Mining, Minerals and Sustainable Development

FACING THE FUTURE

The Report of the Mining Minerals and Sustainable Development Australia Project

Final Draft March 2002

It is not enough to say -- though it is true -- that without business the poor would have no hope of escaping their poverty. Too many of them have no hope as it is. Those who have the power and means, Governments and business, must show that economics, properly applied, and profits, wisely invested, can bring social benefits within reach not only for the few but for the many, and eventually for all.

But at the same time, you in civil society must show that you are ready to work in partnerships for change, rather than remain aloof through the politics of confrontation. We cannot afford to wait for perfect governance, or to engage in endless accusations and discussions. The challenges at hand are far too urgent…The way forward lies in finding constructive solutions together.

Kofi Annan
Message to the World Social Forum
February 2002

The real question is whether the brighter future is really always so distant. What if, on the contrary, it has been here for a long time already and only our own blindness and weakness has prevented us from seeing it around us and within us and kept us from developing it?

Vaclav Havel

EXECUTIVE SUMMARY

Sustainable development is imperative in a world characterized by widespread poverty, rapidly increasing populations and finite natural resources.

If we are to satisfy the needs of the present without compromising the ability of future generations to meet their own needs, we need to think about how we fulfil those needs – including the demands we place on our mineral resources.

We also need to think about how we function as a society – including the relations we establish between industry, government and community.

The future cannot look like the past. Economic development has too often served to increase division between rich and poor; threatened our social cohesion and cultural diversity; and contributed to the degradation of our natural environment. Sustainable development demands that we establish forms of economic development which:

We cannot solve problems using the same thinking we used when we created the problems

Albert Einstein

- Distribute our national prosperity more fairly.
- Are more inclusive in their decision-making, recognize our rights as individuals and strengthen our sense of community.
- Maintain the ecological and environmental integrity on which all life depends.

The Mining Minerals and Sustainable Development project was set up in late 1999, with support from the mining industry, governments, independent foundations and labour unions. It aims to:

- Identify the means by which the minerals sector could best contribute to society's transition to sustainable development
- Build trust and understanding between stakeholders, and
- Begin to define a vision for future minerals development.

MMSD established an open, transparent and highly participatory process of research, analysis and stakeholder engagement.

There are few purely technical questions. All substantive questions require value judgements – and particularly those which involve highly complex social, economic and environmental impacts. Stakeholders have a right to participate in decisions over industry impacts and the choice of management strategies.

The minerals industry needs to understand the changing social and political environments in which it operates – or face real difficulty in accessing land and capital, managing risk and recruiting and retaining quality staff. It needs to overcome its insularity and question the assumptions under which it operated, to broaden its vision and move forward on the basis of greater trust and understanding

This Report discusses the experience and outcomes of the MMSD project in Australia.

The Report recognizes the important progress the minerals industry has made over recent years, and the commitment shown by individuals at all levels to

improving the industry's social and environmental performance. The Australian minerals sector plays a critical role in national and local economies, and in the development of regional Australia. The sector has brought forward important technical innovations in environmental management. It has also begun to work constructively with remote and indigenous communities. Stakeholder recognition of the leadership shown by the industry in these areas is not only fair – it will also do much to reinforce the industry's commitment and capacity development through difficult economic periods.

We should not try to sway public opinion but rather to accept that we have made mistakes and to actively engage with and listen to our critics, to help us define priority areas and to try to improve our performance.

Sir Robert Wilson
Executive Chairman
Rio Tinto

For a developed economy, Australia has a high level of dependence on the mineral sector. The Report does not argue that the sustainable development of Australian society is dependent on the viability of the minerals sector. But minerals development is likely to play an important role in securing the continuing health of the Australian economy. Within this, however, there is scope for very different development strategies and outcomes. Minerals income cannot forever be sustained by increasing production to offset falling commodity prices – especially as exploration efforts push against the limits of what is possible with our current technology and information base. It would be unreasonable to assume, therefore, that the services minerals provide to society can be supplied only through continuing mining. It seems likely that we are entering an important transitional phase. Mining may take a less prominent role as the minerals industry moves further down the value chain by exploiting new opportunities for reuse, recycling and reprocessing of metals. Such a strategy would offer more efficient management of minerals resources.

Voluntary initiatives in community relations and environmental management – notably the Australian Mineral Industry Code for Environmental Management – have helped sustain the industry's licence to operate. But if voluntary codes of practice are to reduce the need for government regulation, they must remain responsive to changing social conditions and stakeholder expectation. They need to be able to demonstrate that they address real problems; their compliance levels are appropriately defined and enforced; and they contribute to significantly improved performance. Given the social contract implicit in the establishment of voluntary codes of conduct, it is appropriate that codes include recognition of the rights of communities and other stakeholders and incorporate opportunities for independent review and verification.

Stakeholder demands have shifted – as one senior industry figure noted during the MMSD Australia engagement process – 'from tell me to show me to involve me'. Communities are becoming ever more familiar with the rhetoric of sustainability and increasingly sophisticated in their response to industry communications. Traditional public relations efforts to bolster corporate reputation will prove counter-productive unless they are accompanied by demonstrable, concrete evidence of change. The community is increasingly asserting its right to participation throughout the lifetime of mining operations – rather than consultation at the outset of projects – and increasing the pressure on industry to build long term, transparent and accountable relationships.

Industry needs to broaden its concepts of its place in the broader community, environment and economy – its zone of stewardship– and work together with stakeholders to develop specific and measurable indicators of sustainability. Industry also needs to accept the need for and promote independent verification of sustainability performance.

INTRODUCTION

As little as 5-10 years ago, minerals development was considered largely a matter of geology, engineering and finance. The minerals industry's role in society was defined in essentially economic terms: the extraction, processing and marketing of mineral resources, and the development of capital, technology and managerial capacities. The industry answered to its shareholders, to financial institutions and government agencies.

The first new rule of success in the resources industry in the 21st Century is listen, learn and engage …… listen, learn and engage.

Ron McNeilly
Executive Director
Global Markets,
BHP Billiton

Today, the industry is expected to play a much larger role in ensuring the well-being of the communities among whom it operates; to adopt more positive and proactive approaches to environmental management and social development; to recognise the legitimate interests of a broader group of stakeholders; and to ensure greater openness and transparency in its policy decisions, operational strategies and performance.

Facing the Future is both the product of greater openness within the industry and a signpost to more equal partnership between the industry and the society in which it operates.

This is the report of the Mining Minerals and Sustainable Development (MMSD) Australia project – a process of participatory research and multi-stakeholder engagement conducted between December 2000 and March 2002. MMSD Australia was funded by the global MMSD project, which received support from industry, governments, independent foundations and labour unions.

Facing the Future identifies key issues related to the Australian mining and minerals sector and sustainable development; critical differences of opinion and outlook between minerals industry stakeholders; and some ways in which the industry can – and should – promote an economically, environmentally and socially sustainable future.

Facing the Future is the product of stakeholder engagement and communication. It is based on extensive dialogue between industry, government and non-government organisations, communities and individuals. It draws extensively on research commissioned by MMSD Australia which has been analysed in a variety of venues, forums and workshops; on research for the global MMSD project; and on the contributions of many concerned groups and individuals.

The Report is more a first than a final word on the place of mining in a sustainable society. It is a work in progress. To build on the progress made over the past 15 months, the process of dialogue and cooperation established by MMSD Australia should be continued and extended in the future. All groups and individuals with a stake in the minerals sector – industry, labour, governments, communities, and non-governmental organizations – have a right and a responsibility to have their voices heard in debate about the future of a sector which is vital to the economic and social health of the nation, as well as in discussion over the establishment, operation and eventual closure of individual mining projects.

It is important to recognize the courage shown by the minerals industry in establishing the MMSD process.

The industry has opened itself to public scrutiny. It has initiated a highly visible and inclusive process of stakeholder engagement. It has participated with

stakeholders in critical research and workshop discussions of its decision-making processes, operational shortcomings and community and environmental impacts – where it could have little control over the outcomes.

The genie is out of the bottle.

The industry has raised stakeholder expectations. It needs to demonstrate strong and continuing commitment to engaging with communities in open and constructive dialogue. It needs to help to establish independent and transparent processes which will allow all stakeholders to work together to ensure the industry makes the most positive contribution to the well being of communities and the natural environment.

A Note on Sources

All commentary and recommendations in *Facing the Future* are drawn from the MMSD Australia process: that is, from research commissioned by the project; multi-stakeholder conferences and workshops; and submissions received on earlier drafts of this Report.

Between December 2000 and March 2002:

- MMSD Australia commissioned research into seven key areas of concern for the Australian minerals sector and its stakeholders.
- Conducted nine multi-stakeholder conferences and workshops, providing stakeholders opportunity to comment on emerging research findings; to review critical issues; and identify opportunities for ongoing stakeholder dialogue and cooperation.
- Received many written submissions from individuals and organizations concerned to support the project's analyses of the minerals sector's role in sustainable development.

These are discussed in this Report, and presented more fully on the website: www.ameef.org.au/mmsd. Where *Facing the Future* makes specific comments on sectoral performance, or recommendations for action by stakeholder groups, these may be traced back through our research and workshop reports to dicussions in the MMSD Australia process.

THE MMSD PROJECT

The Idea of the New Century

Sustainability, according to prominent Australian environmental scientist Professor Ian Lowe, is "*the* idea of the new century".

The 1992 United Nations Conference on Environment and Development in Rio de Janeiro highlighted the critical interaction between environmental problems, underdevelopment and inequality – for the first time, poverty was identified as both a cause and effect of environmental degradation.

The Rio Conference delivered a number of significant outcomes, including a set of 27 universally applicable principles for sustainable development; agreements on biodiversity, forestry and global warming; and Agenda 21, a program of action with over 2,500 recommendations. In the 10 years since Rio we have seen important qualitative successes – increasing awareness of social and environmental issues; public participation through local Agenda 21s; and a growing recognition of the responsibilities of private business and financial institutions.

However, Rio did not establish legally binding commitments. Its final declaration contained ambiguities and overestimated the capacities of many national government and international agencies. It neglected the importance of civil society participation in policy development and local program delivery.

Nearly ten years later, the United Nations Environment Program reported that increasing extremes of wealth and poverty threatened the stability of society, and with it the global environment. UNEP report that 25% of our mammal species and 11% of bird species face significant risk of extinction. The world's water cycle may be unable to cope with increasing demands in the coming decades; land degradation has negated many advances made by increased agricultural productivity; air pollution is at crisis point in many major cities; and global warming seems inevitable. At the same time, United Nations Human Development Indices show that one fifth of the world's six billion people survive on less than US$1 a day; more than one billion people lack access to safe drinking water; 11 million children under five die each year from preventable causes; and infant mortality in developing countries is ten times higher than in the industrialized world.

Australians started debating sustainable development – under the heading of Ecologically Sustainable Development (ESD) – around the time our first State of the Environment report was published in the early 1990s. Since then, sustainable development has become a central topic of discussion and debate at the political level, in academia, in business forums and the quality media. In a key development, the Prime Minister in December 2001 established a Cabinet-level Sustainable Environment Committee to bring a whole-of-government focus to a range of issues including greenhouse, salinity and water quality, land clearing, biodiversity and oceans policy.

The fact is, we are perceived negatively, and our freedom to operate is increasingly coming under threat.

In the first place, our poor reputation has a factual base in performance – in areas such as land management and community relations.

Secondly, we have not communicated the progress we have made in areas such as environmental management, the use of less intrusive technologies and our contribution to sustainable development.

Thirdly, whether we like it or not, there is a broad range of people who believe – rightly or wrongly – that they will be impacted negatively by our mining activities, or by the use of our metals, and they insist on acting as gatekeepers to the resources we need to conduct our business

David Kerr
Chairman and CEO,
Noranda

A Global Initiative

The World Summit on Sustainable Development – Rio+10 – to be held in Johannesburg in August 2002 will review progress toward sustainability since 1992, with reports from international agencies, nations, industries, non-government organizations and communities. The minerals industry – and

many of its government, institutional, academic and NGO stakeholders – is expected to participate. They will 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. MMSD will provide a basis for industry sector input to Rio+10 and establish a new framework for industry-government-community cooperation in pursuit of sustainable development objectives.

The Global Mining Initiative

The mining industry's preparations for Rio+10 began with the establishment of the Global Mining Initiative in 1999. The GMI was closely associated with the World Business Council for Sustainable Development's Mining and Minerals Working Group, comprising 10 of the world's largest mining companies. Those companies recognized that existing industry practice, evidence of environmental damage and conflict with communities were affecting the reputation of the sector and its ability to positively contribute to society. The sector's response to pressing environmental, social and development issues had previously lacked strategic direction and had been piecemeal and inadequate.

GMI was set up with four major elements:

- A commitment to internal company reform.
- A review of international minerals sector associations.
- A major independent study of the sustainable development challenges confronting the industry – and particularly those related to the needs of the wider community rather than just industry needs – and the best and most appropriate responses to these challenges. This element became MMSD – to be conducted at arms length from the industry, under the auspices of the WBCSD.
- A major industry conference – to be held in Toronto in May 2002 – to enable stakeholders to express their expectations of the role of mining in sustainable development and provide companies an opportunity to respond to the priority challenges identified by MMSD. The GMI conference will define a future course of action for the sector and prepare inputs to Rio+10.

[INSERT BOX: GMI WBCSD MMSD RELATIONSHIPS]

The Mining Minerals and Sustainable Development Project

To ensure the independence of MMSD, GMI asked the World Business Council for Sustainable Development to act as their agent in initiating analysis of the role of mining, minerals and metals in sustainable development. WBCSD in December 1999 contracted the London-based International Institute for Environment and Development (IIED) to manage the MMSD study on how the sector could best improve its social, environmental and economic performance.

Consensus was never the aim of the MMSD project. It is the process that has been embarked upon which is important – the start of an ongoing dialogue that will lead to improved performance by the industry and greater understanding of different points of view through engagement between all of the parties with interests in the mining and mineral processing cycle.

Hugh Morgan
CEO, WMC

Project Governance

Governance of the project was early on identified as a critical issue. MMSD could not hope to catalyse change toward the goal of sustainable development unless as wide a range of stakeholders as possible had confidence in its independence from industry; its capacity to produce quality research; and its ability to produce real outcomes.

IIED established three groups to manage aspects of the process.

- A *Work Group* headquartered in London was made responsible for executing MMSD at the global level and co-ordinating the regional activities.
- An *Assurance Group*, an independent international panel with diverse backgrounds and expertise drawn from key stakeholder groups, to offer advice and guidance to the Work Group. [List in appendix]
- A *Sponsors Group* representing the organisations supporting and financing the project, which contributed information and contacts but was excluded from influence over the groups conclusions. [List in appendix]

These groups have overseen a project of considerable proportions. Some 221 reports on global and regional issues have been commissioned. Over 600 people have attended 22 major international workshops organised in nine nations on four continents, and many additional meetings occurred with individual stakeholder groups.

Project Strategy

The 'MMSD approach' was characterised by comprehensive research and analysis; the broadest possible stakeholder engagement; extensive sharing of information; and transparency of project aims, processes and outcomes. MMSD based its analyses in practical reality. It validated those analyses through extensive stakeholder participation, and ensured a clear future focus in its conclusions and recommendations.

MMSD did not address the sustainability of the minerals industry – as important as that is – but rather the industry's capacity to promote and enhance ecological integrity, social and economic development and cultural diversity.

MMSD is not – and never was – intended to be an exhaustive analysis of every issue facing the mining and minerals sector. Nor has it attempted to conduct original, in-depth studies of narrow areas of interest. In the words of global MMSD director Luke Danielson, the project was set up to provide 'a view from 30,000 feet', to establish an overview of the broad range of issues related to

mining, minerals and sustainable development and to identify the critical interactions and contradictions in the sector's social, economic and environmental impacts.

Nor does MMSD play the blame game - mistakes are acknowledged and explored solely for the purpose of extracting lessons for a better future. Sustainable development is regarded not as an option, but as a necessity.

MMSD has no authority to impose solutions on anyone. It has, however, provided a forum where the diversity of views, values and interests is respected; where new ideas can be promulgated and investigated; and where areas of consensus and mutual interest can be explored.

Transparency

IIED recommended an approach which extended beyond research, to incorporate extensive stakeholder perspectives and participation and to build some level of consensus around a concrete way forward. MMSD needed to stress and to practice the principles of inclusiveness, accountability and transparency. In keeping with the aims of an inclusive, accountable and transparent process, discussion and comment was sought from the earliest stages on the project proposal, governance and processes and has continued to be a key defining feature of the global and regional MMSD processes.

The Assurance Group plays a critical role in ensuring the project's independence, transparency and accountability. The Group comprises some 25 internationally recognized, independent experts in the field – including, for example, individuals from governments, multinational institutions, independent foundations, NGOs and universities. The Group ensures MMSD's quality and integrity by advising the project Director on project operations; reviewing the content, conduct and design of the project; and commenting on work plans, discussion papers and reports. The Group is transparent in its deliberations; meets in open sessions; and makes publicly available minutes of its meetings.

Reaching out to the Regions

[INSERT MAP OF GLOBAL MMSD ACTIVITIES]

IIED further insisted that the project incorporate a strong regional focus, with much of the work to be conducted in the world's major centres of mineral production and consumption. In late 2000/early 2001 IIED signed agreements with four regional partners:

- *Australia*: the Australian Minerals & Energy Environment Foundation (Ameef).
- *North America*: Canada's International Institute for Sustainable Development.
- *South America*: the Centro de Investigación y Planificación del Medio Ambiente in Chile, and the Minerals Policy Research Initiative in Uruguay.
- *Southern Africa*: the University of Witwatersrand's School of Mining Engineering and the Council for Scientific and Industrial Research, both in South Africa.

Although given considerable autonomy to establish project strategies appropriate to regional conditions and experience, all MMSD regional partners operated to the same principles of inclusiveness, transparency and accountability established for the global project.

Regional MMSD partners served both to increase the efficiency and effectiveness of MMSD's global outreach and to help incorporate regional perspectives into global MMSD analyses. They performed a number of roles essential to the success of MMSD:

- Increasing the efficiency and effectiveness of MMSD activities at the global level.
- Ensuring the global project built on existing regional experience, research and initiatives.
- Developing – within the regions – processes independent of any particular stakeholder group and capable of coordinating research; promoting regional stakeholder dialogue; diffusing information; and developing independent regional activities.
- Helping to create a global network of institutions capable of continuing MMSD initiatives beyond the lifetime of the MMSD project.

There are, however, gaps in MMSD's regional coverage. Regional partnerships could not be established in every area of significant minerals production and consumption. The global project was constrained in this by lack of time and resources and – in some regions – by lack of regional capacities or suitable regional partners. The global MMSD work team succeeded in establishing some significant activities in areas outside the regional partners network. However, there remained critical gaps in regional coverage – including China, India, West Africa and the Asia-Pacific region – which would need to be addressed in any further development of the MMSD process.

MMSD AUSTRALIA

[INSERT TIMELINE OF MMSD AUSTRALIA ACTIVITIES]

Australia is a world player in the mining and mineral sector. It has played a similarly important role in the GMI/MMSD process. Senior Australian industry figures have demonstrated great leadership and vision in promoting the need for change in the sector. The Australian government and individual Australian mining companies have been major sponsors of MMSD. Australian stakeholders have played a positive role in MMSD dialogue at global and national levels.

Ameef: MMSD Australia Regional Partner

Ameef was established in 1991 to promote sustainable development in the resources sector. Its principal objectives are to facilitate dialogue amongst resource sector stakeholders; to promote excellence in research, education and training relevant to sustainable development; and to recognize and reward achievement in environmental performance and sustainable development.

Ameef has established among external stakeholders a reputation for excellence, objectivity and independence. Its independence is underlined by the presence on its Board of prominent individuals from the scientific, Aboriginal and environmental NGO communities, as well as from industry and government. Although most of its funding is provided by industry and government, Ameef is not a mining industry body – it does not represent the industry or advocate on its behalf.

Ameef contracted with the IIED in February 2001 to act as Australian regional partner to the MMSD project and to manage a regional budget in the order of A$820,000 over a 15-month period. The bulk of this budget funded research and associated multi-stakeholder workshops. A small proportion funded review and planning workshops; longer-term capacity development; communications; administration and travel.

As regional MMSD partner, Ameef is responsible for coordination of MMSD research, stakeholder engagement and future planning processes – and for ensuring those processes enable the broadest stakeholder input into all areas of the project. It is also responsible for ensuring the highest technical standards in all areas of project activities. Ameef, however, is not responsible for the substantive outcomes of the project's research and engagement processes, which reflect the views, values and opinions of the research co-ordinators and of participants of the project's conferences and workshops.

MMSD Australia Objectives

Following an initial CSIRO scoping exercise and consultation with stakeholders, Ameef was in February 2001 contracted to manage the MMSD Australia project. The project established a 15-month process of participatory research, stakeholder engagement and planning. The project aimed to achieve a number of important outcomes:

- To deliver substantive reports on key areas of the minerals sector's social, economic and environmental performance, and on the sector's response to the challenge of sustainable development.

- To establish relationships between diverse stakeholder groups and interests *as well as* delivering concrete outcomes through its research program.

- To enable stakeholders to identify common ground, opportunities for cooperation and areas for further development.

MMSD Australia sought to identify the means by which the Australian minerals industry could best contribute to sustainable development. It sought to define the key challenges facing the sector; to enrich understanding of the particular concerns of different stakeholder groups; and to establish a process through which we could move forward on the basis of dialogue and cooperation. It was understood that the project could not hope to resolve problems, but would increase understanding and trust between the industry and people affected by its operations and begin to develop a broadly shared vision for future minerals development in Australia.

In keeping with Ameef's own values and mission – and the operating principles of the global MMSD project – MMSD Australia was designed to achieve a high level of independence, participation, equity and transparency in its operations.

Governance

MMSD Australia governance included:

- A *Regional Coordinator* contracted by Ameef to manage regional project activities and liaison with the global MMSD work team.

- A *Regional Reference Group* which provided strategic advice and independent supervision to the project.

- The *Ameef Board* which sought to ensure that the technical quality of project activities reflected Ameef commitments to excellence and transparency, and that outcomes were delivered on time and on budget.

The transparency of project activities and outcomes – primarily achieved through the establishment of the MMSD Australia website and regional stakeholder workshops and conferences – also served to validate the direction and focus of regional project activities.

The Regional Reference Group

The Regional Reference Group – an independent advisory body, representing a wide range of stakeholder backgrounds – provided strategic direction and supervision to the MMSD Australia project. The Group operated at a strategic level, providing critical input into the identification of regional research projects; the establishment of strategies for stakeholder engagement; and review of project outputs and performance. Group members could also choose to participate in specific project activities where they have a particular interest or expertise. As regional MMSD partner, Ameef remained responsible for project operations and accountable for project performance and the management of project resources.

The Reference Group – which met formally four times during the course of the project – included individuals from industry, government, research, community

and non-governmental organizations. Members, however, did not represent sectional interests: they were appointed on the basis of their personal knowledge and experience of the minerals industry and its impact on the wider social, economic and natural environment.

[INSERT LISTING OF RRG MEMBERS]

Focus on Australian Operations

At the outset of the project, it was agreed that MMSD Australia would confine its analyses to the operations of the minerals sector within Australia. This proved a contentious point, and requires some discussion.

Australian-based companies have long had a prominent role in mining in Papua New Guinea and the Pacific. In recent years, they have also become increasingly active in mining in South America and Africa. Those overseas operations have been the cause of considerable concern among Australian stakeholders – particularly where they have impacted negatively on the living conditions and natural resource base of poor developing communities. Overseas operations have adversely affected the reputation of Australian-based companies, and provided an important driver in promoting leading companies' commitment to the goals of sustainable development.

It was initially proposed that the regional project should consider the impacts of Australian mining operations in the Asia-Pacific region. This proposal was rejected because of time and resource constraints. More particularly, it was felt that Australian stakeholders might exert disproportionate influence over any broader regional process. Where broader regional MMSD processes were established – in Southern Africa, North and South America – they operated across regions with common social, economic, cultural and political environments. The Asia-Pacific region was too diverse to permit such a regional grouping. MMSD Australia focused on specifically domestic activities, but offered support to global MMSD activities in the Asia-Pacific region.

The global MMSD project conducted important work in the Asia-Pacific region. Baseline assessments of mining and sustainable development in Indonesia and Papua New Guinea, studies of human rights and mining in the context of the Freeport project in West Papua, and studies of artisanal mining in the region, were conducted under the aegis of the global MMSD project and are available from IIED.

MMSD Australia Research

MMSD Australia research yielded significant insights into the operation of the Australian minerals sector. It also helped to frame MMSD Australia's substantial stakeholder engagement program, and provided the basis for extensive discussion between diverse groups and interests about minerals and sustainable development.

Throughout the project, research coordinators worked to very tight deadlines.

- MMSD Australia launched the research program in late February, and called for proposals by mid-March.

- Following Reference Group discussion and negotiation of terms and research scope and milestones, contracts were signed mid-April.

- Initial preliminary research was published late June, and presented in July.

- Draft reports were published late August and presented in September.

- Final draft reports were published in early December and presented later that month.

Research proposals and several stages of draft reports were posted online. They were presented to multistakeholder workshops in Perth, Brisbane and Melbourne, and to numerous other stakeholder events including the Minerals Council's Environmental Workshop in Adelaide. At each stage, stakeholder inputs were fed back into the research – thus moving the debate forward while also validating and enriching the final reports.

This Report is based on outcomes of MMSD Australia research projects; the participation of regional stakeholders in the research phase of the project; and regional stakeholders' comments on the draft report of the MMSD Australia project and on the future development of regional processes for stakeholder dialogue and participation.

Research Themes

At the global level, IIED organized their research and analysis around eight broad challenges (Table 1 below). These became the focus of a large and multi-faceted global research program. The challenges provided opportunities to tackle important issues in the broadest possible multistakeholder effort. As MMSD researched, debated and began to redefine the challenges, they become keys for action leading to change.

1. How can the sector move towards a viable structure that will contribute more effectively to sustainable development?

2. How can the minerals sector support the development of national economies, especially in the poorest countries?

3. How can the sector best contribute to sustained improvements in livelihoods and well being at the community level?

4. How can environmental management in the mining and metals industry be improved?

5. What are the ground rules for land: its management, access, control and use?

6. How can we ensure that future markets and consumption patterns are compatible with a sustainable world?

7. How can we ensure meaningful access to information for all stakeholders in the information age?

8. What should be the relationships, roles, responsibilities and performance standards for the key actors in a more sustainable future?

Table 1: The Eight Challenges, Global and Australian Research

The Eight Challenges	Key Global Research	MMSD Australia Research
Industry How can the industry move towards a viable structure that will contribute more effectively to sustainable development? How can we ensure future markets and consumption patterns compatible with sustainability?	Current Corporate Practice Long-Run Minerals Availability Life-Cycle Analysis	Baseline Assessment of the Australian minerals sector and sustainable development Sustainable Resource Processing Industry-Based Voluntary Initiatives
Governance How can we ensure access to information for all stakeholders in the information age? What should be the relationships, roles and responsibilities and performance standards for key actors in a sustainable future?	Global Information Dialogue Public Participation Planning for Outcomes Global Finance Dialogue	
The Natural Environment How can industry environmental management be improved? What are ground rules for land: its access, management and use?	Mining and Biodiversity Management of Large Volume Wastes Mine Closure Policy	Mining and Biodiversity
Community How can the sector best contribute to sustained improvement in livelihoods and well being at the community level?	Human Rights Conflict and Environmental Security Communications and Conflict Resolution Small-Scale Mining Mining and Indigenous Peoples	People, Power and Participation: Local Community Perspectives on Mining Developing New Models for Stakeholder Engagement Mining and Indigenous Community Agreements
Economic Development How can the sector support the development of national economies, especially in the poorest countries?	Managing Minerals Wealth	Managing Australia's Minerals Wealth

MMSD Australia research complemented the global research program – but on a much more modest scale.

The key themes of the Australian research program were agreed in December 2000 at a regional workshop held in Melbourne and video-linked to Perth and Brisbane. They addressed issues of critical concern to Australian stakeholders and areas where Australia had particular experience to share with other minerals producing regions. The research would support the global research agenda, but provide a specifically Australian perspective.

In April 2001 – following a call for research proposals – the Regional Reference Group agreed that Ameef should commission research coordinators to conduct studies on:

- *Baseline Assessment of the Australian Minerals Industry and Sustainable Development*: A profile of the Australian minerals sector in relation to sustainable development, focusing on the sector's history; emerging trends; policy and legislative environments; changing industry structure; markets; stakeholder pressures and concerns.

- *The Management of Minerals Industry Impacts on Biodiversity*: Study of the impacts of mining on biodiversity; the effectiveness of impact management strategies; and the sector's capacity to protect and enhance biodiversity.

- *The Development of New Approaches to Stakeholder Engagement in the Sector*: A critical review of existing industry-based NGO engagement strategies; identification of constraints to direct NGO involvement with industry; and recommendation of new approaches to engagement and relationship building.

- *The Management of Australia's Minerals Wealth*: Study of the role of government economic policy in optimizing the Australia's minerals wealth; the costs and benefits of mining; and means to improve the sector's contribution to sustainable economic development.

- *The Operation of Voluntary Sustainable Development Initiatives*: The establishment of a voluntary initiatives established by the minerals sector to promote sustainable development.

MMSD Australia subsequently received additional funding from IIED to enable it to manage two further research projects:

- *People, Power and Participation – A Study of Mining-Community Relations*: An exploration of relationships between mining companies and communities, based on the experience of formal consultation processes of three Victorian mining operations. Community-based evaluation of relationships and of participatory processes.

- *Mining Company Agreements with Indigenous Communities*: Identification of best practice in the establishment and operation of agreements between mining companies and indigenous communities; and recommendation of practical strategies to promote enduring and equitable agreements.

MMSD Australia research outcomes and recommendations are discussed briefly in this report. Full text of the research reports is available online at: www.ameef.com.au/mmsd.

Research Objectives

MMSD Australia research was designed to provide a broad over-arching review of the key issues at play in each of these areas, and to identify critical stakeholder tensions and differences. It did not pretend to be comprehensive or conclusive. It was limited by severe time and resource constraints; incorporated little new or primary research; and was only a small part of the broader global research program.

The research coordinators were asked:

- To define our state of knowledge – pulling together existing research and learnings and experience that were independent of MMSD – and the gaps in our knowledge.
- To identify key issues and areas for action in the industry's response to sustainable development.
- To help to develop new ideas and practical tools to help the industry through the transition to sustainable development.
- To provide a basis for stakeholder analysis and engagement.

Stakeholder Engagement

Stakeholder engagement is the single most important element of MMSD Australia – the project's defining operational strategy and key to future progress in the promoting the minerals sector's contribution to sustainable development.

GMI and MMSD were established against a background of considerable public antipathy to the Mining Industry. The industry's traditional response to public criticism or disquiet over its actions – public relations campaigns, education programs and attacks on critics' wisdom or integrity – had too often simply polarized debate and done little to improve mining's reputation. Sir Robert Wilson, Executive Chairman of Rio Tinto recognized this clearly when he acknowledged: "*We should not try to sway public opinion but rather to accept that we have made mistakes and to actively engage with and listen to our critics, to help us define priority areas and to try to improve our performance*."

For some industry players, recognition of the need to engage positively with stakeholders – to incorporate stakeholder insights and perspectives into analyses of industry performance – represented a significant challenge.

Engagement is, however, clearly central to the progress of sustainable development:

- Industry needs to understand the changing social and political environment in which it operates. It needs to understand and value community perspectives and be able to respond to changing community expectations – or face real costs in access to land, capital, risk and ability to recruit and retain high quality staff.

- Stakeholder engagement can challenge the industry's entrenched assumptions, enriches and validates its decision-making and offer an opportunity to move forward on the basis of greater mutual trust and understanding.

- There are few purely technical questions – all questions involve value judgements. Mining involves highly complex and contradictory set of social, economic, cultural and environmental impacts. Stakeholders must – as of right – be able to participate in decisions over the acceptability of Industry impacts and equity of trade-offs.

MMSD Australia provided a forum in which industry, government and communities could work together to ensure that future decision making in the industry might be more broadly acceptable, and reflect a better understanding of the nature of the industry's impacts on communities, the economy and the natural environment. It did so recognizing that many people – within the industry and in community and NGO groups – might find this process difficult and threatening. Industry representatives were confronted – in a period of significant economic uncertainty within the industry – with criticism of their industry's social and environmental legacies; with doubts about the industry's commitment to change; and some skepticism about its sustainability in a changing global environment. Civil society groups – some of whom had previously been antagonistic to the industry – were asked to set aside their mistrust and to collaborate in defining a more positive future for the industry.

However, as former President of the North Queensland Conservation Council, David Haigh, told an MMSD workshop in Brisbane, the stakes were high and the time was right for NGOs to reassess their attitudes to industry. "*NGOs are notorious for mixing environmental passion with corporate suspicion. Corporations, likewise, can be so engrossed in the short-term goal of profit that they forget or don't focus on, their role in the civil society. . . . Now is the time for NGOs to engage in the most important debate of all – how to turn sustainability into practical reality in everyday lives.*"

Of course, it would be foolish to imagine that a limited period of stakeholder engagement could hope to close the gap between diverse positions and points of view. Some groups invited to participate declined to do so on the basis of reservations over any positive engagement with industry. The project respects the rights of stakeholders not to be involved and recognizes that maintaining pressure on companies and governments towards sustainability is probably best served when some groups become actively involved and others maintain a watching brief. For those groups and individuals who did participate, it is important to recognize that open engagement processes can engender significant personal and professional stresses – and risk isolating participants from their own peer groups. Deeply-held convictions, habits of thought and operation, are not changed overnight; and social and environmental activist groups are not likely to revise their positions on the basis of industry's expressed desire to explore new models of operation. It will require a long-term communication and confidence building – and some demonstrable evidence of significant change in the industry – before stakeholders subordinate their narrow interests to some recognized greater good.

MMSD Australia brought together disparate groups who had never previously engaged in such open and free-ranging discussion about the future of the minerals industry and the society within which it operates. It provided them a space in which to express their views, and their contributions helped to move the debate forward. We hope that this will be an enduring legacy of the

project, and that Australian stakeholders will be able to build on this experience of communication and cooperation.

Participatory Planning and Review

The pursuit of sustainable development is a long-term process - a journey towards a better quality of life for all, today and in the future. Our priority must be to maintain the partnerships and the networks engendered by the MMSD process and to create new forums for industry and government, conservationists and human rights activists, indigenous and local communities and scientists and professionals, to come together to advance sustainable development.

A series of workshops were held in February 2002 in Perth, Melbourne, Brisbane and Darwin to review the MMSD process and explore possibilities for ongoing stakeholder dialogue and cooperation. The outcomes of these workshops are reflected in this report.

ABOUT SUSTAINABLE DEVELOPMENT

The Evolution of an Idea

[INSERT TIMELINE OF KEY SUSTAINABLE DEVELOPMENT MILESTONES GLOBALLY AND IN AUSTRALIA]

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs

The Brundtland Report

The clarity and simplicity of Gro Brundtland's definition of sustainable development have given it almost universal recognition and acceptance.

It is more difficult to put this simple concept into practice – to identify the practical steps through which human societies, organizations and individuals can, by changing their thought and behaviour, achieve this common goal.

The idea of sustainable development began to take shape in the context of initial alarm last century that the growth in human populations would overstretch the finite capacity of the planet to provide the resources required and absorb the wastes generated. Initial predictions are now recognized as being unduly pessimistic – too little account was taken of non-finite factors, particularly advances in technology – but the concerns remain valid.

Initially, the emphasis was largely on environmental impacts and capacities. This was very evident in Prime Minister Bob Hawke's 1989 statement, which defined Ecologically Sustainable Development (ESD) as: "*using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and total quality of life, now and in the future, can be increased*"

Over recent years, the trend in Australia, as elsewhere, has been towards the definitions of sustainable development which emerged from the 1992 Rio Summit – retaining commitment to ecological integrity, but also incorporating social and economic dimensions of sustainability. Sustainable development may be seen as maintaining and enhancing:

- *Natural Capital*, defined as all natural resources, both environmental and those of traditional economic value.
- *Manufactured Capital* made by humankind, including produced goods, infrastructure and the built environment.
- *Human capital*, defined as the health, well being, intellect capabilities and spiritual welfare of individuals.
- *Social capital*, defined as social relations and institutions within and between societies, their norms and functionality.

Key Elements

Sustainable development contains a number of elements of critical importance to the mining and minerals sectors. These include:

- Maintenance of *Ecological Integrity*, the protection of the environment and biodiversity.
- *Intergenerational Equity* – not stealing from one's grandchildren.

- *Intragenerational Equity*, which recognizes the close interaction of poverty and environmental degradation and the right of the poor and disadvantaged to seek a better quality of life.

- The P*recautionary Principle*, the proposition that scientific uncertainty should not be used as a pretext for proceeding with development that may carry unacceptable environmental or social risk.

- *Internalization of External Costs*, implying improved valuation, pricing and incentive mechanisms to ensure that social and environmental costs are reflected in the valuation of assets and services.

- *Stakeholder Engagement* to ensure policy decisions and operations take account of community impacts and sentiment.

- *Social Capital Development* to promote the capacity of communities to direct their own development.

- *Cultural Diversity* and respect for indigenous and minority cultures.

- *Transparency and Accountability* in decision-making, operations and reporting.

These elements may best be safeguarded through recognition of the rights of communities and other stakeholders.

Of course there remain important differences of interpretation and emphasis. This is most clearly seen in debate between the proponents of weak and strong sustainability:

- *Weak sustainability* stresses the preservation of the earth's overall capital and would allow substitution of, for example, natural for produced capital. This would allow for substitution of one type of ore for another, one mineral product for another, and the substitution of some existing natural capital by compensating investments in, for example, social capital or manufactured assets.

- A contrary view – the so-called *strong sustainability* – would allow little or no substitution. It would suggest that the quantity and quality of natural resources available to future generations should not be diminished by current human activity. It would require that depletion be fully offset by replenishment of known resources through exploration and technological advances.

It is important to stress that sustainable development is a best viewed as a journey rather than a destination. It is the quest for ever more sustainable and equitable development, rather than a state of being which can ever be achieved and then put aside.

The challenge of sustainability is to find new models of economic development that restore and protect the environment and the fabric of our society. It is about sustaining our natural and social capital for future generations and distributing the wealth we generate more equitably.

Dr Geoff Gallop
Premier,
Western Australia

SUSTAINABLE DEVELOPMENT AND THE MINERALS SECTOR

Are We Asking the Right Question?

Sustainable development is clearly a problematical concept for mining – an activity based on the exploitation of primary resources, which consumes enormous quantities of energy and generates large volumes of waste with sometimes toxic components.

Within the broader parameters of sustainable development, however, there is clearly scope for many different views and emphases.

Throughout the MMSD Australia process, stakeholders returned to two key questions:

- *Can the minerals sector contribute to sustainable development?* This is the principal question asked by MMSD, and is discussed throughout this report.
- *Is the minerals sector sustainable?* This is a rather different question and is discussed briefly below.

Is Mining Sustainable?

Commentators often question the sustainability of mining – viewing it as a sunset industry doomed to inevitable decline and irrelevance. They foresee the industry being overtaken in access to investment capital, profits and reputation by the high-tech new economy. After all, they argue, the total worth of *all mining companies together* is dwarfed by that of Microsoft alone.

How, they ask, can mining hope to adjust to a world where stakeholder concerns have moved beyond purely economic considerations, to include concern for social, cultural and environmental values? Where large companies – and particularly large global companies involved in resource extraction – are regarded with suspicion if not outright hostility by many within the community?

The MMSD Australia process recognized the absolute need to preserve the integrity of natural resources on which our life support systems depend – including biodiversity, clean air and water – for which no substitute exists. It also recognized the need to ensure that industry is fully accountable for the adverse environmental and social effects of its activities. Views expressed in the research and stakeholder engagement process suggested that market mechanisms and substitution would in large part offset the impact of the depletion of particular mineral resources. They also argued strongly the for right of government, industry and communities to convert revenues realized by minerals exploitation to other forms of capital – such as social capacity building or infrastructure development – to ensure future generations retain the ability to satisfy their own needs.

From a strong sustainability viewpoint, it is questionable whether mining can be considered sustainable.

A more general view is that while there is abundant scope for conservation, wise and frugal use and recycling, there will be a continuing need for minerals

Sustainable Development for the mineral sector is operating within the lifecycle from exploration to manufacturing by adding value, recycling and disposing of products while respecting the needs and values of all resource users to maintain or enhance the quality of life and the environment for present and future generations. It also involves securing the involvement and participation of stakeholders. Sustainable Development for the mineral sector encompasses the sustaining of natural resources, ecosystems, communities and economies as they relate to the processes, products and wealth creation of the sector.

Natural Resources Canada

and the sector which provides them. Increasing population and resource use trends would suggest a larger rather than smaller demand for mining.

Arguments about the role of a mining and minerals sector in the sustainable society must also recognize the sector's role as a major provider of employment, technological and managerial expertise, innovation and infrastructure development. These services are provided disproportionately in areas where there are few other sources of such provision. The minerals industry is – and is likely to remain for some time – a major contributor to community, national and global demand, income and wealth.

While it is undeniable that the mining and minerals industries have significant past, present and future internal sustainability issues to confront, the sustainable society of the future will – at least in the mid-term – continue to contain a viable and valued mining and minerals sector.

What we are discussing here is not about compliance, not about risk management or getting out from under – not in the long run. It is about the way we think and do all our business so we look and do good on the inside as well as we look and do good on the outside of the corporate walls – walls that are thinner and thinner.

Tricia Caswell
Global Sustainability, RMIT

What Drives Sustainable Development in the Minerals Sector?

MMSD Australia analyses suggest that the drivers of sustainable development in the minerals sector are powerful, diverse and are both internal and external to the sector. The pressure and incentives for the sector to both enhance its own sustainability and contribute to the broader social movement to sustainability are unlikely to diminish – particularly in those regions in which the industry is a leading proponent of sustainable development.

The following discussion sets out some of the key change drivers – more detail on many of the issues and the industry's responses is set out in later sections of this report.

The Need for Sustainable Development

There is abundant and accumulating evidence of environmental degradation at the local and global level. The world faces unprecedented challenges in juggling future population and resource demands in ways that preserve planetary systems and social cohesion.

If humanity is to achieve this, it will need to establish partnerships or complementary activities at the local, national and international level between the great majority of significant political, economic and social players.

The scientific community, the world's traditional communities and the non-government sector have all played a significant role in highlighting the issues. A growing number of governments, industry leaders and other institutions have also been talking the talk, and are increasingly beginning to walk the walk.

Of course there remain outposts of denial and larger areas where a significant dent has yet to be made on business as usual. But that position is likely to become harder to sustain in face of the evidence of damage wrought to social and natural environments by traditional operations, and increasing government, community and consumer demands for change.

Legislative and Regulatory Compliance

Legislation and regulatory requirements clearly drive some of the move toward more sustainable practice – but it would be simplistic to suggest that this is the

main or only factor. There has been a radical shift in the Australian legislative and regulatory environment over the past decade, partly directed at greater economic efficiency and global involvement and partly driven by changing public opinion and concern for environment and indigenous issues. The need to reflect international treaty obligations is partly behind a significant shift in responsibility from the States to the Commonwealth – irrespective of which party holds office. Where States retain responsibilities and capabilities they often do so on the basis they meet Federal and even international guidelines and standards. At the same time, it is clearly important to devolve decision-making and operational responsibilities to the lowest practical level. The past decade has witnessed increasing local community activism through, for example, environmental NGOs, Landcare and Coastcare.

Legislative changes of major significance to the mineral sector over the decade include the Native Title Act (1993), the Environment Protection and Biodiversity Conservation Act (1999), establishment of the National Pollutants Inventory and a whole raft of only sometimes complementary State environment, heritage and native title legislation.

The EPBC Act provides specific 'triggers' for Commonwealth intervention in project approvals, including potential impacts on World Heritage Areas, internationally listed wetlands and endangered species and ecosystems. One obvious contender for a future trigger is significant greenhouse impacts. EPBC also considerably enhances the communities' ability to challenge through the courts activities that might be damaging to specified environmental values. A similar model is being introduced in forthcoming heritage legislation.

Legislation to make directors and company officers personally liable for a range of environmental offences by companies is also a significant driver to changed attitudes and company behaviour. EPBC extends such provisions, making the deliberate provision by consultants, company officials and other of false information on environmental impacts to the Commonwealth an offence punishable by terms of imprisonment.

Globalization

As Australia is increasingly integrated with the global economy, international stakeholder concerns – and, for multinational companies, base country norms – are increasingly reflected in Australian corporate agendas. Australian companies, for their part, have considerable experience in environmental management and in relating constructively to communities – including indigenous communities – which is of value to the international corporate sectors.

The changing structure of the global mining industry is likely to increase pressures on environmental, social and economic performance. The trend is towards fewer, larger companies, operating wherever there are world-class minerals resources. Those global companies are often highly risk averse and keen to avoid projects which might draw sustained stakeholder criticism. Smaller companies – with less resources or capacity to manage social and environmental impacts – are likely to find it increasingly difficult to obtain project finance.

Community Perceptions and the Licence to Operate

Mining companies have come under increasing community pressure since the early 1990s, following the rise of environmental awareness and concern for indigenous and human rights agendas.

The industry recognizes the link between its reputation and its social license to operate – its need to gain informal community as well as formal government approval for its operations. This is particularly true in terms of accessing land and prospective resources, which may be located in environmentally, culturally or socially sensitive areas. The influence of NGO groups, the Australian public's increasing awareness of social and environmental impacts in remote areas, and the growth of ethical investment, also limit industry's ability to access investment capital and insurance.

The industry's investment in public relations will not reverse its poor public image. It may in fact serve to reinforce public cynicism and mistrust. In the long run, community approval will be conditional on the sector facing issues squarely; engaging constructively with stakeholders; condemning 'cowboy' operations and practices; and demonstrating substantial long-term improvement in performance.

To ensure its sustainability, the industry needs to recognize the inadequacies of public relations approaches. It needs to build trust among stakeholder groups by making significant, long-term changes in the way it operates and in the way it relates to the broader community. This should include:

- Adopting approval processes for new projects which are thorough, transparent and inclusive, and which incorporate risk assessment for all major aspects.

- Reporting publicly – to agreed guidelines and with independent verification – on all aspects of social and environmental performance.

- Establishing and fully funding effective arrangements to repair damage from all mining – past, present and in the future.

- Communicating honestly the impacts and benefits of exploration and mining.

Environmental Performance and Community Perceptions

The Australian Minerals Industry Code for Environmental Management acknowledges that, more than in any other way, the community judges the minerals industry by its environmental performance. The Code is discussed in detail later in the report.

There are risks of water contamination and air pollution, soil erosion, acidification and salinity, inherent in many mining operations. Mining can threaten landscapes, ecological integrity and biodiversity. It can impact the physical basis of local communities' livelihoods: in particular, aesthetic values, marine resources, forests and agricultural soils. Management of overburden and tailings disposal has particular environmental importance and has provided an important focus for community and stakeholder concerns - particularly where materials are disposed into marine and aquatic systems with only limited understanding of the scale and nature of potential impacts. Despite demonstrable improvement in recent years, past and continuing failures in environmental management, and in mine site restoration and rehabilitation, continue to influence public perceptions of the industry.

Social Performance and Community Perceptions

Mining operations can improve local communities' income, opportunities for employment, business and social development. Impacts, however, are rarely entirely positive. Negative social impacts may include changing social patterns and relations; changing consumption patterns; relocation; changes in communities' resource base, economy and employment; and damage to heritage and other culturally important sites. Compensation arrangements may have unintended effects – even where cash compensates for lost resources, it can contribute to social problems.

The industry was perceived to be obstructive in its initial response to the land rights campaigns by indigenous Australians. Some cavalier minerals exploration companies have had poor relations with indigenous communities and rural landholders. Accidents, health and safety issues and related industrial disputes have also lodged themselves in community consciousness.

The reputation of Australian mining companies has undoubtedly suffered from negative human rights and environmental perceptions of their operations abroad. Obvious examples include the contribution of mining operations to civil unrest in Bougainville; the Baie Mare tailings collapse in Romania; and the ongoing controversy and litigation over BHP Billiton's involvement in Ok Tedi. Oxfam Community Aid Abroad's Mining Ombudsman has publicized poor social and environmental performance in a number of Australian overseas operations, and argued the case for a formal complaints mechanism to provide redress to local communities.

The industry's legacy of poor environmental management and social dislocation will not be reversed overnight. Throughout Australia there are abandoned mine workings – 'orphan mines' – established by companies who have since ceased trading, leaving the task of remediation to State and Territory governments. This is an issue the industry as a whole needs to address. There are towns established to support mines which are nearing the end of their economically productive lives, and in some of those areas it may be difficult to see a sustainable future for communities. There are also long-established mines nearing closure, where it may not be economically viable to retrofit technologies to improve environmental performance. Long-standing and potentially intractable problems are likely to impact the industry's reputation for some time.

We are the largest mining financier in the world and my view is we have to take leadership. If the mining industry doesn't change the way it operates it will lose its licence to operate.

Gerard Holden
Global Head of Mining
Barclays Capital

Economic Drivers

Reputation has an economic dimension. It affects access to resources and markets. New pressures and closer public scrutiny multiply the factors that need to be considered in the risk assessment of any project – with obvious implications for the costs of finance and insurance.

Actions taken to reduce risk – or to enhance the non-economic dimensions of the triple bottom line – will enhance business and operational sustainability. Staying at or near the cutting edge of policy and practice in sustainable development will help companies to attract capital earmarked for "ethical investment"; to gain access to mining prospects; and to recruit and retain talented employees.

Policy, Process and Technological Evolution

There are bottom line benefits in improving operational efficiency, reusing resources, finding economic uses for wastes and improving labour and community relations. There is a rapidly growing market for sustainability technologies and expertise. Australian environmental technology is already a

major earner, and there would appear to be important opportunities to export Australian capacity in broader areas of sustainable development.

Best practice is a moving target, driven by better thinking, better systems and new technological possibilities. New concepts, new operational processes derived from them and technological advances combine to produce their own powerful impetus to change. In some businesses, the search for continuous improvement is becoming institutionalized – regardless of regulatory requirements – and pushing forward developments in product stewardship and closed loop production processes.

THE CRITICAL ISSUES

MMSD Australia identified a number of critical issues concerning the sector's ability to contribute to sustainable development. These issues were subject to considerable scrutiny in workshops and other MMSD Australia project participatory processes.

Social justice is in some ways pre-eminent, because if you don't fix the social equation and get a fair society, you won't be able to fix the environment. That's why it's such an important thing to us – to start closing the gap between rich and poor.

Bob Brown
Green Party Senator

The Sustainability of the Minerals Industry

The sustainability of the Australian minerals industry is an issue of critical importance.

Wealth must be created if we are to grow and develop as a nation. Without an economically viable minerals industry, we may not maintain the social, economic and environmental processes which underpin sustainable development.

There is legitimate debate about the desirability of mining activities, and the need to increase the emphasis on minerals processing rather than the exploitation of primary resources. In any future scenario, however, there will be continuing demand for minerals to meet consumer demands, maintain high standards of living and provide essential goods and services. The health of the Australian economy will require a viable and vibrant minerals sector.

Low rates of return on investment, the need to increase value-adding, and the threat to future minerals supply posed by slowdown in exploration, all call into question the minerals sector's ability to deliver substantial and continuing benefit to society. To an important degree, the success of the industry's response to these challenges will depend on its capacity to embrace sustainable development – to demonstrate that it has a role in the twenty-first century economy; that it can promote positive social and environmental outcomes; and achieve community approval for its operations.

Globalization and industry consolidation pose specific challenges. The movement offshore of key corporate decision making processes, professional skills and important human and intellectual capital, threatens Australia's long-term capacity to respond to the challenges of sustainable development.

Governance

The need for improved governance underlies many of the issues raised through the MMSD Australia process.

Improved governance will require clearer definition of the roles and responsibilities of various actors within the sector, and new mechanisms to deliver on commitments to sustainability. It will require that industry to engage positively and inclusively with stakeholders over issues of community concern. It will require NGOs to work constructively with government and industry to promote the interests of communities and the natural environment. It will also require greatly enhanced transparency, inclusiveness, accountability and ethical standards in decision-making, operations, engagement and evaluation.

The commitment of all players to enhance performance in all these dimensions is a key component in transforming the pursuit of sustainable development from an ideal to a practical reality.

Government needs to ensure that the influence of particular sectional interests does not impede the State's ability to act on behalf of the broader community. It needs to engage with business and communities in discussion of the limits to stakeholder responsibilities – and, in particular, of the expectation that industry will perform roles that might more properly be performed by government.

Stakeholder legitimacy is a continuing concern. Stakeholders groups who purport to speak on behalf of particular communities or interests need to be able to demonstrate a clear mandate from those they claim to represent.

The mining industry can only do itself good by taking a leadership role in improving its standards of governance. It has obvious opportunities as the initiator of projects and consultative processes. It has obvious need as the most appropriate response to criticism of its past and current performance. Some commendable steps have been taken in this regard within individual companies and organizations. They now need to make improved performance a core, sector-wide and quantifiable business concern, including recognizing the need to consider the composition and accountability of their boards of directors and to review the diversity of their workforce.

Industry is entitled to expect similar improvements in the ethical behaviour and standards of accountability demonstrated by other stakeholders. But its own improved performance cannot be conditional on similar improvements in others.

Resource Valuation and Management

We need to adopt a much broader view of resources under our stewardship. These are not restricted to minerals resources and ecological values. They also include the human, intellectual and community resources which drive our development. They include the social and cultural heritage values which enrich our quality of life and help to define our relationship to each other and to the natural environment.

Moreover, values are not universal. They reflect different cultural systems and different stages of social, economic and resource development.

Land is our fundamental resource – and most frequent cause of conflict. Mining operations directly occupy relatively little land area and have less broad scale effect on landscape functioning than rural industries. Historically, however, some operations have caused long-term degradation of land and closed-off opportunities for subsequent use. Today, the Minerals Council of Australia promotes multiple and sequential land use to ensure lasting social and economic benefit. Mine site rehabilitation techniques have improved significantly over recent years. But rehabilitation is not simply a technical question – future land use must also reflect local communities' needs, priorities and values.

An unresolved question concerns protected area management. The sector should recognize that some areas must be inviolate from exploration and mining activity. The identification of those areas will require continuing stakeholder consultation and negotiation. Consultation should be informed by rigorous risk assessment processes, based on sound scientific and technological information and communicated in a manner which is accessible and appropriate to stakeholder needs.

Biodiversity conservation is also assuming greater priority. There are limits to the disturbance an ecosystem can tolerate without some fundamental transformation. This is particularly relevant to its carrying capacity and ability to absorb wastes. The precautionary principle demands that such limits be identified before operations commence. Lack of scientific certainty should not be used to sanction actions which may have adverse effects on ecological integrity and function.

Commitment to future generations requires that we must make the wisest and most efficient use of our resources. In relation to minerals resources, that may mean minimizing waste and conserving, reusing and recycling those resources to the fullest extent possible. It may mean that we consider potential alternative land uses; the opportunity costs of capital investment in mining projects; and the effects, for example, of a project's water and energy consumption. Those are questions which require that government, business and communities work together to ensure that minerals development meets society's needs in a manner which reflects society's concern for the sustainability of its environmental, human and community values.

The industry is not presently well placed to deal with these (environment, land access and reputation) issues – nor is it confident about its ability to do so in the future… Few [companies] have positioned themselves yet to identify clearly the non-technical competencies they need for future success. Even fewer have begun the task of ensuring adequate coverage of competencies in their organizations"

Rising to the Challenge
AusIMM, May 2001

Engaging Stakeholders

Much remains to be done in developing the art and science of stakeholder engagement. But much can be achieved if industry recognizes two key principles:

- Stakeholders have a fundamental right to participate in decision-making throughout the lifetime of mining projects and operations.
- Industry is itself a stakeholder – one among many – and should direct its energies to developing long-term relationships rather than achieving short-term goals.

Engagement is an inherently political process – concerned with the allocation of resources and resolution of competing needs and values.

Engagement is not about winners and losers. Nor is it about neutralizing opponents or improving public relations or corporate image. It is a process through which groups work together in an open and equitable way to forge some common understanding and agreement.

Effective stakeholder engagement may require that industry contribute to developing the capacities and resources of stakeholder groups and communities. Such contributions may be substantial. They should be made unconditionally - they should not influence the outcome of the engagement process and nor should they advantage particular groups of stakeholders.

For engagement to succeed, all stakeholders need to demonstrate the highest standards of ethics, accountability and transparency. It may be naïve to imagine that all stakeholders will at all times behave well, but this is an area in which the industry must demonstrate leadership and commitment. Failure to adopt the highest ethical standards will likely reinforce negative public perceptions of the industry, and reduce the industry's long-term ability to access capital, mining leases and staff.

Fair Distribution of Costs and Benefits

Equity – both in this generation and between this and future generations – is a major issue to be faced by the minerals sector. In an industry as widely dispersed as mining, costs and benefits are often unequally distributed between communities and regions. Some areas that play host to major and highly profitable mining ventures are significantly poorer – both in economic terms and in access to services and resources – than the urban centres where the corporate headquarters and majority of shareholders are located.

It is unreasonable to expect industry to redress deep-seated social problems, regional inequalities or deficiencies in public service provision. Social welfare and regional development are government responsibilities and priorities.

Sustainable development, however, demands social benefit from the exploitation of natural resources. Industry must work with government and communities to ensure lasting and equitable benefit from its operations.

The minerals industry makes important contributions to society. The wealth created by industry contributes to the health of the community and the nation. However, where those benefits are inequitably distributed, and local communities do not recognize a link between their well-being and local minerals development, the industry will find its license to operate diminished. The minerals industry can – both by influencing government and through its own efforts – do much to promote an equitable distribution of benefits. Commitment to sustainable development would require it to do so.

Corporate Citizenship requires a serious business commitment to the community going well beyond gaining an immediate, positive effect to the financial bottom line of business. Such a commitment, if made, accepts the view that long-term benefits (not just financial) will accrue to the business, and to the community as well. This is the base of 'sustainable capitalism'

David Birch
Corporate Citizenship
Research Unit
Deakin University

Delivering Lasting Benefits

Mining projects are by their very nature time limited. As many communities will testify – in for example, Mt Morgan, Queenstown, Newcastle or Broken Hill – severe problems can arise if mine closure planning fails to take account of long-term local community needs.

Companies, governments and host communities need to work together to ensure that mining operations provide sustainable benefit to local people. In the past, company-provided benefits may have borne little relationship to local needs or to the capacity of local communities to sustain those benefits in the longer-term. They may have been dependent on resources provided by the company, and contributed to a culture of dependency within the local community. The challenge today is to promote social capital development at the community level – to enable local people to develop the capacities and resources necessary to secure their own future prosperity and well being.

An especially contentious issue is the adoption of 'fly in-fly out' mining operations, where the workforce is resident at a distant metropolitan centre rather than at the mine site. While 'fly in-fly out' reduces some environmental and social impacts of mining, there is community and State government concern that many of the economic benefits and opportunities from mining flow to distant metropolitan centres rather than to local people.

Hard questions remain about the limits of mining's responsibilities to the community. Those limits are likely to be a continuing source of tension, and need to be addressed continuously as mining companies negotiate their position in society and build relationships with the communities among whom they operate.

It is essential, however, that companies understand the impact of their operations on the health, economic well-being, cultural and social relations of their host communities. They need social baseline data for all their operations – both for host communities and for communities impacted indirectly by their operations. And they need to establish effective monitoring systems – based on sound social science methodology and community participation – to measure their success in promoting long-term benefit to local communities.

Governments need to ensure policies secure optimum long-term returns to the community from the use of our natural resources. They should make a searching examination of royalty regimes and exploration tenures, taxation and subsidies in the light of their contributions to sustainable development.

Respecting Indigenous Peoples

Many of the world's – and Australia's – mining operations are conducted or proposed for areas with significant Indigenous cultures. There is increasing legal and social recognition of the rights of traditional owners who may have a fundamentally different relationship with the land and fundamentally different ways of reaching decisions.

Some who currently share their land with mining companies believe that mining operations or infrastructure have been foisted on them, by companies, governments or representative organizations. This is clearly no basis for sustainable operations and lasting positive relations. Companies need to concentrate – from the earliest stages of exploration – on building positive long-term relationships. They need to demonstrate that operations are established with the prior informed consent of local indigenous communities. They need to fully inform traditional owners on the implications of projects – and, where necessary, enable those owners to obtain independent advice – and resist the temptation to proceed by creeping, incremental concession.

Despite the many advances in negotiating, reaching and implementing agreements between mining interests and Indigenous people, significant areas of disadvantage, cultural misunderstanding and resentment remain. The sector needs to deal with perceptions that Indigenous communities bear many social costs from mining operations but fail to achieve anticipated economic benefits, employment or opportunities for participation in community programs.

The sector also has a role to play in supporting the successful implementation of Australia's native title regime.

THE AUSTRALIAN MINERALS SECTOR

Australia's Minerals Resources

Minerals Resource Endowment

[INSERT MAP OF AUSTRALIA'S MINERALS RESOURCES]

The ancient, relatively stable and well-weathered continent of Australia has an extraordinary endowment of mineral wealth and a relatively short history of exploitation of that wealth.

Australia's minerals resources are diverse and extensive. In the 19th Century, the discovery of widely dispersed and rich deposits of gold built the wealth and brought the population to transform Australia from colony into nation. Since that time, many other resources have been found and developed in Australia.

Although lack of resource is not in general a constraint on the industry, it may well be a factor in the long-term sustainability of certain regions and communities. Many easily extracted deposits have been exhausted, and the next generation of major economic discoveries is yet to be made.

Distribution of Mineral Resources

Australian mineral deposits are relatively widely dispersed. The nation does not have one single 'minerals province'. World class deposits of gold, coal, copper and silver-lead-zinc, and uranium are worked in various scattered locations in inland Australia. Diamond and iron fields are present in Western Australia, the most mineral dependent State. Significant mineral sands deposits and quality silica exist in coastal and inland regions.

Some oil and much gas has been found in the coastal seas, although considerable areas of Australia's exclusive economic zone have not been extensively explored.

Regional Impacts of Resource Exploitation and Depletion

Australia has one of the most urbanized populations on Earth. Most Australians live around the South East coast, mainly in a handful of major cities. Many of the non-coal mines in this area have been worked out and there has been a marked reduction in recent years in both mining and mineral processing near Australia's traditional centres of population. Australia has its share of ghost towns from former mining activities; some have become tourism destinations, although some have also become notorious for a dangerous legacy of pollution. In one case – the Queenstown area of Tasmania – the legacy of pollution is the major element of the tourist attraction.

Many major deposits are remote from major centres of population. In some of Australia's remotest and most inaccessible regions, mining and in some cases minerals processing is far and away the most important source of employment, investment and infrastructure development.

Mining companies have increasingly adopted 'fly in-fly out' operations, through which staff are housed at the mine site only temporarily and return to urban centres at the completion of their tours of duty. Fly in-fly out reduces costs, and may also reduce immediate and long-term social and environmental

impacts. However, companies need to recognize broader community concerns about the sustainability of regional Australia. Fly in-fly out may reduce levels of engagement with local communities; opportunities for local employment and business development; and for physical and social infrastructure development. It may also cause resentment within mining regions if economic benefits are seen to accrue disproportionately to distant and wealthier areas.

What is the Australian Mineral Sector?

MMSD Australia defined the mineral sector as:

- The companies producing minerals and basic mineral products within Australia, and dedicated suppliers to these companies. Minerals companies are represented by the Mining Council of Australia, and smaller companies by the Association of Mining and Exploration Companies. There is also a mining council or similar institution in each State.

- Government mineral and energy agencies and departments. This includes mining, direct environmental and other regulators, agencies concerned with the formulation of minerals and energy policy and a considerable scientific and survey establishment.

- Educational and research institutions that train personnel for the sector and/or carry out research relevant to the sector.

- The mineral sector workforce, with special emphasis on those in areas relevant to influencing or directing the move toward sustainability.

Minerals in the Australian Economy

A Minerals Dependent Economy?

In 2000, Australia was among the top three producers for 10 of the world's most important minerals. Exports – accounting for 80% of production – have grown dramatically from an annual $1.4 billion AUD in 1970-71 to $43 billion in 1999-2000. Much of the recent increase, however, is accounted for by increases in volume rather than increases in value. Increases in export volumes and value have also been driven by declines in the value of the Australian dollar.

Australia is unique among developed economies for the degree of dependence on the mining and minerals sector. Minerals' direct contribution to GDP has been around 9% for the past decade. The sector also accounts for just under a half of all merchandise exports, of enormous significance for an economy often running an international current account deficit.

The size of the minerals sector – and the influence it shares with agricultural on economic policy decisions – is sometimes cited as the reason that manufacturing makes a much smaller contribution to GDP than in most developed economies. Although direct employment in mining is not particularly high at 78,000 (120,000 with smelting and refining added), it is the minerals and rural sectors that underpin the services sector as the major employer and largest contributor to GDP.

This dependence underlies much of the concern expressed during the MMSD process that sustainability might imply reducing the mining and processing of virgin resources.

Ownership

There is a common perception that the Australian minerals industry is dominated by large and unresponsive companies, increasingly foreign-owned and controlled. This was reinforced during recent years by merger and takeover activity involving some Australian icon companies – including BHP, CRA, North, Normandy and Woodside. The degree of foreign ownership from time to time emerges as an underlying political issue in Australia:

- A 1972-74 Labor government passed legislation requiring 50 percent Australian ownership among explorers and developers.

- Smaller parties of both the left and right have mounted campaigns on ownership and globalization related issues in recent years – for example over Shell's bid for a controlling share in Woodside and BHP's merger with Billiton.

For many stakeholders, the key issue is not ownership of locally operating companies, but where decisions are made, research conducted and supplies and expertise sourced. As multinational companies headquartered in world financial centres own more local operations, Australian exploration and development projects will have to compete for investment with overseas prospects. We are likely to see a relative decline of Australian equity and a loss of top jobs, taxation revenue, supply chain inputs, and corporate allegiance to Australia with its associated familiarity and confidence for investment in Australia.

Mining, Processing and Adding Value

Australia has significant minerals processing industry and the volume and proportion of refined metal exports has increased in the past decade. There is significant government support, particularly from State governments, to companies wishing to set up or expand processing facilities.

There may be some divergence between community and corporate interests in value adding to mineral commodities. From a national viewpoint, turning minerals into manufactured commodities creates wealth, provides employment, and increases opportunities for other high value industries. On the other hand, the companies that comprise Australia's mineral industry may have a different perspective. These companies may not have the motivation, desire, capital base and expertise to go beyond production of basic mineral commodities. They may argue that they already add considerable value by way of finding or developing mineral deposits, as prior to discovery and development the deposits have nil realizable value. But this may no longer be sufficient or sustainable for Australia.

Australia performs well in the development of mining and mineral sector expertise. The sector accounted for $1.9 billion in high technology exports in 1999-2000 – including 60% of the world's IT software used in minerals exploration and mining. Sustainable development offers the minerals sector important opportunities to exploit expertise in environmental management and analysis, and in the assessment and management of social impacts.

A Suitable Location for a Sustainable Mining Industry?

Australia is among the most promising locations for a sustainable mining industry. It enjoys competitive advantages in its rich and diverse resource endowment, low population densities and fewer competing land uses in resource rich areas, and a critical mass of capital, expertise and infrastructure.

Australia also has high standards and regulations that constrain significant environmental damage from present day mine development. It is geologically, socially, environmentally and economically well placed to benefit sustainably from its rich minerals resource endowment.

The Sustainability of Australian Minerals Development

Sustaining Minerals Development

Exploration activity is highly variable year to year. The overall trend is moderately upwards. But there are concerns that the marked downturn in exploration expenditure evident since 1996-97 may signal a longer term reduction in minerals development.

In most commodity areas, there is also increased competition for major markets, particularly from developing areas. Other minerals producing nations in the region are emerging to challenge for Australian mineral exports.

The minerals industry is a 'price taker', dependent on international movements in the commodities market which are largely outside its control. Increasing efficiencies and competition have contributed to a downward trend in the prices of most commodities. The increasing contribution of the mining and mineral sector to the Australian economy has largely been due to increased output and efficiency and the low value of the Australian dollar. It is unlikely that falling commodities prices can be offset over the longer-term by increased production The overall rate of return on investment in the sector is relatively low – currently about three percent and no higher than 6.4 per cent over the last decade. This has led many industry observers to stress that the obvious – and crucial - course for Australia to take is steps to increase the value adding components of the sector.

These issues must be addressed to enable a vibrant Australian mining industry to make its vital contribution to sustainable development of society.

The Zone of Stewardship

We need to define accurately the parameters of the minerals industry's potential contribution to the sustainable society. The industry's *Zone of Stewardship* extends beyond the mine site and the processing plant. This suggests an holistic vision of the sector – recognizing the full range of industry interactions with society and the natural environment, the opportunities for collaboration and partnership within the sector, and the possibility of defining meaningful indicators of performance.

[INSERT ZONE OF STEWARDSHIP DIAGRAM]

There are calls for the industry to go further – to assume responsibility for minerals products throughout the cycle of extraction, processing, use and recycling. Product Stewardship implies a moral and economic responsibility for minerals use. It focuses attention on minerals as services rather than products. It also highlights the relationship between minerals developers,

downstream processors and end users. The related concept of closed-loop processing suggests important opportunities to improve resource efficiency through re-use and recycling and by finding ways that outputs like waste may be able to be used as inputs for other processes. The major Kwinana refining and industrial area in Western Australia has an ambitious program of seeking as far as possible to use outputs and inputs on a regional scale.

Who measures what?

How do we know if we are making progress? The industry needs to identify indicators, measuring tools and methodologies to measure its progress in promoting sustainable development – and enable it to take corrective action where it is not. Possible core performance indicators have been identified in the MMSD Australia Baseline Assessment. These may provide a basis for stakeholder engagement around vital questions of measurement of mineral sector inputs, outputs, processes and effects.

But, perhaps more importantly, who measures performance? Industry may have the capacity for honest measurement of performance, and full and frank reporting. But governments and the community expect independent verification. An outstanding example of what may be possible is the joint enterprise of BHP Cannington and the North Queensland Conservation Council to jointly develop performance indicators and for NQCC to conduct assessments.

The new economy is increasingly characterised by clean production and 'closed loop' systems, a system based on resource efficiency, re-use and recycling rather than ever-increasing resource extraction…Mining companies focused on endless resource extraction – and particularly those producing commodities that add to the world's environmental burden (such as greenhouse gases or radioactive wastes) – will be increasingly seen as dinosaurs.

Geoff Evans
Director, Minerals Policy Institute

Sustainable Resource Processing

During the course of 2001, MMSD Australia provided support to the Sustainable Resource Processing project – a collaboration between industry and research institutions to apply eco-efficiency principles, industrial ecology and innovation to the production of metals and industrial minerals.

The project was initiated in Australia in 2001 to provide a strategic analysis of the implications of sustainable development for the processing of minerals and metals. It sought to discover how this might be translated into tangible innovations, coherent Research & Development responses, new technology development and business improvement.

Participants included industry, government and research organizations. Sponsoring resource companies were Alcoa World Alumina, BHP, Billiton (QNI), Murray Basin Titanium (Sons of Gwalia and RZM), Normandy Mining, Rio Tinto and WMC. The research community participants were CSIRO Minerals and four universities, namely Curtin (Cleaner Production), Newcastle, RMIT (Global Sustainability) and Queensland (Sustainable Minerals Institute). The federal government participation was through Industry, Science and Resources (Energy Efficiency Best Practice).

The sustainability framework was based on the need for perhaps an order of magnitude improvement ('Factor X') in the ratio of value delivered to cumulative environmental impacts in the overall supply chain and life cycles of material goods and services. Processing of metals and industrial minerals represents a critical stage in those supply chains for the release of gaseous, liquid and solid emissions to nature, since this is the main point of chemical transformation. Resource stewardship provides the obligations and opportunities to maximize the use of recycled and renewable material and energy sources, finding benign reagents and employing closed loop production systems to avoid toxic dispersion, restricting emissions and turning waste streams into valued products.

The great innovative potential in sustainable development comes from the need for total systems thinking, addressing stretch targets and not least the imperative to find economically attractive ways to get there.

Initial work has been very promising, particularly in applying eco-efficiency principles to existing operations at Normandy Mining and applying industrial ecology principles to capture regional synergies at Kwinana. What is needed is a combination of persistent incremental improvement and some breakthroughs. The strategic, vision shaping research program is being developed in parallel so that a coherent and concerted response to the challenges of sustainable development in the processing area can be mobilized.

Cleaner Production and Eco-Efficiency

Cleaner Production offers a proactive and preventive approach to industrial environmental management and aims for process- and/or product-integrated solutions that are both environmentally and economically efficient.

The delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life cycle, to at least in line with the earth's carrying capacity.

Definition of Eco-Efficiency
World Business Council for Sustainable Development

Cleaner Production aims to make more efficient use of natural resources (raw materials, energy and water) and reduce the generation of wastes and emissions. This is generally achieved through combinations of:

- *Resource Use Optimization*: Making the most efficient use of mineral resources from mineral recovery through to production of useful by-products and conversion into geo-chemically-stable residues for storage.
- *Input substitution*: Using less polluting process reagents and process auxiliaries (such as lubricants and coolants).
- *Technology modifications*: Including improved process automation, process optimization, equipment redesign and process substitution.
- *Good housekeeping*: Improving operational procedures and management in order to eliminate waste and emission generation.
- O*n-site recycling:* Re-using process wastes (including emissions and process heat) at the company where these have been generated.

Cleaner Production promotes significant improvement in the sustainable use of minerals resources. These Eco-Efficiencies include:

- Reduced material intensity of goods and services.
- Reduced energy intensity of goods and services.
- Reduced toxic dispersion.
- Enhanced material recyclability.
- More sustainable use of renewable resources.
- Extended product durability.
- Increased service intensity of goods and services.

Operating Examples

The Australian minerals processing industry already benefits from the application of Cleaner Production practices and Eco-Efficiency Strategies. This is evident in a number of examples.

- **Tiwest Pigment Plant** (Kwinana, Western Australia) has actively pursued Cleaner Production initiatives in the areas of energy, materials and water efficiency. It has halved the amount of water used in production of pigment, through counter current washing and other process improvements. A new plant was commissioned in 2000 to recover synthetic rutile and petroleum coke. This plant could save about $ 31,000 a day and reduce waste generation by at least 10,000 ton per annum. Waste hydrochloric acid is converted by a neighbouring company into ammonium-chloride for use at another Tiwest operation supplying the pigment plant.

- **Alcoa World Alumina** has implemented a range of Cleaner Production initiatives in its Western Australian bauxite mines and alumina refineries. These included dust control measures in bauxite residue disposal areas (using waste heavy equipment oils), improved vessel descaling in alumina precipitation (using caustic solutions instead of mechanical and water blasting), improvement of bauxite quality (by carefully removing soil overburden with small excavators), reduction of fine alumina waste from refineries, and actively seeking markets for residues (such as oxalate for vanadium processing). Approximate annual savings are in the order of $20 million per annum.

- **Iluka Resources** operates mineral sands mining and synthetic rutile production near Capel in Western Australia. Iluka implemented a number of Cleaner Production projects and is actively seeking new markets for its waste products. The new synthetic rutile plant has been equipped with waste heat recovery power generation. This unit was the first of its kind in Australia, with an investment of just over $20 million and expected rate of return of 16%. This compared favourably with a traditional wet scrubbing system that was expected to cost around $9 million but had no financial return on investment. The plant now generates 6.5 MW of electricity, with an average of 5.5 MW. Iluka is committed to further Cleaner Production, and investigates opportunities to produce pig iron from iron oxide residues, fertilizers and soil conditioners from acidic effluents and activated carbon from carbonaceous waste.

- **Comalco Aluminum** (Bell Bay, Tasmania) In the past, uncertainty surrounding the operation's future imposed constraints for addressing some issues, but with a power agreement in place to extend the life of the Bell Bay operation to 2014, the investment of $44 million to provide world's best practice fume scrubbing technology was made possible. Total savings have been approximately $11 million a year. Environmental benefits include: 95% reduction in potroom ducted fluoride emissions; 75% overall reduction in site fluoride emissions and 70% reduction in site water consumption.

Industrial Ecology and Regional Synergies

Eco-Efficiency strategies can be extended into regions which are home to major concentrations of resource processing activities. This *Industrial Ecology* enables waste from one plant to become an input material to another plant.

The Kwinana Industrial Area of Western Australia is one of Australia's dozen or so concentrations of resource processing industries. The Kwinana Industrial Area offers important opportunities for regional synergies. The region is home to an alumina refinery, a nickel refinery, an oil refinery, a coal and gas fired power station, a cement plant, three major industrial chemicals plants, a pigment plant and a number of small to medium sized operators. A number of synergies have been realized so far – including the use of spent refinery catalyst for rehabilitation of bauxite residue disposal areas; conversion of weak hydrochloric acid from pigment production into ammonium chloride for synthetic rutile production; and conversion of waste hydrogen and carbon dioxide into commercial gases. The region has also seen the establishment of a cogeneration facility in joint venture between the pigment plant and the power utility, and use of calcium carbonate waste from the nickel refinery in cement manufacturing.

Figure 1 provides an impression of some of the key regional synergies currently being achieved in the Kwinana Industrial Area.

[INSERT SIMPLIFIED DIAGRAM OF KWINANA SYNERGIES]

The Kwinana Industries Council manages the collective interests of the industries in the area, which is close to the towns of Kwinana, Rockingham and Cockburn, and the Cockburn Sound, a sensitive marine environment. In 2001, the Industries Council began to identify opportunities for further resource synergies in the area.

A resource input/output analysis has been commissioned, with financial support from Environment Australia under its Eco-Efficiency Agreement with the Chamber of Commerce and Industry of WA. Several workshops have been held with environment and technical staff from the key industries, supported by the Industries Council, Chamber of Commerce and Curtin University's Centre of Excellence in Cleaner Production. Opportunities are now being pursued in four areas: greenhouse gas emissions; non-process wastes (in particular green wastes and recyclables); inorganic process residues (such as bauxite residue and other slags); and water. Preliminary targets have been set, and efforts are now focusing on the technical opportunities and organizational requirements to take those stretch targets on.

Future Directions

Whilst much of the focus of MMSD has been on mining issues, the Sustainable Resource Processing project highlights the opportunity to make a creative contribution to the transition to sustainable development in the processing of minerals and metals.

The global goal of sustainable development is not achievable without major change in the way goods and services are delivered and material needs satisfied. This requires tremendous innovation in the supply chains and life cycles in which the production of metals and industrial minerals take place.

Australia, as a resource rich nation with excellent Research & Development capabilities, provides an excellent anchor for a concerted global thrust in the area of minerals and metals processing. The major global resource companies have significant operations in Australia and CSIRO, the universities and the Cooperative Research Centre system contribute to an effective research capability. A detailed proposal for a major program is now being developed to help:

- Create a strategic technology vision for the industry into the future ('2050'), along with the technology roadmaps and supporting economic and business models

- Translate sustainable development principles into a lever for wealth creation and establish the technology foundations for moving profitably towards zero emissions and wastes, based on the principles of eco-efficiency, industrial ecology and total systems innovation

- Establish a practical framework for improving the business performance of existing operations with economically attractive ways to reduce or eliminate residues, toxic dispersion, water intensity, energy usage and fossil fuel dependency

- Capture regional synergies in resource processing intense regions of Australia and spread the methodology globally

- Build an effective and formalised collaborating network for Sustainable Processing of Minerals and Metals - incorporating a Cooperative Research Centre within it

- Build industry, government and research partnership

- Promote collaborative Research and Development through AMIRA International, in a strategic partnership with industry acceptance and global reach

The program will take shape over the period to May 2002, and will be aligned where possible with MMSD regionally and globally, as the outcomes are consolidated and the priorities agreed.

Mining and Indigenous Communities

Much mining in Australia takes place in remote and isolated regions. Indigenous communities in those regions often have significantly lower standards of income, employment, health, housing and education than most Australians.

The causes of underdevelopment are complex and multi-faceted. But it is fair to say that until relatively recent times mining companies were often seen to be more prominent on the problem side of the equation than its solution. Legacy issues have tainted the general quality of the relationship between indigenous communities and mining companies, but there has also been an increasing effort to open a dialogue and confront many issues.

Mining industry relations with indigenous communities are reviewed in a later section which discusses the operation of native title regimes and the establishment of mining company-indigenous community agreements.

The Labour Force

Changing work practices and mining methods and equipment have meant that mining employment in Australia peaked in 1985-86 and is now considerably below these levels. Levels of unionization have declined, while remaining still high by general Australian standards.

Employment, including professional employment, is predicted to continue to decline. The industry's downsizing – and the manner in which this is managed – may have important impacts both on the sustainability of local communities and on the industry's perceived commitment to social responsibility.

Within the industry, efforts to continually increase productivity place stress on the relationship between sector employers and employees. The industry's commitment to community well being may be reflected in the way that it treats its workforce – and particularly the work patterns and hours of work it requires of employees. This goes to the heart of the companies' relationships with the communities in which they operate. The industry will not enjoy community support if its shift patterns impact the contribution individuals can make to their families or communities, or if working hours risk running workforces to exhaustion. While some companies may see long working hours as a source of competitive advantage, this may be unsustainable in the longer-term.

There are also important diversity issues surrounding employment, with very low levels of female employment and difficulties in getting the desired outcomes from indigenous employment programs.

INDUSTRY RESPONSES TO SUSTAINABLE DEVELOPMENT

A Question of Values

Companies are increasingly expected to address complex and sometimes contradictory stakeholder demands. They find it difficult to define their responsibilities and respond appropriately. A clear vision of principles and values provides an invaluable compass and guide to action.

Corporate values systems based on sound ethical principles may provide a foundation for organizational excellence. They promise long-term company and stakeholder benefit. They may help to place and maintain projects in good standing; improve corporate reputation; and increase access to investment capital, insurance and new mining concessions. For stakeholders, they provide a public statement of specific, non-negotiable basic standards.

A sound value system will counter the temptation to generate short-term results in ways which impair long-term performance, reputation and social standing.

If you don't dump your wastes in your own rivers and oceans, please don't dump them in mine.

Mathilda Koma
National Environmental Watchdog Group, Papua New Guinea

For companies operating across a number of countries, it will help to avoid the charge that their standards are driven only by expediency – that they apply lower standards in countries with weaker environmental legislation and limited capacities for enforcement.

A number of minerals companies have published values statements and statements of business principles. This is a positive development. But companies need to integrate those principles fully into decision-making and operations and to ensure they are enforced throughout the organization. Companies need to develop integrated, comprehensive systems to ensure their business and operational decision-making is consistent with their policy commitments to sustainable development. (BHP Billiton's integrated investment system provides a practical example of this.) Companies also need to consider how they deal with and report on transgressions, where behaviour falls below expressed corporate standards.

Making the Commitment

Sustainable Development Policies

Individual companies and their peak bodies in Australia were relatively slow in specifically including sustainable development at the policy, objective and yardstick level. Where mentioned at all, sustainable development often appears to be an add-on to policies and plans that have environmental management as their principal focus.

Business is now lagging behind other significant social institutions in espousing principles of sustainable development. In Australia as in some other developed nations, the goals and principles of variants of sustainable development have found their way into the mission statements of government departments and local government and into the purposes and objectives of much planning and regulatory legislation and subordinate legislation.

How effective this legislative recognition has been in practice however is open to question. Business and government may be closer together in the difficult

task of translating sustainable development principles into measurable and achievable measures.

The MMSD study found that most companies do not yet include sustainable development principles in their operating statements, mission statements, or any other statement of purpose.

The Minerals Council of Australia recently changed its internal committee structure to better serve its member companies' pursuit of sustainable development. A Sustainable Development Committee – incorporating the previous Environment and Land Access Committees – was formed late in 2001 to develop and implement an industry-based national sustainable development strategy. This is still embryonic. Policy directions have been established in the very broadest terms.

To manage their greater visibility and potential exposure – and to be able to account publicly for their actions and performance – companies will need to enforce a set of globalized corporate values and principles in all their operations. The extent to which these are truly embraced within the company will influence its success, and so be yet another key sustainable business asset.

Björn Stigson
World Business Council for Sustainable Development

The Minerals Industry Code for Environmental Management

The Minerals Council of Australia launched the *Australian Minerals Industry Code for Environmental Management* in 1996 to "demonstrate [the industry's] commitment to continual improvement in environmental management, *and to be open and transparent in its dealing with the community*." (Emphasis added)

The Code plays a valuable role in improving both awareness and performance. It does not, however, prescribe absolute standards of performance – rather it seeks to encourage signatories to improve on their existing levels of performance.

Although the Code contains only one explicit reference to sustainable development, it does also refer to the need to adhere to broader sustainable development principles. Signatories are required to commit to integrate environmental, social and economic considerations into decision making "*consistent with the objectives of sustainable development*". Reference is made to cultural and social objectives, but the Code focuses primarily on environmental management issues.

At 1 January 2002 there were 43 signatories to the revised Code established in 2000. This group of signatories is responsible for more than 90% of current Australian minerals production. This group includes most major mining companies. The vast majority of smaller and medium size companies are not signatories and no mechanism exists – beyond example and exhortation – to bring those smaller companies up to the standards defined by the Code.

Codes of conduct are awfully slippery. Unlike laws, they are not enforceable.

Naomi Klein

A Minerals Industry External Environmental Advisory Group has been established to provide independent advice to the Minerals Council's Sustainable Development Committee on issues of concern about the industry's social and environmental performance. The Advisory Group also conducts an industry-wide assessment of progress in implementing the Code, and publicly reports its findings each year. The Advisory Group Chairman is appointed by Minerals Council members. The Group itself is resourced, and its reports published, by the Minerals Council.

Public Environment Reporting

Code signatories are required to publish reports of environmental performance (PERs) and to complete an annual Code Implementation Survey. The Survey

results are reflected in annual reports on the progress of Code implementation, and are subject to three-yearly accredited external audits.

PERs generally emphasize broader environmental management objectives, including technical data related to rehabilitation aims, pollution minimization and water quality. But a greater awareness of social and indigenous issues and the greater importance of these concerns to companies have seen a recent increase in social reporting – an area in which companies are struggling to establish appropriate monitoring systems and indicators.

PERs are the key current mechanism for disseminating information on innovative, interesting and successful initiatives to the broader mining community and to an array of government, community and special interest associations.

The Code does not prescribe indicators. It allows signatories the flexibility to use performance indicators that best meet their stakeholders' information needs and which are best suited to driving internal management improvements. The main weakness of this approach is lack of a consistent reporting framework – it is very difficult to compare performance across the industry. Adoption of more consistent reporting frameworks – such as those developed, for example, by the Global Reporting Initiative – would better enable stakeholders to compare companies' social and environmental performance; make informed judgments about operational impacts; and demand improved standards from the industry's weaker performers.

Similarly, the Code does not require independent verification of reports. Verification is at an early stage in its evolution. But independent verification of reports and underlying management systems is ultimately the most effective means of ensuring the usefulness, quality and credibility of reports.

The Code is at best a limited instrument for sustainable development. PERs are similarly only partially accountable records of progress. Both, however, offer opportunities for institutional learning and a feedback loop for continual reporting, learning and attitudinal change. The Code clearly has had an important influence in the spread of open, data rich reports providing information which – as little as five years ago – would have been considered highly sensitive and shielded from public scrutiny.

NGOs have criticized the translation of Code principles into practice. The Australian Conservation Foundation in 2000 used the minerals industry to illustrate their contention that companies were not living up to their best practice policies and statements. The ACF also noted "*There are positive signs that corporate Australia's poor environmental performance could be reversed in the coming years*." Later that year, the Worldwide Fund for Nature evaluated PERs, finding that 13 mining companies (out of 32) had no performance targets, whilst others were failing to meet their targets. Those findings were, however, a considerable improvement on those in WWF's first survey.

Internalising Sustainability

The Code and associated initiatives are valuable, but limited, first steps towards sustainable development commitment and practice.

Progress may depend on the increasing appointment of key personnel in dedicated sustainability roles, and the clearer definition of sustainability principles, goals and indicators. Industry leaders and peak bodies also need to

influence smaller mining companies – some of whom are focused on day-to-day survival and may have difficulty adhering to even statutory requirements. The industry as a whole is judged by the standards of its weakest performers.

The Australian Minerals Industry Code would be strengthened by including an explicit emphasis on sustainable development; incorporating a broader definition of the environment; and encouraging higher standards of social accountability and cultural sensitivity.

The Code should also be strengthened to ensure that signatories recognize and comply with the clearly stated requirement that it apply to all signatories' activities, wherever they operate. Australian stakeholders are – as demonstrated clearly in MMSD Australia workshops, the reports of the Oxfam CAA Ombudsman and External Advisory Group – concerned about the overseas performance of Australian minerals companies. The veracity of the Code's claim to cover signatories' overseas operations needs to be tested, and should be reported unambiguously in reports on the Code's operation.

Finally, the Code could require signatories to recognize the fundamental rights of all stakeholders to participate in decision-making related to minerals projects. The Code would be strengthened – and its credibility enhanced among non-industry stakeholders – by the inclusion of a commitment to a rights-based approach to environmental management and community relations.

The industry is not presently well placed to deal with these (environment, land access and reputation) issues – nor is it confident about its ability to do so in the future… Few [companies] have positioned themselves yet to identify clearly the non-technical competencies they need for future success. Even fewer have begun the task of ensuring adequate coverage of competencies in their organizations"

Rising to the Challenge
AusIMM, May 2001

Other Voluntary Initiatives

MMSD Australia identified 225 case studies of voluntary corporate initiatives to promote sustainable development.

These often represent a positive desire to address the challenges presented by a company's operations, and to adopt innovative responses to the needs of poorly resourced social groups in remote environments. Some of the most interesting voluntary initiatives were located in mines in remote locations, where community infrastructure is scarce or sometimes non-existent. Although mining in such areas can exacerbate existing patterns of deprivation and marginalization, voluntary corporate initiatives may dramatically enhance benefits to local communities.

Some features to emerge from assessing the initiatives were some diverse and innovative approaches to social capacity building in communities. Notable in the area of environmental initiatives was the frequency of environmental training to increase awareness, skills and competence. Environmental induction programs and on-going training on health, safety, incident and broader environmental issues have approached the level of being standard procedure on many sites. Also notable for their frequency in reports were specific biodiversity projects and research.

Although there are many examples of beyond-compliance practice, serious questions have been raised about the capacity of industry to promote and implement sustainable development. Much depends on the degree to which companies internalize the experience of sustainable development initiatives – both vertically from operations to the boardroom and horizontally, across and between operations. Knowledge management is a key priority here – and the common practice of employing external consultants to deal with social and indigenous issues may prove costly in the longer-term.

The more fundamental issue relates to the skills and capacities of staff in the minerals industry. Technically oriented professionals face increasing pressure to deal with complex social issues which may be beyond their training and experience. It is important that technically-trained and oriented staff develop greater understanding of social process and community development issues. BHP Billiton's recent initiative with Oxfam CAA, which involved taking a group of the Company's community affairs staff to India to gain first-hand experience of development challenges, provides an example of the kind of positive and innovative approaches required in this area. Overall, MMSD Australia suggested that technical professionals needed more exposure to non-technical education, and non-technical specialists need more recognition within companies.

MINING AND THE NATURAL ENVIRONMENT

Mining the Megadiverse Landscape

Australia's native flora and fauna evolved mainly in isolation from the rest of the world in a wide variety of ecosystems. It is in many ways unique. Some 85% of our flowering plants, 84% of mammals, 45% of birds, 89% of reptiles, 93% of frogs and 85% of our inshore temperate zone fish exist only in Australia.

Australia is megadiverse. It is one of only 12 nations defined as megadiverse and the only one classified as a developed nation. It has a disproportionate share of endemic biological resources. It also has the largest area of – and greatest variety of – designated world heritage areas.

But much of the country's biology and landscape is fragile. There is evidence of significant change in the fauna and flora since the coming of the first humans, and particularly dramatic change and degradation in the 220 years since the first European occupation.

The exploitation of Australia's rich and dispersed minerals endowment can be a real or potential threat to the natural environment. Some known and likely mineral resources have already been excluded from exploitation – for example, the mineral sands of Fraser Island, and the limestone, and possibly petroleum, of the Great Barrier Reef. MMSD Australia commissioned the Australian Centre for Mining Environmental Research (ACMER) to investigate the minerals industry's impact on biodiversity. The following pages draw mainly on that report.

The single most important relationship we have is with the land and the way we understand it is the interconnectedness of everything. Animals, plants, us, spirituality, everything is all interconnected and our management of it boils down to this: One cannot survive without the other, people who destroy country, destroy themselves.

Michael Hill
Aboriginal representative
Biodiversity Advisory Council

A Rapidly Evolving Regulatory Framework

Australia's environmental regulation is evolving rapidly in response to greater awareness of environmental threats; rising community expectations; and obligations imposed by international agreements.

States remain the principal regulators of mining and minerals processing. But the Commonwealth is increasingly moving to assume responsibilities or impose standards on the States. The recent Commonwealth Environment Protection and Biodiversity Conservation Act, for example, gives the Commonwealth powers to intervene in or oversee State approval processes for projects which may significantly impact on matters of national environmental significance. This would include projects which threaten to impact on World Heritage areas, internationally listed wetlands, listed migratory species, listed threatened and endangered species, Commonwealth Marine areas and nuclear related matters.

There is also a growing area of joint Commonwealth/State specification of standards and procedures; Water Quality Guidelines (ANZECC) and the Strategic Framework for Mine Closure (ANZMEC) being two prominent examples.

Most States have for some time been replacing single issue legislation with integrated acts designed to address the inter-related nature of environmental issues. Most States have a single authority responsible for environmental approvals and regulation, although some maintain separate – and sometimes deficient – procedures for designated major projects. Much new generation

planning legislation has the avowed purpose of promoting sustainable development, although further evaluation would seem to be needed in some jurisdictions to see if avowed purposes were being matched by actual outcomes. Other State initiatives to address sustainable development initiatives include environmental audits, ongoing security bond reviews, mine closure plans, development consents, requirements for mine environmental management plans and requirements for additional approvals in sensitive areas.

There is also some joint government/industry specification of procedures with potential regulatory effects. Two examples from New South Wales of State government and NSW Mineral Council joint initiatives are the Guidelines for Aboriginal Heritage Impact Assessment in the Exploration and Mining Industries; and the Guidelines for Best Practice Community Consultation in the NSW Mining and Extractive Industries.

Regulatory issues in the States include inadequate enforcement and the operation of some licensing standards which bear little relationship to the principles of ecologically sustainable development. ACMER notes, for example, that security deposits – required by some States as guarantees of the eventual rehabilitation of mined areas – may sometimes be set too low. This, coupled with inflationary pressures, means some rehabilitation is subsidized by State governments

It is encouraging that some government agencies are exploring possible alternatives to the traditional approach of progressively increasing the complexity and restrictiveness of licensing conditions. Increasing legislative and judicial acceptance of third party applications for environmental regulatory enforcement may also have important long-term benefits.

Evaluating Mining's Impact

Australian State of the Environment reporting defines biodiversity as: *The variety of all life forms - the different plants, animals and micro-organisms, the genes they contain and the ecosystems of which they form a part*. There is some criticism of this definition, but it does serve to underline the vast amount not known.

Nationally

Australia has experienced degradation of bioregions and ecosystems and a significant loss of species. The extensive and cumulative impact of localized vegetation clearing continues to be a major threat to the country's biodiversity.

Mining has operated in 66 of Australia's 80 biogeographic regions. There are also significant mineral deposits in another 6 regions. Mining has less impact on biodiversity than activities such as agriculture, pastoralism, urban and infrastructure development. But the negative environmental impacts of mining are often perceived differently, and the positive contribution made by the industry to our quality of life not so clearly understood. In contrast, agriculture arguably has greater cultural significance in Australia, and its products are more readily identified and valued by consumers and urban populations.

Mining directly affects a relatively small area– less than 0.05% of Australia's landmass. Whereas 44 species extinctions are attributed to agricultural and grazing activities, the ACMER study suggests that mining may be implicated in one known extinction. Indirectly, mining also uses land for associated

infrastructure such as transport corridors, processing plants and urban settlement.

But mining is a high intensity land use. Mining may remove the biota within the active area and can impact the quality of nearby ecosystem functions and processes. It may also alter topography and the hydrological functioning of the landscape. It can also contribute to groundwater salinity and acidification, air and water pollution and the introduction of diseases and pest species.

Mining may not have been the source of the many major impacts. But environmental impacts tend to be cumulative in nature – it may not be the main offending land use which upsets the delicate ecological balance.

Locally

Local mining impacts can be severe. Particular cases – such as Queenstown, Captains Flat, Mt Morgan and Rum Jungle – live long in the public memory. But the public credits mining with more environmental damage than is warranted – and the grazing and agricultural sectors with too little.

Making a Positive Contribution

In recent decades, mining companies and other elements of the mining and minerals sector have developed internationally impressive capabilities in environmental research, lower impact mining and post-mining rehabilitation. Much valuable knowledge of our environment and biodiversity is now coming from studies that have been funded or carried out by the mining and minerals sector.

It appears that the minerals sector is more comfortable with environmental management than with the broader arena of sustainable development. The environment is seen as an area susceptible to technological solutions. The sector is experienced in working with quantitative metrics, and has established a growing body of scientifically grounded experience in dealing with specific issues.

We need to ensure that the natural environment is not isolated from the wider sustainable development agenda. We need to recognize that environmental values are socially and culturally based. We need to recognize local traditional knowledge and find ways of incorporating local, including indigenous wisdom in all areas of resource management decision-making – not simply employing local labour in ecological monitoring and rehabilitation.

In certain fields of rehabilitation expertise, such as native ecosystem reconstruction, the minerals industry in Australia is seen as a leader in development of new technologies. With the continuing globalization of the industry, these technologies may become useful in other countries with similar climatic ranges.

ACMER

Voluntary Responses by Industry

The minerals industry collectively – and companies individually – have introduced significant voluntary initiatives to facilitate improvements in environmental performance.

The major industry-wide initiative was the development in 1996 of the Australian Minerals Industry Code for Environmental Management, discussed earlier. Many mining companies and minerals processors are also members of The Greenhouse Challenge, a voluntary joint industry-government program designed to reduce greenhouse gas emissions. The industry has also – in partnership with Environment Australia and Ameef – supported the publication of the Best Practice in Environmental Management series of booklets for the mining industry.

The Gap between Best Practice and Common Practice

Although voluntary initiatives tend to support the case for self-regulation, they tend to have only partial coverage and effect. There may remain a significant gap between best practice and common practice.

ACMER notes, for example, that with the exception of certain industry leaders, rehabilitation practices at many of Australia's current mining operations are of a relatively poor standard with respect to re-establishment of biodiversity values. This is because the restoration of landscape function and partial vegetation structure is considered by many to constitute rehabilitation success, with far less regard for the restoration of species composition.

Critical gaps exist in our knowledge of mining's impacts on the environment. Emphasis on the most easily quantified elements of biodiversity conservation – counting and classifying species, for example – may take precedence over developing deeper understanding of ecosystem functioning. Preserving genetic diversity is even more problematic, with some suggestions that species need conserving over much larger extents of their original ranges.

An Unfortunate Legacy

Australia has a considerable legacy of environmental degradation and contamination from past mining operations, many conducted in times when community values were different, pollution not an issue and rehabilitation not a necessity or concern.

Geoscience Australia estimate that in New South Wales there are more than 20,000 sites in which quarrying, mining and prospecting activities have taken place. Only a proportion of these, however, require clean up and rehabilitation. The New South Wales Minerals Council suggest that there are about 200 moderate to significant derelict mines and a few hundred to a thousand former mining sites that could require attention to, for example, soil conservation, weed control or drainage reinstatement.. Nationally, the Australian Centre for Mining Environmental Research has identified acid mine drainage as a major issue. Some Australian waterways have been severely degraded by past mining activity.

Rehabilitation is difficult and, in some cases, its costs may exceed the returns of the mines involved. Orphan mines – mine workings abandoned by companies who may have ceased trading – present a particular problem which will need to be addressed by the industry as a whole.

Enhancing the Contribution

MMSD Australia identified a number of ways the industry can improve its overall performance. These include increasing its already considerable effort in environmental education; raising community awareness; and disseminating its technical and managerial skills more broadly throughout the sector.

Australia can – and should – seek to maintain and extend the standards adopted by its leading companies in rehabilitation expertise and techniques. It needs, however, to invest heavily in research into neglected dimensions of biodiversity conservation, including ecosystem functioning and preservation of genetic diversity.

The Ecological Footprint of Mining and Mineral Processing

Implicit in the definition of sustainable development is the issue of the overall impact of the mining and mineral sector. We need to move beyond the consideration of mining's direct impacts. We need to consider the whole mineral cycle, including use, re-use and lifecycle stewardship.

Our demand for the services provided by minerals will not diminish – most forecasts assume the reverse. The challenge for industry is to continue to supply the world's metal needs, while reducing demands on virgin resources and waste volumes and undesirable components through the whole product cycle. This is a leadership issue – both for sector and for society.

Climate Change

Climate change is a major concern in relation to the minerals sector and sustainable development. It is, potentially, one of the greatest of all threats to the environment, to biodiversity and ultimately to our quality of life.

MMSD did not address climate change. The issue was considered too large and complex to be addressed within the project's time and resource constraints. There were also significant national and international processes pushing forward our understanding and developing responses in this area, and little value to be added by duplicating effort.

However, climate change clearly raises important issues for the minerals industry's operations; relations with the broader community; and willingness to internalize important sustainable development principles, including the precautionary principle. The industry's commitment to sustainable development will be judged in part by its support for credible, independent research into climate change, and by its willingness to engage constructively with stakeholders in addressing this issue.

STAKEHOLDER ENGAGEMENT

Mining and the Australian Community

The minerals industry needs to engage more effectively with its stakeholders.

This is partly a question of attitude and understanding. The industry needs to understand just who – or what – its stakeholders are. It needs to recognize their legitimate right to participate in decisions which affect their lives or their interests.

But it is also a practical question. The industry needs to learn *how* to engage effectively with stakeholders.

MMSD Australia commissioned research in three distinct areas of stakeholder engagement:

- An exploration of new approaches to stakeholder engagement.
- A study of critical community perceptions of the process and outcomes of formal consultation processes around three Victorian mining proposals.
- An examination of best practice in the establishment and operation of mining company agreements with indigenous communities.

The following pages draw on the first two of these studies. The third study – dealing with the complex and special issues involved in indigenous relations – is discussed later.

The days of 'tell me' and 'show me' have been replaced by 'involve me' in company decision-making that potentially may impact communities

Hugh Morgan,
CEO, WMC

Who are Australian Mining's Stakeholders?

Traditionally, industry has seen shareholders, host governments and local communities as its primary stakeholders. It needs to broaden its horizons – to recognize the legitimate concerns and interests of a far larger constituency of groups and individuals.

Stakeholders are essentially self-defined. Industry should respect the rights of all those who express an interest in their policies and activities, to be involved in and be informed of policy decisions, project strategies, operations and impacts, and to have opportunity to express their views and concerns.

It is not enough simply to consult with stakeholders. Stakeholder engagement is a far more complex and dynamic process, and implies a long-term process of trust and relationship building.

Thinking globally

Stakeholder engagement brings us back to MMSD's central theme – the role of the mining industry within society.

If the industry is to contribute to a more sustainable future, it must recognize a responsibility to society which transcends narrow sectoral interests or the specific contingencies of a particular project. It must reflect on the broader social needs for cohesion and equitable relationships between all groups in Australian society; on the importance of maintaining our cultural and biological

There are many different – often conflicting – perspectives and few simple solutions. Engagement is difficult. But we believe it is essential – providing valuable learning and building trust.

Phil Watts
Executive Chairman
Royal Dutch/Shell

diversity; and for Australian-based mining companies to be well regarded internationally.

Traditionally, governments have represented community interests in general mining issues or specific mining proposals. Over recent years, the government approach has moved away from direct regulation, towards greater management by industry with audits by government. The changing role of government, the rise of civil society and increasing distrust of traditional institutions, has changed the nature of government-community relationships. Where government is involved in consultation over mining operations, it may itself be the focus of community suspicion and concern.

Industry must recognize that it can no longer depend solely on the formal sanction of government and regulatory agencies to conduct its business. It must also work with communities and interest groups in an ongoing process of dialogue and engagement, to secure its social license to operate.

Governments, also, must engage the community more effectively to ensure their views on policy, regulation, and resource development are taken into account. They should similarly develop more effective mechanisms to ensure community participation in the wide range of smaller projects which do not trigger formal public environmental impact assessment, and in review of projects' broader social and economic impacts. Government responsibilities also include the provision of information on movement to a sustainable future, on the costs and benefits of policy proposals and on regulatory outcomes.

Acting locally

The prospect of a mine, ongoing mining operations or mine closure, are of intense interest to affected communities.

Legislation may require specific consultative processes and/or specify opportunities for community input in relation to new projects or significant changes in operational strategies.

Such legislation is likely to be only of limited help to companies seeking to establish sustainable operations. It often leaves unclear, for example, what constitutes a community or who represents a community. It also relates specifically to consultation prior to the start of a mining project, and says relatively little about the need to maintain relations throughout the lifetime of operations.

Companies must be as inclusive as possible in their stakeholder engagement. (Certainly a company that is seen to be prescriptive or adopt too narrow a view of its stakeholder base is likely to be viewed with considerable suspicion.) When reaching out to stakeholders, companies need to cast their net as widely as possible. They need to reach out to anyone or any group who could conceivably have an interest, and suggest that they in turn contact others who have an interest – thus establishing a broad networking process.

Companies also need to be sensitive to the perspectives and concerns of their internal stakeholders – their workforce and shareholders.

Stakeholder engagement is a complex and dynamic process. It is important to recognize that stakeholders will often interact with each other independently of their relations with the company – and this can add an important layer of complexity to stakeholder engagement processes. Similarly, some stakeholders will disengage – and others join in – at different stages of the

process. There is no such thing as a static list that can be filed away once all stakeholders have been successfully identified.

Why Engage with Stakeholders?

There is increasing recognition of the benefits to be gained from better stakeholder engagement – and costs of not doing so.

Benefits include:

- Stakeholders feel more at ease with activities they understand.
- Companies receive earlier signals of public discontent.
- A continuing license to operate is more likely when stakeholders have developed greater trust in their corporate neighbours.
- Stakeholders can help companies identify cost-effective impact mitigation measures.

The benefits of better engagement are best seen in the longer term. Conventional business models may see compliance or approvals-related community consultation as a short-term cost. Industry leaders increasingly recognize that building relationships is a sensible long-term investment in the success of their enterprise.

The competitive nature of business inclines management to be economical with information. That trait once had survival value in a smaller, more regulated economy where the people who mattered were experienced bureaucrats and a select group of knowledgeable bankers, analysts and the like.

Today a company must gain the respect of a wider, more diverse audience. Today, openness and transparency are the traits which appeal to that audience. Being able to identify and communicate effectively with stakeholders is essential if a company wishes to establish public credibility

Leon Davis
Deputy Chairman
Rio Tinto

Interaction, Engagement and Participation

Companies should move beyond the legal minimum in consultation and involve the community well outside the narrow confines of an approval process. CSIRO's study of communities' critical perceptions of consultation processes defined a hierarchy of company involvement with the community:

1. *Strictly Business:* Companies see no necessity to deal with the community beyond any legal minimum requirement.
2. *Benefactor:* Relationship is defined in terms of what the company gives to the community in fields such as employment or funding. This is sometimes derided as the 'beads and trinkets' approach.
3. *Manage and measure:* Community relations are managed and measured like any other business variable.
4. *Practical partnerships*: Company seeks mutual interest partnerships with elements of community, but it usually determines the parameters.
5. *Sensitive New Age Miners:* Individuals in companies may approach relationships in a less instrumentalist and more holistic fashion. Their contributions may not be valued internally and they may struggle within more conservative company cultures.

This is a progression from consultation – at the lowest level the mere provision of information – to participation.

Building Better Dialogue

In the area of stakeholder engagement – as in so many others – the minerals industry has to deal with a legacy of past mistakes and miscalculations.

Their communications are often viewed with suspicion by local communities. Stakeholders are aware that much consultation is initiated by company and/or government and usually with a particular goal – a 'right answer' – in mind. They will resent any process directed towards a foregone conclusion.

MMSD Australia research and workshops suggested strongly that companies perceived to be going through the motions of consultation – following the letter rather than the spirit of the law – were likely to face much suspicion and cause resentment in the community. Token effort could be worse than no efforts at all. Significantly, this was the view of both community and industry respondents to the studies.

This does not mean that regulation is not important – regulation provides a baseline of expectations and enables communities to engage on some basis of parity with companies and governments. Long-term relationships, however, should be given greater attention.

The Sustainable Relationship

Short-term consultation strategies – in which stakeholders may have inadequate information, time and resources to formulate their responses – are likely to prove counter-productive in the longer-term. It is also important to meet stakeholders in ways and forums appropriate to them.

Communities are rarely unanimous in their views. They can also take short- rather than long-term views – particularly where there is widespread poverty and few alternative sources of employment or investment. The rush to agreement – any agreement – is not necessarily in the best long-term interests of either side. Companies should be careful to ensure that agreements do not carry with them the seeds of future community division. They should also understand and respect the need for *prior informed consent* – with all the difficulty and complexity that may imply.

The primary goal must be to build relationships with stakeholders. This is more likely to be successful if companies can look beyond the current negotiation. The process here may be as important as the outcome. Meetings and negotiations have a role in establishing personal contact and developing relationships. Demand for quick solutions or specific outcomes should not be allowed to impede this process.

Government also has an important role in considering the social impacts of development on local communities, and on how proposals will affect present and future generations.

Cultural Differences and Differences of Viewpoint

Different cultural values, perspectives and timeframes critically affect the outcomes of stakeholder engagement processes. This is particularly apparent in relation to indigenous groups. But all community and activist groups are likely to have significantly different worldviews to company representatives – even where those company representatives are personally sympathetic to community and activists' views. Philosophical differences have enormous

bearing on attitudes to interaction. It is important to understand the culture and motivations of the people you are hoping to engage.

A Human Rights Based Approach to Stakeholder Engagement

The human rights focus is an emerging perspective which may transform the sustainability potential of community-company dialogue.

The effect of mining operations on remote and vulnerable communities has gained added prominence in recent years as Australian companies have become more active in developing areas. This has lead some NGO groups to argue the case for models of stakeholder engagement based on universal concepts and international agreements on human rights. In Australia, Oxfam Community Aid Abroad has:

- Appointed a mining ombudsman to receive, investigate and seek to remedy the complaints and concerns of communities in developing areas affected by the actions of Australian mining companies.

- Urged the Minerals Council of Australia to include specific reference to human rights in the Minerals Industry Code for Environmental Management, and to revise the Code to address related social or economic impacts of mining operations.

- Argued for the establishment of an independent complaints mechanism for the minerals sector.

Although the primary responsibility for implementing international human rights treaty obligations rests with national governments, this does not mean that business can ignore human rights principles.

The establishment of an independent complaints mechanism would send a powerful message of the industry's commitment to play a positive role in society and to respect the rights of stakeholders and host communities.

The human rights approach is based in international agreements complementary to the aims of sustainable development. Those agreements mean that all people have a right to clean water, and to a safe environment in which to live. They have the right to sustainable livelihood; to control the use of their land; and to be fairly compensated for loss of property. And they have the right to be free of intimidation and violence. Adoption of a rights-based approach to communities would offer the mining industry a framework within which to ensure that the basic rights of individuals, groups and communities affected by its operations are upheld and enhanced as a result of exploration and mining activities.

Capacity Building for Better Dialogue

Community-based groups are often constrained by limited resources and capacities in their dealings with governments and companies. This is true both of remote and indigenous communities and of some relatively affluent mainstream communities.

Limited capacities impact the effectiveness of stakeholder engagement processes, and threaten the sustainability of their outcomes. They also exacerbate problems of 'stakeholder fatigue' – overburdening finite community

resources and placing undue pressure on the time and commitment of a few dedicated individuals.

There is one obvious way to address significant imbalance issues, and that is for the powerful and well resourced to materially assist the disadvantaged and under-resourced to participate in negotiations on a more equal basis. Companies have an interest developing community capacity to engage effectively in dialogue, although this cannot be solely the responsibility of industry. However, companies do increasingly provide financial and other assistance to indigenous communities to help them participate in negotiations – it would be in companies' long-term best interests to extend such assistance in consultation processes with non-indigenous communities.

Such capacity building initiatives promise improved dialogue and better outcomes. They may also shorten the time required for consultation, and reduce the need to review agreements at a later stage. Such assistance will be most effective where:

- It is provided unconditionally – that is, it does not seek to influence the outcome of the process
- It is provided in a transparent and – where there are competing stakeholder demands – in an even-handed way
- It is directed to the satisfaction of locally-defined resourcing needs.
- It facilitates communities' access to independent professional and specialist advice.
- It supports the development of a continuing relationship

Community Partnerships in Sustainable Development

A number of NGOs have indicated a willingness to engage strategically with industry to promote sustainable development. The Worldwide Fund for Nature is a primary example. WWF worked in close cooperation with elements of the forestry industry and major timber processors to establish the Forest Stewardship Council – a certification scheme designed to provide market incentives to more responsible companies within the sector.

WWF is currently working – with support from a small number of mining companies – to establish a similar scheme for the minerals sector, exploring the feasibility of independently certifying mines to identify their contribution to sustainable development.

Such collaborative ventures have potential to promote more responsible social and environmental performance in the minerals sector, and to foster greater trust and understanding between the industry and external stakeholders.

Bringing in the 'People People'

Discussion at several MMSD Australia workshops suggested the need to review the skill sets available to the industry. The industry's technical expertise and innovation is greatly respected and valued. However, there is concern that technically-oriented staff may be uncomfortable with softer issues of social process, community development and stakeholder engagement. Attempts to apply business systems approaches to community relations issues have achieved limited success, at best.

Most of us…come from a scientific, technological background. That type of education, along with our corporate culture, teaches us that we must try to identify a problem, isolate it and then fix it. That sort of approach works well with a physical problem – but is not so useful when we are faced with, say, a human rights issue. For most engineering problems there is a correct answer. For most social and political dilemmas there is a range of possible answers – almost all compromises.

So, starting off with a strong, scientifically grounded mind-set, we tended to misjudge some of the softer issues and consequently make mistakes. We misread some of the situations.

Cor Herkstroter
former Group Managing Director, Royal Dutch/Shell

When social process expertise is needed, it is often hired in from outside the company. Such expertise might not be integrated into company processes, or considered core to company objectives and business success. Individuals most closely involved in building community programs might not be those required to foster and maintain ongoing relations with local people. High quality communications and community collaboration skills need to become part of the industry's DNA – companies need to attract, develop and reward 'people people' within their ranks.

Case Study: People, Power and Participation –
A Study of Victorian Company-Stakeholder Interactions

In an era of rising stakeholder expectations, company interactions with the community are a vital component of business success. They may make or break project proposals – swinging the balance between project approval and rejection.

These interactions, formerly mediated through government, are now much more direct.

MMSD Australia commissioned the Commonwealth Scientific and Industrial Research Organization (CSIRO) to prepare a case study based on previous CSIRO research of company-community interactions around three new or extended mining ventures in Victoria. The report – People, Power and Participation: A Study of Mining-Community Relationships – discussed the experiences and perceptions of local community members who were opposed to the proposals.

The CSIRO report discusses formal consultation processes which addressed proposals for open cut mining projects, and conflicting land use options. It involved small- and medium-sized gold companies, and a well-educated, organized and relatively powerful section of the population. Each case study was characterized by a period of conflict – in some cases ongoing at the time of the research. Conflict was negotiated in the context of well-established legislation, formal environmental approval processes with opportunities for public participation, a relatively free media and acceptance of free speech.

In all three cases the local community had a significant influence on the outcomes of the mining proposals. In two of the cases, mining did not proceed.

The Victorian case studies suggested that:

- *Environmental approval processes are seen by the community as the main opportunity for being informed and influencing decisions.*
- *Lack of independent information – i.e. other than that produced by the proponent – is a significant concern.*
- *Large public meetings are difficult for many participants.*
- *Proposals can introduce conflict into communities, even families, which can cause resentment or refusal to participate in consultation.*

- *Community members commonly feel disadvantaged in dealings with mining companies, with power and information imbalances the most commonly expressed concerns.*

- *Company and community representatives feel that technical discourse is a problem.*

The suspicion of the information made available is a particularly significant concern given that, in most impact assessment processes in Australia, reports are both prepared for and paid for by proponents.

CSIRO placed their findings in the context of a shift from purely representative to more participatory democracy involving more decentralized decision-making. This implies more 'downward and outward' accountability to people affected by decisions; the need for more education and information on issues at stake; and obligations on the part of communities to be informed and involved.

Discussion in MMSD Australia project workshops suggested that, while the industry often acted from good intentions, there was a lack of understanding of the nature and impact of unequal power dynamics. The industry – and consultation processes more generally – needed to move from a technical paradigm of consultation towards approaches which operate in a more human way.

Perhaps one of the most interesting findings was that the language of sustainable development appears to have permeated well into the community. Values around sustainable development principles were a common theme. People talked about future generations, the precautionary principle, sustainable practices, responsibility for land and balanced decision making taking into account social, economic and environmental factors.

MINING AND INDIGENOUS COMMUNITIES

Sharing the Land

Archaeologists believe that Australia has been occupied in its entirety for about 40,000 to 60,000 years. The legal fiction of *terra nulius* – that the continent was legally and effectively unoccupied prior to European settlement – was overturned only in the 1992 High Court decision on the Mabo case.

Indigenous property rights derive from the traditional laws of Indigenous people. Prior to *Mabo*, the indigenous system of law and culture was seen as inferior to the Western system, and indigenous property rights were vulnerable to extinguishment or impairment under the common law. *Mabo* and the Commonwealth Government's *Native Title Act 1993* were based on the recognition of indigenous laws and customs that pre-existed the acquisition of sovereignty in Australia.

The Native Title Act allowed indigenous groups to lay claim to unallocated Crown land to which they had a clear cultural connection.

In 1996 the High Court determined – in the Wik case – that native title rights were not necessarily extinguished by the grant of pastoral leases. This had implications for the mining industry because numerous mining tenements are located on pastoral leases. Elements of the mining industry – and some State governments – conducted a fierce and ultimately highly damaging campaign against native title rights.

Indigenous communities cannot be seen simply as another stakeholder, with the same rights to participate in decisions as any other stakeholder group. The International Convention on the Elimination of all Forms of Racial Discrimination – under which Australia has voluntarily accepted obligations – requires that states balance the rights of different racial groups. It does not require balance between the interests of different stakeholder groups – but rather that they balance the rights on indigenous and non-indigenous titleholders.

Mining companies have begun to search for common ground with indigenous communities on a range of issues, including the recognition of claims to land. Experience is building up on both sides of negotiated agreements which may allow companies and communities to co-exist with mutual respect and to mutual benefit.

MMSD Australia commissioned research into good practice in the establishment and operation of agreements between mining companies and indigenous communities. The following discussion and case studies draw on the outcomes of that research.

Our relationships with the communities in which we work are the single most important thing we do for sustainable business. Mines run out. So we've got to be able to develop other ore bodies and we can only do that if we have our reputation intact.

If we were still working the way we were as little as five or six years ago we would have no future in Australia.

Bruce Harvey
Chief Adviser
Aboriginal and
Community Relations
Rio Tinto

The Clash of Cultures

Questions of respect, and fundamentally different approaches to land, are at the basis of the historical misunderstandings between the mining industry and aboriginal communities.

For indigenous peoples, the relationship with land and sea is a complex mix of stewardship responsibilities and historical, cultural, ceremonial, dreaming,

harvesting factors. Some mining companies have invested much effort in developing their understanding of this worldview.

A Period of Division

Distrust between the mining industry and indigenous communities reached its height immediately following the Wik judgment and during the debate over the 1998 amendments to the Native Title Act - enacted after one of the longest and most emotional debates in the history of the Federal Parliament. These amendments gave the States power to establish their own Native Title regimes. But the Senate retained a right of veto.

Some, mineral rich States and Territories have had trouble formalizing their native title regimes under this scheme. The Senate rejected the initial West Australian and Northern Territory proposals outright, and successfully sought amendments before accepting the Queensland native title scheme. In contrast, the NSW regime was introduced unopposed and unamended after agreement between all parties.

A backlog of exploration applications developed, in part because of disputes as to whether the right to negotiate applied before or after exploration. Native Title claims became bogged down in courts and conflicting claims were lodged in some cases. The Western Australian government is committed to reviewing opportunities for co-operative resolution of native title issues.

A Sea Change

MMSD Australia research and workshops noted a 'sea-change' in mining industry attitudes since 1998. They attributed this change to:

- Recognition that native title is here to stay.
- Change in corporate culture of mining companies and industry bodies.
- Increased interest in the principles of sustainable development.
- Increased preparedness and ability to participate in negotiations by indigenous organizations.
- Changes in attitude on the part of some State governments, from seeking to limit native title to an emphasis on negotiation.
- An increased familiarity by native title parties with agreements and their negotiation, in particular with the introduction of Indigenous Land Use Agreements under the amended Native Title Act.

The Significance of Indigenous Land Use Agreements

The mining industry has always had the option of reaching independent agreements with indigenous communities. There has been a dramatic increase in the number of such agreements following formalization of Indigenous Land Use Agreements (ILUAs) under the amended Native Title Act, and industry's 'sea-change' in attitudes to native title since the late 1990s.

ILUAs can provide for practical resolution of land use and management issues. ILUAs provide a framework for compensation applications or for other agreement negotiations. They offer a way for negotiating parties to bypass the

right to negotiate provisions under the NTA; a way to facilitate approvals, or a way to define relationships between interested parties.

ILUAs have permitted some indigenous communities in rural and regional Australia to become integral stakeholders in mineral resource development. As such, they make a significant contribution to the sustainability of those communities.

Case Study: The Yandi Land Use Agreement Between Hammersley Iron and the Gumula Aboriginal Corporation

The Yandi Land Use Agreement took nearly two years to negotiate and was reached between the parties without outside intervention. Hamersley decided to negotiate rather than take a legal or adversarial approach developing initial contacts with elders of traditional land owning groups and undertaking heritage surveys of the mine site and railway corridor.

The company's corporate culture was changing as key executives devoted considerable time towards shifting group policy towards more constructive resolution of disputes. This message from the top pushed the company toward negotiation.

Social mapping and external consultation obtained the views of people with experience in negotiated settlements, provided understanding of the circumstances, motivations and aspirations of Indigenous stakeholders and developed a positive climate for negotiation.

The consultation and personal contact process kept people informed throughout - meaning they were less likely to tend to uninformed criticism. This lead to an understanding by the company of Aboriginal attachments to land, motivations and family relationships, disputes and the shifting and unpredictable nature of social politics in the region.

The company allocated resources to support the Indigenous negotiation parties knowing they would lose some element of control over the process. An independent facilitator, a series of community meetings and a fund for independent legal advice was set up. At this stage there was no single Indigenous body with the capacity to represent all Indigenous interests so the local people decided over a series of bush meetings to establish Gumala Aboriginal Corporation.

There were some misgivings in Hammersley at the cost of funding all of the requirements necessary for negotiation with Gumala, but they allowed the process to take its course in order to keep the integrity of the negotiation in the face of expense, frustrations and numerous problems.

A draft protocol on negotiations dealt with information sharing, privacy and stated they were to be conducted in good faith and build on a reservoir of trust and goodwill that had already been established and that there should be a focus on long term benefits and security for both parties.

A mediator helped isolate issues, identify interests and assisted agreements to accommodate mutual interests. The less controversial issues were dealt with first in order to build confidence in the process. A series of staged agreements were entered into over the protocol, the heritage surveys, a memorandum of understanding and the final land use agreement.

Sessions took place at frequent intervals to maintain momentum and communications maintained through deadlocks. Once all Indigenous stakeholders had signed off and all government approvals were given a symbolic end to the process took place with a barbeque involving people from all sides, music, speeches and an exchange of gifts.

Case Study: Queensland – Western Cape Communities Co-existence Agreement

Signed in March 2001 between the Cape York Land Council, eleven traditional owner groups, the Queensland Government and Comalco the agreement took five years of discussions and recognises and respects the native title rights of traditional owners and allows for consultation over future mining operations over 2,500 square km of Western Cape York Peninsula.

The agreement is mutually beneficial with Indigenous groups supporting Comalco and in return having some say in the way the mine operates and getting community benefits from the mining activities.

Comalco expected Native Title claims would significantly impact on their leasehold area and recognized their historical approach was out of step with contemporary expectations. Both they and the CYLC decided negotiation would be preferable to protracted court settlement.

A Memorandum of Understanding was agreed at an early stage. This would provide for background studies to document the needs of the respective groups including reports on community and environment impacts. Proposals were exchanged in 1997 covering issues related to employment and training, cultural heritage and site protection, economic support and development, native title and compensation. There were initially major differences between the parties over native title and compensation issues.

Principles were agreed on but difficulties arose over agendas and approaches taken by each side which sometimes stalled negotiations. The long time factor meant changes in personnel and relationships between individuals and corporate memories were lost slowing the process.

Limited resources for the CYLC also slowed progress. Six months before the agreement was reached a second MOU was made and all parties undertook to promote it to their respective communities and the CYLC sought consent from traditional owner groups. This MOU was designed to be a good faith sign-off before final agreement.

The State Government took an observer role for much of the negotiations and their agreement was required for an ILUA in the final stages.

Aboriginal parties agreed to there being no exclusive possession and no challenge to Comalco's existing rights and interests and in return Comalco pledged support for native title claims over its areas and agreed to support fast tracking of claims. After Comalco finished with land under claim it would not object to native title rights being restored to the fullest effect at law and land would progressively be restored for Aboriginal ownership. Comalco contributes about $3 million per year to a trust and to employment initiatives. The state government contributes to local community development projects. All Comalco staff and principal contractors receive cultural awareness training and site protection plans and cultural heritage surveys are undertaken.

Comalco supports Indigenous business enterprises and establishment of outstations on suitable areas of the lease.

A committee meets monthly to assess implementation issues. The agreement was registered as an ILUA in August 2001 and there were no objections in the 90-day objection period. Registered native title claims (e.g. the Wik claim) were adjusted to conform to the agreement.

Comalco has certainty for its operations and both sides work to make the agreement successful because of the mutual benefits. Comalco recognized that a devotion of resources and personnel capabilities was required and that the same personnel should be involved throughout the negotiations. They also decided frequent and effective communications were required and all parties needed to be seen to be supporting the discussions and agreed positions

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Addressing Issues by Agreement

In approaching the native title issue, all parties involved in the negotiation process naturally aim to maximize their potential benefits. For indigenous groups and communities their legitimate aims are often to maximize employment opportunities and associated benefits. The company's aim is to gain land access for the development of a project in a cost-effective manner. Government's role in this process is largely to act as a facilitator, offering the parties recourse to litigated resolution options if required.

Increasing experience, trust and resourcing appears to pay dividends with improvements in the process, quality and coverage of final agreements. There are some outstanding issues.

Cultural Heritage

Expedited mechanisms exist under the Native Title Act for 'fast-tracking' mineral tenements considered to be 'low-impact'. But some indigenous organizations advocate against their use in order to protect native title rights. This is a source of frustration to exploration companies and State governments.

On the positive side, the management of the objection process and subsequent participation in heritage clearance processes has allowed native title claimants the opportunity to become familiar and more directly involved with heritage protection by agreement with other interests.

Regional protocols and ILUAs have been developed in a number of cases, offering a more efficient means of dealing with heritage protection issues.

Employment and Business Development

Mining may contribute to local business and employment opportunities in remote communities – sometimes it is the only significant contributor apart from government programs. The provision of such opportunities and associated support are often a key ingredient of agreements, particularly for mining.

Indigenous Business Australia provides resources and advice. It assists and facilitates such arrangements as joint ventures or preferred tendering arrangements.

However indigenous communities and Native Title Representative Bodies are often skeptical about mining companies' commitment to fulfill quotas in relation to the employment of Aboriginal staff. Indigenous people may be employed from outside the area of the agreement, or may be employed in jobs which do not offer the opportunities for training specified in agreements. It has also been suggested there is little indigenous employment in areas where indigenous people do not retain a claim for land.

For their part, companies argue that sometimes strenuous efforts to fulfill the employment provisions in agreements fail for a variety of reasons. Barriers identified by MMSD Australia include basic requirements that the job applicants have previous experience or appropriate qualifications. Mining companies' need for quick start up at full capacity to recover initial investment may work against the employment of initially unskilled labour.

Given the concern expressed about equity of employment opportunities in the industry, it is important that companies review the diversity of their workforces; consider whether employment policies or practice discriminate against particular groups; and take corrective action. The most effective way to do this is to report publicly on their employment of minority groups. BHP Billiton Iron Ore has committed to increase Aboriginal employment in its operations to 12% by 2010; we would expect to see progress towards this target reported publicly.

Mining companies and indigenous communities interact closely. They need to establish trust and confidence – through, for example, equitable distribution of mining revenues and employment and business development opportunities – as a basis for lasting and mutually supportive relations.

Some pointers which may assist with success in this area include structured step-by-step approaches combined with very close mentoring and monitoring, clear incentives built into each step, and heavy involvement of both mine management and the community in selection of candidates. A further essential pre-requisite is training, not just in mine-related skills, but basic life skills including money management, making commitments, literacy and numeracy, health and hygiene.

Royalties and equity

The distribution of resources is always a sensitive and contentious issue. MMSD Australia research suggests the best solution may be a mix of royalties and equity. There is a tendency on the part of companies to prefer royalty arrangements. Equity arrangements, however, offer long-term benefits to both sides and can be an ingredient in building better long-term relationships. Clearly, however, many indigenous communities have pressing short-term needs and also need to be aware of the risks inherent in all mining projects – thus the need for a royalty component.

Training

Training may be the most effective means by which indigenous peoples can improve their socio-economic position in wider society, and is one which often features in mining companies' agreements with indigenous groups.

This is another area where program outcomes fall well short of aspirations. A key reason for this is literacy and numeracy levels are often so low that many people do not have the basic skills that enable them to be trained safely and effectively. Social issues impact on school attendances and motivation, there is a lack of skilled and motivated teachers and appropriate curricula.

Both mining companies and indigenous communities express some anger at government expectations that mines deliver some of community infrastructure that public authorities supply as a matter of course to other Australian communities. There is a clear need to distinguish between benefits which might be expected to flow from mining agreements and basic rights – to shelter, health care and education, for example – which indigenous communities are entitled to enjoy as Australian citizens.

Nevertheless, some companies are providing literacy programs, health services and other normally public community programs and the provision of such services can be specified in agreements. (And clearly demand for some of these services is related to local population increases due to the mining project itself.) Some in the mining industry believe that responsibility for training should be moved away from individual miners and contractors and more centralized training provided on a fee for service basis. Others believe that competition between companies in training is healthy.

Good practices include provisions for the encouragement of school attendance as well as concrete assistance to do so in the form of scholarships for secondary as well as tertiary education. These provisions would need to be administered in the same fashion as other community benefits provided through agreements such as through a trust.

Sustaining Benefit

It is clear that all accurate information on the mining development and its potential impact should be put before Indigenous stakeholders as this impacts the negotiations and durability of agreements. Companies must ensure assessments of likely social and environmental impacts explicitly examine issues perceived as important by the Indigenous stakeholders and they should consider funding communities for independent assessments of the economic, social and environmental impacts of the development. If agreements are made and implemented to the satisfaction of both sides, benefits will be maintained in the future as it is in the interest of both sides for the mining activity to be profitable and successful.

Pointers to Progress

MMSD Australia has established a database of agreements which will be of considerable benefit to partners in future negotiation and implementation. The research also collated some pointers to better negotiation, agreement content and implementation from the 140 agreements examined. A key recommendation was that the mining industry seek to overcome its residual distrust of NTRBs. Many fears about NTRBs are not borne out in practice as they offer sound service delivery with limited resources and extensive representational structures through their elected and governing committees or through Elder's Councils.

There is no single 'best practice' solution to cover all situations. Enduring and mutually beneficial agreements are more likely to combine many different elements of good practice, appropriate to the specific needs and conditions of the local environment.

Good Practice in Negotiation

Good practice in negotiation stresses a full company commitment to the negotiations, the early engagement of NTRBs, the provision of clear

information on the project and its implications, a skilled negotiating team which is maintained for the duration of the negotiation, and acceptance that the process may take time. Companies may need to provide concrete assistance to communities to conduct the negotiations, including funding and help in accessing independent expertise.

Good Practice in Agreements

Good practice in agreements includes appropriate protection for and respect of heritage, employment provisions backed by the means to make them achievable, carefully designed arrangements for compensation for the right people, and consideration of equity as well as royalty arrangements.

Good Practice in Implementation

Good practice in implementation means it should be as much a concern as negotiation. Provision needs to be made for appropriate and representative governance of the agreement and for monitoring and facilitating implementation, including where appropriate the appointment of coordinators.

Outstanding Issues

The Australian mining industry has moved considerably – from (at best) a good neighbour policy to one of recognizing the rights of indigenous community groups. Some individual executives or particular mining companies have shown considerable vision and leadership in promoting this change in attitude and policy. A number of successful agreements demonstrate the scale of the change.

There is, however, a gap between best practice and the practice of some elements of the industry. There is also a need to pursue better employment and social outcomes, both from agreements and more generally.

MANAGING AUSTRALIA'S MINERALS WEALTH

The Challenges in Minerals Wealth Management

Australia needs to manage its mineral resource base carefully and begin to plan for a future in which a disproportionately large portion of revenues is no longer derived directly from minerals extraction.

A dynamic resources sector can contribute significantly to national economic growth, exports, employment, regional development and improved standards of living. The key issues are the level and distribution of minerals revenue, and how best to invest that revenue to secure sustainable social benefit.

The challenge ahead is to manage Australia's mineral wealth in a sustainable way.

For government, this means ensuring wealth it is not lost through wasteful mining or premature mine closures. Where falling commodity prices reduce the viability of minerals resource development, governments must ensure that the resource remains available for a time when changing technology or economic circumstances make development more economically attractive.

It also means establishment of policies that maximize returns for the benefit of the nation and careful management of the boom-bust cycle linked to mineral discoveries and fluctuating commodity prices.

Added to these challenges are those implicit in sustainable development – the need to ensure mineral wealth is used in an environmentally benign way and for costs and benefits to be equitably distributed within this generation and across future generations.

Economic Dimensions of Sustainable Development

The aim of sustainable economic development is to increase the flow of benefits to current and future generations. The definition of wealth must cover natural resources – land, biodiversity, minerals and so on – in addition to human and intellectual resources and the more usual narrow purely economic attributes of capital.

Mining is often portrayed as a business of depleting natural resources. Broader and more generally accepted concepts of sustainability accept higher levels of substitution of one form of wealth for another – depletions of natural wealth can be transformed into material and human capital.

Will We Run Out of Minerals?

There is not, for most minerals, any short to medium term fear that the world is about to run out of resources. However, demand is increasing significantly – forecasters predict that in 50 years the world will require five times the mineral commodities produced to date – and is unlikely to be satisfied by the exploration and development of virgin mineral resources. Immediate anxieties relate to levels of exploration and production – it is becoming increasingly difficult to discover new resources that can be mined economically at current commodity prices. In the longer-term, this is likely to be overshadowed by demands for greater substitution, reuse and recycling of minerals resources.

Overcoming the 'Resource Curse'

Australia is one of a number of countries identified as possibly 'cursed' by its natural resource wealth. Essentially resource curse theorists argue that mineral resource abundance is a trigger for factors that contribute to poor economic performance.

Those factors include:

- Government 'capture' by interests associated with large scale mining, who are the beneficiaries of strong exchange rates. Governments then resist the implementation of microeconomic and macroeconomic policies that would facilitate sustainable economic growth.
- Strong revenues flowing to government allow it the latitude for sloppy economic management and profligate spending programs to benefit sectional interests.
- Declining terms of trade, held to be a consequence of the long downtrend in commodity prices relative to those of manufactured goods.
- Lower multiplier effects for mining than would exist for the same dollar utilized in manufacturing, particularly export oriented manufacturing.
- Economic flow-on effects from mineral booms which disadvantage other sectors of the economy through increased costs and flow-on effects.

MMSD Australia research suggested that symptoms of the so-called 'resource curse' were really symptoms of inappropriate government policies, rather than natural resource abundance. Such policies result in destruction, over-consumption, inappropriate investment of resource rents, and mismanagement of economic adjustment processes associated with resource booms and the cyclical nature of commodity prices.

Remedies might include a bias toward saving and investment over consumption. A stabilization fund might be introduced to even out the foreign exchange effects of mineral booms. Government might also be expected to maintain low inflation, adopt taxation reform and avoid any subsidies, incentives or special deals for particular sectors.

Australia's micro- and macro-economic policy frameworks have undergone significant change and reform over recent years. Floating exchange rates are beyond government control or that of any other sectional interests, and tend to dampen flow-on effects from mineral booms. Tariffs and quotas have also been significantly reduced exposing the economy to increased foreign competition, and the introduction of competition policy reforms are also claimed to have also boosted domestic competitive forces. Monetary policy, which influences the exchange rate, is set by the Reserve Bank rather than by government.

Making the Most of Resource Rents

The job of government may be described as securing the maximum value from our mineral wealth – or, in economic terms, securing the maximum 'rent' from use of the resource. Doing this sustainably involves change in the way we

traditionally assess policy – currently considered in terms of *economic* efficiency, administrative efficiency and equity. This should include intergenerational equity – but more needs to be done in this regard.

Government's main economic interactions with the mining industry are in managing land access, levying royalties and taxes, and setting other requirements such as a level of environmental performance. Some of the policy implications of sustainable development in these areas are considered below.

Internalising Social and Environmental Costs

Environmental damage is often a consequence of market failure. If, for example, air and water were considered free goods, their destruction would appear to have no economic impact. Internalization of the costs of use of services provided by the natural environment – incorporating those costs in the price of finished goods and services – is a way of ensuring that environmental goods are properly valued and thus conserved.

Internalization offers incentives to efficiently use the services provided by the social and natural environments.

Work is progressing on the economic valuation of environmental services, but this is still at a very early stage.

Governments can impose costs on actions with potential environmental consequences – for example, requirements to rehabilitate mined land and the bonds imposed by some States to ensure rehabilitation. But it may be difficult to impose those costs at the right economically beneficial level or to include all the environmental variables. Are we, for example, in any position to put values on lost or disrupted biodiversity? The economically optimal level of rehabilitation may fall far short of restoration of a natural functioning ecosystem.

An alternative method of internalizing costs is the establishment of markets in services provided by the environment, with the still to be established markets in emissions cited as a common example. This would be a preferred option of many economists, but the difficulties again, are considerable. Australia faces an important public debate over the issue of 'grand-fathering', which gives current polluters a baseline of their current pollution levels. Extensive grand fathering provisions would disadvantage new – and potentially more environmentally benign – entrants to the market.

Traditional methods of minimizing environmental damage involve command and control regulatory measures. Such regulation – especially that conducted in different ways across a number of jurisdictions – is often difficult to design and expensive to enforce. It cannot keep pace with technological and process innovation. It encourages industry to focus on compliance rather than continual improvement. It can impose its own costs and produce a result that is less than the economic – and sometimes environmental – optimum.

It may be argued that moves to internalize environmental costs should proceed in tandem with moves to reduce government imposed impediments to economic activity. One obvious step towards sustainability – albeit a politically difficult one – is for government to phase out subsidies and other preferential treatment for environmentally damaging activity. It has been argued, for instance, that the diesel fuel rebate enjoyed by mining, rural industries and transport in Australia advantages these sectors over others and also

disadvantages the development and use of new and more environmentally benign technologies. Others argue that denying the diesel fuel rebate to mining industries would result in taxation of an intermediate input and create inefficiency in production.

Taxes and Royalties

Royalty payments are the main way the community captures a share of the resource rent flowing from exploitation of its mineral resources. Australia's various royalty regimes may fail the tests of equity, economic efficiency and administrative efficiency. They may also encourage companies to enter into exploration ventures at a less than optimal time or, alternatively, to pre-emptively lock up prospective areas. Reform may be needed – towards more market-based systems of competitive bidding and free trading in exploration rights.

Such market based systems however need careful consideration in the light of Industry Commission findings that they favor the larger companies over the smaller operators, and could have the effect of reducing resource development and land turnover.

It was suggested during the MMSD project that industry should refrain from lobbying to reduce government taxes and imposts on the industry under the guise of requiring governments to be internationally competitive. Industry should enter into dialogue with governments over preferred taxation principles, standards and charges, but should respect the need to sustain public benefits from mining. This would mitigate rising community resentment that business is unwilling to pay its fair share of tax.

Australia's fiscal regime of taxes, fees, charges, rents, incentives, subsidies, rebates and redistributive arrangements should be reviewed in relation to sustainable development. They should be tested against criteria such as economic and administrative efficiency; equity; transparency; and stability. Such criteria are heavily value-laden. Review should be conducted through dialogue and negotiation across the range of stakeholders. Lesser reviews, such as any consideration of the imposts on and subsidies to the mining and mineral sector, should be conducted in the light of the overall need and context.

Industry Responsibilities

During the MMSD process, it was suggested that research into the management of minerals wealth had focused too heavily on the role of government. The minerals industry played a significant role both indirectly, by influencing the broader policy environment, and directly, in their own actions and operations.

One concern was the perception of companies playing off governments against each other over subsidies, tax concessions and favourable conditions to build new mines and mineral processing projects – the so called "Dutch auction" issue. At the very least, this reduced the economic benefits that should flow from such projects to governments and the community. Much community resentment can be the result of government fast-tracking approvals past usual levels of environmental and social impact assessment and requirements for community input. Competition to lower standards of environmental and social performance runs directly counter to the entire ethic of sustainable development.

While targeted investment allowances may be used to attract industry to particular areas, the industry's broad position is that a process of this kind is not a good substitute for a well developed policy framework.

It was also suggested that companies should commit to funding sustainable development initiatives in the regions where their operations are based, as a form of community return. It is not necessary or appropriate that the entirety of such community returns be spent in the mining regions – clearly it is important that economic policy maximizes benefit to the whole community. It is also clear that the mining industry already contributes significantly to infrastructure development in regional Australia. But it is not equitable for a majority of community returns to be spent in areas where the shareholders are based rather than where mining is having its greatest impacts.

Access to Land and Resources

State governments once had exclusive control over the access of mining companies to mineral resources. The picture is now more complicated. Federal Government has assumed at least an oversight or standard setting role in areas such as environmental and native title issues.

The Australian government, as documented in the 1998 Minerals and Petroleum Resources Policy Statement, is committed to adopting multiple and sequential land use policies and frameworks for approving and managing mineral resource exploration and development in a manner which ensures environmental protection, while allowing for social and economic benefits of mineral extraction and other activities to be realized.

The 1992 Intergovernmental Agreement on the Environment provided the mechanism for establishing clear roles and responsibilities for the States, Territories and Commonwealth regarding environmental protection. In particular there was recognition that "ecological sustainable development provides potential for integration of environmental and economic considerations in decision making and for balancing the interests of current and future generations".

Purely economic criteria are clearly not sufficient to determine issues of land access. The mining industry must accept, for example, that mineral deposits in areas of high biodiversity or cultural value may be off limits. This is not a particularly new proposition for Australia, which has long had a similar regime for National Parks. Mineral sand mining was stopped on Fraser Island, the vast area of the Great Barrier Reef is legislatively protected from any mining or exploration activity and mining of the promising deposits of Coronation Hill was not permitted for cultural reasons.

Government may also impose economic costs through requirements for environmental and social impact assessment which are commonly followed by conditions attached to land access – although this can also be portrayed as the cost of ensuring that community values are adhered to during development. A whole new debate has erupted over native title rights, which some say have overturned the long standing system that citizens have only surface rights to property while ownership of minerals was vested solely and can be dispensed only by the government. This may introduce uncertainty into property rights, although it can also be argued that these are also the uncertainties that necessarily occur at the interface of fundamentally different understandings of land, country and property rights. In general, however, community ownership of resources will continue to be an essential basis for a sustainable future.

Policy should aim to ensure that owners of surface rights are fairly and fully compensated. It should ensure that compensation guidelines are clear and that exploration and mining enterprises and communities that benefit from their activities are not subjected to costly uncertainty, delays, complex compliance arrangements and de facto royalty imposts.

This is a very complex area. It is clear that equity and administrative and economic efficiency criteria might be difficult to identify and reconcile.

AN AGENDA FOR ACTION

Sustainable development dialogue is not new. It has, however, reached a critical point.

Business cannot afford to be seen as the problem. It must, working with government, and with all the other actors in society, be part of the solution

Kofi Annan
Speech to the World Economic Forum
February 2002

The MMSD project – globally and in Australia – marks the beginning of a crucial transition for the minerals sector. Stakeholders are increasingly concerned about industry's social and environmental performance. They are impatient to see the rhetoric of sustainable development give way to practical reality.

The question is no longer whether industry has a role to play in sustainable development. It is how industry can ensure lasting benefit to the communities and natural environments in which it operates.

This was made clear in the many workshops conducted during 2001 and 2002 by the MMSD Australia project; in the research the project commissioned; and in submissions received on earlier drafts of this report. There was little disagreement about the need for change or about the broad nature of that change in the Australian mining and minerals sector.

The Future of the MMSD Process

During its 15-month term, the MMSD Australia project established a substantial body of knowledge on sustainable development and the minerals sector. Through an extensive series of multi-stakeholder workshops, it identified a broad range of perspectives on the role of minerals development in promoting social, economic and environmental benefits; some important constraints on the sector's performance; and some means to improve the sector's contribution to society's transition to sustainable development.

There were undoubtedly shortcomings. Limited time and resources meant that smaller- and medium-sized mining companies, mine site staff and remote communities, were not engaged effectively in the process. A number of NGOs excluded themselves from the process – partly because of the legacy of suspicion and mistrust within the sector. And, because of limitations in the project brief, we were not able to address important stakeholder concerns about the overseas performance of Australian companies.

It is important to recognize, therefore, that this report is the beginning of a process – not the end.

Concern was expressed in workshops that the MMSD process should not lose momentum on completion of this report. The commitment demonstrated by diverse stakeholders over the past 15 months, the new or enhanced networks and the energy built up around the MMSD Australia process, needs to channeled towards lasting, tangible progress. MMSD has added to existing pressures on the industry. It has identified issues without being able to resolve those issues. There is an expectation that the period following MMSD will be marked by action rather than words.

- To build on the progress made over the past 15 months, the process of dialogue and cooperation established by MMSD Australia should be continued and extended in the future. All groups and individuals with a stake in the minerals sector – industry, labour, governments, communities, and non-governmental organizations – have a right and a responsibility to have their voices heard in debate about the future of a

sector which is vital to the economic and social health of the nation, as well as in discussion over the establishment, operation and eventual closure of individual mining projects.

It will be important to build on and extend the MMSD Australia process's success in identifying key issues related to sustainable development and the minerals sector and promoting multi-stakeholder discussion of those issues. There are three obvious areas in which the MMSD process should be extended:

- Developing processes to engage the wider Asia-Pacific region in discussions of the role of the minerals sector in promoting sustainable development.

- Engaging medium- and smaller-sized minerals companies in a process which to date has been dominated by the larger companies; defining the role of smaller companies in sustainable development; and developing strategies and tools specific to the needs of smaller enterprise.

- Within larger companies, developing processes to extend discussion of sustainable development beyond corporate headquarters. Sustainable development should become a concern and responsibility of all staff.

In extending the MMSD process, there is a clear need for partnership between industry, government, NGOs, representative bodies and labour unions.

Critical Issues

The minerals industry has brought forward some significant initiatives in recent years. The Code for Environmental Management, increased corporate reporting, introduction of sustainability policies and local community programs, suggest an increasing awareness of broader stakeholder concerns and some willingness to renegotiate the industry's role in society. These initiatives have been introduced, moreover, during a period of significant change, consolidation and margin pressure in the industry – a period in which human and financial resources have been stretched or distracted.

The community, however, is generally skeptical of the minerals industry's commitment to sustainable development. Positive initiatives often lack strategic direction. They are taken up only by a small proportion of the industry. And they reflect management discretion – rather than recognition of stakeholders' fundamental right to participate in decisions which affect their interests. The broader community is likely to reserve judgment until industry recognizes the rights of stakeholders, and responds to stakeholder concerns in a tangible, credible and participatory way. The sector needs to develop comprehensive and integrated systems to give practical effect to sustainable development policies in operational and investment decision-making; to promote more equitable distribution of costs and benefits; and measure and report more effectively on social and environmental performance.

The sector can make a start by addressing the critical issues identified during the MMSD Australia process. It can also reflect on the specific roles and responsibilities of key actors within the sector. These issues, roles and responsibilities are discussed below.

Sustainability of the Minerals Industry

The MMSD Australia process revealed significant concern about the sustainability of the Australian minerals industry. This appeared to be driven by perceived consolidation within the industry; movement of ownership offshore; declining exploration effort; low commodity prices and increasing pressure on margins.

There are real concerns that the industry may not be able to maintain its economic contribution to society; to continue to play an important role in regional development; or provide a focus for the continuing development of Australia's managerial, financial, environmental management and logistical expertise.

Low rates of return on investment, the need to increase value-adding, and the threat to future minerals supply posed by slowdown in exploration, all call into question the minerals sector's ability to deliver substantial and continuing benefit to society. Current strategies to maintain returns within the sector – increased production of primary mineral resources, underpinned by greater efficiencies, productivity and a low Australian dollar – clearly have limits. They may – over the longer-term – be unsustainable.

The industry needs to drive further into the value chain by increasing the emphasis on minerals processing rather than the exploitation of primary resources. However, this is likely to require a lengthy period of adaptation in industry and society. In the foreseeable future, there will be continuing demand for mining to meet consumer demands, maintain high standards of living and provide essential goods and services.

The MMSD Australia process suggested the need to promote the sustainability of the minerals industry by:

- Pursuing the cleaner production, eco-efficiency and regional synergy models developed by the Sustainable Resource processing project.
- Promoting movement towards value-adding activities within the minerals industry, shifting emphasis from the exploitation of primary resources towards the stewardship of minerals resources and provision of minerals services.
- Increasing community recognition and value of the role played by the minerals industry in promoting social and economic development.
- Ensuring supply of mineral resources to meet future needs by improving geophysical knowledge and increasing exploration activity.
- Further developing and capitalizing on the Australian industry's considerable mining exploration, engineering, management and environmental expertise.
- Developing the industry's human resource capacities in the key areas of resource valuation and management; stakeholder engagement; community and sustainable development.

Governance

Sustainable development requires higher ethical standards on the part of all minerals sector stakeholders and increasing levels of transparency,

inclusiveness and accountability. In some cases, this will mean reversing patterns of thought and behaviour which have become ingrained over generations.

This will only be achieved through greater transparency and accountability, and by independent verification of performance and reporting standards. It would be wrong to assume that all parties – industry, governments, NGOs and community representatives – will move forward at the same pace. Free riders will be numerous, and may appear to gain advantage in the short-term. But ultimately all stakeholders will benefit from the increased stability and trust engendered by improving standards of governance.

Resource Valuation and Management

Minerals development's contribution to sustainable development depends on the correct valuation and efficient management of our ecological, environmental, social, human and cultural resources.

The sector needs to adopt a whole-of-life approach to resource management, recognizing its responsibilities to both present and future generations. It needs to ensure that the full environmental, social and other costs of resource extraction and processing are reflected in the price of minerals products. In particular, it needs to:

- Recognize that this task can only be achieved through dialogue and the engagement of all key stakeholders.
- Recognize that some areas – host to sensitive natural or social environments – may be off-limits to exploration and mining activity. Identification of those areas will require stakeholder consultation and negotiation, informed by rigorous risk assessment processes, based on sound scientific and technological information and communicated in a manner which is accessible and appropriate to stakeholder needs.
- Ensure that minerals development offers sustainable social and environmental advantages over alternative land uses.
- Develop new metrics to measure social, cultural, livelihood and health impacts of proposed projects and – with stakeholder participation – establish appropriate mechanisms for impact management and compensation.
- Improve our understanding of the sector's social, economic and environmental costs over a time scale of generations, and at global, national, regional and local levels.
- Promote sequential land use policy which does not close off options to future generations
- Ensure through rehabilitation that mining does not close off options to future generations
- Preserve biodiversity, recognizing the requirement to understand and preserve genetic and ecosystem diversity as well as species diversity.
- Promote the effective stewardship of mineral resources
- Minimize waste, waste volumes and toxicity.

- Pay particular attention to the need to conserve water levels and quality; to increase energy efficiencies; and to address the dangers of climate change.

- Where industry negotiates tax concessions with government, it should respect the need to sustain public benefits from mining.

Engaging Stakeholders

Stakeholder engagement is central to the minerals sector's progress towards sustainable development.

Industry operates within a rapidly changing social and political environment. It needs to understand and value community perspectives and be able to respond to changing community expectations – or face real costs in access to land, capital, insurance and the ability to recruit and retain high quality staff. Engagement can challenge industry's entrenched assumptions, enrich and validate its decision-making, and offer an opportunity to move forward on the basis of greater mutual trust and understanding.

In minerals development, there are few purely technical questions – all questions involve value judgements. Minerals development involves a highly complex, dynamic and contradictory set of social, economic, cultural and environmental impacts. Stakeholders must – as of right – be able to participate in decisions over the acceptability of industry impacts and equity of trade-offs.

MMSD Australia enabled industry, government and community groups to work together to ensure that future decision making in the industry might be more broadly acceptable, and reflect a better understanding of the nature of the industry's impacts on communities, the economy and the natural environment. For many people – within the industry and in community and NGO groups – this process was difficult. This engagement is still in its infancy – it will take time to build trust and confidence among different stakeholders – but MMSD Australia has established a process which should be allowed to continue and to develop over time.

The MMSD Australia process identified a number of key criteria for successful stakeholder engagement:

- The sector should recognize that stakeholders have a fundamental right to participate in decisions which affect their interests.

- Stakeholders should be self-defined – no long-term benefit can be gained by industry or government attempting to define the stakeholders to a particular project or operation. Industry and government should respect the rights of all those who express an interest in their policies and activities, to be involved in and informed of policy decisions, project strategies, operations and impacts, and to have opportunity to express their views and concerns.

- The goal of stakeholder engagement should be the establishment of positive long-term relationships, rather than a short-term focus on project approval. Communities are naturally suspicious of engagement mandated by formal consultation processes or directed to specific outcomes.

- Engagement represents a significant step beyond consultation – at its lowest level the mere provision of information. Engagement implies an active partnership, and the participation of stakeholders in decision-making.

- Engagement requires human resource capacity and degrees of cultural sensitivity which may not exist in some companies or government agencies. Those capacities should be developed, valued and rewarded within the sector.

- Improved governance, greater openness and accountability, are essential to successful stakeholder engagement.

- Provision of financial and other material support to community capacity building. Such support should not be contingent on specific outcomes. It should address locally-identified needs; facilitate community access to independent advice and expertise; and serve the interests of long-term relationship building.

- While engagement is an inherently political process, companies and government should provide support in a transparent and even-handed way, and resist the temptation to privilege one group of stakeholders over another. Favoritism is divisive of communities and likely in the longer-term to be counter-productive.

Fair Distribution of Costs and Benefits

We need to improve our understanding of the minerals sector's costs and benefits in the wider social, economic and environmental sense and over a time scale of generations needs to be further developed. This is the case globally, nationally and regionally and at the very local, or site specific level.

Equity – both in this generation and between this and future generations – is a major issue to be faced by the minerals sector. The industry cannot itself redress deep-seated social problems, but sustainable development requires a social value-added from the exploitation of natural resources. Industry must work with government and communities to ensure lasting and equitable benefit from its operations.

- The minerals industry can – both by influencing government and through its own efforts – do much to promote an equitable distribution of benefits. Commitment to sustainable development requires it do so.

- Companies, governments and host communities need to work together to ensure that mining operations provide sustainable benefit to local people. The challenge facing the sector is to promote social capital development at the community level – to enable local people to develop the capacities and resources necessary to secure their own future prosperity and well being.

- Government, industry and community need to evaluate mining's responsibilities to the community. The limits of industry responsibility will be a continuing source of tension, and need to be addressed continuously as mining companies negotiate their position in society and build relationships with the communities among whom they operate.

- Government and industry need to measure the impact of mining operations on the health, economic well-being, cultural and social relations of host communities. They need to establish social baseline data for all their operations – both for host communities and for communities impacted indirectly by their operations. And they need to establish effective monitoring systems – based on sound social science methodology and community participation – to measure their success in promoting long-term benefit to local communities.

- Governments need to ensure policies secure optimum long-term returns to the community from the use of mineral resources. They should make a searching examination of royalty regimes and exploration tenures, taxation and subsidies in the light of their contributions to sustainable development.

Respecting Indigenous People

Australia's mining and mineral sector has markedly improved its relations with indigenous Australia from the very low levels of regard and trust of less than a decade ago. This progression needs to continue if existing reserves of corporate empathy, expertise and experience are not dissipated or lost.

The MMSD Australia process, through its research and stakeholder workshops, identified a number of areas in which the minerals sector could promote sustainable development among Australia's indigenous peoples. These included:

- Industry should respect the need for indigenous communities to give *prior, informed consent* to minerals development on their lands. Indigenous communities should be given comprehensive and accurate information on proposals and projects, and should be given access to independent advice and expertise. Given the uncertainties in minerals projects, and the incremental nature of project decision-making, companies should be prepared to renegotiate agreements at regular intervals.

- Industry should recognize that indigenous communities' decision-making may operate on different time-frames to that of business or mainstream communities. *Prior, informed consent* requires that communities have the time they need to properly digest, discuss and formulate responses to proposals.

- The legal status of Native Title Representative Bodies should be respected, and Representative Bodies engaged in negotiation of agreements.

- Wherever possible, the outcomes of agreements – particularly where they relate to employment, business opportunities and community programs – should be monitored and reported. Industry and indigenous communities need to work together to develop appropriate tools for monitoring and evaluation, and to demonstrate as much concern for the outcomes of agreements as for their establishment.

- Mining companies, governments and representative bodies should work together to promote social capital development in indigenous communities.

- Industry should work constructively with government and representative bodies to ensure the effective operation of Australia's various native title regimes.

Roles and Responsibilities of Key Actors

Industry

Industry must pursue – and be seen to pursue – the long-term well-being of the communities and environments in which it operates.

Public mistrust of many industries, including the mining and minerals processing sector, is at high levels. It is likely to change only as a result of sustained commitment to improved standards of corporate governance, operation and engagement, and tangible evidence of improved performance.

Within the industry, there are a number of significant sustainable development initiatives operating at the site and company level. But there is still some way to go in making the pursuit of sustainable development a core corporate priority, an investment criterion or board-level concern. Much remains to be done in the broader sector in developing comprehensive and integrated systems to ensure that sustainable development policies are put into practice.

MMSD Australia identified the need for industry to:

- Establish clear and unequivocal statements of values and business principles in relation to governance standards, community and environmental performance.

- Establish clear policy commitments to promote sustainable development.

- Critically review the long-term sustainability of business strategies premised on the extraction of increasing volumes of primary minerals resources against a backdrop of falling commodity prices.

- Consider the need to develop long-term business strategies which incorporate greater value-adding through minerals processing, resource stewardship and industrial ecology.

- Develop systems to embed sustainable development principles into strategic planning and operational practice, ensuring consideration of the sustainability agenda throughout planning and decision-making processes, assigning appropriate priorities, staffing and other resources, and appropriate processes for monitoring, evaluation and reporting.

- Ensure commitments to sustainable development are reflected throughout the organization. Companies need to ensure that staff at all levels have the understanding, skills and support necessary to deliver on the company's policy commitments – and can in turn contribute their views and experience to forward policy and operational development.

- Address broader governance issues, ethical standards and accountability, and establish viable long-term relationships with stakeholders.

- Facilitate independent verification of operations, social and environmental performance and reporting standards.

- Establish open and accessible mechanisms for stakeholder complaints and complaints resolution.

- Support the establishment of an independent mechanism to monitor and report on the outcome of stakeholder complaints across the industry as a whole.

- Promote industry and sectoral responsibility for the advancement of sustainable development. Australia's leading companies have the capacity to influence, and share learnings with, other companies, industry associations, government, media and communities, shareholders and the workforce.

To ensure its sustainability, the industry needs to improve the value the broader community attaches to minerals development. It needs to build trust among stakeholder groups by making significant, long-term changes in the way it operates and in the way it relates to the broader community. This should include:

- Ensuring approval processes for new projects which are thorough, transparent and inclusive, and which incorporate risk assessment for all major aspects.

- Reporting publicly – to agreed guidelines and with independent verification – on all aspects of social and environmental performance.

- Establishing and fully funding effective arrangements to repair damage from all mining – past, present and in the future.

- Communicating honestly the impacts and benefits of exploration and mining.

Discussion at MMSD workshops raised a number of other specific concerns about company performance:

- Fly in-fly out practices reduce social and environmental impacts of mining operations but can also deprive local communities and regional economies of much of the economic benefit and opportunities flowing from remote operations. Companies need to address – in an open and participatory way – the conflicting stakeholder, economic and operational concerns about fly in-fly out operations, and ensure that local communities are not disadvantaged by the decision to source staff from remote locations.

- Consolidation within Australia's mining industries, and movement offshore of key corporate decision-making roles, has generated some concern about reductions in human capital and long-term capacity to address the sustainable development agenda. Industry needs to recognize this anxiety and to work with government to address stakeholders' concerns in this area.

- Some individual mining and minerals companies are emerging as industry leaders in the consideration and implementation of sustainable development initiatives. They see competitive advantage in their leadership in this area. But the long-term sustainability of the minerals

industry may depend on those leading companies developing practical and effective strategies to raise standards across the industry as a whole.

Industry Associations

The Minerals Council of Australia has played a key role in coordinating industry responses to emerging conclusions of the MMSD Australia research and stakeholder engagement processes. The Minerals Council represents the interests of its member companies at the national level, and acts as the leading lobbying voice of the industry. State chambers of mines play similar roles at the state level, where much regulation and mining operations take place.

The Minerals Council of Australia is largely responsible for development and implementation of the Australian Minerals Industry Code for Environmental Management, discussed extensively in this report. Over recent months, the Council has also restructured its internal committee structure to establish a Sustainable Development Committee comprising the former Environmental and Land Access Committees. The Council has committed to reviewing its sustainable development program in the light of the outcomes of the Global Mining Initiative and MMSD processes.

In acknowledgement of the community's expectations for wealth creation to be accompanied by environmental excellence and social responsibility, the Australian minerals industry pursues continual improvement in its environment management and performance and incorporation of the social dimension through a sustainable development approach.

The Minerals Council of Australia

The MMSD Australia process identified a number of issues related to the Minerals Council and state chambers' role in the promotion of sustainable development:

- The Minerals Council and state chambers do not represent all minerals companies. They are dependent for their operation on the fees paid by their members. Their ability to provide leadership and influence change in the industry may be constrained by an inability to get too far ahead of their slowest moving members.

- While it is right that industry associations promote industry interests, they need to ensure that they do so in a constructive fashion. Industry associations need to respond positively to legitimate criticism of the industry's social or environmental performance, and engage with industry critics and other stakeholders to map out decision-making and operational processes which help to secure the long-term sustainability of the industry itself.

- The Minerals Council and state chambers have done much to promote dialogue about the industry's social and environmental performance. They are, however, industry representatives whose primary function is to represent and promote the interests of the minerals industry. They should not be expected to host independent processes of stakeholder engagement, although their participation may be crucial to the success of such processes.

Industry associations have a key role to play – in cooperation with other stakeholders – in improving standards of governance and accountability within the industry. This might include:

- Developing practical processes for the independent verification of companies' social and environmental performance, decision-making processes and monitoring and reporting standards.

- Promoting support for a public, industry-wide commitment to respect and promote the rights of communities and other stakeholders. This

might in some ways appear symbolic. It would, however, have important practical effects in establishing a more equitable basis for stakeholder engagement and community relations.

- Facilitating the practical implementation of sustainable development principles through the development of generic tools to identify, negotiate, manage, evaluate and report on, critical issues.

- Establishing an independent mechanism for the review and resolution of stakeholder complaints against mining companies.

- Developing practical, effective and meaningful indicators of social, economic and environmental performance, and encouraging use of more consistent reporting frameworks throughout the industry.

The MMSD Australia process also identified the need to strengthen the Minerals Industry Code for Environmental management to address continuing questions related to its governance; its ability to influence company performance in the broader arena of sustainable development; to raise standards across the industry as a whole; and the need to promote greater openness and transparency in public environmental reports. Proposals included:

- Strengthening the Code's emphasis on sustainable development; incorporating a broader definition of the environment; and encouraging higher standards of social accountability and cultural sensitivity.

- Ensuring that signatories recognize and comply with the clearly stated requirement that Code provisions apply to all signatories' activities, wherever they operate. The veracity of the Code's claim to cover signatories' overseas operations needs to be tested, and should be reported unambiguously in reports on the Code's operation.

- Requiring signatories to explicitly recognize the fundamental rights of all stakeholders to participate in decision-making related to minerals projects. The Code might be strengthened – and its credibility enhanced among non-industry stakeholders – by the inclusion of a commitment to a rights-based approach to environmental management and community relations.

- Requiring independent verification of signatories' social and environmental reports.

Government

This report – and associated MMSD Australia project research papers – discusses some specific government-related issues flowing from consideration of the potential mining and mineral sector contribution to sustainable development. In the broadest sense, government has stewardship of Australia's mineral wealth, and the responsibility to maximize the long-term benefit to the community from the exploitation of our resource endowment.

There has been criticism of the States' various land access, exploration tenement arrangements and royalty regimes, chiefly along the lines that they fail traditional tests of economic and administrative efficiency. There is a need to examine the returns from and consequences of current arrangements, using the long-term perspective implicit in intergenerational equity.

The consideration of policy settings related to the mining industry should take place in the context of government's wider responsibilities to society as a whole. There are growing calls to examine the extent to which the general structure of taxes, subsidies, fees, charges and concessions is consistent with sustainable development.

There are also linkages between the concern about fiscal policy effects on sustainability and related debates on the most appropriate framework of regulation. The debate on self-regulation versus state regulation is beyond the scope of this report – it may be that careful case-by-case analysis is preferable to broad ideological positions with supposed uniform applicability. But there is growing consensus on the respective merits of "command and control" regulation and the "internalizing costs and benefits" approach.

There appears to be a growing view that better outcomes will flow from finding ways of incorporating environmental and social costs and benefits into the economic consideration of projects and policies. Much of the task of internalizing the externalities falls by necessity on government; which must insist on the incorporation of the externalities, levy the charges on behalf of the wider community or create the new markets in public goods such as water, air and biodiversity.

The MMSD Australia process raised a number of specific issues related to the role of government in promoting the minerals sector's contribution to sustainable development. These included the need for government to:

- Support the maintenance of equitable relationships between all groups in Australian society; of our cultural and biological diversity; and of the reputation and competitiveness of Australian mining companies.

- Engage with business and communities in discussion of the limits to stakeholder responsibilities – and, in particular, of the expectation that industry will perform roles that might more properly be performed by government.

- Where government has moved away from direct regulation, towards greater management by industry with audits by government, ensure that all stakeholders understand the respective roles and responsibilities of different actors.

- Ensure policies secure optimum long-term returns to the community from the use of our natural resources. This may require a searching examination of royalty regimes and exploration tenures, taxation and subsidies in the light of their contributions to sustainable development.

- Engage more effectively with the community to ensure their views on policy, regulation and resource development are taken into account.

- Develop more effective mechanisms to ensure community participation in the wide range of smaller projects which do not trigger formal public environmental impact assessment, and in review of projects' broader social and economic impacts.

- Ensure that owners of surface rights are fairly and fully compensated. Government should ensure that compensation guidelines are clear and that exploration and mining enterprises, and communities that benefit from these activities, are not subjected to costly uncertainty, delays, complex compliance arrangements and de facto royalty imposts.

Non-Governmental Organizations

Non-governmental organizations have played a critical role in increasing awareness of the damage wrought by extractive industries on sensitive social and natural environments. They have improved our understanding of the nature of industry's impacts; advocated for stronger regulation; and mobilized consumers, community groups and – increasingly – financial institutions to demand change in industry's governance, decision-making and operations.

We are now moving from conceptualizing and promoting the sustainable future to actually implementing it. Industry and commerce generally are major players. Sustainable development will not happen without significant input from business – which may require substantial support and guidance from the NGO community.

There are now many indications that significant elements of industry and commerce have and are committing themselves to change. Industry increasingly sees traditional greenwash responses to environmental and social problems as both inappropriate and counter-productive.

The MMSD project offered an opportunity – however inadequate – for business and NGOs to work together in establishing new conceptual and operational models to promote sustainable development. This achieved some limited success – this report's advocacy of a rights-based approach to stakeholders, for example, is the result of discussions between Oxfam CAA and other stakeholders. However, engagement between industry and NGOs is often difficult and can be uncomfortable for both sides:

- There is a long history of mistrust between these parties.
- Relations between the two have historically been unequal – industry has greater resources and – arguably – greater access to media and government.
- A small number of NGOs are implacably opposed to mining and to engagement with the minerals industry.
- A number of NGOs' ability to adopt new policy and operational directions are constrained by their large and skeptical memberships.
- Many NGOs lack the time and resources necessary to engage effectively with industry and government.
- Industry often lacks the skills necessary to engage with NGOs.

A valuable and essential watchdog role can be played by those NGOs that stay aloof from industry-initiated processes.

But greater industry-NGO co-operation will be needed to advance sustainable development. Just as industry has undergone a self-initiated and often painful examination of its own priorities and performance, NGOs need to review their own engagement strategies and to consider how they can most effectively benefit the interests or communities they serve.