mining techniques.⁵¹¹ In 2006 around 5,000 miners participated in the workshops. The management at Geita are also working with local government officials and community representatives to identify property which is appropriate to small scale mining and to promote registration by operators in terms of relevant legislation.⁵¹²

Like the Bulyanhulu mine,⁵¹³ the Geita Mine has been involved in many social and economic initiatives in the local area. As part of its tender for catering services, the Geita management included, as a precondition for all applicants, the initiation of a project which would contribute to the welfare of the local communities in the area. The Nyakabale Community Agroforestry Project was born from this initiative, and is jointly funded by GGM and All Terrain Services, the camp management contractors who were the successful tenderers for the job. The project relies on the demand for local produce from the catering contractor, which also provides Nyakabale with the requisite technical expertise and day-to-day management. Funding comes from Geita and the mine is also responsible for the co-ordination with the village government.

Congress, "Risks" Issue No 60, 29 June 2002 at http://www.tuc.org.uk/h_and_s/tuc-5141-f0.cfm (accessed 6 June 2007).

⁵¹⁰ AngloGold Ashanti Ltd, *Country Report – Tanzania 2005*, 4; Moore, Peter, "Mine of the Month – Geita", *Mining Magazine*, June 2006, 14.

⁵¹¹ AngloGold Ashanti Ltd, n 497 above, 4.

⁵¹² AngloGold Ashanti Ltd, *Report to Society – 2006*, 124-127.

⁵¹³ See further Business Partners for Development, Natural Resources Cluster, "Development in Kahama District, Tanzania", June 2002, which details KMCL's initiative for social development, both to develop a housing scheme for mine employees and to assist the communities surrounding the mine in the areas of health, education, water supply and micro-enterprise development. This has involved KMCL providing technical know-how, financial support and capacity building for local communities, government and NGOs to participate in the process. Ms Aida Kiangi, Manager, Social Responsibility, KMCL has stated that "the ultimate aim is for government, communities and NGOs to take over. However, to get things started, KMCL has had to adopt a role that is closer to that of an NGO": Report p iii; personal communication, 2 March 2004.

Vegetables produced by the project are also sold to Mchauru village. An agronomist employed by the project also provides local farmers with advice and training in sustainable development practices and business management skills. According to the company, they have managed to establish a co-operative environment which assists local farmers and which provides a centralized market for their produce.⁵¹⁴

In 2000, GGM, along with African Mining Services and Meremeta Limited co-founded a baseline cross-sectional HIV prevalence survey. The African Medical and Research Foundation (AMREF) performed the survey in collaboration with the National Institute of Medical Research (NIMR), Mwanza and the London School of Hygiene and Tropical Medicine (LSHTM).⁵¹⁵ Without intervention and as a result of the high rates of other STIs and reported high-risk sexual behaviour among mineworkers, GGM estimated that it could observe a rapid escalation in the mineworker HIV prevalence up to 20-40% within the life of the mine. Although an explicit financial assessment of the impact of this potential HIV prevalence was not conducted, the potential financial impact of this increase is a significant threat to GGM's continued profitability.⁵¹⁶ Hence there were financial, as well as altruistic, reasons for the company to be involved with this project.

The health project's three year US\$325,000 budget is financed by GGM (55%), its main contactor, DTP Terrassement (40%), Stanley Mining Services (4%) and other contractors (1%). The US\$93,000 2002 budget corresponds to US\$62 per worker per year. Community donors have provided in-kind donations. Partnering with the AMREF, the program has delivered the following:

- HIV/ STI awareness workshops at the mine
- the training of 60 community health educators in the villages around the Geita mine
- HIV Information Centre established in Geita,⁵¹⁷ which provides a range of services, including voluntary counseling and testing
- a 'wellness management program' launched in May 2002 designed to extend asymptomatic, productive life of HIV+ employees as far as possible.

⁵¹⁴ AngloGold, Gold Mining and Marketing – Case Studies at <http://www.anglogold.com/Environment> (accessed 23 March 2004).

⁵¹⁵ The survey measured the prevalence of HIV, other STIs and associated risk factors in 412 subjects, representing 4 groups: (1) 104 male national mineworkers representing 12% of the workforce at the time of the survey; (2) male community members; (3) female community members; (4) female food and recreational facility workers. The survey confirmed the pre-existence of a local HIV epidemic in the community: 19% of men, 16% of women and 39% of high risk women were HIV+. Men working at the mines surveyed had a comparatively lower HIV prevalence of 4%. Both the community members and mine workers demonstrated that they were at high risk of becoming HIV+. (1) all groups reported very high rates of STIs in the last 12 months; (2) all groups had high rates of positive syphilis serology; (3) 35% of mine workers indicated that they had had multiple sexual partners in the last 3 months; (4) 54% of mine workers had paid for sex in the last 12 months and 30% did not always use condoms during these paid acts.

⁵¹⁶ World Economic Forum, Global Health Initiative Private Sector Case Example, "Geita Gold HIV/ Aids Tanzania Case Study", Geneva, 2002, 3.

⁵¹⁷ The Centre was launched at a public event with guest speakers included GGM's CEO and the Executive Director of the Tanzanian Commission for Aids, Major General Lupogo, and with the Regional Commissioner for Mwanza as Guest of Honour.

As well as participating in the program, an AMREF Project Officer monitors the project on the monthly basis, reporting to the mine manager and the District Medical Officer. Biannual Local Steering Committee meetings are convened by GGM with partners in the program and relevant District medical staff. It is also anticipated that every three years externally performed audits conducted by internationally recognized experts will evaluate program effectiveness.⁵¹⁸

An illustration of the emphasis placed on HIV-Aids initiatives is that one of the key performance indicators of the Managing Director of AngloGold relates to the reduction in the spread of Aids.⁵¹⁹

External verification

In terms of sustainability, in 2001 AngloGold was the recipient of the award for the Sustainability Leader in the precious metals sector by the Dow Jones Sustainability World Indexes. AngloGold achieved the highest total score of any of the companies included in the precious metals sector. This rating was based upon AngloGold's high level of performance across the three dimensions of corporate sustainability: economic, social and environmental. Achieving at least compliance with legislation and striving towards international best practice is the role of operational management.⁵²⁰

One of the main drivers for environmental compliance has been the decision to seek, and then obtaining, ISO14001 certification, and the consequential compliance auditing. Geita was the first mine in Tanzania to achieve such certification, in mid-2001. AngloGold notes that "in spite of sometimes weak and/or poorly implemented environmental legislation in developing countries, AngloGold has committed to complying with internationally accepted environmental standards".⁵²¹ One compulsory target for certification is to meet all legal compliance requirements. ISO14001 requires independent auditing of the environmental management system – in Geita's case this was firstly done at 6 monthly, and later 8 monthly intervals.⁵²² There is a requirement for a 3 yearly recertification, and this was achieved in 2004.

The Environmental Manager for AngloGold's African operations, Ms Cathy Reichardt, has acknowledged that sizeable communities had to be relocated to make way for the

⁵¹⁸ World Economic Forum, Global Health Initiative Private Sector Case Example, "Geita Gold HIV/ Aids Tanzania Case Study", Geneva, 2002, p 6. It is interesting to note that in a disclaimer to the report, the World Economic Forum (an NGO based in Geneva, Switzerland) notes that the Global Health Initiative Private Sector Case example "is based on a self-reporting model. Although the GHI makes reasonable efforts to ensure the accuracy of the statements, this report should not be viewed as an external audit of the program described": p 8.

⁵¹⁹ Personal communication, Ian Livingstone-Blevins, General Manager, Underground Operations, AngloCoal Australia Pty Ltd, 14 September, 2007.

⁵²⁰ AngloGold, Gold Mining and Marketing – Environment at <http://www.anglogold.com/Environment> (accessed 23 March 2004).

⁵²¹ AngloGold, Gold Mining and Marketing – Interviews – interview with Cathy Reichardt, Environmental Manager for AngloGold's African operations at <http://www.anglogold.com/Environment> (accessed 23 March 2004).

⁵²² Personal communication, Graeme McIlveen, HSE Manger 2002-2004, 4 June 2007.

Geita mine, stating “throughout mine life we need to undertake ongoing socio-cultural monitoring to determine whether the social impacts of involuntary resettlement have been adequately addressed, and if not, to identify and implement appropriate mitigative measures.”⁵²³

The whole experience of managing large open cut mines in Africa is relatively new, and this is especially the case for the Tanzanian regulators. The rehabilitation program was established by company commitments in their environmental impact statement, rather than specific standards being imposed by the government. In the absence of specific Tanzanian standards, rehabilitation is conducted according to Australian methodologies and standards, utilizing indigenous vegetation. Plants are sourced from local nurseries established under the Agro-forestry venture which was set up by the mine.

Additionally, one area of the Tanzanian government, the Tanzanian Tree Seed Agency, has provided extensive input. It provides advice and assists in monitoring of the rehabilitation.⁵²⁴ Training is also provided to local communities in identification, seed collection and optimum planting and germination practices.⁵²⁵ While the rehabilitation has generally been successful, further education is needed for some local farmers, who have burnt the rehabilitation areas or allowed cattle to graze on that area.⁵²⁶

At the time that the mine was commissioned, one principal concern of environmentalists was that sodium cyanide used to extract gold from ore may leak into the lake through the rivers and cause a species imbalance and water poisoning. Tundu Lissu, then in ‘exile’ in Washington DC, working with the World Resources Institute, is reported to have said: ‘Should any of this cyanide find its way into the lake, then Tanzania will not suffer alone, but so will her neighbours and millions of other people’.⁵²⁷ Professor Wangari Maathai of Kenya’s Greenbelt Movement is also reported to have stated:

It is dangerous, unethical and the most insensitive economic undertaking I have ever come across ... It is not just a matter of poisoning people. Very soon, European Union will ban all fish exports from East Africa just because some toxic element have found their way into the fish, and that it will also be a great economic loss to the local people whole life depend entirely on fishing. This project is a threat to the whole world.⁵²⁸

⁵²³ AngloGold, Gold Mining and Marketing , n 508 above.

⁵²⁴ Personal communication, Graeme McIlveen, HSE Manager, 2002-2004, 6 June 2007.

⁵²⁵ AngloGold Ashanti, “Community – Case Studies: Tanzania”, *Report to Community 2004*, 7.12.

⁵²⁶ Personal communication, Graeme McIlveen, HSE Manager, 2002-2004, 6 June 2007.

⁵²⁷ Drillbits & Tailings, “Gold Mining Threatens Environment and Communities in East Africa”, Vol 5 No15, 19 September 2000 (at http://www.moles.org/ProjectUnderground/drillbits/5_15 (accessed 23 February 2004)). See also report by World Rainforest Movement, “Tanzania: Gold Mining adds new problems to Lake Victoria” at <http://www.wrm.org.uy/bulletin/39/Tanzania.html> (accessed 23 March 2004).

⁵²⁸ Drillbits & Tailings, “Gold Mining Threatens Environment and Communities in East Africa”, Vol 5 No15, 19 September 2000 (at http://www.moles.org/ProjectUnderground/drillbits/5_15 (accessed 23 February 2004)).

In his paper prepared for the Seminar, “Perspectives for the economic development of Tanzania in the Context of Global Economy” in Frankfurt, Germany on 30 November 2002, Francis Killenga, Development Co-ordinator with the Catholic diocese of Geita looked at the positive and negative effects of the gold mining industry in the Geita district.⁵²⁹

Killenga’s paper examined the economic, environmental and social effects of the Geita Gold Mine. The following positive environmental effects were noted:

- tree planting support to the nearby villages
- support for the formation of NGOs on environmental issues, eg the Environment and Mined Land Rehabilitation Group of Geita.⁵³⁰

The following were noted as negative environmental effects:

- “environmental degradation due to pit mining
- tree cutting at the government forest reserve due to the growth of Geita Town and increased population
- potential endangerment to fish species in Lake Victoria due to the tailings storage facilities at Nyankanga pit
- an increased number of occupational hazards due to pollution which might lead to:
 - lung cancer to miners
 - air borne diseases
 - poor sanitation due to temporal settlements which might result to the outbreak of diseases due to overcrowding, eg diarrhea, etc.”⁵³¹

Perhaps the more telling criticism, however, relates to the issue of corruption. After discussing the contribution made to several local schools by the Mining Company, Killenga notes:

... after our thorough study, the donation for the above mentioned projects from GGM [Geita Gold Mine] was not exhaustively used for these projects. Because not much of these projects can really be seen. Local fundis (sic) were engaged to do the construction or renovation, thus a lot of money was left for individual projects (corruption).

The Positive effect here is that there is the expansion of school facilities for increased number of children.

And the Negative effect here is that the money provided by GGM for the projects which pass through the District Council is not fully utilized for the intended projects, instead it assisted to promote individual projects of those who receive the money from GGM. Strategies for curb this negative effect by the Government is not seen. The people cannot

⁵²⁹ This seminar was convened by The Tanzania-network.de e.V. This organisation is made up of “representatives of groups and organizations from politics, the public, and the churches” in the Federal Republic of Germany and Tanzania. It describes itself further as a “forum for communication, information, networking, solidarity and lobby”: <http://www.tanzania-network.de> (accessed 24 March 2004).

⁵³⁰ Killenga Francis, “Effects of the Gold Mining Industry in Geita District”, presentation to *Perspectives for the economic development of Tanzania in the Context of Global Economy Seminar*, Frankfurt, Germany, 30 November 2002, 4.

⁵³¹ *Ibid*, 5.

do anything about the corruption because they are not informed of the money, neither the projects.⁵³²

Government action

It is significant to note that in 2001, the Tanzanian government formed a four-man task force to investigate a corruption scandal involving government officials suspected to have pocketed millions of Tanzania shillings in compensation earmarked for some 900 people relocated from the mine site.⁵³³ The taskforce was led by the then Mwanza regional head of the Prevention of Corruption Bureau,⁵³⁴ Mr Stephen Mashishanga.

No report has even been tendered arising out of this investigation and the PCB has not responded to any of the writer's many attempts seeking follow up on the matter.

Geita Gold paid out a total of US\$5.06 million in relocation compensation, but landowners were either claiming that they received less compensation than was due, or did not receive compensation. The chief executive officer of Geita Gold, Mr Harry Michael, stated:

We noticed that in the case of 461 entries that claim underpayment, the correct amount was paid by Ashanti into the government-controlled bank account, but did not reach the rightful person. It is our understanding that fictitious names have been added to the claims and that some committee members⁵³⁵ were charging Tsh100,000 (US\$120) to prepare bogus claims.⁵³⁶

Reviewing the Geita Case

The Geita mine contrasts with the Bulyanhulu mine in a number of specific operational terms. It is around twice the size of the Bulyanhulu mine, it is an open cut operation, which is demonstrably a safer form of mining than underground mining, and it is closer to an area of significant environmental value. Having said that, in the area of environmental compliance, there is one significant element which is absent in the case of the Geita mine. This is the absence of a specific World Bank oversight through the MIGA underwriting protocols.

Environmental compliance by the Geita mine can be considered under the following heads.

⁵³² Ibid, 1.

⁵³³ Mwamunyange Joseph, "Tanzania to Probe Gold Scam", *The East African*, 23 April 2001.

⁵³⁴ The Prevention of Corruption Bureau is "a semi-autonomous institution which is entrusted to combat corruption in Tanzania mainland. It is a department under the supervision of the President's office": PCB website at <http://www.tanzania.go.tz/pcb/corruption/welcome.html> (accessed 25 March 2004).

⁵³⁵ The Committee comprised of the district land officer, the regional valuer, the kitongoji (ward) chairman, ten cell leaders, the village executive officer and the village chairman.

⁵³⁶ Mwamunyange Joseph, n 520 above.

First, compliance with the terms of the *Mining Act 1998*. As stated above, two full time inspectors are employed by the mine to oversight environmental compliance in terms of the Act, the EMP and the EMS. These are in fact Tanzanian government officials whose salaries are paid by the mine. To date, no issues of non compliance have been reported.

Second, beyond the legislative requirements, the Geita mine appears to have instituted an environmental management system going well beyond the specific legislative requirements. They have:

- acquired ISO14000 certification and re-certification. This is one of the highest levels of international environmental certification as it requires independent, international auditing on a regular basis. There is no readily apparent reason why the company has attempted to achieve this level of certification beyond a high value being placed on its international corporate reputation. The Bulyanhulu mine has not achieved this level of certification. To a very large extent this level of certification effectively replaces the oversight of MIGA or the IFC.
- managed to maintain a relatively co-operative relationship with international NGOs.
- Instituted a range of local initiatives which appear to have effectively incorporated local issues and aspirations into the overall operating framework of the mine. This, admittedly, is to some extent government policy, but there does appear to be an earnest and genuine attempt to institute a broader policy. The incorporation of HIV-Aids reduction targets into the key performance indicators of the CEO may well be unique among mining companies.

After examining the Geita operation in detail, it is difficult to find any area of its operations (with the possible exception of mine safety which needs improvement) which differ in any particular from a level of high standard compliance, and beyond compliance, which would otherwise be applicable in a developed country. In fact the level of community involvement, their commitment to training artisanal miners, their specific policy of sourcing produce from the local community, could be taken as an example of how to conduct an integrated operation in an environmentally sensitive manner. The mine won the Presidents Award for Environmental Excellence in 2004.

5.3. Papua New Guinea

One of the most significant issues in terms of regulation of the 2 case study mines in Papua New Guinea is the partial government ownership. As will be seen in the Ok Tedi example, in particular, this conflict of regulator and owner meant that the best environmental outcomes were not achieved.

5.3.1. The Ok Tedi Mine

As will be discussed in greater depth below, the environmental impact of the Ok Tedi mine was substantial. It is one of the most publicized mines in the world and the extreme

negative publicity that BHP has received from it has been one of the catalysts for the transnational corporation to improve their environmental performance, or as Phillips describes it as motivating “corporate executives to take a hard look at their own ‘reputational capital’.”⁵³⁷

In terms of this thesis, it serves as an historical example of a mine that complied with government requirements and legislation, but played a dominant role in destroying, for a time, the environmental reputation of the world’s largest mining company. The PNG government sanctioned the method of tailings disposal and indeed insisted that the mine continue after BHP’s withdrawal. Unlike Tanzania, where the mines are privately owned, all the mines in PNG are partly government owned. Hence there is “a disincentive to regulate those projects in a way that increases costs and decreases profits. OK Tedi was a classic example of this conflict of interest.”⁵³⁸ It is this tension that is particularly significant when reviewing compliance with environmental laws for mines in PNG and which, as will be discussed below, has been used as an argument for self regulatory mechanisms.

The Ok Tedi mine also demonstrates the effectiveness of self regulatory mechanisms in the form of ‘de facto regulators’, the NGOs, who drew the world’s attention to the environmental devastation caused by the mine. More generally, it has led to a proliferation of external monitoring of mining companies by Australian NGOs and to a rapid increase in the knowledge base for these NGOs.⁵³⁹



Source: United Nations Environment Program – Maps and Grids

⁵³⁷ Phillips Ruth, “Engagement or Confrontation” in Evans Geoff et al (eds) *Moving Mountains: communities confront Mining and Globalisation*, Zed Books, London, 2002, 186.

⁵³⁸ Harris Chris, “An Australian NGO perspective on the implications of Ok Tedi” in Banks Glenn & Ballard Chris (eds) *The Ok Tedi Settlement: issues, outcomes and implications*, National Centre for Development Studies, Canberra, 1997, 193.

⁵³⁹ Banks Glenn and Ballard Chris, “Introduction: settling Ok Tedi” in Banks Glenn & Ballard Chris (eds) n 525 above, 9.

Ok Tedi Mining Limited (OTML), at Mt Fubilan in the highlands of western Papua,⁵⁴⁰ is one of the world's lowest cost copper miners. It generates about 20 percent of PNG's foreign exchange earnings and accounts for about 10 percent of PNG's gross domestic product. OTML is PNG's largest corporate employer, with a workforce of approximately 2,000 with a further 1,500 employed by contractors servicing the company. Over 90 percent of the company's staff are PNG citizens, with about 800 coming from villages within a 40 km radius of the mine.⁵⁴¹ The mine uses riverine disposal of tailings. The mine is situated in the headwaters of the Ok Tedi River⁵⁴², which is a tributary of the Fly River. The Fly River is the 23rd largest river system in the world. It has a total catchment area of about 76,000 km². It discharges between 3,000–7,000 m³ of water per second to the Gulf of Papua.

The very high rainfall in the headwaters⁵⁴³ and tendency towards frequent landslips causes large amounts of natural sediment to wash into the river system. The Fly River carries a natural sediment load of about 10 million tonnes each year. An average of 90 million tonnes per year of tailings, overburden and mine-induced erosion are discharged to the Ok Tedi each year from the mine. About 50 million tonnes of this reaches the Fly River.⁵⁴⁴ One industry-funded study predicts that if the dumping continues at that rate until the mine is scheduled to close in 2010, the total amount of sediment in the river would be 1.72 billion tons, or the weight of 4,712 Empire State Buildings.⁵⁴⁵

The original Ok Tedi project was designed to include a large tailings dam on the Ok Ma (an adjacent valley). The foundations of the tailings dam were irreparably destroyed by a landslide in 1984, during the construction of the dam. In the absence of any immediate alternative, and faced with the prospect of the mine not proceeding, the government agreed to an Interim Tailings Disposal Scheme (ITDS) that comprised riverine disposal of tailings and extensive monitoring to assess the likely long-term impacts. BHP Billiton have stated:

The decision to proceed at the time was based on evidence that the downstream aquatic ecosystem was well adapted to recovering from natural inputs of massive amounts of sediment. Predicted environmental impacts were based on the best available knowledge at the time.⁵⁴⁶

⁵⁴⁰ “The region was so undeveloped as to be effectively outside the control of PNG. It was a frontier area, where development activity was undoubtedly spurred by the Indonesian takeover of West Papua.”: King David, “The big polluter and the constructing of Ok Tedi: eco-imperialism and underdevelopment along the Ok Tedi and Fly rivers of Papua New Guinea” in Banks Glenn & Ballard Chris (eds), n 525 above, 97.

⁵⁴¹ Higgins Roger J, Managing Director, OTML, “Ok Tedi: Creating Community Partnerships for Sustainable Development”, 1 May 2002, 1.

⁵⁴² ‘Ok’ means ‘river’ in the local language.

⁵⁴³ Rainfall averages nearly 11 metres per year at the mine site.

⁵⁴⁴ Ok Tedi Mining Ltd, “The Fly River System”, 2001, 1.

⁵⁴⁵ Earthworks and Oxfam America, *Dirty Metals: Mining, Communities and the Environment*, USA, 2004, 7.

⁵⁴⁶ BHP Billiton, “Ok Tedi Sustainable Development Program”, at <http://www.bhpbilliton.com/bb/sustainableDevelopment/environment/okTedi.jsp> (accessed 9 September 2002).

The mine started life in 1984 as a gold mine, and now produces a high quality copper/gold concentrate. In 1989, on the basis of the monitoring results, and despite advice from several sources concerning the likely implications, the ITDS effectively became the permanent system.⁵⁴⁷ The impacts of the tailings in the lower Ok Tedi became obvious in the late 1980s, and “local and international actors mobilized in a campaign to provide compensation to those affected, and to reduce future tailings disposal in the river”.⁵⁴⁸

Legislative history of the mine

The *Mining (Ok Tedi Agreement) Act* was passed by the newly Independent State of PNG in 1976, and *Mining (Ok Tedi Supplemental Agreement) Act* was passed in 1980. Special legislation for the Bougainville Copper Mine was also passed around this time. Filer and Imbun note that the key question addressed in the construction of the mineral policy framework from this time was:

How could the national government capture the maximum possible share of the nation’s mineral wealth in the form of mineral revenues without alienating foreign investors to an extent which would deter their future investment in the production of more mineral wealth and more mineral resources? The importance of this question lay in a belief that the revenues derived from two very large and profitable mines, if properly applied to the task of national development, would enable the government and the country to escape their dependence on Australian aid and expertise before those mines had been exhausted.⁵⁴⁹

Filer notes that “environmental considerations were not entirely absent from the mineral policy regime established after 1972, but they were not pursued with the degree of diligence that applied to tax matters”.⁵⁵⁰ The Ok Tedi project was exempted from the later *Environmental Planning Act 1978* and subsequent *Environment Act 2000*.

The Ok Tedi mine operates through statutorily enforced agreements between the government and the joint venture partners. Changes to conditions and financing are made through supplemental agreements. In each agreement, it is a condition that the “State shall as soon as is practicable introduce and sponsor in the National Parliament a Bill for an Act to approve that agreement and give force of law to the alteration of the rights hereunder”.⁵⁵¹ There have been eight supplemental agreement Acts, together with the *Mining (Ok Tedi Mine Continuation Agreement) Act 2001*.

⁵⁴⁷ It is relevant to note that at this time (1989) a rebellion on Bougainville closed down that mine, which had been PNG’s most profitable mine and the Porgera mine had not yet opened.

⁵⁴⁸ Banks Glenn, n 362 above, 55.

⁵⁴⁹ Filer Colin & Imbun Benedict, “A Short History of Mineral Development Policies in Papua New Guinea”, Resource Management in Asia-Pacific, Working Paper No 55, Australian National University, 2004, p 5.

⁵⁵⁰ *Ibid*, 7.

⁵⁵¹ *Mining (Ok Tedi Agreement) Act 1976* (PNG), cl 42.2.

Environmental impacts of the mine

Non government organisations EarthWorks and Oxfam America have cited the devastation thus:

The dumping has contaminated the river with toxic metals and caused an enormous, permanent flood. Nearly all the fish in the river have been poisoned, and some fish species appear to have become extinct. Vast tracts of forest have been drowned. A 1999 estimate put the amount of forest damaged in that year alone at 176 square kilometers. Most of the wildlife has disappeared from the region. Plants of sago palm and other staple crops have died, and some 30,000 to 50,000 people have been displaced.⁵⁵²

OTML has cited the following as the major impacts of the mine.⁵⁵³

- vegetation dieback - . OTML monitors the amount and distribution of vegetation dieback through satellite images, together with ground surveys. Dieback is progressively increasing as the amount of sediment in the rivers increases and moves downstream, thereby reducing the depth of the river and increasing frequency and severity of over-bank flooding. Based on the observed dieback over the past nine years, and extensive modeling undertaken for the Mine Waste Management Project, the maximum amount of forest affected by dieback may eventually reach about 2,000 km².
- copper levels in the river system are elevated due to copper in mine waste, “but they are still well within Australian, PNG and World Health Organisation drinking water standards”.
- fish numbers have dropped significantly in the Ok Tedi and Fly Rivers. “This is thought to be due to sediment smothering fish habitat in the main river channels”.

The legislative history and civil action taken by landowners has been discussed in Chapter 3. For the purposes of this chapter, it is suffice to note that the first complaints about the mine came not from government regulators, but directly from the villagers. John Burton notes that:

Often this took the form of letters of complaint copied to as many parties as the writers could think of – the District Office, the government Liaison Officer, the OTML General Manager and so on – making little distinction of responsibility. ... The messages contain a mix of complaints about the distribution of mine benefits, the lack of government services and environmental impacts, but they are typically embedded in a wrapping of these other things.⁵⁵⁴

Glenn Banks also highlights this difficulty for the mining industry in PNG when dealing with landholders who have little knowledge of English. He notes:

One issue that has consistently affected the environmental credentials of the mining industry in PNG is the communication of environmental information to affected

⁵⁵² Earthworks and Oxfam America, n 532 above, 7.

⁵⁵³ Ok Tedi Mining Limited, “Impacts of Mining”, 2001, 2.

⁵⁵⁴ Burton John, “Terra nugax and the discovery paradigm” in Banks Glenn & Ballard Chris (eds), n 525 above, 42-43.

communities. The transmission of technical information across cultures (from the Western scientific rationale to very different understandings of how the world works) is inherently difficult. The issue is more than just one of cross-cultural communication, as there is the added complication that the state and the mines (and at times the NGOs) are often dealing with very remote communities with low levels of literacy. This combination of factors means that the information passed to communities is rarely received in the manner in which it is intended. Although there are some attempts to address this issue, it is not a simple process, and requires more effort.⁵⁵⁵

This issue has also been raised by the management of the Lihir Gold Ltd, as will be discussed in the following case study.

The withdrawal of BHP Billiton

In 1996, OTML commissioned consultants to undertake a risk assessment of the mine to assist the Board and management of the company in determining which of several management options it should pursue in relation to mine waste mitigation. The risk assessment included a US\$60 million dredging trial in the lower Ok Tedi to investigate the effectiveness of dredging to reduce sedimentation.⁵⁵⁶

The risk assessment addressed four options, details of which, together with the advantages and disadvantages of these options, are included in **Appendix 5-3**. The report concluded:

From an environmental standpoint, the best option is to close the mine immediately since this avoids the discharge into the Fly River system of some 200-300 million tonnes of tailings and mine waste which will occur if mining continues to 2010. But from a social standpoint this would result in a potentially disastrous situation because there is no preparedness for mine closure.⁵⁵⁷

Also in 1999, OTML and the Government embarked on a consultation process with more than 150 communities comprising the estimated 40,000 people in Western Province affected by the mine. PEACE Foundation Melanesia, a PNG-based NGO was contracted to provide communities with training to support their participation process prior to commencement of formal discussions with OTML. Feedback from communities was clear and consistent: ‘don’t shut the mine, but give us more compensation’ and, perhaps less believable, ‘give us sustainable development opportunities’.⁵⁵⁸ The outcome was the signing of Communities Mine Continuation Agreements which provided the relevant communities a mixture of cash and other development funding for initiatives and other programs downstream.

⁵⁵⁵ Banks Glenn, n 362 above, 59.

⁵⁵⁶ Higgins Roger J, n 528 above, 3.

⁵⁵⁷ World Bank, *Ok Tedi Mining Ltd, Mine Waste Management Project, Risk Assessment Report*, 2000, para 32.

⁵⁵⁸ Higgins Roger J, n 528 above, 3.

Since the most feasible option in terms of mitigating environmental impacts was to close down the mine, OTML left this decision to the PNG Government. The Government decided that the mine should continue. Academic David King supports this view, noting that:

As far as the core issue of underdevelopment is concerned, an extension of mining with pollution brought under control is a preferable option for the longer term development of this remote region. The closure of the mine under pressure from groups or countries outside PNG would have simply amounted to eco-imperialism.⁵⁵⁹

As this case study is looking at the response to an environmental catastrophe by TNCs, it is relevant to consider ‘lessons learned’. For example, Murray Honnan, Chairman of OTML gave the rather general response:

Each of the three shareholders has learned an enormous amount from the Ok Tedi uses, and basically what the PNG government and BHP and Inmet have learned, is that there are processes and more rigorous processes that must be gone through in any project of this magnitude, particularly where there are uncertainties, to reduce to the smallest possible the uncertainties that might cause impacts like those that have arisen at Ok Tedi.⁵⁶⁰

In 2001, BHP endorsed a new policy not to practice riverine disposal at any of its future sites.⁵⁶¹ Also in 2001, “in the face of international opprobrium – but clear support for continued operation from communities as well as other shareholders” – BHP Billiton announced its intention to withdraw from the project, and to transfer its 52 percent equity into a new organisation “for the benefit of the people of Western Province and PNG generally”.⁵⁶²

In August of that year, the newly merged BHP Billiton wrote off its remaining US\$148 million investment in OTML.⁵⁶³ In February 2002, it handed over its 52 percent share of the project to a government-controlled local corporation, the PNG Sustainable Development Program Limited, in exchange for indemnity⁵⁶⁴ from future legal claims.⁵⁶⁵

⁵⁵⁹ King David, “The big polluter and the constructing of Ok Tedi: eco-imperialism and underdevelopment along the Ok Tedi and Fly rivers of Papua New Guinea” in Banks Glenn & Ballard Chris (eds), n 525 above, 112.

⁵⁶⁰ Radio National, “Earthbeat on Saturday – Ok Tedi Copper Mine, 26 February 2000 at <http://www.abc.net.au/rn/science/earth/stories/s103875.html> (accessed 2 April 2004).

⁵⁶¹ Policy on Tailings Management – “BHP Billiton will not commit to a new mining project that disposes of waste rock or tailings into a river. Please note that this position does not apply to the disposal of waste rock and tailings materials in conventional waste rock dumps or tailings dams which may be constructed within the catchment of a river system where such structures are designed to retain and store the waste materials. Neither does it apply to the discharge of water from tailings dams or waste rock dumps that is of a quality acceptable for downstream beneficial uses: BHP Billiton, “Environment” at <http://www.bhpbilliton.com/bb/sustainableDevelopment/environment.jsp> (accessed 4 May 2004).

⁵⁶² Higgins Roger J, n 545 above, 4.

⁵⁶³ BHP Billiton, News Release, “BHP Billiton withdraws from Ok Tedi Copper Mine and establishes development fund for benefit of PNG people”, 8 February 2002.

⁵⁶⁴ The Mining (Ok Tedi Mine Continuation (Ninth Supplemental) Agreement) Act 2001, s 5(1) provides “subject to subsection (3), neither the State nor any Government Agency may take, pursue or in any way

The Program Company will operate independently and will utilize dividend payments arising from the shareholding to fund current and long term sustainable development projects in PNG, particularly the Western Province. The benefits flowing from the Program Company are separate from, and in addition to, the compensation arrangements negotiated directly with the affected Western Province village communities by OTML.⁵⁶⁶

The Program Company is independent of OTML and the PNG Government. It has seven independent directors, one based in Singapore, and operates through an Executive Officer, Program Manager and Advisory Council with clearly defined operating rules, including criteria for selecting programs and projects, for consultation and for public reporting. The purpose of the company is to fund short and long term sustainable development projects in PNG. Its dividends are to be allocated as follows:

- one third of the dividends are to be spent on current sustainable development projects. Of this, one third of this portion are to be spent on the Western Province and two-thirds in PNG generally, until mine closure.
- two thirds of the dividends are set aside in the Program Company's Long Term Fund to be used after mine closure. They must be allocated to sustainable development projects in PNG.⁵⁶⁷

In an effort at remediation, the agreement for BHP Billiton's withdrawal provides for continued dredging from the Lower Ok Tedi (at a current cost of US\$35 million per year) to remove about 20 million tons of sediment per year. Dredging, or an approved superior alternative mitigation measure, will continue for the life of the mine.⁵⁶⁸ The dredging has begun to reverse the flooding, and vegetation is slowing returning to some areas. Ultimately, however, up to 6,600 square kilometers of vegetation⁵⁶⁹ may be destroyed during the life of the mine. In fact, a developing problem is now how to deal with potentially over 200 million tons of sulphite rich sediment deposited adjacent to the Ok Tedi River. This is itself has the potential to be a serious environmental issue, but has received little comment in the literature since BHP's withdrawal.

In 2002, BHP Billiton's then deputy CEO, Brian Gilbertson, said the group's Ok Tedi mine investment was an 'environmental abyss'.⁵⁷⁰ BHP Billiton suffered a US\$430 million write-down following its 52 percent investment in Ok Tedi. Gilbertson said that agreement to write-down the value of the asset (total development costs were US\$1.4 billion) and hand its stake to the PNG government was the best trade-off that could have

support proceedings against a BHP Billiton Party in respect of an Environmental Claim relating to the operation of the Project.”

⁵⁶⁵ The other shareholders – the State of PNG (30%) and the Canadian Inmet Mining Corporation (18%) retained their shareholding following BHP Billiton's withdrawal.

⁵⁶⁶ BHP Billiton, n 550 above.

⁵⁶⁷ OTML, “Sustainable Development” at

<http://www.oktedi.com/sustainable/pfSustainableDevelopmentProgramCompany.php> (accessed 5 November 2003).

⁵⁶⁸ BHP Billiton, n 550 above.

⁵⁶⁹ Earthworks and Oxfam America, n 532 above, 7.

⁵⁷⁰ McKay David, “Ok Tedi is ‘environmental abyss’ – Gilbertson”, Mineweb Australasia, 30 August 2002.

been made given the highly complex circumstances. “The final result has not, I think, fully satisfied everybody, but most will concede that it represents the best trade-off that could be made in very complex circumstances, by parties acting in good faith, and with the best of intentions”, he said.⁵⁷¹ CEO and Managing Director, Paul Anderson, stated:

We sought to close the mine early because of its environmental impact however any significant operational changes requires the approval of all shareholders including the PNG Government. At the same time, we also made it clear we were not prepared to simply continue operating the mine to the end of its 10 year economic life.⁵⁷²

As has been noted in previous Chapters, the shareholders’ agreement for BHP Billiton’s withdrawal and the Community Mine Continuation Agreements have been legislated by the PNG Parliament through the *Mining (Ok Tedi Mine Continuation (Ninth Supplemental) Agreement) Act 2001*.

Ok Tedi Development Foundation

As part of the *Mining (Ok Tedi Mine Continuation (Ninth Supplemental) Agreement) Act 2001*,⁵⁷³ OTML established an Ok Tedi Development Foundation as a way of achieve the long term goals of sustainability. As the mine moves towards closure in 2010, it has become important to shift the community programs to make them independent of the mine, both in resources and administration. OTML considered that the most efficient way to respond to the issues and possibilities of sustainable development was to establish a foundation with sole responsibility to promote the design and implementation of sustainable social and economic development activities in PNG’s Western Province.⁵⁷⁴ The fund allocated US\$3 million per year to help build local infrastructure and to introduce sustainable development projects for affected communities. It will also work with communities to help them support themselves after the mine closes.⁵⁷⁵

In his comprehensive review of mining in PNG as part of the Mining, Minerals & Sustainable Development project, Glenn Banks of the University of New South Wales notes that initiatives, such as the development foundation, “can be regarded as well overdue”, but that they “do offer the prospect of more sustainable local outcomes form mining for the respective communities”.⁵⁷⁶ He notes that the motivation for establishing funds such as this one and ones established by the Lihir and Porgera⁵⁷⁷ mines is partly self-interest, partly new agendas from higher within the corporate structure and partly the concerns and efforts of individuals within the companies, particularly those in the community affairs sections of the various mines. It is driven in part by the recognition

⁵⁷¹ Ibid.

⁵⁷² BHP Billiton, n 550 above.

⁵⁷³ This was established pursuant to s 6 of the *Mining (Ok Tedi Mine Continuation (Ninth Supplemental) Agreement) Act 2001*.

⁵⁷⁴ Higgins Roger J, n 545 above, 4.

⁵⁷⁵ National Research Institute, Boroko, NCD, Papua New Guinea, Environment Monitor – Papua New Guinea, 2002, 17.

⁵⁷⁶ Banks Glenn, n 362 above, 75.

⁵⁷⁷ That is, the Porgera District Plan.

that at the local level, the institutional structures and capacity simply do not exist to secure and translate revenue streams into longer-term sustainable forms of development.⁵⁷⁸

Banks notes that such Foundations have the potential to create conflict with local and provincial government (particularly the elected members), since they establish a separate body to provide services to the local communities, rather than strengthening the existing system. Banks queries whether the desire of companies, such as OTML to externalize their community development role is the most appropriate method. While not expressing a definite conclusion, he raises the relevant issues that externalising of communities affairs also has the result of weakening the direct relationship between communities and companies. He notes that “elsewhere, such attempts to do this have met with skepticism from communities, who see it as an attempt by companies to reduce the extent of their relationship with affected communities”.

The Ok Tedi mine is an example where social issues continue to override environmental issues. In an attempt to quantify the impact of the mine in terms of social factors, The World Bank Review of the Risk Assessment Report stated:

OTML has become the principle agent responsible for providing for a variety of social services such as health, education, training programs, infrastructure development and local business development in the Ok Tedi, Fly River areas. Half of the Western Provinces funding comes from Ok Tedi. Significant advances have been made in the area of public health with infant mortality down from 300 per 1,000 [presumably at commencement of the mine] to less than 15 per 1,000, average life span up from 30 years to 50 years and the incidence of Malaria decreasing from 70 percent of children to less than 15 percent and amongst adults from 35 percent to less than 6 percent.⁵⁷⁹

The legislation establishing the Ok Tedi mine addressed operations issues, but did not cover closure. As Ok Tedi is the only major economic entity in the Western Province, and runs the best medical facilities in the region, one of the issues to be addressed prior to closure is working with the government to make services, such as health care, sustainable.⁵⁸⁰

The Ok Tedi case highlights conflicts between local interests and the international community. It also highlights the different perspectives of both the developed and developing world. Whereas the PNG Government is willing to accept the environmental impacts because the mine provides foreign exchange, employment and promotes regional development, the international community, most especially NGOs in the developed world, are advocating its closure.⁵⁸¹

⁵⁷⁸ Banks Glenn, n 362 above, 75-78.

⁵⁷⁹ World Bank, *Mine Waste Management Project Risk Assessment*, 2000, para 24 quoting OTML, *Community and Environment Program*, 1999.

⁵⁸⁰ World Bank and International Finance Corporation, *It's Not Over When It's Over: Mine Closure Around the World*, 2002, 7.

⁵⁸¹ IIED and World Business Council for Sustainable Development, “Mining for the Future – Appendix H: Ok Tedi Riverine Disposal Case Study”, April 2002, H-18.

This raises a major question of who makes the final decision on what is to happen in such a case. Should the decision be based on a set of best management practices, as supported by the international community (in this case permanent closure) or should this decision be left to the PNG Government. The answer is, of course, that the PNG government always had the final say and would make the final decision. Given that the mine represented 25 percent of tax receipts, that decision was always going to be inevitable. The mine will continue in operation until at least 2010.

Reviewing the Ok Tedi Mine

If there is a mining equivalent of a Greek tragedy, then BHP's Ok Tedi experience would no doubt qualify. What appeared at first sight to be an advantageous commercial relationship with the PNG government (albeit one forced on BHP by PNG legislation) carried with it the seeds of its own demise.

No matter how highly developed or sensitive were BHP's environmental credentials, and at the time they were not as highly developed as would have been desirable, they always had the potential to be undercut by the financial self-centredness of their commercial partner. In short, if the contracting partner is the legislative and regulative authority itself, with a massive vested interest in financial return, then the commercial relationship is essentially problematical. When BHP sought to withdraw from mine, following the World Bank review of the mine and advice that, environmentally at least, the best solution was to cease production, the government insisted that the mine continue operation.

The lesson of Ok Tedi for TNCs generally is to be very careful of making the government your partner. It is at least arguable that a relationship with a government can be maintained in a developed country with significant external oversight from NGOs, the law and community groups, but it may not always be maintainable in a developing country which is struggling to acquire foreign currency by whatever means. Part of the lesson here is the cost that was paid by BHP which went far beyond the financial cost. Its reputation was justifiably savaged in the media and in the Australian courts, and the company has spent nearly a decade trying to rebuild.

The most salient point here is that BHP complied with all the regulations and all the local laws, but was undone by the very factors which it is argued are now imperative throughout the world, namely sustainability issues, environmental reputation and public opinion.

5.3.2. Lihir Gold

Lihir Gold Limited (LGL) is located on Lihir Island in the New Ireland province of PNG. Lihir Island is about 900 kilometres north east of Port Moresby. The island is a volcanic seamount that rises steeply from sea level to approximately 600 metres above sea level.

At its widest points, the island measures 22 km from north to south and 14.5 km from east to west. The mine presently consists of two deposits – the Lienetz deposit⁵⁸² and the Minifie deposit.⁵⁸³ A third pit, the Kapit deposit, will be developed as the Lienetz pit is depleted by approx 2015. The average precipitation is 4,800 millimetres per year.



Source: Lihir Gold Ltd, *Annual Report*, 2002, 2.

From its inception until October 2005, LGL was managed by Lihir Management Company Ltd (LMCL), a wholly owned subsidiary of Rio Tinto. LGL is a public company and as at 2004, it was owned as follows:⁵⁸⁴

- Rio Tinto 16.3%
- Institutions and general public 76.9%
- Mineral Resources Lihir Ltd 6.8%⁵⁸⁵

In October 2005, LGL itself took over the operations. However as the purpose of this thesis is to test the motivators of environmental compliance by the ‘top tier’ mining companies, it is the period of Rio Tinto’s management that will be the focus of this case study, rather than the subsequent period.

A special mining lease was granted on 17 March 1995 and is valid for a term of 40 years. Construction of the mine commenced in 1995 and the first gold was poured in 1997.

⁵⁸² The Lienetz deposit measures approx 800 metres x 400 metres and gold mineralisation occurs at elevations between 140 metres above and 250 metres below sea level. The deposit has higher grade ore than the Minifie deposit.

⁵⁸³ The Minifie deposit is larger in dimension and measures approx 1,000 metres x 600 metres. Gold mineralization occurs mostly between the surface (about 50 metres above sea level) and 150 metres below sea level. This deposit was largely depleted by 2005.

⁵⁸⁴ Lihir, Major Shareholders at http://www.lihir.com.pg/investor_info/shareholders.htm (accessed 2 April 2004).

⁵⁸⁵ Mineral Resources Lihir holds its shares in trust on behalf of the people of Lihir. The purchase of MRL shares was through a special low interest loan through the European Investment Bank, which was organised by the PNG Government.

LGL is an open pit mine, the planned final dimensions of the pit are approx 2 km x 1.4 km, with a final depth of 185 m below sea level. It is anticipated that open pit mining will continue until 2014, during which time the high-grade ore will be processed. The lower-grade ore that is currently being stockpiled will be recovered and processed over the succeeding years.

To finance the mining operation, US\$450 million of shares were floated and the Union Bank of Switzerland syndicated a loan for US\$300 million. MIGA indemnified the loan against political risks. On 10 May 1995 the Executive Board of MIGA approved guarantees of US\$76.6 million for the project.⁵⁸⁶ In 1997 the Australian Government's Export Finance and Insurance Corporation (EFIC) provided political risk insurance of US\$250 million, which had been denied on environmental grounds⁵⁸⁷ by its United States government equivalent, the Overseas Private Investment Corporation.⁵⁸⁸ EFIC's government manager, Michael Jackson stated that "the company had been required to submit annual reports to verify the environmental conditions attached to the insurance was complied with".⁵⁸⁹ Lihir commissioned the annual reports. EFIC did not commission its own reports or have the reports by Lihir's consultants checked independently.⁵⁹⁰ The insurance was relinquished in 2000. Operational details of the mine are given in **Appendix 5-4**.

Environmental issues

LGL's community and environmental policy includes the following statements:

- comply with applicable PNG environmental laws and regulations as well as corporate standards and guidelines and, where these do not exist, adopt internationally recognized standards of practice.
- participate with government and industry organizations in further development of social and environmental policies, codes and practices aimed at improving performance.⁵⁹¹

⁵⁸⁶ Down to Earth and Minewatch Asia-Pacific paper, "Into the unknown regions: the hazards of STD", November 2000 reports that "World Bank President James Wolfensohn reportedly told a meeting of Swiss parliamentarians in May 1996 that the project would be 'disastrous'. The writer has been unable to verify this source.

⁵⁸⁷ The reason was that the mine would contravene various US domestic Acts, including the Clean Water Act and the Marine Protection Research and Sanctuaries Act as well as the London Convention on Dumping at Sea.

⁵⁸⁸ Roberts Greg, "Government link to gold mine's 'prohibited' waste, *The Sydney Morning Herald*, 16 November 2002.

⁵⁸⁹ Ibid.

⁵⁹⁰ Ibid. In correspondence to the Mineral Policy Institute on 17 July 2001, EFIC stated that it would not provide details of Lihir's monitoring, which had been sent to it by the company, as 'a result of the confidentiality obligations' it had entered into when it insured the mine: Divecha Simon, Mineral Policy Institute, *STD Toolkit: New Guinea Case Studies*, Project Underground and Mining Watch Canada, 2002, 6.

⁵⁹¹ Lihir Gold Ltd, "Community and Environment Policy", June 2003.

The approval for the mine was issued under the *Environmental Planning Act 1978*. Under this Act, LGL was required to submit an environmental plan⁵⁹² before approval. In relation to this environmental plan, LGL notes:

The Lihir EP took 12 years to complete, costing over US\$2 million, and involving extensive community and government consultation. It contains more than 1,100 pages of detailed scientific, social and environmental engineering studies, including an analysis of the existing environment (baseline studies) and anticipated environmental impacts.⁵⁹³

The environmental plan was approved by the PNG government in 1995.

LGL also holds various permits for waste water discharges under the *Water Resources Act 1982*.⁵⁹⁴ One of the conditions of the environmental authority is for Lihir to submit annual environmental monitoring reports. In addition, Lihir is also required to submit water quality analysis for the water discharge permits it holds. Any variation from the mine development which significantly affects the environment is also required to be firstly cleared from the DECS. In 2003, DECS reported:

DEC's assessment of the environmental monitoring reports have shown that Lihir is in compliance with the environmental conditions set in the approvals and permits. DEC commends the initiative taken by Lihir in planning to evaluate its environmental performance in line with the new Environment Act 2000 and subsidiary regulations which will come into force by mid 2003. The Mine and this Department will be involved in this process. We are happy to say we are confident of the Company's environmental performance.⁵⁹⁵

LGL engaged a local company to carry out environmental monitoring – although this cannot be said to be true 'third party certification'. Owned by the Naval and Dalavit clans on Lihir Island, Lihir Environmental Services (LES) was set up in September 2003 with the assistance of Lihir Gold's Development Unit. The company is headed by former Lihir Gold environment officer, Augustine Zykios, and employs a senior hydrologist, two graduates and an extension officer.

Lihir Gold General Manager, External Affairs and Sustainable Development, Geoff Day, stated:

The idea behind forming such a company was to develop and promote business opportunities for Lihirians, and to increase the local skills base through the provision of technical training. An additional and important benefit is that it provides a more

⁵⁹² This environmental plan is similar in extent to an Australian environmental impact statement: personal communication, Mr Geoff Day, General Manager, External Affairs & Sustainable Development, Lihir Gold, 5 May 2005.

⁵⁹³ Lihir Gold Ltd, "Responsible Environmental Management", Fact Sheet 3, undated, 1.

⁵⁹⁴ These permits regulate, inter alia, the amount of water that can be extracted from the island's freshwater creeks for gold processing and the management of stormwater and sediment runoff from roads and mine infrastructure.

⁵⁹⁵ Letter from Mr Robert Norombe, Acting Secretary, Department of Environment and Conservation, to the Manager, Lihir Management Company, 14 April 2003.

transparent mechanism for the Lihirian community to be involved in collecting environmental data, and monitoring and assessing any effects of the operation on the environment. During the initial stage of the contract Lihir Gold's Environmental Department is working closely with LES officers to help train them in environmental monitoring best practice.⁵⁹⁶

The Department of Environment and Conservation has a full time environment officer based on Lihir to monitor operations and liaise with the local community.⁵⁹⁷ There are no resources from the government to directly fund this position, so the company has set up a process of providing money to the local government to fund the officer's position.⁵⁹⁸ The PNG government also lacks the capacity to fund social services and police, and resources for these positions is also provided by Lihir.

The company has indicated that there is some difficulty in communicating scientific information about the environmental impacts of the mine to the local community. To this end, it is working with anthropologists Dr Martha Macintyre and Dr Simon Foale and the schools around Lihir in a bid to promote scientific learning and enable the Lihirian community to take a more active role in environmental monitoring and awareness.⁵⁹⁹

The Environmental Section of LGML monitors air, water and soil quality, as well as noise levels and the health of wildlife including Megapodes, Leatherback turtles, sago trees and fish. The company funds additional research programs at the CSIRO Division of marine Science, James Cook University, Australian Institute of Marine Science and Deakin University.

In 2005, the company undertook an environmental impact assessment for the implementation of "Production Improvement Programs".⁶⁰⁰ As well as being assessed by the Department of Environment and Conservation, the EIA was in compliance with "all relevant international environmental and social guidelines including the nine Equator principles."⁶⁰¹ Like the Geita Gold Mine, obtaining ISO14001 certification has been a driver for LGL. In May 2004 it was the first mining company in PNG to receive such certification. Two surveillance audits have been subsequently conducted by SAI Global, and on both occasion, LGL achieved zero non-compliances.⁶⁰²

⁵⁹⁶ Lihir Gold Ltd, "Lihirian Company Awarded Environmental Monitoring Contract", Press Release, 10 February 2004.

⁵⁹⁷ Lihir Gold Ltd, 2002 Report to the Community, "Together we are making a difference", 2003, p 17.

⁵⁹⁸ Personal communication, Mr Geoff Day, Lihir Gold, 5 May 2005.

⁵⁹⁹ Lihir Gold Ltd, n 584 above, 17.

⁶⁰⁰ This includes activities to commence development of the Kapit pit, a flotation circuit to further improve the economics of the project, improvements in mine water/ sediment/ acid rock drainage management, and the use of geothermal steam for power generation. (Source: Lihir Gold Ltd, *Lihir Environment Annual Report*, 2005, 2).

⁶⁰¹ Lihir Gold Ltd, *2005 Sustainability Report*, 48.

⁶⁰² Lihir Gold Ltd, *Environment Annual Report 2005*, Vol 1 – Main Report, 14-15. Audits were held in May 2005 and January 2006.

LGL's first Sustainability Report was prepared for the year ending 31 December 2005. It is based on the Global Reporting Initiative's GE Draft Guidelines. The company notes that:

this Report has been prepared for all of our stakeholders including our shareholders, employees, contractors, host governments, local communities, NGOs, suppliers and customers. We engage constantly and consistently with our stakeholders, especially government and community groups in the areas in which we operate.⁶⁰³

Submarine Tailings Disposal

One of the main issues that is always highlighted about mining in PNG is the disposal of tailings in either rivers, or the ocean. LGL disposes of both waste rock⁶⁰⁴ and tailings⁶⁰⁵ in the ocean. Waste rock and tailings are discharged via an underwater Deep Sea Tailings Placement pipeline. At the time the mine was approved, there were no applicable PNG standards for water quality criteria, so they were derived from a combination of standards of the World Health Organisation, the US Environmental Protection Agency and the Australia and New Zealand Environment and Conservation Council (ANZECC).

As part of the Lihir mining feasibility study, all available options for storing waste rock and tailings were identified, including land based and deep ocean floor 'storage'⁶⁰⁶. The company reports social, environmental and economic reasons for the choice of ocean disposal, viz:

The construction of a storage dam would have resulted in the destruction of several hundred hectares of the island's rainforest and vastly increased the area taken up by the mine, reducing the already scarce land space for housing and agriculture. Land is highly valued by Lihirians and extensive public consultation indicated that the local community was not in favour of on-land disposal. The area was also considered to be geotechnically unsuitable for dam construction, given the steep terrain, seismic activity and high rainfall. A tailing and waste rock dam would require continuous monitoring and post-mine maintenance to ensure effective environmental control of issues such as acid rock drainage, dam stability and erosion. For these reasons, a tailing dam was considered to pose too serious a risk to the environment and the community, and would be cost prohibitive.⁶⁰⁷

⁶⁰³ Lihir Gold Ltd, n 588 above, 7.

⁶⁰⁴ Waste rock, or overburden, is the rock that is removed before the gold-bearing ore can be mined. Over 20 million tonnes of waste rock is mined from LGL's open pit each year. The waste rock consists of rock with gold concentrations uneconomic to process, and does not undergo processing of any kind.

⁶⁰⁵ Tailings in the material left over after the gold has been extracted from the ore. It comprises a mixture of crushed rock particles (approx 3.5 million tonnes per year), fresh water, sea water, measurable quantities of dissolved metals (ie iron, zinc, copper, cadmium, arsenic, lead and mercury) and small amounts of process chemicals, including lime and cyanide.

⁶⁰⁶ Lihir Gold Ltd, "Responsible Environmental Management", Fact Sheet 2, undated, 1. Whilst, admittedly, mining is full of euphemisms, the choice of the word 'storage' by LGL, rather than disposal, needs some comment!

⁶⁰⁷ Ibid, 1.

Ocean disposal at LGL occurs by two processes:⁶⁰⁸

- waste rock is discharged by bottom-opening barges into steep submarine canyons where more than 99% of this material descends rapidly down to water depths of between 900 metres – 2 kilometres. Small amounts of fine sediment from the waste rock remain as suspended sediment plumes near the ocean surface within the barge dumping areas. These plumes rapidly dilute and disperse.
- tailing is discharged by a system known as Deep Sea Tailing Placement (DSTP).⁶⁰⁹ DSTP is a specialized form of marine tailing placement where the outfall location and depth are carefully selected and the tailing is discharged via an underwater pipeline located below the biologically productive upper ocean layers. This type of system is restricted to locations where deep ocean water is close to shore and favourable currents assist the tailing to descend and deposit on the deep ocean floor. LGL further notes that “this method is now accepted as a viable option by many countries where suitable geographic and physical conditions exist, and is currently being used by nine mine operations around the world, including in developed countries such as the UK, France and Canada”.

LGL notes that the main impact is visual surface plumes caused by barge disposal of unprocessed waste rock, and road and mine runoff after heavy rainfall. “Internal and external studies indicate that the sediment from these plumes has not had a major impact on coral reefs within Luise Harbour, and there has been no affect on the fish or any other marine organism. In addition the concentration of metals and cyanide in the surrounding ocean, resulting from the DSTP system, is considerably lower than the PNG Government’s water quality criteria for the protection of marine ecosystems”.⁶¹⁰

In a company publication, LGL addresses three criticisms,⁶¹¹ which it refers to as “correcting misconceptions”. The company’s position is given in **Appendix 5-5**.

The issues that are commonly raised by NGOs in relation to deep sea tailings placement (DSTP) include the following:

1. DSTP costs less than land-based disposal because it does not require the construction of dams or long term responsibility for the effects of tailings. Once the waste is released into the sea, it is ‘out of sight, out of mind’.⁶¹²

The US Department of the Interior conducted a global review of mines using DSTP and concluded that on average, DSTP use resulted in a 17 percent reduction in capital costs

⁶⁰⁸ Ibid, 2.

⁶⁰⁹ NGOs, such as the Mineral Policy Institute, question the use of the term ‘Deep Sea Tailings Placement’, and even ‘Submarine Tailings Placement’, noting that the mining industry prefers these terms as ‘placement’ sounds much nicer than dumping or disposal: Mining Policy Institute, “Submarine Tailings Disposal” at <http://www.mpi.org.au/std/index.html> (accessed 2 April 2004).

⁶¹⁰ Lihir Gold Ltd, n 596 above, 2.

⁶¹¹ It should be noted that misconception 1 uses quite a technical interpretation of the London Convention.

⁶¹² Mineral Policy Institute, “What is STD?” at http://www.mpi.org.au/std/std_what.html (accessed 2 April 2004).

and a 1.6 percent increase in operating costs.⁶¹³ Incidentally, DSTP is not permitted in the United States, as it breaches the provisions of the Clean Waters Act.⁶¹⁴

2. Tailings can have an impact on the environment both through certain types of chemicals that they contain or more simply through their physical presence in the sea water.

An Australian oceanographer with extensive PNG experience, Phil Shearman, notes⁶¹⁵:

- the bottom of the ocean is not an uninhabited desert in most of the coastal environments of the Pacific. A huge range of creatures live there that are important parts of the marine community. Their loss, when tailings are deposited on them, reduces the productivity of the surrounding area. Furthermore there exists numerous species of organism that feed upon the bottom of the ocean or which migrate to the surface to feed, and these can have the effect of moving pollution into the surface zones of the sea.
- tailings will enter the sea at different depths and will spread out for many kilometers. It is also possible that these tailings will not mix rapidly with the surrounding water, so will maintain their high concentrations of tailings for many kilometers from their source.

3. Unlike on land, if something goes wrong with an DSTP system, there is little the company, or anyone else, can do. The public may not even discover a problem, because it is out of sight under the sea.⁶¹⁶

Nevertheless there are scientists who argue suggest that DSTP is more appropriate than land disposal under certain conditions. For example, Tom Pedersen, a mining consultant and geologist at the University of British Columbia in Vancouver, states:

In fact I think that it is irresponsible to put sulphide-rich tailings in conventional ponds in seismically active, high-rainfall areas with the expectation that they will remain in a safe

⁶¹³ Shearman Phil, "STD from the perspective of oceanography", paper presented to the International Conference on Submarine Tailings Disposal, 23-30 April 2001, Indonesia, 1. Further examples given by MiningWatch Canada are: Placer Dome's Dick Zandee's statement in 1985 that their surface disposal system into Calancan Bay in the Philippines 'costs less than half as much as the operation of the tailings-pond system'; the estimate that the DSTP system for the Kitsault mine in Canada would save Placer Dome \$25 million dollars per year relative to the cost of land disposal: reported in Catherine Coumans, "STD Toolkit – Submarine Tailings Disposal", 2002, 1.

⁶¹⁴ Dixon Kevin, "US Regulations Submarine Tailings Disposal", paper presented to the International Conference on Submarine Tailings Disposal, 23-30 April 2001, Indonesia, 1 quoting Patricia McGrath, "Discharge Permitting and Environmental Assessment Issues Associated with Submarine Tailings Disposal for the Alaska-Juneau Mine Project", US EPA Region 10 (the Pacific Northwest and Alaska), Seattle, February 1998, 1.

⁶¹⁵ Shearman Phil, n 600 above, 3.

⁶¹⁶ Catherine Coumans, n 600 above, 1.

state in perpetuity. [But tailings put beneath the waves] if disposed of properly are essentially chemically inert in perpetuity.⁶¹⁷

Whilst a scientific analysis is beyond the scope of this work, the one conclusion that can be drawn is that the answer no doubt lies in real independent verification. Ms Matilda Koma of the NGO Environmental Watch Group has echoed these thoughts. She acknowledges:

Lack of manpower and technical capacity and the availability of finance make it difficult to reliably conduct independent monitoring of any STD system in the country. Currently the mining companies carry out all environmental monitoring work, with respect to the Environmental Management and Monitoring Program (EMMP). Their findings are reported to government [DECS] on quarterly on 6 monthly basis depending on the program. As a result it can be strongly assumed that any reporting will be biased on the side of the company.⁶¹⁸

Such comments are also supported by McKinnon, who has made the point that “people’s main concerns come from observable changes in say a river – discolouration, odour, taste or feel – rather than chemical quantification of some scientific phenomenon unknown to villagers.”⁶¹⁹ Two NGOs who appears to be opposed to mining, MineWatch Asia-Pacific and Down to Earth express this in more direct terms:

In short STD [DSTP] is neither a tried, nor recognized, technique for ridding the mining industry of its worst nightmares. Its pretended economic worth is also highly speculative. It rests on the virtually impossible task of comparing the degradation of offshore waters and deep sea fishing resources, with the sustainable use value of land and waters where tailings are currently deposited, and which they will continue to adversely affect. Since STD has only recently been employed in tropical waters ... such a comparison would have to wait many years for validation.⁶²⁰

In a recent presentation to the Pacific Economic Cooperation Council’s Minerals Network, James Wanjik and Patricia Peperia from the PNG Department of Mineral Resources gave the following conclusions:

[DSTP] has proven to be a viable alternative to land-based tailings disposal in PNG due to ideal conditions such as deeper waters, mining processing infrastructure near shore, limited land for alternative use, compensation demands, impact of ARD in the long term onland and large volume of seawater for dilution and dispersion at the end of the tailings outfall.

⁶¹⁷ Pearce Fred, “Tails of Woe”, New Scientist, 11 November 2000 at

http://www.mpi.org.au/std/std_newscientist_print.html (accessed 2 April 2004).

⁶¹⁸ Koma Matilda, “Problems associated with submarine tailings disposal in PNG”, paper presented to the International Conference on Submarine Tailings Disposal, 23-30 April 2001, Indonesia, 3.

⁶¹⁹ McKinnon Elizabeth, “The environmental effects of mining waste disposal at Lihir Gold Mine, Papua New Guinea”, (2002) *Journal of Rural and Remote Environmental Health* 1(2): 40-50 at 41.

⁶²⁰ Down to Earth and Minewatch Asia-Pacific paper, “Into the unknown regions: the hazards of STD”, November 2000, 10.

However there are still some gaps in knowledge such as benthic ecosystems recovery, impacts of low concentration plumes for DSTP.

Whilst studies are being undertaken largely by those mining companies using DSTP there is need for independent research. But, such research can be cost prohibitive, hence collaborative approach is a way to go. However, as a compromise, these studies should then be subjected to a peer review process.⁶²¹

Nevertheless, whilst the majority of mines utilizing DSTP are in developing countries, there are some that are in developed countries.⁶²²

Mining Monitor has reported the following response to a member of the public who wrote to the then Federal Minister for Environment and Heritage, Senator Robert Hill, expressing concern about the prospect of DSTP at another mine⁶²³ or in Australia. The Department responded:

By international standards deep sea disposal of mine tailings in coastal areas in an acceptable practice. While the likelihood of mining companies seeking to adopt this method for operations in Australia is small because deep sea disposal sites are not found near worthwhile mineral deposits, in other countries it may be found to be suitable and environmentally acceptable.⁶²⁴

Ms Matila Koma from PNG NGO Environmental Watch Group also highlights the conflict of interest inherent in government ownership and regulation of the mine. Speaking at the International Conference on Submarine Tailings Disposal in 2001, Ms Koma notes:

The government owns 20% equity shares in Misima mines, 30% in Ok Tedi, 25% in Pogera and in Lihir, the public, mostly Papua New Guineans own about 56% shares. This makes it difficult when it comes to decision making on the impacts associated with mining projects. Inevitably the decision on economic benefit usually outweighs the associated impacts and accordingly taking the environments aspect as a second priority.⁶²⁵

⁶²¹ Wanjuk James and Peperia Patricia, "Issues Surrounding Deepsea Tailing Deposition – Case Studies of Misima and Lihir Mines in Papua New Guinea from Regulatory Perspective", Presentation to the PECC Minerals Network, Brisbane, Queensland, 17-19 November 2003.

⁶²² The first mines to use DSTP were the Atlas Mine in the Philippines and the Island Copper Mine in Canada (both in 1971) and the Jordon River Mine in Canada and the Black Angel Mine in Greenland (both in 1972). DSTP is currently being practiced in Chile at the Huasco Iron Pelletising Plant (Compania Minera del Pacifico), in Indonesia at Minahasa Raya and Batu Hijau mines (both operated by Newmont Corporation), in Turkey at the Cayeli Bakir Mine (Inmet Mining), in PNG at the Misima Mine (Placer Dome), in England at the Boulby Potash Mine (Cleveland Potash), in the Philippines at the Atlas Mine (Atlas Consolidated Mining and Development Corporation).

⁶²³ That is, the BHP Billiton/ PT Antam Gag Island nickel project in Indonesia.

⁶²⁴ Letter from Alison Russell-French, Assistant Secretary, Marine Coasts and Wetlands Branch Environment Australia, 10 January 2001, reported by Burton Bob, "BHP Seeks Support for Ocean Dumping Plans", *Mining Monitor*, Vol 6 No 1, March 2001, 9.

⁶²⁵ Koma Matilda, n 605 above.

Social issues

Like each of the other mines discussed in developing countries, one of the great problems for the government –with assistance from the mining companies – are social issues. In the case of Lihir, the mine has brought significant contributions to the economic development of the island. The World Bank’s Extractive Industries Review project visited Lihir in 2002 and observed as follows:

The community of Lihir enjoy better infrastructure, health facilities and educational opportunities since the development of the mine. The company [LGL] has contributed over US\$10 million over the last five years toward village infrastructures including new housing, provision of water and power supplies, and meeting halls and churches. The majority of landowners have benefited from rental fees on their lands; indeed, by the end of 2000, a total of US\$1.7 million in royalties was paid to landowners. However, ‘benefit sharing’ among members of the clans has not been satisfactory. ... As a result, social tensions prevail on the island as major conflicts occasionally occur between the haves and have-nots. There has been a notable increase in alcohol consumption within the community, which has led to an increase in alcohol-related crime and other problems, such as an increase in the breakdown of marriages and traditional relationships.

... The arrival of workers and job seekers from other regions of PNG has added to the social tensions, placing further demands on the infrastructure, public services and natural resources of the small island.

... There is a need to break the cycle of corporate dependency since Lihirians have come to expect the company to provide for all their needs.⁶²⁶

Ms Koma confirms these social problems, noting that mining in PNG has “uprooted the social fabric of many communities in PNG, while the revenues have not been equally redistributed. Human rights violations, alcoholism, prostitution and AIDS are on the rise at mine sites around the country”.⁶²⁷

In the specific case of Lihir, prior to the mine, the Lihirians lived a subsistence lifestyle. There was a Catholic run mission and church on the Island, but very little infrastructure. The adjustment from a subsistence lifestyle to one strongly dependent on a cash society has brought many challenges to the local community. People from other provinces have also come to the mine in search of work, and this has also brought tensions. The maintenance of law and order is a significant problem on the Island. Lihir Gold has contributed funds to the Police/ Magistracy to assist with this process.⁶²⁸

Rehabilitation

In 2002 a local land rehabilitation business, Laton Maintenance, was established to work with the Environment Section to re-establish sections of disturbed land within the mine

⁶²⁶ Extractive Industries Review, “Project Visit to Papua New Guinea”, 2-11 August 2002, 6-7.

⁶²⁷ Interview with Matilda Koma, July 2003 for Friends of the Earth, et al, “Conclusion: The Poor Track Record of the World Bank’s High-Risk Projects”, *Gambling with People’s Lives: The World Bank and High Risk Projects*, Friends of the Earth, US, 2004, 38.

⁶²⁸ For example, in 2002 Lihir donated a new vehicle to the Resident Magistrate to make it possible for the Magistrate to attend village court appears around the island and carry out law and order awareness programs. In that year it also donated a new car to the local police which enabled the police to be more proactive: Lihir Gold Ltd, 2002 Report to the Community, n 584 above, 16.

pit, and around road cuttings and construction areas. A hydroseeder unit was purchased to plant seeds on steep slopes. The resultant groundcover is helping to stabilize the soil and reduce erosion. In 2002, nine hectares of land were rehabilitated.⁶²⁹

Reviewing the Lihir Gold Mine

The continuing insistence by the PNG government that it be granted an equity position in mining ventures is always going to be a problem. Where a tension exists between economic benefit and environmental cost, the role of the government as shareholder and regulator is obviously going to be problematical. This was obviously the case in Ok Tedi, but it has not become an issue at Lihir. The reason that it hasn't become an issue is that the economic benefit happened to coincide with an internationally acceptable, although by no means uncontroversial, means of tailings disposal. If this option had not existed, the situation may have paralleled that at Ok Tedi.

Lihir Gold operates under the regulatory apparatus of the PNG legislation, which has been discussed previously. These tend to be highly developed legislative models from developed countries. In the case of PNG the legislation was drafted by the Victorian Environmental Protection Authority. Compliance with these requirements is of course a base line activity for TNCs. Going much further than this to seek and acquire ISO14000 certification, which involves regular independent third party monitoring, and funding research into the mine at a range of institutions, is clearly a substantial step in the direction of beyond compliance corporate behaviour.

In the broadest sense, the environmental issues at Lihir tend to relate mainly to community and social problems and here, Lihir has implemented a range of community and socially based programs, as indicated. The fact that the Lihirians are essentially pre-scientific, with an abiding interest in sorcery, makes translating scientific findings and environmental standards, socially difficult. Faced with the problem, as stated previously, Lihir has commendably sought the assistance of two specialist sociologists. Again, none of this is required to be done. It is done for a self interested purpose to heighten the reputation and integrity of the company as a good corporate citizen. Although Lihir seems to indicate a high level of environmental sensitivity, the potential lack of enforcement of environmental standards arguably could have resulted in a different outcome had the mining company been one of the junior miners.

⁶²⁹ Ibid, 19.

5.4. Queensland

This section will review BHP Billiton's Cannington Mine and Barrick's Osborne mine. Both mines were developed in the 1990s (that is, in the post-sustainability era) and both mines have mission statements to do 'beyond compliance'.

5.4.1. Cannington



The Cannington Mine is generally cited by BHP Billiton as the antithesis of Ok Tedi. Indeed, Cannington is regarded as “the benchmark - the mine to which others aspire”.⁶³⁰

The Cannington silver, lead and zinc deposit was discovered by BHP Minerals Exploration in June 1990. It is located some 85 kilometres south of McKinlay in northwest Queensland. It is about 800 km south west of Townsville and about 200 km south-east of Mt Isa. The mine's tenure is a Special Mining Lease with an area of 10,000 hectares. The area of land actually disturbed by the mine, process plant, village, airstrip and all the other structures and buildings relating to the operation is about 180 hectares. The rest of the land is subleased by local pastoralists for grazing of stock.

The Cannington Mine was commissioned in September 1997. It is now the world's largest, and lowest cost, silver and lead producer. It is an underground mine using both open-stope and bench mining methods with metallurgical processing incorporating grinding, sequential flotation and leaching to produce high-grade marketable products. The operation includes a rail-loading facility at Yurbi, about 15 kilometres east of Cloncurry, and a minerals concentrate handling facility at the Port of Townsville.⁶³¹ The mine is likely to continue operations until around 2016. Operational details are included in **Appendix 5-6**. Work is underway on the Cannington Life Extension Project, which will mean a transition to an open cut mine. A voluntary environmental impact

⁶³⁰ Personal communication, John Davoren, The Kennedy Group (former employee of the Environmental Protection Agency, Mines Division), 14 May 2004).

⁶³¹ BHP Billiton, “Cannington Mine” at <http://www.cannington.bhpbilliton.com/index.asp> (accessed 4 May 2004).

assessment has commenced, with December 2008 the timeframe for getting approval to move from pre-feasibility to full feasibility.⁶³²

Cannington has received many environmental awards, including the Australian Minerals and Energy Environment Foundation (1998 and 2001), Prime Minister's Award for Community Partnership (2001) and the Queensland Premiers Award for Environmental Excellence (1994).

The company applies what it calls 'a principles approach to environmental management' based on minimizing the environmental impacts of mine-site activities on the social, land and river values of the regions. Particular emphasis is placed on conserving water, minimizing disturbance of topsoil to facilitate reclamation, management of surface water to prevent contamination with lead and other heavy metals, minimizing generation of dust, developing contingency plans to deal with environmental incidents and conserving energy to reduce the production of greenhouse gases using strategies such as switching from diesel to gas-fired power generation.⁶³³

Certifications

In keeping with the corporate ethos to go beyond compliance, Cannington has obtained the following certifications:

1. ISO14001 certification for their environmental management system.
2. SA8000 Social responsibility international standard

Cannington is the first mining operation in the world to be successfully audited against the SA8000 – a standard promoting management systems that upgrade working conditions. SA8000 is awarded by Social Accountability International, a non-profit organisation dedicated to the development, implementation and oversight of voluntary, verifiable social accountability standards. SAI states that SA8000 "is a way for retailers, brand companies, suppliers and other organisations to maintain just and decent working conditions throughout the supply chain".⁶³⁴

3. AS4801/OSHA18000 – Health and Safety Standard).

Voluntary initiatives - Green Lead

Cannington, in combination with consultants Environmental and Licensing Professional Pty Ltd and Eco Futures Pty Ltd, has been the leader in developing an international

⁶³² BHP Billiton, "CANdid Talk", Issue 19, July/ August 2008, 1.

⁶³³ The Silver Institute, "Cannington poised to be world's largest silver mine" at <http://www.silverinstitute.org/news/5f1999.html> (accessed 27 April 2004).

⁶³⁴ Social Accountability International, "SA8000 – Overview of SA8000" at <http://www.cepaa.org/SA8000/SA8000.htm> (accessed 7 February 2004). The Standard is reproduced at <http://www.sai-intl.org/index.cfm?fuseaction=document.showDocumentByID&nodeID=1&DocumentID=136> (accessed 15 September 2008).

initiative, called ‘Green Lead’. Cannington is the largest single producer of lead concentrate in the world.

The Green Lead Vision 2003 is:

the vision of mining, processing, transporting, treating, manufacturing, storing, using and recycling lead – with zero harm from lead exposure to people and the environment.⁶³⁵

Green Lead is the identification of impacts associated with lead, the establishment of standards to minimize these impacts and certification of organizations and eventually lead products that achieve these standards. It will focus initially on lead used in batteries, because they use approximately 80 percent of lead produced and are theoretically, perfectly recyclable.⁶³⁶

The project is still in its early stages, with a London Workshop held in April 2004 setting up a Steering Committee to oversee a program of work to advance work on Green Lead in the six months leading up to a second workshop in Europe in October 2004. The Steering Committee includes representatives from the ICM, BHP Billiton, Noranda, Berzelius Metall GmbH and WWF.⁶³⁷

Whilst a detailed discussion of the mechanics and changes to the lead processing system is beyond the scope of this work,⁶³⁸ what is relevant to emphasise is that this project will involve third party certification of both the process and the product. The auditor completes a certification report to a body set up to administer the scheme. The current proposal for discussion is that the Green Metals’ entity will consist of a Board of Directors and an NGO Board., formally operating the certification system through a group of third party certifiers who are accredited by an organisation that is independent of Green Metals. This body may have application for nickel, zinc and mercury and perhaps for certifying the safe use of cyanide in gold production. If so, it makes sense to create an entity capable of certifying a range of ‘Green Metal’ outcomes. Each would be conducted under a separate trade mark with its own standard and certification regime.⁶³⁹

Broadening Our Horizons

The *Broadening Our Horizons* Report (BOH) (2000) by the North Queensland Conservation Council has been discussed in Chapter 2. In the context of this Chapter, it is relevant to note that it was the first review of ESD and the mining industry to be

⁶³⁵ Roche Michael, BHP Billiton Cannington, “Green lead – oxymoron or sustainable development for the lead-acid battery industry?”, presentation to the 10th Asian Battery Conference, Bangkok, 3 September 2003.

⁶³⁶ Green Lead Workshop, “An Overview Paper”, Workshop held on 28-30 April 2004, London, 3.

⁶³⁷ Green Lead Project, “Proposed Work Programme for Phase 0”, 6 May 2004.

⁶³⁸ Detailed information about the initiative is available at <http://www.greenlead.com>.

⁶³⁹ Green Lead Workshop, “Green Lead Governance and Structure”, 28-30 April 2004, London, 3, 4, 5.

conducted by a community group.⁶⁴⁰ It assessed the mine's performance from three perspectives: legislative, corporate and ESD.

Following the release of the BOH Report and infighting within the North Queensland Conservation Council (mentioned in Chapter 2), Mr Mick Roche, then Cannington's Manager for External Affairs, is reported to have said that he would take a different approach if he had his time again. "What I would do in the future would be to identify or form a group, probably the latter than the former that would best represent the cross section of the stakeholders associated with Cannington".⁶⁴¹

Community panel

Indeed, this is what happened and in 2002, Cannington formed the Cannington External Advisory Panel as a result of the *Broadening Our Horizons* Report. The Panel comprises community members from the region stretching from Cairns to Townsville, and west to Mount Isa, that is, the region directly or indirectly potentially impacted by Cannington's operations. It consists of 14 volunteers representing a cross-section of the communities associated with the mining operations. Cannington's intention in forming the Panel was to provide a community perspective on how Cannington would achieve a level of sustainability acceptable to that community. It would also enable Cannington to continue the achievements of the BOH report with respect to the mine's operations and their impact on the community.⁶⁴²

Contributions made by Cannington to members of the CEAP has been for accommodation and transport for meetings and a coordinator. The CEAP meets in various communities (eg Townsville, Mt Isa, Cloncurry and Cannington) three times per year. The decisions of CEAP "are entirely its own". Its relationship with Cannington "aspires to be one of integrity, independence, openness and transparency".⁶⁴³

One of the main tasks of the CEAP has been the preparation of Cannington's "Health, Safety, Environment and Community 'Working With Community' Report". Methodology and terms of reference for the report was negotiated with the CEAP and Cannington and details of this are included in the report. Interestingly, where consensus among CEAP members could not be achieved, the view that was held by an 80 percent majority of CEAP members prevailed. Like the BOH Report, the CEAP Report also analyses issues from a legislative, corporate and ESD perspective – and as such focuses on, and critiques both compliance and beyond compliance behaviour of Cannington. The Report provides recommendations and where applicable, suggestions for improvement, on each of the 32 terms of reference. In summary, one of the recurring recommendations

⁶⁴⁰ Cannington External Advisory Panel, *Working with Community – Cannington 2003 Health Safety Environment and Community Report*, November 2003, 11.

⁶⁴¹ Burton Bob, "Forum: BHP Engaging with NGOs", *Mining Monitor*, Vol 6 No 1, March 2001, 8.

⁶⁴² Cannington External Advisory Panel, n 626 above, 11.

⁶⁴³ *Ibid*, 12.

is that Cannington engage independent external experts to verify/ audit their compliance with regulatory and non-regulatory requirements.⁶⁴⁴

Waste disposal

Tailings

About 50 percent of the tailings is pumped to the tailings dam for permanent storage. At the end of the mine's life, the tailings dam will be rehabilitated. The tailings dam will be covered with a thick layer of impermeable clay and layers of top-soil, and replaced with native grasses and trees.

The other 50 percent of the tailings is mixed with cement to produce a paste. The paste is then poured through bore-holes into the underground mine to backfill mined-out slopes.

Waste rock

Waste rock is:

- used for construction purposes around the mine site (eg roads both on the surface and underground, tailings dam walls, and the like)
- incorporated along with some of the tailings into the paste used to backfill mined-out stopes underground
- stockpiled for later use and/or rehabilitation.

Some waste rock contains sulfide minerals (such as pyrite or pyrrhotite, arsenopyrite or chalcopyrite) that have the potential to form acid mine drainage, when exposed to water and oxygen. This waste rock is stockpiled in areas away from any water. Any acid mine drainage that does form ends up in the retention ponds and therefore does not leave the mine site.⁶⁴⁵

Other waste material

Materials such as scrap metals (eg copper, aluminium, steel), paper and cardboard, and waste oil and oil drums are all collected and removed from the mine site for recycling. Kitchen waste from the administration block and the village is composted in a worm farm. The worm castings are then used in the nursery to raise seedlings of native plants to be used in rehabilitation of disturbed areas around the site.

⁶⁴⁴ For example, Terms of Reference recommendations that Cannington - (TOR) 18: "engage an independent external expert(s) to check Cannington's health, safety and environment policies reflect ESD principles"; TOR 22: "identifies and evaluates alternative processes for the calculation of rehabilitation (including engaging third parties to prepare tenders for the preparation of rehabilitation liabilities); TOR 28 "initiates peer review of all cornerstone rehabilitation assessment reports, as well as dam performance, groundwater impact assessment".

⁶⁴⁵ Mineral Council of Australia, "Queensland Case Study – BHP Billiton Cannington" at http://www.minerals.org.au/education_program/case_QLD_waste.htm? (accessed 5 May 2004).

Rehabilitation

Rehabilitation is undertaken at each stage of the mine. For example, environmental scientists plant between 5,000 and 10,000 native seedlings on the site each year. These are grown from seeds collected locally.

Water

Water management and use is a significant environmental issue at Cannington. The mine uses large quantities of water in mining (dust suppression and drilling), processing (in the grinding mill and flotation and leaching plants), in rehabilitation (eg to water seedlings used for rehabilitating disturbed land) and for domestic purposes in the administration building and village (potable water).

Because of the arid nature of the region, there are no permanent bodies of water of sufficient size to supply the mine and processing plant with its water requirements. All of the water is obtained from the Great Artesian Basin. Specifically, it comes from an aquifer 300 metres below the surface and a bore field about 20 km away from the mine. From the borefield the water is pumped along an underground pipe line to the mine site.

The mine is licensed to use about 2400 mL/year of artesian water, but used about half of this. The mine used a number of measures to reduce the amount of water used and to recycle water as much as possible. For example, in the tailings dam, the solid tailings are allowed to settle out of the wet slurry produced in the processing plant. This leaves clear water which is decanted from the solids and recycled back through the processing plant. Local ground water which seeps into the underground mine is pumped out, clarified and is also reused in the processing plant. The plant uses about 220 litres of water per second, of which about 190 l/sec is recycled water.

An additional activity that Cannington undertakes is a bore rehabilitation program to rehabilitate old pastoral bores that are flowing freely and wasting artesian water. Rehabilitation involves capping these bores to stop or control their flow, and installing pipes to replace the open ditches that transfer the bore water to where it is eventually used. This reduces loss of water by evaporation. It is estimated that over the life of the mine, the bore rehabilitation program will save an equivalent amount of water to that used by Cannington.⁶⁴⁶

Reviewing the Cannington Mine

It is apparent from the forgoing that the amount of social impact work undertaken by Cannington is considerably more extensive than the situation at the Tanzanian and Papua New Guinean mines. The reasons for this is largely cultural. It is clearly easier to explain environmental issues to an educated community, all of whom speak the same

⁶⁴⁶ Mineral Council of Australia, "Queensland Case Study – BHP Billiton Cannington" at http://www.minerals.org.au/education_program/case_QLD_water.htm? (accessed 5 May 2004).

language and have the same cultural traditions. In addition to this, of course, Cannington also has ISO14000 certification.

Again, the activity undertaken by the mine is not required under any regulation. It is taken on board as part of the 'external affairs' of the corporation. Does it pay dividends? The answer from the TNCs is clearly it does.

5.4.2. Osborne Mine

Osborne Mine was formerly a wholly owned subsidiary of Placer Dome Asia Pacific, until Placer Dome was taken over by Barrick Gold on 20 January 2006. Osborne is a copper/gold mine located in north west Queensland, about 200 km south-east of Mt Isa.



The mine was commissioned in June 1994. Osborne was an open pit mine up until 1996, when underground operations began. Operational details are included at **Appendix 5-7**. It is a much smaller mine than Cannington. Like Cannington, is also conducts a fly-in, fly-out operation – around 250 employees work a nine days on/ five days off roster, flying in and out of Townsville. People working at the mine are housed in a village complex on site.

Environmental issues

The main environmental issues at the mine relate to the tailings dam, containment of concentrate, general site water management and protection of sites of aboriginal significance.

A new tailings storage facility was built in 2003, requiring amendment of the Environmental Management Overview Strategy and determination of new licence conditions. Osborne submitted the new EMOS in November 2002 is it was accepted by the EPA in February 2003. A new environmental authority was issued on 21 February 2003.

The new tailings storage facility will meet storage requirements up until 2013. In relation to the tailings management system, Dr G I McPhail has stated in the 2002 Sustainability Report:

Osborne's commitment to ensuring that the best available technology is applied on the tailings dam in the interests of environmental and cost performance is exceptional.

Osborne have operated their tailings systems in accordance with licence environmental conditions and have carried out diligent monitoring, inspecting and review.

A full understanding of the acid drainage potential of the tailings and optimal long term closure design for the tailings dams needs to be progressed. The continuing evaluation of thickened discharge provides an excellent opportunity to carry out the necessary work, the results of which will be paramount in deciding on the efficiency of thickened discharge.⁶⁴⁷

An external verification statement from the Environmental Protection Agency has been included in the 2002 Sustainability Report. In relation to the tailings storage facility, the EPA noted that “an inspection of Osborne’s new tailings storage facility by the Agency’s Manager for Dam Safety and other officers in November 2002 found no evidence of non-compliance”.⁶⁴⁸

In 2003, Osborne submitted a new Plan of Operations. As required, this outlined proposed activities, a rehabilitation program for the site and an action program for achieving and implementing environmental protection commitments and control strategies identified in the EMOS and Environmental Authority for the next five years. It also re-calculated the financial assurance.

Three native title claims have been lodged in the district, including the Osborne Mine lease. Most of the land and infrastructure around Osborne is associated with the Yulluna people. Cultural heritage surveys have been conducted with the Yulluna and Kalkadoon people, including the development of site management plans for important dreaming sites that are within the lease.

The Trekelano Mining Agreement was finalized in 2005.⁶⁴⁹ This was important from an operational perspective, as it has provided an additional ore source for the processing plant and further area for exploration activities. It also provided for the establishment of the North West Queensland Indigenous Development Association, a collaborative process between Osborne and the Yulluna and Kalkadoon peoples. This not for profit association provides education and training programs focused on achieving employment and business skills.

Verification of Sustainability Reports

In 2001, Osborne commenced a process to externally verify its performance by inviting several stakeholders representing different interest groups “to provide their perspective of how we manage ourselves and how true we are in meeting our stated values of open and honest communication”.⁶⁵⁰ Eighteen stakeholders were invited to provide their

⁶⁴⁷ Placer Dome Asia Pacific, *Osborne Mines Sustainability Report*, 2002, 8.

⁶⁴⁸ *Ibid*, 15.

⁶⁴⁹ Barrick, *Osborne Mine Responsibility Report*, 2006, 4.

⁶⁵⁰ Placer Dome Asia Pacific, n 633 above, 5. Alternative models that were considered and dismissed were: (1) paying third parties (usually financial or environmental) to audit and verify information; (2) publicly

perspective on the Mine's performance, and 14 stakeholders responded. Osborne notes that:

We are struggling to overcome the obvious bias of selecting the stakeholders that contribute to the report by approaching a broad and diversified group. However, we would like to invite statements/ comments/ criticism from any interested party in the future.

We believe this attempt at external verification is unique in that we have been able to engage so many different types of stakeholders to provide their perspective on different aspects of our business. We are confident this approach will be acceptable to the institutions that have encouraged us to consider external verification.⁶⁵¹

In 2002, this external verification process was continued, with 11 stakeholders participating in the process. Further volunteers have been sought via requests in the 2002 Sustainability Report. In addition, external verification statements from environmental consultants have been included in the Report.⁶⁵²

In 2003, the EPA conducted a compliance audit as part of its State Wide Compliance Program. Osborne's Environmental and Safety Management Systems were also audited externally in 2003. Additionally, the mine was chosen as one of the case studies for the [year] CSIRO External Verification of the Australian Minerals Industry Code for Environmental Management. It found that Osborne "saw the Code as implicitly fitting into their broader philosophy".⁶⁵³

Like Cannington, this mine is supplied by groundwater sourced from a borefield (some 25 km from the mine, on the edge of the Great Artesian Basin). Osborne has a comprehensive water management system in place, including a key performance indicator of 400l water consumed to process one tonne of ore. The mine looks for opportunities to improve their water efficiency, with reuse presenting the most significant opportunity to make further progress.⁶⁵⁴ It has experimented with new techniques to reduce water by providing mounds across the facility. This was not a licence condition, but has been successful and has led to a reduction of water usage.⁶⁵⁵

disclosing the results of management system audits; and (3) forming advisory panels to assess performance and issue qualifying statements. (Source: 2001 Sustainability Report, 5).

⁶⁵¹ Placer Dome Asia Pacific, *Osborne Mines Sustainability Report*, 2001, 5.

⁶⁵² By way of example, these include Dr GI McPhail, Director and Principal, Metago Environmental Engineers (Australia) Pty Ltd and Mr Damien Chung, IMM Australian Representative, The International Metals & Minerals Co Ltd, together with several neighbouring pastoralists.

⁶⁵³ Solomon FL, "External Verification of the Australian Minerals Industry Code for Environmental Management: A Case Study" CSIRO Minerals, Melbourne, 7 at http://www.minerals.csiro.au/sd/CSIRO_Report_Verification.htm (accessed 6 February 2008).

⁶⁵⁴ Placer Dome Asia Pacific, n 633 above, 17.

⁶⁵⁵ Personal communication, Mr David Gullo, Environmental Manager, Osborne Mine, 24 June 2004.

Waste management

The company has cited waste management as an area where it goes beyond the legislative standards.⁶⁵⁶ For example, the environmental authority provides that tyres could be stockpiled and disposed of as backfill when reshaping slopes. The company believed that this was wasting a potential resource, so, following input from local graziers, made them available for holding yards for cattle and retaining walls.

Another example Mr Gullo cited as where the company has gone beyond its licence conditions is Osborne's monitoring schedules of the tailing dam walls and regional borefields. As well as making this data available to the regulator, as required, the company also makes this data available to local landholders.

As part of the decommissioning of the mine, Osborne is of course required to prove that the tailings dam is stable. To this end, it has been looking at a range of different covers and revegetation options. Modelling for a period of 500 years has been conducted in terms of wall erosion, oxidation and acid generation and wall seepage.

Reviewing the Osborne Mine

Given the cultural affinity between the mine operators and the local community, Osborne's reluctance to seek ISO14000 or social impact accreditation is probably understandable. It is after all a small mine, around 1/10th the size of the Geita Mine. Their approach, however, is interesting in that it seeks to avoid a formal external process while bringing stakeholders, which include the local aboriginal community, into the process, ostensibly as real participants.

There seems every indication that Osborne is sincere in its belief that this represents a more effective process than the more formal accreditation route. There is to date no indication from the local community that this is not the case.

Once again, and as mentioned previously, there is no regulatory requirement for the company to undertake this. In terms of formal regulations, they need only comply with their licence conditions, which they have done. As a small mine, its environmental footprint is relatively minor. Principal environmental issues, as mentioned, are water usage and the integrity of the tailings dam, which are common to most mines around the world.

⁶⁵⁶ Personal communication, Mr David Gullo, Environmental Manager, Osborne Mine, 24 June 2004.

Comparative Table of Mining Regulations

| | Queensland | Papua New Guinea | Tanzania |
|----------------------------------|--|---|--|
| | Environmental Protection Act 1994 / Environmental Regulation 1998 | Environment Act 2000 /Environment (Permits) Regulation 2002/ Environment (Prescribed Activities) Regulation 2002 | Mining Act 1998; Mining (Environmental Management and Protection) Regulation 1999 |
| Types of applications | Standard environmental authority (mining activities) Non-standard environmental authority (mining activities) ⁶⁵⁷ | Environmental permit (level 2 activity) Environmental permit (level 3 activity) ⁶⁵⁸ | Special mining licence ⁶⁵⁹ Mining licence Gemstone mining licence |
| Imposition of licence conditions | Applicant must prepare draft environmental authority, and propose licence conditions: s 208. Administering authority can also propose conditions: s 210. | Permit may be issued subject to conditions, including but not limited to those specified in s 66. ⁶⁶⁰ | Requirement for licence: reg 12; standards are specified in Sch 5; provision for higher standards to be applied given special environmental circumstances: reg 14. |

⁶⁵⁷ This is the licence needed for large scale mining projects. The information following in the Table relates to requirements for a non-standard mining activity. There are also a range of environmental authorities required for other mining related activities, eg prospecting, exploration and mineral development. However this Table will just address the environmental requirements for mining leases.

⁶⁵⁸ This is the permit needed for large scale mining projects. It applies to “mining activities which require the issue of a Special Mining Lease under the Mining Act 1992; Mechanised mining on a Mining Lease involving chemical processing, except where the activity falls within the ambit of a Category B, Level 2 activity; Extraction of off-shore coral deposits for roading (sic), commercial lime making or similar use; Submarine tailings disposal.”

⁶⁵⁹ This is the licence needed for large scale mining projects. The information following in the Table relates to requirements for a special mining licence.

⁶⁶⁰ In deciding whether or not to grant a permit, and the conditions attached thereto, the Director of the Department of Environment and Conservation must consider a list of factor, which are identical to the “standard criteria” in Sch 3 of the *Environmental Protection Act 1994* (Qld). Interestingly, s 65 also provides, inter alia, the Director may grant a permit where he is satisfied that “the activity will not contravene any relevant environmental obligation under any international treaty, convention or instrument to which Papua New Guinea is a party and which has been ratified by the Parliament or any law of Papua New Guinea”: s 65(1)(c) *Environment Act 2000* (PNG).

| | Queensland | Papua New Guinea | Tanzania |
|---|---|--|---|
| Reporting requirements | Annual fees payable: EP Reg Sch 6 Pt 2. | | Annual Environmental Monitoring Report required within 1 month of the anniversary of the Approval for Authorisation – reg 18. |
| Auditing/validation | Environmental Protection Agency can order the licence holder to undertake environmental audits about a range of matters: s 280 or can conduct the audit itself/ appoint its own auditor: ss 283, 285. | Environmental audit or investigation may be order by the Director of the Department: s 74. | Licensing authority may order third party audit and validation of monitoring and analysis – reg 19. |
| Environmental impact assessment/ environmental management documents to be lodged with application | EIS must accompany application if EPA, and in certain circumstances the Minister, decides it is required – ss 164, 165. ⁶⁶¹ Must submit an EMOS (environmental management overview strategy) for all non-standard applications – s 201. | EIA must be undertaken prior to making formal application for a permit: s 62. | EIS must accompany application for Mineral Rights, unless exempt under s 64(2) Act. Content of EIS: Sch 3. Content of EMP: Sch 4. |
| Public notification provisions | Yes required for all mining lease applications – s 211. | | Yes if required to lodge an EIS and EMP – reg 7(1). |
| Appeal provisions | Appeal to the Land and Court if: <ul style="list-style-type: none"> • application is refused: Ch 11 Pt 3 • there are objections to the | | |

⁶⁶¹ In reaching this decision, the Environmental Protection Agency and the Minister for Environment must consider the “standard criteria” (defined in Sch 3).

| | | | |
|--|--|-------------------------|--|
| | grant of the application: 216-226. | | |
| | Queensland | Papua New Guinea | Tanzania |
| Ongoing environmental documentation required | Plan of operations must be submitted before carrying out activities at mining lease: s 233. Plan must be updated at least every 5 years: ss 234-235. | | EMP must be updated at least every 5 years – reg 10. |
| Security Deposits required | Yes – ss 364-367 | | Yes – may be required by the Minister under reg 31. |
| Security Deposits – Discounts based on environmental performance | For non-standard mining projects, there are 5 categories: 5 (100% ⁶⁶²) – basic operational approvals in place 4 (90%) – demonstrated ability to comply with the environmental authority and plan of operations 3 (65%) – satisfactory performance for two years 2 (40%) – satisfactory operational environmental performance maintained 1 (25%) – validation of EMOS commitments and beyond compliance behaviour. | | none |

⁶⁶² That is, 100 percent of the estimate for the rehabilitation to be completed by third party contractors.

| | Queensland | Papua New Guinea | Tanzania |
|--------------------------|--|-------------------------|---|
| Mine closure obligations | Administering authority to decide whether land has been “satisfactorily rehabilitation”: s 273 | | Duty imposed on every licenses, manager or agent of licensee to carry out a program of environmental protection and reclamation – reg 21. Standard of reclamation: productivity of reclaimed land shall not be less than existed prior to mining on an average property basis unless satisfy Chief Inspector that this is impractical – reg 23. Specific standards in regs 24-28. |
| Mine closure sign-off | Procedure for surrender application: Ch 5 Pt 10. Must include final rehabilitation report, together with audit statement: ss 273, 274. May include conditions for ongoing monitoring of land in accordance with environmental management plan. | | Give report to Commissioner and Ministry responsible for environment – reg 29. Ongoing monitoring may be ordered – reg 30. |

SIX

CONCLUSIONS

Two activities, agriculture and mining, have been the essential corollaries, or more correctly, prerequisites of human progress over the last 7000 years. Agriculture finally allowed the species to replace a nomadic existence with one which generated food surpluses and which eventually allowed for the development of settled communities. It was the social *sine qua non*.

The search for metals, through mining, was the technological driver that permitted the Bronze Age, the Iron Age and today, the information age.

There was, and to some extent still is, a perceptual difference between the two activities. Farming has traditionally been viewed as a socially constructive, indeed laudable, undertaking that converted disorganised nature into a more manageable form,⁶⁶³ but mining has always been messy. If anything its effect often seems to be the converse of agriculture. Mining seemed to convert some parts of nature into a more chaotic form and then, having exhausted the resource, the miners moved on. For thousands of years the planet seemed large enough.

Today however the world is not large enough.

This thesis has examined the extent to which large transnational mining companies have come to terms with a new and worldwide environmental consciousness specifically in the context of their willingness to respond to non-regulatory factors ie factors which do not, intrinsically, (or theoretically) *have* to determine their behaviour.

The issue which has been examined does not lend itself to the construction of a global theory. Indeed an analysis of issues in the social sciences hardly ever results in theories of universal applicability due to the virtually infinite variability of human behaviour.

The intent here was rather more modest, to examine the reality of current practice and from it to predict *likely or probable* behaviour in the future in institutionally sophisticated and relatively unsophisticated environments. As a result of this analysis the following summary of conclusions is tendered under the following headings.

1. Response to legal requirements
2. The cultural determinants of corporate behaviour
3. The role of self-regulation

⁶⁶³ The commencement of broad acre corporate farming may now be modifying this perception somewhat.

6.1. Response to legal requirements

In all the examples considered the TNCs concerned have been able to respond to the specific rules laid out in the various operating statutes and regulations. The reasons for this have been canvassed in detail but in summary they are:

- a) developed environmental standards tend to exist even in the undeveloped countries and this is a function of the willingness of global institutions (and specific national governments)⁶⁶⁴ to provide the finance and expertise to create them.
- b) a breach of local environmental regulations will have immediate legal consequences in the developed countries and at least the potential for reputational consequences in undeveloped ones.

Two factors interpose on this conclusion however:

First, the issue in Tanzania, at both the mines considered, is clearly not the existence or otherwise of developed environmental standards *per se* it is the question of enforcement. At this point, as discussed in the thesis, two other factors are operating viz. the availability of expertise at the local level of sufficient quality to be able to oversight company activity and the ever present question of corruption.

Second, given the relative absence of on-site evaluation by local officials in Tanzania and PNG it may fall to the company itself to report breaches. The more sanguine conclusion under these circumstances is that this is unlikely to occur and that breaches may be happening which remain unknown to the administrating authorities. Having said that, no evidence has been able to be adduced which would indicate that the TNCs themselves are dictating a lower environmental standard to the indigenous governments and in fact in the case of Ok Tedi, the reverse appears to be the case. Some oversight is provided by NGOs but, for example in the case of the two Tanzanian mines and Ok Tedi, exaggerated claims may be made, for a variety of reasons, so the level of oversight provided becomes biased. Lihir, Cannington and Osborne have sought more direct, upfront, engagement with NGOs and stakeholders, who have also become involved in arms length verification of the mine.

6.2. The cultural determinants

For a TNC headquartered in Australia or Canada it is demonstrably easier to conduct mining in a similar culture. In Tanzania and PNG cultural affinity with the miner is highly problematical which can, and does, lead to misunderstandings. This may not be a function of the company being unprepared to listen but simply to the realities of imperfect communication exacerbated by poverty. In the case of Lihir, this has resulted in the sensible employment of an anthropologist at the mine site.

None of the Australian operations considered in this study has had to contend with the sometime presence of 4000 artisanal miners on the doorstep of the mining lease as in the case of the Geita mine nor the social consequence of the importation of non-indigenous miners as in the case of the Lihir mine.

⁶⁶⁴ In the case of PNG this is exclusively, Australia.

Understanding and dealing with these issues is not a natural reflex for companies which are predicated on removing earth and extracting minerals and clearly the companies vary in the quality of their response.

The Geita mine and the Lihir mine have responded to these issues in a constructive manner as discussed in thesis.

Nevertheless, it is these cultural factors which generate the capacity for misunderstanding combined with the subtle transition of environmental issues into human rights issues which makes operations in undeveloped countries much more prone to dysfunction.

All companies faced with such issues will choose to manage them in various ways. Strangely, and unlike the environmental arena where models and performance criteria are quite available, the cultural aspect seems often to be underemphasized.

6.3. Self Regulation

Given the imposition of often exacting environmental standards in the developed world it is strange that corporations should seek to go beyond them. This however appears to be the case in some (though not all) instances. The reasons for this have been canvassed in the thesis but in summary they appear to be:

- 1) it is attempt to maintain the reputation and the integrity of the corporation operating in an international mode and maintain its international 'licence to operate'.
- 2) it is an attempt to forestall environmental problems.

In this arena, and the examples considered here are Tanzania and PNG, the compound of issues viz. lack of government oversight on the ground, lack of local expertise etc effectively give the TNCs an option – to comply with minimum regulatory requirements, or do less than the minimum standards or to go beyond and to institute environmental policies which reflect an environmental determination by external agencies.

In all the cases considered the companies appear to be complying with standards which go beyond minimum standards. In the case of Geita and Carrington they have clearly exceeded them having sought and achieved ISO 14000 certification. This environmental management standard, which is not mandated in any jurisdiction considered (including Queensland) involves independent assessment by external auditors.

The reasons why companies should seek to comply with this non-regulatory requirement have been discussed in the thesis but, in short, they reflect the perception within the companies that the risks associated with environmental damage are now so serious in terms of their share price, their overall reputation and their ability to acquire new opportunities that they are worth undertaking. Ok Tedi is an example of what can happen, despite the company complying with the government's requirements.

The fact that the TNCs are prepared to apply a level of "best practice" outside traditional developed economies is also evident from the preceding analysis. The willingness of major mining companies to comply with environmental standards, often of their own making, and

to go beyond the basic legislative standards is indicated by the above study and there appears to be no demonstrable difference in this regard between developed and under developed states.

The factor which emerges from this analysis is the qualitative difference in emphasis between these two types of state. In the developed economy of Queensland the clear emphasis is on environmental management *per se*, in Tanzania and PNG the transition of environmental concern into human rights concern is evident. It is the management of this last factor which may become the biggest challenge for TNCs in the future.

6.4. Broad issues and recommendations

The issues dealt with in this thesis and the behaviour of TNCs across nation states exist and interact at the interstices of corporate morality, environmental morality, economics, politics, human rights, and the law. The fact that they exist in this complex mix is a function of their social and behavioural status. Ultimately economics, and all of the other factors mentioned, have their origin in aspects of human behaviour and social organisation. They are no more reducible to qualification than psychology is reducible to mathematics. Each of these is now taken in turn, followed by a series of recommendations.

6.4.1. Corporate morality

The experience in late 2008 with the global financial crisis clearly indicates that corporate morality cannot be mandated. Aspects of corporate morality which lead to deleterious effects can be punished by law, but such actions are always after the event in the absence of stringent regulatory frameworks being put in place by governments. No one ultimately can legislate for morality, corporate or otherwise. Morality is a function of upbringing, parenting and being exposed to correct and socially responsible ideas. If the behaviour in the 2000s of world banking institutions is any guide, then sheer greed will always win out against corporate morality. Regulation is therefore critical. This thesis clearly indicates, in my submission, that these regulatory frameworks are in place.

6.4.2. Environmental morality

Environmental morality can be considered as a subset of overall morality, given our now developed awareness of the effects of human behaviour on the global environment. Although an increasing proportion of persons in the western world appear to be subsuming the idea of environmental morality as part of their overall moral fabric, it can no more be considered an inevitable function of corporate behaviour than can corporate morality itself.

Again, the issue resolves itself to regulation and enforcement, matters which have been considered in detail in this thesis.

6.4.3. Economics

It is beyond the expertise of this writer to comment specifically on economic theory, economic philosophy or behavioural economics. Beyond the simple observation that a global trading system is driven by economics, and economics is ultimately driven by profit.

The only fulsome attempt to regulate economies derives from Karl Marx and the outcome of that attempt was not only disastrous for the Eastern Bloc countries over a 75 year period, but its environmental consequences were devastating. One must surely conclude that the environment will be better protected in a system of free markets than in an over regulated system, where the economy becomes a command economy and environmental degradation becomes an irrelevant factor in the allocation of resources.

6.4.4. Politics

Although we may have seen the so called ‘triumph of democracy’ in the western world, the same cannot be said for many of the countries within which TNCs operate. Many of them are essentially tribal societies, forcibly aggregated into nation states by the colonial powers, and sometimes evidence a commitment to democracy only to the extent that it facilitates the flow of aid moneys from western donor countries. Some of these states considered in this thesis are at best transitional (Tanzania) and at worst failed (PNG). There appears to be no way that the United Nations or the Security Council can intervene in the administration of these states via trusteeship arrangements which once applied under the old League of Nations. Those days have ended with the mass arrival of AK47s. No western nation, for example, is currently prepared to address the situation in Zimbabwe because of fears of ongoing and endemic warfare directed against the occupying power. Even if the authority for the occupation is granted by the Security Council. Politics in these transitional or failed states may continue to be dominated by the reality of corruption, a factor which has been dealt upon in detail in this thesis. There is no readily apparent solution.

Interestingly, perhaps the risk in the developed countries is over regulation. The suggestion from the Environmental Protection Agency in Queensland to regulate for the complete and total retention of drainage flows from 36 mines in the Fitzroy River Basin⁶⁶⁵ may be an attempt to legislate the impossible.

Politics may well be the art of the possible, but in transitional states one could suggest that it is virtually the art of the impossible, and in developed states, the art of the impenetrable. In terms of the ultimate environmental values in either of these societies, the political factor is central. Dealing with it is a function for the corporations involved and on the basis of the details put forward in this thesis, in a broad sense they appear to be doing it reasonably well.

6.4.5. Human rights

As indicated previously, the question of environmental value and environmental morality leads ineluctably to a consideration of the broader question of the rights of individuals and communities throughout the world to enjoy the benefits of their own resources. This factor is of course inextricably bound to all the other issues raised above.

⁶⁶⁵ Morley P, “Move to bank mine outflows”, *The Courier-Mail*, 7-8 March, 2009, p 23.

As a topic, however, it would be the topic of another thesis. Beyond the arguably ineffective UN Convention on Human Rights, beyond the Atlantic Declaration, it does seem problematical to this writer, at least, that increasingly in transitional states the world is turning to TNCs to protect human rights, rather than the governments of those states.

6.4.6. Law

The basis for all economic relationships and the basis for a global trading system is a simple proposition, viz that promises should be kept. That proposition is the foundation principle of all contractual and commercial law. It is the central proposition in what the law calls ‘the law of obligations’. It is also, together with ideas of retribution and deterrence, which are central to criminal law, one of the central concepts in what we call ‘the rule of law’.

In the face of all the issues raised above, and the discussions throughout this thesis, the writer ultimately suggests that one of the few ways that the complicated entanglement of corporate morality, economics, environment and politics can be disentangled is through a greater international application of the rule of law.

Law does not exist, however, in a vacuum. It is a function of institutions, many of which have, in the west, slowly been improved over a thousand year period. It is palpably unfair to insist on an adherence to legal institutions in transitional states which were imposed upon them as an end result of a thousand years of development in other societies.

What then is the role of the law? Since some of the states considered in this thesis are transitional and others could be called failed, and since the rule of law is ultimately the best protector of environmental values, then a role must be considered for international judicial institutions. Currently there are two such formal institutions, together with a series of ad hoc institutions operating out of The Hague pursuant to Security Council resolutions. The formal institutions are:

1. The International Court of Justice
The fundamental difficulty with applying to this Court is the “acceptance of jurisdiction” clause which is the first step to allowing it to exercise jurisdiction. Often nation states, such as Australia, France, the United States, have refused to allow the ICJ to act. Given this clause, its jurisdiction and its impact will continue to be limited.
2. The International Criminal Court
Again, jurisdictional issues limit the role of the special prosecutor to investigate and prosecute crimes against humanity and human rights, although, it must be conceded, the limitation is rather less stringent than the ICJ. The Court, however, appears to be limiting its jurisdiction to matters such as genocide and in the case of, for example, Zimbabwe, seems quite incapable to act.

However international judicial bodies can act, and have acted, as is exemplified by the prison sentences handed out to perpetrators of the Kosovo genocide. Given my ultimate conclusion, however, that the rule of law must be the determining factor, and that since the only institutions who can enforce such rules are international institutions, a case can clearly be made for the establishment by the United Nations of an international environment court.

The establishment of such an institution will be difficult in the face of the sovereign rights concerns of major global states, such as the United States and the People's Republic of China.

Nevertheless, if the world is to move beyond the global trading system to a global regulatory system, then such a court must eventually be established, supported and given sufficient power to protect the environmental values which have been discussed in this thesis.

APPENDICES

APPENDIX 1-1

Potential environmental impacts of mineral exploration and development

| PROCESS | IMPACT AND AVOIDANCE OF IMPACTS |
|---|---|
| <i>Exploration</i> | |
| Geophysical and geochemical exploration, geological mapping | Low impact, care needed to avoid disturbance by low-flying aircraft. |
| Ground access | Potential impact from track and road construction. Possible introduction of weeds, feral animals and diseases. Access roads should be closed and rehabilitated when no longer required. |
| Exploration camps | All equipment and litter should be removed and the site rehabilitated on abandonment to avoid fuel and litter impacts. |
| Drilling | Precautions required against spills of drilling mud. Drill holes should be plugged and site rehabilitated. Drill mud potentially impacts on aquatic fauna. |
| Surface excavations | Should be back-filled and revegetated when no longer required. |
| | |
| <i>Mining – open cut</i> | |
| Pit | Sometimes back-filled, but usually left open. Should be shaped and made safe. |
| Waste rock dumps | Should be shaped and revegetated. Risk of acid mine drainage if dumps are not properly constructed. Aesthetic impacts can be minimised by screen planting. |
| | |
| <i>Mining - strip</i> | Involves larger areas of land, the creation of new land forms and may be visually dramatic. Involves complete clearance of all vegetation and breakdown of soil structure. Progressive rehabilitation and minimisation of open areas is essential. Care needed to avoid adverse impacts on groundwater. |
| | |
| <i>Mining - dredging</i> | Common technique for mineral sands mining. Potential impacts similar to strip mining except that replication of existing land forms is usually feasible due to the small volume of ore removed. |
| <i>Mining - underground</i> | Less visible impacts. Ground subsistence may be a problem in coal mining. Waste rock dumps require management as for open cut operations. |
| <i>Heap leaching</i> | Technique occasionally used for extracting high value minerals from low grade ores, especially gold. Main risks arise from leakage and disposal of the leaching solution. The spent heap will require revegetation or disposal into a pit. |
| <i>Mineral concentrating</i> | Generally involves crushing and grading of ore to fine particles, separation of minerals, and disposal of the remaining sandy material into a tailings dam. Tailings material may be toxic and it |

| | |
|----------------|---|
| | is therefore essential that dams are properly engineered, contaminations of groundwater is avoided, and dams are sealed and revegetated. |
| <i>General</i> | Impacts of varying intensity may occur in relation to air, land forms and soil, water systems, flora and fauna, species and habitat. Possible impacts on wilderness may also be relevant. |

Source: Commonwealth of Australia, ESD Working Groups, 1991, 26.

APPENDIX 1-2

A history of the environmental impacts of mining

In order to understand the need for regulation of mining, it is necessary to consider the impacts that mining has had on the environment. Clearly, mining is not a recent activity. It has been practiced in one form or another even in the pre-historical period. As Jones remarks:

The history of mining is the history of civilization itself. Without mining, man would still be just another animal, seeking nothing more than a full belly and a refuge against other animals more savage than himself.⁶⁶⁶

During the Neolithic, or new stone age (from about 10,000 BC), great trade routes were established between Western Europe and the Middle East and beyond. These trade routes passed through Mesopotamia, then an extremely fertile area of land in the river valleys of the Tigris and Euphrates. Trade was carried on in flint, salt, amber, bitumen, pottery and agricultural products.⁶⁶⁷ The first metal to be mined was gold, which appears to have first come to the attention of man around 6,000 BC.⁶⁶⁸

It was, for example, the rich gold deposits available to Egypt that, in part,⁶⁶⁹ led to its becoming the greatest power in the ancient world. Coptos, in the Nile Valley, was the world's first gold boom-town.⁶⁷⁰ The gold mining areas of Egypt occurred in a strip east of the Nile and west of the Red Sea, extending southward from Coptos for about 500 miles into the Nubia desert. Both placer and vein gold were mined, the richest deposits being worked in Nubia.⁶⁷¹ The hardships of slaves employed in the gold mines were referred to by the Roman author, Diodorus Siculus. He noted that the workers were kept in fetters and worked day and night guarded by soldiers who could not converse with them in a common language. They worked naked and in all conditions irrespective of their health, age or sex and were constantly beaten. Children were used to transport the broken material to the mine surface where it was treated by men over 30 years of age.⁶⁷² Nothing is known about the effects of this mining on the natural environment at the time though the lack of chemically based extraction techniques would suggest it was limited in extent and probably confined to the short-term pollution of local watercourses and the degradation of some local habitats.

The Greeks, similarly, were only peripherally concerned with the environment and did not perceive it as capable of being threatened. Essentially the Greeks of Aristotle or Pericles' time lacked a conception of the environment in the sense that we know it today. Greek cities were doubtless often dirty, foul-smelling places threatened by disease, such as the notorious plague at Athens at the beginning of the Peloponnesian War so graphically described by

⁶⁶⁶ Jones MJ (ed), *Minerals and the environment*, Proceedings of an international symposium, organised by the Institution of Mining and Metallurgy, with the cooperation of the Institute of Quarrying and the Institution of Mining Engineers, held in London, 4-7 June 1974, *The Institution of Mining and Metallurgy*, England, 1975, x.

⁶⁶⁷ Cedric Gregory, *A Concise History of Mining*, AA Balkema Publishers, The Netherlands, 2001, 8.

⁶⁶⁸ *Ibid*, 9.

⁶⁶⁹ One other factor, of course, was the extraordinary fertility of the Nile valley.

⁶⁷⁰ Cedric Gregory, n 653 above, 10.

⁶⁷¹ *Ibid*, 10.

⁶⁷² Shepherd R, *Ancient Mining*, Elsevier Science Publishing Ltd, England, 1993, 256-257.

Thucydides⁶⁷³. However they had few factories, no cars or modern industrial pollution, no plastics or man-made radiation, no noise pollution from airports, and they covered a very small area of the earth's surface.⁶⁷⁴ In any event the products of mining at the time, gold, silver, copper were part of the ingredients of the Greek's rather single-minded quest for "the good life" and little was permitted to stand in the way of this pursuit.⁶⁷⁵

The relevant point for the purposes of this brief history starts not with a civilization but with a metal- lead. It may be difficult to conceive today but lead was one of the most useful industrial metals in Greek and Roman times. Because of its corrosion resistance and formability, it was used in plumbing, architecture, shipbuilding, for stationery and in cooking vessels and plates. Its density and malleability made it attractive for making plummets, sinkers, and standard weights. Its low melting point – further reduced by the addition of tin – ensured its use as solder since very ancient times. The addition of lead to bronzes made them easier to cast. The utilisation of lead reached such an impressive level during the period of the Roman Empire that lead is often referred to as a 'Roman metal'.

The disclosure of a source of tin in Cornwall and the need for lead inspired Julius Caesar to invade Britain in 55 BC. During the reign of Claudius in AD43 Britain was again invaded under the general-ship of Agricola, and the Romans subsequently discovered gold and iron deposits, but more particularly lead in the Mendip Hills and Derbyshire. Many old lead smelters have since been found, with ingots bearing the names of emperors and corresponding dates. However, the Romans were not the first lead miners in these areas. Some Celtic artefacts have been recovered, showing that the lead mines were worked centuries earlier. The Romans applied their customary efficiency and organisation to the operation of these old mines.⁶⁷⁶

The use of lead in the Roman Empire exceeded 550g per person per year. The cumulative worldwide production of lead from the earliest times to the fall of the Roman Empire has been estimated to be about 40 million tons. It is estimated that the number of workers who were occupationally exposed to lead during the period of the Roman Empire was over 140,000 per year.

Considerably higher fractions of lead-using populations were exposed to lead contamination in their food and drink. The Romans, for example, preserved their fruits and vegetables with lead salts, cooked their foods in leaden pots, and commonly assuaged their 'sweet tooth' with the sugar of lead (saccharum saturni, or lead acetate). They added lead to their wines and their water was delivered in lead pipes, while saturnine cosmetics and medicaments were common and quite popular. Lead was also used for such diverse purposes of the lining of ships, manufacture of seals, admission tickets for theatres, the loading of whips with lead balls, and coffins.

With such overexposure to lead, we find frequent literary references to epidemics of plumbism and saturnine gout among the members of the Roman aristocracy.⁶⁷⁷ Wall notes that the excesses of Caligula and Nero may have been due to their fondness for acidic fish

⁶⁷³ Thucydides, *The Pelopnesian War*, Penguin, England, 1967.

⁶⁷⁴ Westra L and Robinson TM (eds), *The Greeks and the Environment*, Rowman & Littlefield Publishers Inc, New York, 1997, 19-20.

⁶⁷⁵ Ibid, 20.

⁶⁷⁶ Cedric Gregory, n 653 above, 34.

⁶⁷⁷ Nriagu, J, "Lead and lead poisoning in antiquity" in Wall Derek, n 24 above, 40-41.

saucers that dissolved the lead from the imperial tableware, into the imperial brain and bloodstream.⁶⁷⁸ Shepherd⁶⁷⁹ discusses excavations made at the Roman town of Cirencester in Gloucestershire, England between 1969–1976. There more than 450 Roman skeletons were found in a cemetery that was used from the 4th to 15th century AD. Tests made on the skeletons have shown evidence of spina bifida and arthritic conditions. Lead was found in many of the bones.⁶⁸⁰

Whilst it is beyond this thesis to canvass the entire history of the environmental impacts of mining, another illustration from the middle ages is instructive. Georg Bauer, better known by the Latin version of his name, Georgius Agricola,⁶⁸¹ is considered the founder of geology as a discipline. He is remembered for his greatest work *De Re Metallica*, literally translated means “On the Nature of Metals”. This work remained the standard text on mining for 180 years.⁶⁸² Agricola reviewed everything then known about mining, including equipment and machinery, the means of finding ores, methods of surveying and digging, assaying ores, smelting, mine administration and even occupational diseases of miners.

In Book I, Agricola includes “the arguments which may be used against this art, and against metals and mines, and what can be said in their favour”.⁶⁸³ This provides a useful insight into 16th century criticism of mining on environmental grounds. He summarises such criticisms as follows:

[t]he strongest argument of the detractors is that the fields are devastated by mining operations, for which reason formerly Italians were warned by law that no one should dig the earth for metals and so injure their very fertile fields, their vineyards, and their olive groves. Also they argue that the woods and groves are cut down, for there is need of an endless amount of wood for timbers, machines, and the smelting of metals. And when the woods and groves are felled, then are exterminated the beasts and birds, very many of which furnish a pleasant and agreeable food for man. Further, when the ores are washed, the water which has been used poisons the brooks and streams, and either destroys the fish or drives them away. Therefore the inhabitants of these regions, on account of the devastation of their fields, woods, groves, brooks and rivers, find great difficulty in procuring the necessaries of life, and by reason of the destruction of the timber they are forced to greater expense in erecting buildings. Thus it is said, it is clear to all that there is greater detriment from mining than the value of the metals which the mining produces.⁶⁸⁴

In his defence of mining the earth Agricola states:

They [the critics of mining] say, ‘Although metals are in the earth, each located in its own proper place where it originated, yet because they lie thus enclosed and hidden from sight, they should not be taken out’. But in refutation of these attacks, which are so annoying, I will on behalf of the metals instance the fish, which we catch, hidden and concealed though they

⁶⁷⁸ Wall Derek, n 24 above, 2.

⁶⁷⁹ Shepherd R, n 658 above, 176.

⁶⁸⁰ Numerous ancient societies have collapsed because of environmental degradation. The builders of Avebury and Stonehenge seem likely to have caused massive deforestation, leading to soil erosion, climatic change and probable famine. The Mayan pyramid builders may have caused their own demise in a similar fashion. Over-zealous irrigation schemes that drew salt into the soil hastened the collapse of Sumerian society and possibly that of the Indus valley: Wall Derek, n 24 above, 2.

⁶⁸¹ 1494-1555.

⁶⁸² Agricola G, *De Re Metallica*, 1556, translated by Hoover HC and Hoover LH, The Mining Magazine, London, 1912, Translator’s preface ii.

⁶⁸³ Ibid, xxix.

⁶⁸⁴ Ibid, 8.

be in the water, even in the sea. Indeed, it is far stranger than man, a terrestrial animal, should search the interior of the sea than the bowels of the earth. For as birds are born to fly freely through the air, so are fishes born to swim through the waters, while to other creates Nature has given the earth that they might live in it, and particularly to man that he might cultivate it and draw out of its caverns metals and other mineral products.⁶⁸⁵

At the same time as Agricola was defending mining on the continent in England coal had entered general use for domestic and industrial purposes. Its use expanded in the 17th century as a shortage of timber led to its consequent rise in price which accelerated the use of coal.⁶⁸⁶ The only important industry which hadn't changed over to coal firing by the end of the 17th century was iron smelting⁶⁸⁷. The Industrial Revolution began in England because coal and iron were found there in close proximity.⁶⁸⁸ However it wasn't until the end of the first decade of the 18th century, when Abraham Derby utilized low-sulphur coke for iron smelting, that the iron industry was able to develop.⁶⁸⁹

The industrial revolution in England could be said to have changed everything. The introduction of manufacturing machinery decreased costs and the wealth created by the factory system increased income, so what had been the luxuries of the few became, in time, the essentials of the many. This increased demand for goods of all kinds necessitated a substantial increase in mineral production and, in the absence of an efficient land-based transport system, it became clearly desirable to establish the manufacturing facilities as close to the actual mine sites as possible. Increasingly, over time, large sections of the population were obliged to live within sound, sight and smell of those mines and factories that their own demands had brought into being.

As England industrialized in the 19th century, more and more mining was also taking place overseas; in the jungles, deserts and barren hills of Africa, Asia, South America and Australia. As in England, so in the far-flung corners of empire, the simple bookkeeping principle of return on total assets was universally accepted not just as an accounting principal but as a moral one. In such terms to clothe a waste dump in vegetation or build a dam for tailings that could otherwise be simply and efficiently discharged into any nearby stream was not only a flagrant misuse of shareholders funds but, in Victorian and later Edwardian terms, immoral.⁶⁹⁰

The European industrial revolution did not usher in a climate of thinking about broad environmental issues such as habitat destruction, biodiversity and pollution though, in the face of mounting evidence of the deleterious effects that the new industrial society was having on the external world, such could have been the case. At national levels a developed consensus about causes and effects remained stubbornly absent as western man continued his love affair with the idea of progress and the ineluctability of mans dominance over nature. Small groups did arise to champion various environmental issues in some western nations in

⁶⁸⁵ Ibid, 12.

⁶⁸⁶ Smiths and lime-burners had used coal from very early on, and by the mid-17th century it was also used in salt boiling, dyeing, brewing and soap boiling as well as in the preparation of alum, copperas, saltpetre and tallow candles: Worster D (ed), *The Ends of the Earth: Perspectives on modern environmental history*, Cambridge University Press, England, 1988, 83-84.

⁶⁸⁷ The high sulphur content of coal resulted in the contamination of the metal, rendering it brittle.

⁶⁸⁸ Calvert P & S, *The South, The North and the Environment*, Pinter, London, 1999, 26.

⁶⁸⁹ Worster D (ed), n 672 above, 84.

⁶⁹⁰ Jones MJ (ed), n 652 above, x.

the first half of the last century⁶⁹¹ but at an international level and in international forums the seemingly arcane concern that human activities could damage the biosphere upon which we all ultimately depended consistently failed to attract a constituency in the face of two world wars and the cold war.

By the late 1960s however some of the evidence of large-scale environmental damage began to emerge⁶⁹² and with it the small beginnings of an international perspective which was destined to grow rapidly over the following 30 years. This process and the international norms which eventually began to issue from it will be discussed in detail in the following chapter.

⁶⁹¹ Examples in the USA include the Audubon Society and the Sierra Club.

⁶⁹² In this regards DDT and the thalidomide scandal are highly significant.

APPENDIX 1-3

Forms of pollution covered by mining licence conditions

This Appendix is not intended to be a scientific excursus on the environmental effects of the various forms of pollution generated by mining. Rather, it is intended to provide a layman's overview of such impacts which will be sufficient to understand the licence conditions that will be discussed in Chapter 3 of the thesis.

Air contaminants

Dust elements in suspension in the air are potentially of concern to human health. Dust particles are generated during drilling, blasting, excavation with shovel/ dragline, transportation of ore and overburden, crushing, loading and conveying of ore in handling plants and from wind erosion of overburden and ore dumps.⁶⁹³ The precise effects depend on the nature and the concentration of particles that are deposited. Gaseous pollutants related to base metals mining are of concern mainly to mine workers.⁶⁹⁴ Open cut mining produces some carbon monoxide, oxides of nitrogen and sulphur (blasting and diesel operated equipment).

Noise emissions

The major sources of noise in the mining industry are fixed plant, mobile equipment and transport movements. Vibration is also a potential impact. In blasting operations, an undesirable result of detonation is the surface displacement of the ground in the vicinity of the blast, the amplitude of the displacement depending on the distance from the blast, the energy released in the explosives and local geological conditions.⁶⁹⁵ Such surface and sub-surface shock waves may have a serious effect on nearby building structures and result in the forced migration of local species.

Water pollutants

In open-pit operations, the volume of water collected in the mined area will depend on both the ingress of groundwater and on precipitation into the surface area of the pit. This water is normally collected in sumps in the pit bottom and pumped into a tailings dam.⁶⁹⁶

Tailings are in most cases composed of a slurry which contains particles of ground material (gangue minerals and minor amounts of valuable minerals) in suspension. The contaminants in tailings pond effluents include suspended metals in solution, thiosalts and chemicals used in the extraction process.⁶⁹⁷ It follows that effluent characteristics will be highly dependant upon the specific operation.

⁶⁹³ Trivedy RK and Sinha MP, *Impact of Mining on Environment*, Ashish Publishing House, New Delhi, 1990, 7.

⁶⁹⁴ United Nations, Department of Technical Co-operation for Development and German Foundation for International Development, *Mining and the Environment: The Berlin Guidelines*, Mining Journal Books Ltd, London, 1992, 26-27.

⁶⁹⁵ Ibid, 37.

⁶⁹⁶ Ibid, 28.

⁶⁹⁷ Ibid, 28.

Mining water pollutants may impact on human health. More usually however, pollutants are at levels which cause some change in aquatic life, but not its total destruction. Many metals, such as copper and zinc, are necessary to health in small concentrations, but are highly toxic when present in excess. The toxicity of heavy metals in fresh water is not only dependent on metal concentration, but also on other factors such as pH, water hardness and the occurrence of other metals.⁶⁹⁸ Acidity, which may result in an increased concentration of dissolved heavy metals, can aggravate the problem.

Oil may also be discharged from a mine site, or may be mixed in the water when it is released from the site. Oil can also impact on aquatic life, as it forms a thin film over the water surface and can interfere with the re-oxygenation of the water. It may also coat the gills of fish.

Acid mine drainage

The major and most significant source of liquid waste in the non-ferrous metal mining industry is acid mine drainage. Acid mine drainage is common in areas where mine openings intersect the water table and where the rocks contain iron sulphides (pyrite and/or pyrrhotite) or, less commonly, certain other sulphides. Where such pyritic ores are mined, rainfall leaching of rock waste stockpiles may be responsible for significant, long-term environmental damage.⁶⁹⁹ Such damage may include the complete destruction of entire marine biosystems, the destruction of nesting sites and the pollution of drinking water.⁷⁰⁰

One of the measures that impacts on the type of rehabilitation work undertaken is the possible acid-producing character of a mine.⁷⁰¹ At acid-producing sites, contaminated drainage can occur, resulting in a long term treatment obligation if it is not effectively controlled. Drainage water may come from mine, waste stockpiles or tailings disposal facilities. Hence the objective is to reduce the volume and strength of acid-drainage to a level where passive techniques (such as treatment with bicarbonate) are a sufficient treatment of the residual drainage before discharge.⁷⁰²

⁶⁹⁸ Ibid, 25.

⁶⁹⁹ Ibid, 27-28.

⁷⁰⁰ An example of such wholesale destruction has occurred in the Dee River below the Mt.Morgan mine in central Queensland. The first 60km of this river is devoid of marine life and the water is dangerous to humans and livestock if drunk. This situation continues despite large scale operations ceasing nearly 20 years ago. The river, pointedly, is known by local children as the "yellow river".

⁷⁰¹ Again, Mt.Morgan is such a mine. Presently the pH of the retained water in the old open cut pit is 2.5. Acidity at this level is capable of completely dissolving a human body in four days and to kill seabirds (pelicans) within minutes of landing.

⁷⁰² United Nations, n 680 above, 39.

APPENDIX 2-1
The rise and fall of environmental consciousness from 1970

Wave 1 (peak 1969-73)

| Environmentalism | Mainstream |
|--|-----------------------------------|
| 1970 Earth Day, USA | 1970 Gadhafi takes power in Libya |
| 1972 UN Stockholm Conference | 1972 US troops leave Vietnam |
| 1972 <i>Limits to Growth, Blueprint for Survival</i> | 1973 Watergate scandal |
| 1973 OPEC 1 oil shock | 1973 Yom Kippur war |

The first downwave (trough: 1974-87)

| Environmentalism | Mainstream |
|---|--|
| 1974 Seveso disaster, Italy | 1975 Fall of Saigon; first North Sea oil ashore |
| 1978 San Carlos de la Rapita gas explosion kills 200, Spain | 1976 Mao dies, China |
| 1979 OPEC 2 oil shock | 1977 Elvis Presley dies |
| 1983 Greenham Common protests, UK | 1979 Shah of Iran exiled; Khmer Rouge genocide exposed in Cambodia |
| 1984 Bhopal disaster, India; Band Aid | 1981 Pope, President Reagan shot |
| 1985 BAS discovery of Antarctic ozone hole; Live Aid; French blow up Greenpeace's <i>Rainbow Warrior</i> in Auckland harbour, New Zealand | 1982 Falklands War |
| 1986 Chernobyl disaster, USSR; Rhine disaster | 1984 China sets off down capitalist road |
| 1987 <i>Our Common Future</i> ; Montreal Protocol signed; 'storm of century' lashes UK | 1985 Gorbachev new Soviet leader |
| | 1986 Mrs Aquino forces out Marcos, Philippines |
| | 1987 'Black Monday' stock market crash |

Wave 2 (peak 1988-90)

| Green | Mainstream |
|---|--|
| 1988 'Greening' of leading politicians, eg Thatcher, Gorbachev, Bush); Green consumer movement starts | 1988 USSR withdraws from Afghanistan; George Bush elected US President; Harvard awarded patent on genetically engineered mouse |
| 1989 Exxon Valdez disaster; 15% of UK voters back Greens in Euro-elections | 1989 Massacre in Tiananmen Square, China; collapse of communism in Eastern Europe |
| 1990 Earth Day, international; start of | 1990 Re-unification of Germany; Iraq |

| | |
|---|--|
| corporate environmental reporting trend | invades Kuwait 1991 Gulf War/ Operation Desert Storm; disintegration of former Yugoslavia; coup against President Gorbachev; demise of USSR |
|---|--|

Downwave 2 (trough 1991 -)

| Sustainability | Mainstream |
|---|--|
| 1992 UN Earth Summit, Rio de Janeiro | 1992 Bill Clinton elected US President; riots in Los Angeles |
| 1995 Brent Spar controversy, Europe; Shell Nigeria; French nuclear tests in Mururoa | 1993 Peace agreement between Israel and PLO; President Yeltsin clashes with Russian Parliament |
| 1996 BSE/ 'mad cow' disease, Europe; road protests at Newbury, UK; publication of <i>Our Stolen Future</i> , Body Shop's <i>Values Report</i> | 1994 Democracy breaks out in South Africa; Rwandan civil war, massacres; ceasefire in Northern Ireland |
| | 1995 Financial crisis in Mexico; collapse of Barings; Oklahoma City bombing. |

Wave 3 (current)

| Drivers | Characteristics |
|--|--|
| <ul style="list-style-type: none"> • economic and social fall-out from globalisation • economic recovery in some countries • 'pre-millennial tension' | <ul style="list-style-type: none"> • acceleration and growing complexity • global goldfish bowl, spurred by internet • new focus on life-cycles, business ecosystems, time-scales, corporate governance |
| <ul style="list-style-type: none"> • values shift(s) • new generation of activists | <ul style="list-style-type: none"> • triple bottom line • value migration |

Source: Elkington John, *Cannibals with Forks*, Capstone Publishing Ltd, London, 1997.

APPENDIX 2-2

World Wide Fund for Nature – Corporate Programs

What's in it for Business?

A company that aims for sustainable management processes and fully integrates WWF into its marketing activities, environmental concerns and corporate philosophy can benefit in a number of ways. The partnership can:

- encourage customers to choose its projects above a competitor's
- increase brand loyalty
- attract the best people to work for it
- increase its chances of gaining 'permission to operate' from the communities that its operations may impact or rely upon
- increase its standing amongst its peers
- increase its share value.

What's in it for WWF?

WWF views successful corporate partnerships as a way to:

- show other industry groups the commercial and social benefits of promoting an environmental cause with a much loved and respected charity such as WWF
- magnify its own efforts and resources and achieve far reaching and effective changes for the environment
- encourage staff, shareholders and customers to support effective internal environmental management processes.⁷⁰³

⁷⁰³ WWF, Natural Business Solutions at http://www.wwf.org.au/content/business_why.htm (accessed 12 August 2003).

APPENDIX 2-3
North Queensland Conservation Council –
Recommendations on the Cannington Mine

General recommendations

NQCC recommends:

- that BHP Cannington set conservation ideals as goals, even if not thought to be immediately achievable.
- that BHP Cannington reviews all performance targets to ensure that they are specific, quantifiable, reflect company goals and ESD principles, and that the community is involved in regularly reviewing these targets.
- that BHP Cannington, in its values and guiding principles, clarifies its relationship to the natural environment by:
 - acknowledging that the company’s economic wealth derives from exploitation of the natural environment and deprives both the earth and future generations of natural wealth
 - rewording its guiding principle in terms of aiming to achieve no long-term adverse impacts on the natural environment
 - making specific reference to the major environmental issues such as decline in life-supporting systems (air and water) and loss of biodiversity
 - accepting company responsibility for following its products/waste/by-products and their impacts through from extraction to end use
 - recognising individual and company involvement in a variety of communities and extending individual and company responsibility to influencing the actions of other humans and companies to respect and protect the natural environment
- that BHP Cannington’s commitment to the environment be elevated as an ‘overriding commitment’, as stated in the BHP Charter, and that the company dedicate its considerable technical and economic expertise to overcoming economic constraints to developing and implementing measures to protect the environment and achieve ESD in operations in which it is involved and in operations contracted to other companies.
- that BHP Cannington conducts a rigorous analysis of legal and company obligations, links work practices to these obligations and formally assigns responsibilities in position descriptions.
- that BHP Cannington builds on existing examples of leadership to adopt a more defined leadership role and specific leadership goals, including the following:
 - to investigate and implement measures to influence the downstream processors of its products
 - to investigate how and implement measures to influence the use of its end products—recognising that some uses of lead, silver and zinc are damaging to environmental and human health—and promote recycling of end products

- to strongly promote within the mining industry the practice of quality community partnership and meaningful involvement of community in decision-making
 - to strongly promote within the mining industry the practice of external verification
 - to advocate for government policy, legislation and enforcement of legislation that better protects the natural environment from the impacts of mining and related activities
 - to advocate for changes in economic structures that currently penalise both the environment and companies that seek to protect the environment
 - to advocate for community access to environment and other related law via third party access provisions—this would demonstrate good faith by giving the community more powerful tools with which to be involved in mining and associated business.
- that the company should conduct a life cycle audit and adopt a life cycle approach,

involving for example:

- tracking Cannington products from mine to end use in order to understand current uses and to form the basis of decision-making about how to influence end-uses
 - developing and implementing policies about the processing and transporting of products, including goals to improve environmental performance of processors and transporters
 - developing and implementing ethical policies about the preferred use of products, including goals to maintain the product in use or in a reuse cycle, and to encourage the ethical use of products.
- that BHP Cannington review its community participation role and set company goals, targets and performance indicators which demonstrate best practice and industry leadership and are reflective of ESD principles in this area
- that BHP Cannington clarify its commitments to the community (as distinct from the government to which BHP Cannington has legislative commitments) in terms of environmental goals and targets, much more specific than those enunciated generally in policies and charters.
- that BHP Cannington continue the approach initiated by this project; that BHP Cannington, both internally and in collaboration with NQCC review the project to assess areas for improvement and highlight successful aspects; that BHP Cannington promotes the benefits of the project within BHP and more broadly within and beyond the mining industry to encourage and challenge other companies to adopt improved community participation practices.
- that BHP Cannington investigates how best to resource community participation in external verification; that the company consider establishing a trust fund to provide sufficient resources to enable adequate levels of community and NGO participation when requesting such organisations to help them in their work.
- that BHP Cannington considers how it might more substantially contribute to protection of the environment; for example by contributing a certain proportion of its profits to environmental protection, either by establishing an independent trust

- fund for resourcing community environmental projects or by contributing to organisations with appropriate mandates for protecting the environment.
- that BHP Cannington initiate discussions with NQCC and others about how questions about the role of business and government and community in environmental management may be explored and developed—perhaps initially as a regional North Queensland think tank, and leading possibly to a theme for the Australian Minerals Council Annual Environmental Workshop.

Specific recommendations

Legislative requirements

- Resolve the statutory security deposit issue with DME.
- Ensure that an independent external assessor conducts the PoO audit.
- Conduct a Compliance Audit.
- Ensure all relevant personnel are aware of licence conditions and display relevant licences at all sites.
- Review company goals and performance targets to assess how they reflect legislative requirements and where they should be upgraded to reflect practices which exceed legislative requirements.
- Review licences to ascertain where conditions are below the standard attained or desired by BHP Cannington, and negotiate with the relevant government department to raise the licence standards where appropriate. This could serve an important role in lifting departmental expectations of other companies. (Note: all licence conditions are negotiated between a company and the relevant government department and are generally only changed by negotiated agreement.)
- Become a strong advocate within industry and government forums for higher relevant legislative and licence standards which reflect ESD principles.

Management of the environmental management program

- Monitor and assess the effectiveness of the environmental induction, follow-up and training programs in terms of environmental performance.
- Fully document employee responsibilities with respect to the environment and link accountability of employees to position descriptions. Conduct regular assessment of employee compliance with environmental procedures as required by position descriptions.
- Extend the same approach to contractors, by incorporating required standards in agreements with contractors and conducting assessments of contractor compliance with those standards.

- Implement mechanisms for risk assessment as outlined in the EMS, Chapter 2.2 and prioritise risk reduction strategies based on findings of risk assessment.
- Implement incentives/acknowledgement systems which recognise individual and team efforts in improving environmental performance.

Best practice

- Continue the water use reduction program at the mine after construction of the Stage Two tailings dam.
- Commission independent monitoring of the impacts of company port operations on the marine benthos in Cleveland Bay, rather than relying solely on monitoring by the Townsville Port Authority. Report results of monitoring of the marine benthos in the Environmental Monitoring Report.
- Investigate and implement measures to recover mineral resource from sludge ponds at the railhead and port.
- Further investigate and implement options for using renewable energy (e.g. wind or solar) in operations at the mine, railhead and port facility.
- Set formal company goals which reflect ESD principles even though such goals may exceed legislative requirements and may not be thought to be technically or economically feasible at the time. For example, translate the unofficial company goal of no dust emissions at the railhead into a formal goal. Adopt a similar approach with other environmentally relevant activities. Involve environmental NGOs in the formal setting of goals.
- Establish a formal mechanism for the review of consultants' reports and for the referencing of information drawn from these reports particularly where this information is of key significance.

General procedures

- Complete all documentation required by the EMS in accordance with the recommendations of the October 1999 EMS Audit, in particular the requirement for position descriptions setting out management responsibilities, the legislation matrix and translation of company goals into targets.
- Include monitoring data on impacts of port activities on marine benthos in the Environmental Monitoring Report.
- Commission independent monitoring of the impacts of company activities at the port.
- Select all service providers, including consultants, on the basis of their environmental credentials and record.

- Implement risk assessment procedures which consider all environmental risks, particularly at the port.

Waste management

- Develop and implement a system to reclaim spilt product from the sludge settlement ponds at the Yurbi railhead and the port facility. This might include considering the option of contracting out the recovery rights.
- Implement the acid generation waste rock removal plan to rectify threat of environmental contamination where this rock type was inappropriately used. Ensure that company learning takes place as a consequence of the review of the problem and that responsibility is accepted by the appropriate managers.
- Develop agreements with waste disposal contractors which require disposal consistent with ESD principles; monitor compliance of contractors with legislative and agreement obligations.
- Use post consumer waste recycled paper and paper products for all stationery and company publications and ensure that promotional products and projects are consistent with company environmental values, e.g. promotional products should be made of recycled materials, preferably of Australian origin.
- Continue to seek recycling solutions for waste reduction, e.g. tyre recycling.
- Engage new consultants to assess the integrity of the tailings dam, rather than the consultants which were responsible for the faulty design.

Spill prevention and control

- Evaluate the current bioremediation process and consider diverting capital, directed to the current practice, to further preventative mechanisms.

Energy

- To enhance energy efficiency, reconsider developing a conveyor system instead of truck haulage for transporting ore from the mine head to the processing plant. Assess benefits over the life cycle of the mine, rather than simply comparing establishment costs.
- Use environmental cost accounting in considering energy options—e.g. where existing technology is outmoded in energy efficiency, its remaining utility and projected life-span should be heavily discounted due to its higher energy input requirements.
- Further investigate the options for use of renewable energy and develop and implement goals for use of renewable energy (see further recommendations re greenhouse gases in section below).

Air quality management

- Adopt measures to fully contain air-borne particles at the port loading facility. If the problem proves intractable, NQCC would recommend investigation of product pelletising.
- Formalise zero emissions target for dust escape at rail siding by including it in the EMS.
- Adopt higher targets for reduction of greenhouse gases by reducing use of fossil fuels and replacing with renewable forms of energy; assess the company's potential to create and repair ecologically sustainable greenhouse sinks through, for example, revegetation projects.

Water management

- Update the borefield predictive water extraction model to take account of the current water extraction rate.
- If not already undertaken, conduct an assessment of any ecological features, e.g. mound springs, that may be affected by BHP Cannington's extraction of groundwater. Ensure that borefield water management, plans and procedures include measures to protect ecologically dependent features of the natural environment.
- Continue and enhance involvement with community and government efforts to arrest declining water levels in the Great Artesian Basin. BHP Cannington could assist graziers to cap uncontrolled bores, to install tanks to avoid trampling of mounds by cattle and to reduce evaporation rates, and develop/support community programs which promote sound management of groundwater reserves.

Land quality management

- Ensure that the final report evaluating rehabilitation is of an appropriate standard. We recommend that it be peer reviewed by an independent reviewer.
- Adopt a goal to ensure that the rehabilitated mine site is managed post-closure according to ESD principles. Consider whether post-mining uses could serve conservation purposes.

Evaluation of program effectiveness

- Conduct a regular external independent environmental audit to provide greater objectivity in assessment and monitoring. Different perspectives and objectivity could also be fostered by regularly contracting different consultants for the audits.
- Enhance the standard and objectivity of environmental audits by subjecting them to peer review.
- Review monitoring and reporting arrangements at the port to ensure that BHP Cannington has adequate information about and can take responsibility for potential

impacts of concentrate drift on marine benthos in Cleveland Bay. We recommend independent monitoring.

- Complete the documentation required by the EMS, including a legislation register providing all the requirements for statutory environmental compliance. A legislation register will ensure staff knowledge of statutory requirements, which form one baseline for improvement in the environmental assessment program.

Product end use/life cycle

- Conduct a life cycle audit of the company's products, which involves tracking Cannington products from mine to end use.
- Develop and implement policies and strategies to promote life cycle responsibility according to ESD principles. This would address processing and transporting of products, and product end use, reuse and recycling.

Protection of community and cultural values

- Consider increasing community support, according to predetermined targets for support, for local and regional communities. NQCC recognises that BHP Cannington presently provides financial support for various projects.
- In consultation with NGOs, community representatives and scientists, develop non-legislative company goals and targets which reflect company values and ESD principles. Develop a "commitment to the community" document which outlines these goals and targets. Report regularly to the community on progress against the targets.
- Initiate discussions with NQCC and others about how to develop more effective approaches to institutional reform required to advance the principles of ESD.
- Augment current commitments to projects that contribute to protection of the environment. In acknowledgement that the company's economic wealth derives from exploitation of the natural environment and deprives both the earth and future generations of natural wealth, we recommend that BHP Cannington commit to contributing a certain proportion of its profits to environmental protection, either by establishing an independent trust fund for resourcing community environmental projects or by contributing to organisations with appropriate mandates for protecting the environment.
- Investigate how best to resource a community participation program. NQCC recommends that companies should establish trusts to provide sufficient resources to enable adequate levels of community and NGO participation when requesting such organisations to help them in their work. Such trusts should be administered independently of the company by a board of trustees.

APPENDIX 2-4

Global Environmental Conventions

Atmosphere-related Conventions

Vienna Convention for the Protection of the Ozone Layer (1985)

Biodiversity-related Conventions

Agreement on the Conservation of African-Eurasian Migratory Waterbirds

Agreement on the Conservation of Small Cetaceans of the Baltic & North Seas

Agreement on the Conservation of the Black Seas, Mediterranean and Contiguous Atlantic Area

EUROBATS

Convention on International Trade in Endangered Species (1973)

Bonn Convention on Migratory Species (1979)

Convention on Biological Diversity (1992)

Cartagena Protocol on Biosafety (2000)

Chemical-related Conventions

Montreal Protocol on Substances that Deplete the Ozone Layer (1987)

Multilateral Fund for the Implementation of the Montreal Protocol

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998) (joint interim secretariat with FAO)

Stockholm Convention on Persistent Organic Pollutants (2001)

Other Conventions

United Nations Convention to Combat Desertification

United Nations Framework Convention on Climate Change

United Nations Convention on the Law of the Sea

UNESCO Man and the Biosphere Programme

UNESCO World Heritage Convention

Source: United Nations Environment Program, "List of Global Environmental Conventions" at <http://www.unep.org> (accessed 18 September 2003).

APPENDIX 2-5
Recommendations of the
Mining, Minerals & Sustainable Development Project

Key Actions at the Global Level

| Actions | Responsibilities |
|--|--|
| <ul style="list-style-type: none"> • complaints and dispute resolution mechanism | <ul style="list-style-type: none"> • companies, representatives of affected stakeholder groups, commercial lenders |
| <ul style="list-style-type: none"> • product stewardship initiative | <ul style="list-style-type: none"> • non-ferrous metals consultative forum on sustainable development, industry associations, NGOs, governments, labour |
| <ul style="list-style-type: none"> • sustainable development support facility | <ul style="list-style-type: none"> • governments, international organisations, NGO such as IUCN, stakeholders |
| <ul style="list-style-type: none"> • reporting guidelines | <ul style="list-style-type: none"> • ICMM-industry associations, NGOs and stakeholders, Global Reporting Initiative, companies, international organisations |
| <ul style="list-style-type: none"> • protected areas and mining | <ul style="list-style-type: none"> • conservation NGOs such as IUCN, governments, companies, associations such as ICMM, communities |
| <ul style="list-style-type: none"> • dialogue on mineral legacies | <ul style="list-style-type: none"> • mining industry, world leaders |
| <ul style="list-style-type: none"> • dialogue on financial surety | <ul style="list-style-type: none"> • World Bank, mine ministers |
| <ul style="list-style-type: none"> • global labour-management agreement | <ul style="list-style-type: none"> • international labour unions such as ICEM and international industry associations such as ICMM |
| <ul style="list-style-type: none"> • form on mining, minerals and sustainable development | <ul style="list-style-type: none"> • all actors |

Key Actions at the National Level

| Actions | Responsibilities |
|---|---|
| <p>Review and development of legal and policy frameworks</p> <ul style="list-style-type: none"> • access to information • public participation • land rights regimes and compensation systems • traditional indigenous territories • maximising the benefits of mineral | <ul style="list-style-type: none"> • governments and relevant stakeholders |

development

- artisanal and small-scale mining
- community development
- mining-induced displacement and resettlement

Other actions

- an international register of payments to combat corruption
 - audits, guidelines and standards for environmental management
 - capacity building
 - labour-company agreements
 - national multi-stakeholder processes
 - companies, industry associations, NGOs, governments, international organisations
 - government, affected communities, companies
 - governments, international organisations such as the World Bank, the UN, NGOs, donors
 - national unions, companies
 - all relevant actors
-

APPENDIX 2-6 Global Reporting Initiative – G3 Reporting Guidelines



The **Reporting Framework** contains the core product of the [Sustainability Reporting Guidelines](#) (“the Guidelines”), as well as [Protocols](#) and [Sector Supplements](#).

The [Guidelines](#) should be used as the basis for all reporting. They are the foundation upon which all other reporting guidance is based, and outline core content for reporting that is broadly relevant to all organizations regardless of size, sector, or location. The Guidelines contain principles and guidance as well as standard disclosures – including indicators – to outline a disclosure framework that organizations can voluntarily, flexibly, and incrementally, adopt.

[Protocols](#) are the "recipe" behind each indicator in the Guidelines and include definitions for key terms in the indicator, compilation methodologies, intended scope of the indicator, and other technical references.

[Sector Supplements](#) respond to the limits of a one-size-fits-all approach. Sector Supplements complement (not replace) use of the core Guidelines by capturing the unique set of sustainability issues faced by different sectors such as mining, automotive, banking, public agencies and others

Source: Global Reporting Initiative, “About Reporting Framework” at <http://www.globalreporting.org/ReportingFramework/AboutReportingFramework/> (accessed 1 May 2007).

APPENDIX 2-7

Can mining be sustainable?

Despite the ICMM, an essential question nevertheless has to be asked, namely can the mining of non-renewable resources ever be sustainable in any meaningful sense? Although it is beyond the province of this work to canvass this issue in detail, it may be sufficient to point out that in the terms of at least one economic theory it can be. This proposition, known as the Hartwick Rule,⁷⁰⁴ is dependent upon a broader frame of reference than the specific activity being undertaken by a mining company. It places mining in an enlarged context of energy utilisation in an otherwise closed system. In short, the Rule would suggest that if the revenue generated by the mining of non-renewable resources is able to be channelled into the development of renewable ones, then systemically the first activity, namely the mining, can be classified as ‘sustainable’.⁷⁰⁵

There are acknowledged difficulties with this principle, not the least of which is that, to date, the world has seen little correlation between profits generated from mining and the development of non-renewable energy sources. The World’s largest corporation, Exxon Mobil, which in 2007 recorded the world’s largest net profit of US\$41 billion, has not one cent invested in the development of renewable energy.⁷⁰⁶ The reason given is that “Exxon doesn’t believe renewable are commercially viable on a significant scale without government incentives. Exxon executives privately accuse rivals like BP and Shell of exaggerating their commitment to renewable energy”.⁷⁰⁷

⁷⁰⁴ Hartwick, John M. "Intergenerational Equity and the Investment of Rents from Exhaustible Resources" *American Economic Review*, 67, December, 1977, 972-74.

⁷⁰⁵ It is of note that British Petroleum now refers to itself as ‘Beyond Petroleum’. Presumably this is a marketing manifestation of the Hartwick Rule.

⁷⁰⁶ Reuters, :Factbox: Oil major’s investments in renewable energy”, 3 April 2007 at <http://www.reuters.com/article/reutersEdge/idUSL2966041120070403> (accessed 11 February 2008).

⁷⁰⁷ Ibid.

APPENDIX 5-1
Operational Statistics for the Bulyanhulu Mine, Tanzania

| For the year ended December 31 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 |
|--|-----------|-----------|------------------|---------|-----------|------------------|
| OPERATIONAL STATISTICS | | | | | | |
| Gold Production | | 311,000 | 350,000 | 313,551 | 356,319 | 241,575 |
| Mine | | | | | | |
| Tons of ore mined | | | | | | |
| Tons per day | 1,183,000 | 1,011,000 | 1,118,000 | 944,510 | 943,629 | 454,695 |
| Grade oz/ ton | | | 3,057 | 2,602 | 2,585 | 1,690 |
| | 0.320 | 0.336 | 0.376 | 0.385 | 0.405 | 0.438 |
| Mill | | | | | | |
| Tons of ore processed | 1,176,000 | 1,045,000 | 1,123,000 | 979,950 | 1,075,190 | 777,947 2,892 |
| Tons per day | * | * | 3,057 | 2,700 | 2,946 | |
| Grade processed oz/ton | 0.32 | 0.34 | 0.35 | 0.36 | 0.39 | 0.38 82.3% |
| Recovery rate | 87.8% | 88.5% | 88.4% | 88.1% | 86.1% | |
| FINANCIAL STATISTICS (US\$) | | | | | | |
| Mining cost (per ton mined) | * | * | \$38.64 | \$41.13 | \$31.98 | \$36.15 |
| Processing cost (per ton processed) | * | * | \$14.22 | \$18.89 | \$16.86 | \$16.73 |
| G&A cost (per ton processed) | * | * | \$18.22 | \$18.16 | \$11.95 | \$12.25 |
| Total operating cost (per ton processed) | * | * | \$79.28 | \$69.83 | \$63.64 | \$58.34 |
| Total cash costs per ounce | \$339 | \$358 | \$240 - \$260 | \$246 | \$198 | \$197 |

* = data not reported for this period.

Sources: Barrick Investor Briefing, February 2004, Summary Information; Barrick Annual Report 2005; Barrick Annual Report 2006; Barrick Year-end 2006.

APPENDIX 5-2
Operational Statistics for the Geita Gold Mine, Tanzania

| Year ended 31 December | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 |
|-----------------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|
| Production (ounces) | 308,000 ⁷⁰⁸ | 613,000 | 570,000 | 661,045 | 579,043 | 545,562 |
| Cost per ounce (US\$) | 497 | 298 | 250 | 170 | 163 | 143 |
| Tonnes of ore mined (000 tonnes) | n/a | n/a | n/a | 5,685 | 5,399 | 4,520 |
| Ore grade (g/t) | 1.68 | 3.14 | 3.74 | 3.22 | 3.52 | 3.80 |
| Ore processed (000 tonnes) | 5,700 | 6,100 | 4,700 | 5,704 | 4,979 | 4,582 |
| Head grade (g/t) | 1.68 | 3.14 | 3.74 | 3.90 | 3.92 | 3.91 |
| Recovery (%) | | | | 92.4 | 92.3 | 93.0 |

Sources: Ashanti Goldfields Company Limited, Press Releases, 13 February 2003, “Results for the year ended 31 December 2002”; 4 February 2004, “Results for the year ended 31 December 2003; AngloGold Ashanti Ltd, Country Report 2006 – Geita, Tanzania; AngloGold Ashanti Ltd, Annual Report 2006.

⁷⁰⁸ In 2006 gold production decreased by 50% owing to a combination of factors: in the first quarter, drought reduced the water supply to the processing plant and subsequent heavy rains resulted in hauling constraints. This, combined with the slower than anticipated cut back of the Nyankanga pit, resulted in a 46% drop in grade for the year. These factors also contributed to a 67% increase in total cash costs during the year. From AngloGold Ashanti, *Country Report 2006 – Geita*, 20 March 2007, p 6.

APPENDIX 5-3
Ok Tedi Mining Ltd
Mine Waste Management Project
Risk Assessment and Supporting Documents

The World Bank

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

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INTBAFRAD

INTERNATIONAL DEVELOPMENT ASSOCIATION

INDEVAS

U.S.A.

Cable Address:

January 20, 2000

Hon. Sir Mekere Morauta, Kt, MP
 Prime Minister
 Government of Papua New Guinea
 Morauta House
 P.O. Box 639
 Waigani, NCD
 Papua New Guinea

Dear Mr. Prime Minister:

Ok Tedi- Risk Assessment of Mine Waste Management Project

When we met last August you requested the Bank's assistance in interpreting Ok Tedi Mining Limited's (OTML) voluminous report on the Risk Assessment and Associated Documents of the Mine Waste Management Project (hereafter referred to as the 'Risk Assessment'). The study, commissioned by OTML, represents the outcome of extensive studies in engineering, environmental and risk components carried out over the last two years on the operation of the Ok Tedi mine near Tabubil, Western Province. The report findings have been disseminated by OTML and BHP, the majority shareholder in OTML. Report findings have attracted substantial public interest, setting the stage for an important debate on the future of the mine and the people that depend on it or that are adversely affected by the impact of its ongoing operation.

In our desk review we have sought to: i) bring to your attention areas which, in the Bank's opinion, needed further study or clarification in order for the Government to take a more informed decision on an appropriate course of action, and; ii) advise on good practice (at corporate governance and government levels) in preparing for, and managing mine closure, including the mitigation of environmental and social impacts and associated risks. We received the reports in late October and a small Bank team undertook the desk review shortly thereafter. The Bank has had no direct or indirect involvement with the Ok Tedi mining operation and, therefore, undertook its review from a limited knowledge base. The analysis of the report has therefore necessitated more time than initially anticipated.

OTML commissioned the Risk Assessment to assess options available to address the environmental problems created by operation of the mine. The Risk Assessment examines specific environmental mitigation proposals within the context of a comprehensive risk assessment framework. These studies are intended to assist OTML management and shareholders with the decision-making process regarding a possible course of action to mitigate the impacts of mine waste disposal. The objective of the Risk Assessment was to assess the relative risk of different waste management and mine operation options to minimize the overall risk to OTML shareholders. The risk was quantified through determination of the total cost that is most likely to be incurred by the company for each of the scenarios, based on widely accepted techniques of identification, characterization and quantification of risks. The total cost also includes the opportunity cost of foregone sales revenue and related profits under the scenarios where earlier than planned mine closure is being considered.

The Risk Assessment therefore reviews a limited set of technical options from a shareholder's risk exposure perspective with the purpose of defining a mine operation setting that minimizes overall risk to shareholders. While the Bank recognizes the importance of this report to the Government of PNG as a shareholder in OTML, the Bank's assistance is being provided to assist the Government in dealing with the broader issues of social and environmental stewardship and responsibility which rest with the Government in relation to the people of Western Province, and not as a shareholder of OTML.

For all waste management options considered in the Risk Assessment, it was assumed that a comprehensive mine closure strategy would be implemented in order to "adequately address the engineering, environmental and social aspects associated with cessation of operations" and that a 10-year after-care period would follow mine closure. But the report does not provide any information on the mine closure plan or broader mine closure strategy. We understand that OTML is preparing such a plan and that it will be submitting it to Government in the near future.

Given that a mine closure plan is not yet available, we are not able to assess the appropriateness of social and environmental mitigation measures under consideration and whether international best practice is being followed. The Risk Assessment highlights the social problems that would occur if mine closure took place next year but it does not examine how long is needed to: a) undertake the necessary preparations so that mine closure could take place in a socially acceptable manner, and; b) build-up strong local government institutional capabilities to support the mine closure strategy. In this regard, we understand that removing the dredge could release funds that could be used for other types of environmental improvements (e.g. in the mill) or for social improvements and compensation. More information is needed in this regard. Indeed, the report indicates OTML is expected to be very profitable from 2000-2010 but does not address whether the proposed level of social spending is appropriate or not. This is clearly the beginning of a transition period for the Government and Western Province, and both must acknowledge the importance of beginning to prepare for this transition and the need to establish the necessary partnerships to make this as smooth a process as possible.

At the outset one should also note that the Risk Assessment confirm the widely acknowledged view that the environmental impacts of mine operation are significant, and have been far greater than initially anticipated. The report also confirms the understanding that the impacts are likely to worsen, and will continue for some time even after the mine has closed and that the existing and potential future environmental impacts of the mining

operation are directly related to the discharge of tailings and waste rock from the mine. These discharges far exceed the sediment transport capacity of the river system downstream of the mine. The Risk Assessment also acknowledges that “none of the options for mitigating environmental impacts, or otherwise operating Ok Tedi, provides a clear best alternative forward”. It is therefore in this context of inconclusiveness that, in the view of the mine operators, the following comments are provided for your consideration.

The Bank’s technical team that reviewed the report is unequivocal in its overall opinion: the risk assessment and underlying technical reports are first rate and state-of-the-art in terms of environmental science and risk assessment methodologies. Independent peer reviewers and auditors commissioned by OTML to review the work concur in affirming that the quality of scientific and technical expertise underlying the reports is of high order. Our technical opinion is provided in the attached Technical Note, which also includes a number of questions/issues that should be raised with OTML for further clarification.

The Risk Assessment confirms what one would expect on a purely intuitive basis. First, the lowest cost to OTML is to continue operating until 2010 under the no-dredge option. The highest cost option is to close the mine early and forego 10 years of operating profit. From an environmental standpoint, the best option is to close the mine immediately. But from a social standpoint this would result in a potentially disastrous situation because there is no preparedness for mine closure. In addition, little or no attention in the Risk Assessment was given to the impact of the various options of mine closure to the economy of the country and province. Since a Mine Closure Plan has yet to be tabled, it is impossible to determine if it is environmentally and socially sound, which means that it is also impossible at this stage to judge its final cost. To reiterate, the overall risk assessment is incomplete in its integration of social and environmental costs and not comprehensive enough for the government to decide on next steps. Most importantly, the risk assessment does not adequately address the trade-offs between environmental and social costs according to the timing of mine closure.

From a purely environmental perspective, the Risk Assessment suggests that the Ok Tedi Mine needs to be *moving towards closure as soon as possible*. Preparations for closure should be initiated without delay given the traditionally long lead time associated with social impact mitigation measures. In fact, without a draft Mine Closure Plan supported by a comprehensive and participatory Mine Closure Strategy (which would be the Government’s and Western Province’s responsibility) addressing environmental and social issues, immediate closure would appear to carry with it the worst social impact.

The Government must take decisive action in regards to the set of issues for which it is best positioned to deal with, including:

- Consider OTML’s draft Mine Closure Plan including, *inter alia*: area of impact; stakeholder identification, participation and perceptions; regulatory and contractual requirements; environmental aspects; social aspects; compensation; end point criteria and post mine closure and conflict resolution. Attention should be given to the final landform of the mine site, and how the plan ameliorates impacts already in evidence at the mine site, in the Ok Tedi and Fly Rivers and their floodplains. The Mine Closure Plan should take into account costs of physically closing the mine, the environmental and social costs and impacts associated with mine closure and should be based on prevailing best practice in the mining industry not simply historical practices. Based on the time needed to accomplish mine closure and effectively mitigate the potential impact on the economy

and people of PNG, the mine closure plan should present a timetable for ramping down commercial exploitation of the ore body and ramping up expenditures for mine closure;

- In parallel, OTML, the Government, Western Province, affected communities and other stakeholders should initiate, through a participatory mechanism, the preparation of a Mine Closure Strategy that would also address, from the Government's standpoint, how the mine closure fits into the broader picture for Western Province and its communities and for the economy as a whole. This will therefore require a robust social and institutional assessment of major stakeholders in the transition to a different economy when OTML ceases operation;
- The Government should undertake an independent review of the proposed draft Mine Closure Plan, including involvement of the affected communities, NGOs and other stakeholders in its assessment;
- The Government will need to undertake an independent assessment of financial costs of ameliorating and compensating the impacts of mine closure. It will also need to determine how funds received from OTML can be managed to generate a sustainable income stream over the long term (since observed, predicted and unexpected environmental and social impacts are likely to be long-term). It is clear that significant investments in the local communities will be required to mitigate the socio-economic impacts of mine closure, regardless of its timing.

In closing, we welcome and encourage the continued open and frank assessment of the environmental impacts that the operation of the mine has had on the Ok Tedi and Fly Rivers. This is no doubt an important and significant step in OTML's acknowledgement of the long-standing view that environmental impacts of its operations have been significant and that the social dimension of these impacts is of great concern to local, national and international organizations.

Finally, we feel it is critical that stakeholders in this decision-making process are brought into the picture as soon as possible and that their concerns are fully taken on board.

Sincerely yours,

Klaus Rohland
Country Director, Papua New Guinea
East Asia and Pacific Region

Attachment [*The attachment is not reproduced in this thesis*]

bcc: Messrs./Mmes. Talati, Weise (EASPR); Rahill, Tronchet, Osei (EACNI); Fossberg, Stephens, (EAPVPX).

APPENDIX 5-4
Operational statistics for the Lihir Gold Ltd, Papua New Guinea

| Year ended 31 December^A | 2005 | 2004 | 2003 | 2002 | 2001 |
|---|-------------|-------------|-------------|-------------|-------------|
| Production (ounces) | 596,000 | 599,386 | 550,772 | 607,087 | 647,942 |
| Cost per ounce (US\$) | \$372 | \$270 | \$276 | \$226 | \$216 |
| Tonnes of ore mined (000 tonnes) | 9,400 | 11,586 | 10,979 | 9,290 | 7,851 |
| Ore grade (g Au/t) | * | 3.52 | 3.46 | 3.86 | 3.04 |
| Ore processed (000 tonnes) | 3,500 | 4,091 | 3,926 | 3,828 | 3,615 |
| Head grade (g Au/t) | 5.98 | 5.11 | 4.95 | 5.46 | 6.18 |
| Recovery (%) | * | 88.4 | 88.6 | 89.6 | 90.6 |

A. years subsequent to Rio Tinto's involvement not included.

* data not publicly reported.

Sources: Lihir Gold Ltd, Annual Reports, 2001- 2005.

APPENDIX 5-5

Lihir Gold Ltd's publication about Deep Sea Tailings Placement

Misconception 1: International conventions prohibit deep sea tailing placement

Not true. The London Convention,⁷⁰⁹ as well as the UNCLOS, does not prohibit disposal of waste from land-based structures such as pipelines and permits ocean disposal providing the host nation manages the practice through stringent environmental management and permitting. At Lihir, the tailing is discharged through a pipeline at a depth of 125 metres. The tailing continues to descend rapidly beyond the pipeline, eventually settling on the seabed at depths of up to 2 kilometres. Also, both the London Convention and the UNCLOS specifically exclude internal waters from their definition of the protocol area. Since the mine disposes of its waste rock from barges within Luise Harbour, which is in PNG's internal waters, and the PNG Government manages the practice of ocean disposal via a rigorous permitting and monitoring program, operations at Lihir do not violate either of these international protocols.

Misconception 2: DSTP would not be permitted in developed countries

Not true. DSTP is a specialized form of marine tailing placement that is only viable where there are suitable geographic and physical conditions. DSTP is increasingly being seen as a viable alternative to on-land storage of tailing, particularly at island and coastal mine sites where deep water is close to shore, and where geotechnical conditions and social considerations do not favour on-land storage. It is now generally accepted as a feasible option by many countries where suitable conditions exist (eg UK, France and Canada) and is currently being used by nine mining operations around the world.

Misconception 3: Waste rock dumping is illegal under the London Dumping Convention

Not true. Waste rock is disposed by bottom-opening barges in designated disposal zones within the internal waters of PNG. This material consists of hard and soft rock with gold concentrations uneconomic to process. No other process chemicals are added. As unprocessed waste rock it is not classified by the London Convention as "processed waste" and so can be disposed legally in PNG (subject to approved permits).⁷¹⁰

⁷⁰⁹ This is, the International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Measures, 1972 aims to "... prevent the pollution of the sea by dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life". It focused on the dumping of various types of waste from artificial structures at, or over, the sea, such as from ships, aircraft, platforms, etc. The London Convention does not apply to waste dumped into the sea through pipes from land. This form of dumping is excluded – as there are so many other types of piped discharges – such as cooling water, sewerage, etc. In 1996 a protocol was added to the Convention to exclude dumping by Member States (which include PNG and Australia). At this time, the Annexes (including lists of materials that cannot be dumped) were also redefined to include industrial waste more generally as "waste materials generated by manufacturing or process operations". Mine tailings are not explicitly mentioned.

⁷¹⁰ Lihir Gold Ltd, "Responsible Environmental Management – meeting PNG regulations and world standards", Fact Sheet 3, undated, p 2.

APPENDIX 5-6
Operational statistics for the Cannington Mine, Queensland

| Year ended 30 June | 2003 | 2002 | 2001 |
|---------------------------|---|---|---|
| Material mined | 2,393,000 tonnes | 2,240,000 tonnes | 1,861,000 tonnes |
| Ore milled | 2,312,000 tonnes | 2,176,000 tonnes | 1,781,000 tonnes |
| Average head grades | 544 g/t Ag 11.9% Pb 4.5% Zn | 616 g/t Ag 12.9% Pb 4.6% Zn | 599 g/t Ag 13.3% Pb 5.4% Zn |
| Production | 34,872,000 ounces Ag 237,427 tonnes Pb 63,862 tonnes Zn | 35,964,000 ounces Ag 231,764 tonnes Pb 58,856 tonnes Zn | 29,488,000 ounces Ag 200,328 tonnes Pb 64,194 tonnes Zn |
| Sales | 35,850,000 ounces Ag 239,294 tonnes Pb 58,270 tonnes Zn | 35,448,000 ounces Ag 229,362 tonnes Pb 64,935 tonnes Zn | 30,359,000 ounces Ag 206,306 tonnes Pb 63,026 tonnes Zn |

APPENDIX 5-7
Operational statistics for the Osborne Mine, Queensland

| Year ended 31 December | 2003 | 2002 | 2001 |
|-----------------------------------|---|--|--|
| Material mined | 1,479,600 | 1,461,000 | 1,478,000 |
| Ore milled | 1,485,000 | 1,456,000 | 1,487,000 |
| Average head grades | 1g/tonne gold 3.0% copper | 1 g/tonne gold 3.3% copper | 1.1 g/tonne gold 3.5% copper |
| Production | 37,357 oz gold 93,638,000 pounds copper | 38,149 oz gold 101,652,000 pounds copper | 41,706 oz gold 108,496,000 pounds copper |
| Sales | Not specified | 39,368 oz gold 108,866,000 pounds copper | 38,534 oz gold no copper sold |

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