PART IV

RESPONSES AND RECOMMENDATIONS

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CHAPTER 15

REGIONAL PERSPECTIVES

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The minerals sector often has a uniquely local profile. While a large copper mine or a small gold mine may look similar in different parts of the world, the technical, management, social, political, and environmental skills that need to be applied to operate in different localities will result in a different type of project in each case. Mine localities – with different histories, cultures, and environments – have great bearing on the way mining and processing are viewed and the way a project is implemented and managed at the local level.

This diversity cannot be captured and reflected effectively from an office in London or by those who have not lived and worked with mining in these localities. The MMSD Project was therefore critically and substantively informed by diverse research and stakeholder engagement that was undertaken by the project's regional and national partners in various parts of the world.

The perspectives brought to bear in the regional discussions derive in part from locally specific factors, but are also strongly influenced by the place of the region in global and regional economies. Some people might debate the value of gold mining, for example, but for the Southern African region it is a key source of employment and foreign exchange earnings and thus an essential component of local and national economies. In many areas within these regions, mining may be the only viable form of economic activity, and mine closures cause considerable hardship where unemployment may already be unacceptably high. Regional priorities differ in other ways: while the transmission of HIV/AIDS by migrant labour forces working in the mining industry is of significant concern in South Africa, it does not register as such in North America or Australia.

The implications of the North-South divide come through clearly in some of the regional work. Some governments and private companies may view with suspicion calls to change operating standards and practices to a sustainable development norm that only addresses the concerns of affluent industrial countries. In some cases, governments and industry may see the evolving sustainable development agenda driven by industrial nations as creating barriers to entry for minerals and metals commodities originating in the South. And technology, information, and capacity gaps between North and South may mean that time scales and approaches to putting sustainable development into practice may be very different.

Due to space constraints, this chapter can provide only an overview of the considerable work undertaken at national and regional levels. In the case of the regions, the executive summaries were provided by the regional partners; fuller reports, with much more detail than can be included here, are available from the partner organizations. In other cases, summaries have been integrated directly from the baseline studies and background papers.

The themes that run throughout the regional work mirror those at the global level – capacity and governance, equity and transparency, the economics and mining, and so on. Within this complex of issues, it is clear that the potential solutions and courses of action are often local in nature; strategies for community involvement in decision-making, for example, may be quite different in South Africa, North America, and India. Thus implementing the recommendations in Breaking New Ground will understandably require different tools and approaches, and will proceed at different paces, in various regions of the world.

Overview of Reports from MMSD Partner Organizations

Southern Africa

In Southern Africa, the MMSD Partner was the University of Witwatersrand in Johannesburg and the Council for Scientific and Industrial Research in Stellenbosch.

Despite the prevailing economic pressures on the mining industry, the mining sector in the 12 mainland SADC countries directly employed 2.3% of the region's total available work force, which was estimated at 68 million in 1999. Employment in the sector increased to 2 million in 2000, not including informal miners. Although these figures do not account for the millions of people who are dependent on miners' incomes for their livelihoods, they do emphasize the importance of the mining sector as a source of employment.

Today, despite recent adverse economic developments

and depressed commodity prices for many metals and mineral products, mining and its associated industries continue to form the cornerstone of the economies of most Southern African countries.

The wealth generated by the mining and minerals industry has not always been used to rehabilitate environmental degradation caused by mining nor to benefit the communities affected by the industry. In spite of this, current trends in the mining and minerals sector indicate that it can contribute to the region's move towards sustainable development. The industry remains a most significant factor in the region's future development.

Small-scale mining is an important source of income for many people in the region and is likely to grow in importance. For most small-scale miners, however, poverty and lack of skills are major constraints to changing subsistence activities into more profitable ventures. In addition, the cumulative environmental impact of the growing small-scale mining sector is increasing due to a lack of awareness and the inability to implement environmentally friendly technologies and management programmes. This activity is usually wasteful of non-renewable resources and hazardous to human and environmental health. However, it has the potential to give disadvantaged groups economic power and to enrich nations by virtue of its low investment costs and the short lag time from discovery to production.

The mining industry has shaped the lives of women in rural Southern Africa for many generations. Rural economies are impoverished by the loss of labour to the mines. The poverty is intensified when male workers in particular are retrenched and return to the rural community, which has become dependent on their wages. The important role women play in the rural economy while the men leave to work in the mines is a key feature of the mining industry. Positive results have been achieved by multistakeholder initiatives that aim to reduce the impact of retrenchment on communities, especially in areas providing labour.

HIV/AIDS is arguably the most significant threat to sustainable development in Southern Africa. A decade ago, HIV/AIDS was regarded primarily as a health crisis. Today, it is clear that the disease is a development crisis. The economic implications are dire: loss of productivity, loss of the benefits of education and training, and the diversion of resources from investment to health, orphan care, and funerals.

The mining and minerals industry has been a key player in the fight against HIV/AIDS, providing a substantial proportion (and sometimes almost all) of the initiative and effort in the region. However, neither the responsibility nor the capacity rests with one stakeholder group, and positive signs of cooperation between various stakeholders are emerging in the region.

The Southern African region is rich in natural resources, including minerals. But future regional growth and development may be constrained by the increasing scarcity of one of the most critical resources – fresh water. Water pollution caused by mining activities is a significant problem in several countries in the region.

In November 2000, at a Multistakeholder Meeting in Johannesburg, stakeholders identified five key areas for research. The five key areas were:

- small-scale mining and sustainable development in Southern Africa;
- HIV/AIDS, the mining and minerals sector, and sustainable development in Southern Africa;
- social issues within the mining and minerals sector in Southern Africa;
- mining, minerals, the biophysical environment, and the transition to sustainable development in Southern Africa; and
- mining, minerals, economic development, and the transition to sustainable development in Southern Africa.

At the various meetings, certain overarching issues were given priority by stakeholders. These issues have to be addressed if progress towards sustainable development is to be achieved, and they appear as cross-cutting issues in the recommendations. There is not sufficient space here to relate all 42 specific recommendations for action, which are detailed in the final report; some of the key points are as follows:

Poverty alleviation – In a region where the average daily income is just above US$2, it is to be expected that poverty alleviation is a critical issue. The most important way in which poverty can be alleviated is through the involvement of all stakeholders. The

processes include education, policy-making, and facilitation of the means of avoiding increased poverty, such as the establishment of medical benefit schemes. Job creation and capacity building are recommended as essential to poverty alleviation, and specific emphasis is placed on the small-scale sector of the economy.

Job creation – Unemployment rates throughout the region are high and exacerbate poverty and its attendant ills. The minerals sector, on the one hand, contributes to this situation through resettlement, downscaling, closure, and retrenchments. On the other hand, the sector can do much to alleviate the problem. The recommendations envisage job creation through education, by providing opportunities for development in local communities and by stimulating the growth of the small-scale mining and agricultural sectors.

Capacity building and skills training – A lack of skills and capacity are prevalent in the Southern Africa region, presenting a challenge in the move towards sustainable development. The recommendations envisage capacity building by a variety of means: education, government policy, self-regulation within a stakeholder group and consultative and collaborative approaches. An imperative in the move to sustainable development is multistakeholder cooperation. This is an aspect of the majority of recommendations, and is epitomized in the recommendation that proposes cooperation across a broad spectrum of activities by all stakeholders to deal with the threat of HIV/AIDS.

Governance – If the wealth generated by the mineral sector is to be managed sustainably and shared equitably between all stakeholders, good governance is required. Government policies determine whether such an enabling environment exists. However, governance is not just the responsibility of the state but of all stakeholders, and the benefits accruing from good governance affect all stakeholders. The recommendations address the unsustainable practice of child labour and the situation of marginalized and disempowered sectors of the community, such as women, resettled communities, and people infected with HIV/AIDS. Good governance as a factor in regional cooperation is addressed, as is protection of the natural environment. The equitable distribution of the rents from minerals exploitation is ensured by good governance.

Gender Equity – In a region where the majority of the population are poor, women are among the poorest. Culturally, historically, and economically they are also disempowered and form a significant marginalized group. The recommendations address all these issues, and urge women to take steps to address their own situations. The main thrust of the recommendations is the empowerment of women, because equity will flow from this. Empowerment in education, employment, and opportunities to obtain these needs to be accompanied by recognition of women's status as legitimate stakeholders by others.

Stakeholders expressed reservations that the research and subsequent recommendations would end up where many initiatives had ended up before – gathering dust on shelves. An urgent request was made that structures should be put in place that could implement the recommendations of the MMSD Southern Africa process. Such structures would not only be needed to implement recommendations, but also to coordinate the move towards sustainable development across the region. Greater regional cooperation was stressed as an essential element of a successful transition to sustainable development.

It is noted that the World Summit on Sustainable Development will be held in South Africa and that mining in the region will also develop within the framework of the New African Initiative for 'Millennium Africa' proposed by President Thabo Mbeki of South Africa.

North America

The MMSD Partner Organization in North America was the International Institute for Sustainable Development based in Winnipeg and Ottawa, working with the Mining Life Cycle Centre, MacKay School of Mines, at the University of Nevada at Reno. Participants in MMSD North America established five tasks to be completed in meeting MMSD objectives.

First, work was commissioned to develop a comprehensive profile of the mining/minerals industry and to describe the contributions over time (positive and negative) of mining and minerals from the perspective of sustainability. Because different interests view the contribution of the mining/minerals industry differently, effort was put into describing the various interests (industry, indigenous people, mining-dependent communities, government, labour, non-

governmental organizations (NGOs)) as well as their sense of that contribution as it has evolved through the past century.

Task 2 was the creation of four scenarios that looked forward in time at a range of possible futures. The implications of each scenario were identified, not only for the industry but also for other stakeholder interests. Task 3 turned to the operational level, where the objective was to develop practical guidance for assessing a project's contribution to sustainability, resulting in an assessment framework in the form of Seven Questions to Sustainability. The applications span from early appraisal through planning, financing and insuring, licensing and approvals, internal corporate reviews, corporate reporting, and external reviews. Tasks 4 and 5 involved the proposal of an action plan that would see the momentum initiated through MMSD North America continued and the synthesis of the results into the regional report.

Work on the profile showed that the mining/minerals industry in North America is best described as an integrated production system consisting of interdependent firms that range in size from small to large. Successfully aligning activities of this complex production system with the concept of sustainability will only be possible through the involvement of all parts in designing and implementing the needed steps for change. Furthermore, there are significant differences in the US and Canadian mining sectors. These differences too must be carefully accounted for.

Major uncertainties facing the industry were identified, and the two most dominant uncertainties – future variations in societal values and performance of the economy – were chosen as the basis of a logical framework for developing four distinctly different scenarios. (See Box 15–1.)

Box 15–1. Four Scenarios Developed for the Mining and Minerals Sector in North America

- In the New Horizons scenario, there is a coincidence of strong economic conditions and a high level of trust and respect characterizing overall societal values. For the most part, this same trust and respect is found among mining- and minerals-related communities of interest. Vision and change are guided through collaborative activity involving many communities of interest interacting in a constructive way. Confidence in the future is high.
- In the Phoenix Rising scenario, difficult economic conditions serve to drive innovation. At the same time, respectful social values further facilitate positive change. The overall result is that difficult times give way to more encouraging conditions, like a phoenix rising.
- In the Perfect Storm scenario, depressed economic conditions coincide with fractious social conditions. Here the spiral is down with little hope of reversing the trend. With this juxtaposition of unfortunate conditions, the Perfect Storm is inevitable.
- The dominant force in the Money Divides scenario is an excess of money. However, rather than serving as a positive force, industry arrogance and societal divisions increase. Government stands back and watches Money Divide.

The assessment framework developed by MMSD North America asked seven key questions that should be considered in assessing whether a proposed project's or operation's contribution to sustainability is positive over the long term:

- *Engagement* – Are processes of engagement committed to, designed, and implemented that ensure all affected communities of interest, including vulnerable or disadvantaged sub-populations (by reason of, for example, minority status, gender, ethnicity, or poverty), have the opportunity to participate in the decisions that influence their own future? And are the processes understood, agreed on by implicated communities of interest, and consistent with the legal, institutional, and cultural characteristics of the community and country where the project or operation is located?
- *People* – Will the project or operation lead directly or indirectly to maintenance of people's well-being, preferably an improvement during the life of the project/operation and after it closes?
- *Environment* – Will the project or operation lead directly or indirectly, to the maintenance or strengthening of the integrity of biophysical systems so that they can continue in post-closure to provide the needed support for the well-being of people and other life forms?
- *Economy* – Is the financial health of the project/company assured and will the project or operation contribute (through planning, evaluations, decision-making, and action) to the long-term viability of the local, regional, and global economy in ways that will help ensure sufficiency for all and provide specific opportunities for the less advantaged?
- *Traditional and non-market activities* – Will the project

or operation contribute to the long-term viability of traditional and non-market activities in the implicated community and region?
- *Institutional Arrangements and Governance* – Are the institutional arrangements and systems of governance in place that can provide confidence that the capacity of government, companies, communities, and residents to address project or operation consequences is in place or will be built? And will this capacity continue to evolve and exist through the full life cycle, including post-closure?
- *Overall Integrated Assessment and Continuous Learning* – Has an overall evaluation been made and is a system in place for periodic re-evaluation based on, at the project level, consideration of all reasonable alternative configurations (including the no-go option in the initial evaluation); at the overarching strategic level, consideration of all reasonable alternatives for supplying the commodity and the services it provides for meeting society's needs; and a synthesis of all the factors raised in this list of questions, leading to an overall judgement that the contribution to people and ecosystems will be net positive in the long term?

An "ideal answer" to each of the seven questions is also offered, along with example objectives, indicators, and specific measurements that provide the data and information base needed to answer the questions. In applying the framework, values come into play and there isn't necessarily a unique or "right" answer to the seven questions.

In acting on the results of any assessment, a company, community, or government will inevitably have to weigh certain trade-offs. In doing so, the rules governing such trade-offs along with fair processes for their application need to be established. However, the starting point for all of this is the identification of the considerations that are fed into the decision-making process.

The Action Plan for Change developed in the final regional report derived from the North America regional process identified 10 key points:

- *Addressing the Legacy* – A comprehensive strategy should be developed with all communities of interest to address the legacy issue. In Canada, the lead for this falls to a current multi-interest initiative of the Intergovernmental Working Group on Mining. The discussion should be expanded to encompass Canada, the US, and Mexico.
- *Taking Preventative Action* – A broadly accepted approach to current projects should be designed and implemented that will give confidence that acceptable post-closure outcomes will be achieved and that commitments made will be fulfilled. The initiative should encompass Mexico, the US, and Canada.
- *Assessing for Sustainability* – Further development of the Seven Questions to Sustainability approach to assessing the contribution of an operation or project to sustainability should be undertaken initially through a series of pilot tests. Pilots should span both industrial and developing country examples of activities across the mine-project life cycle. Multi-interest Work Groups, led by the most appropriate actor, should be maintained and, following completion of several of the pilots, reconvened by the appropriate body.
- *Encouraging Success* – Mechanisms should be developed by which communities of interest can encourage good performance and discourage bad performance among their peers (within companies, across the industry, across NGOs, across governments). Leadership for this initiative should be assumed by the Northwest Mining Association (US) and the Prospectors and Developers Association of Canada, acting collaboratively with a number of organizations, including the Mining Association of Canada, Canadian Institute for Mining and Metallurgy, the National Mining Association (US), the Society for Mining, Metallurgy and Exploration, Inc. (US), and NGOs in both the US and Canada.
- *Addressing Disputes* – An effective suite of mechanisms for dispute resolution applicable at the project/operation level of the mining and minerals industry should be designed and implemented. The Dialogue Forum (Centre for Dialogue at Simon Fraser University in Vancouver BC) has offered to facilitate this exercise.
- *Encouraging Recycling* – A North American recycling policy regime should be designed and implemented that effectively encourages recycling of metals and minerals while controlling the movement of hazardous waste. The lead for this initiative should be put to a partnership of environmental NGOs and industry in collaboration with the North American Commission for Environmental Cooperation and governments.
- *Addressing Equity* – Capacity needs to be created for

identifying the mining/minerals-related distribution of costs, benefits, and risks accruing to various communities of interest and for creating mechanisms for ensuring that the distribution is fair and equitable.

- *Adjusting the Current Financial, Business, Economic Model* – The economic model that is currently taught in mining and business schools and used by mining companies, the financial services industry, and government needs adjustment so that it is more effective in its treatment of ecological and social liabilities, costs, benefits, and risks.
- *Improving Learning/Research Support* – The academic and learning support system required for building the mining and minerals-related human capital needs of industry, government, First Nations/Native Americans, NGOs, and other communities of interest needs strengthening. A collaborative effort is required to oversee this task. Leadership should be assumed by the Society for Mining, Metallurgy and Exploration, Inc. and the Canadian Institute for Mining and Metallurgy working in concert with the North American Working Group on Academic Support for the Mining Industry, the Prospectors and Developers Association of Canada, the Northwest Miners Association, the Mining Association of Canada, and the National Mining Association.
- *Facilitating and Tracking Progress* – A mechanism for facilitating and reporting on progress achieved on the recommendations of MMSD North America should be established.

South America

MMSD South America's activities concentrated on Bolivia, Brazil, Chile, Ecuador, and Peru. The regional report for South America is the result of a process of research and participation by many parties. It is coordinated by CIPMA in Chile and the Mining Policy Research Initiative of the International Development Research Centre in Uruguay. The research component aimed to capture a contemporary image of the mining sector's progress in contributing to sustainable development, based upon extensive review of existing publications. The participatory process sought to identify the existing perspectives on key issues and to produce relevant agendas that suggest where new public and corporate policy directions are needed and where increased research and engagement capacity is required to bridge gaps.

Mining in South America is an activity with pre-

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Columbian origins that has always developed across multiple ecosystems and in the midst of marked social, cultural, economic, and technological contrasts. Many organizations specializing in the subject have recorded how, despite quantitative progress in basic health, education, and housing services, there persist worrying indices of poverty, a poor quality of life, and income distribution inequities for many people.

The countries in the region have made progress in strengthening their democracies, expressed by new constitutional frameworks with a growing diversity of channels for participation by the general public. This is developing within a dynamic context of role redefinition for the many parties involved and the search for institutional consolidation.

The region enjoyed significant mining investment in the 1990s and the sector now contributes over 20% of world metal production (and in some cases up to 80%) while consumption of these materials is a mere 8%. In the words of the regional Advisory Group, 'mining is both essential and strategic for the development of our countries'. Therefore, the issue is how and where to do it. Mining may contribute to sustainable development if it is conducted within a context of economic growth, social equity, respect for cultural diversity, and responsible environmental management and with transparent mechanisms for participation in the decision-making process.

With this in mind and acknowledging the positive contributions of the sector, a series of key issues of concern were identified. In the five focus countries, the basic proposal involved the need to improve the

visions of sustainable development so that they might act as a strategic guide for long-term natural resource management; the perfecting of national, local, and regional development tools and plans; and coordination with the mining sector's development plans.

At the start of the project, MMSD identified 17 key issues in mining and sustainable development in the region as guides for the study:

- public management tools and capacities;
- opportunities, mechanisms, and capacities for the general public to participate in decisions regarding mining;
- access to and use and generation of pertinent information about mining;
- distribution of mining taxes and duties at local, regional, and national levels;
- assessments of current taxes and duties;
- social and environmental performance of mining;
- quantity and quality of mining employment;
- small-scale and artisanal mining;
- mining in natural protected areas and high biodiversity zones;
- mining in indigenous territory;
- local development (social, economic, cultural, environmental);
- resource rights and management (land, water, biodiversity, minerals, and so on);
- scientific and technological development;
- planning and management of social and environmental impacts of mine closures;
- environmental and social inheritance from mining activity in the past (environmental and social passives);
- market access; and
- incidence of international agreements, treaties, and standards.

These factors were defined by the work team, taking into account dilemmas identified by the global MMSD Project, and with the collaboration of experts and members of the Advisory Group. Following this, priorities were discussed, detailed, and defined through the MMSD process, so that they would serve to shed light on what is currently understood in the region by 'mining from a sustainable development perspective'. The project uncovered different approaches to the development of mining, while emphasizing that there are complementary visions about mining development projects.

The priority issues identified in the region are:

- more direct and equitable contribution by mining to local development;
- improved capacities and more efficient tools for public management of non-renewable natural resources, by means of greater use of informed and participative processes of land use planning; and
- sustained improvements in the social and environmental performance of mining.

In addition, in light of the social importance of artisanal and small-scale mining and its potential to contribute to local development and overcome poverty, the project identified the need for national developments in this sector's categorization and management.

Discussion of these issues focused on the need to improve decision-making processes with better information (availability and access) and participation; the need for more research and training became clear as part of capacity-building. Key issues for indigenous peoples (such as recognition and the exercise of collective rights regarding resource use) were also identified through the participative process in the region. Relevant issues for labour were identified as occupational health, employment stability, differences between company employees and contract workers, and compliance with international laws.

A call was made to the respective governments to consolidate an agile, effective, democratic, and transparent institutional and political framework that protects the rights of the most vulnerable groups, while ensuring a healthy and stable investment climate in order to attract companies with the highest standards of social and environmental performance.

The mining companies have been called to play a more committed and caring role with local development, building citizenship and strengthening governance, without undermining the role of the state.

Last, civil society in general – including mining workers – should take up its rights to citizen participation, in accordance with individual capacities and knowledge, and thus recognize responsibility in building society's future with governments and the private sector.

This implies that all parties must progress decisively towards greater levels of sustainability, within the limits of their capacities. Notwithstanding whether the states manage to govern well and build on citizenship in the national arenas, fair and equitable international relationships are needed in order to make an effective transition towards sustainable development viable.

Australia

The Australian regional report – *Facing the Future* – prepared by the Australian Minerals, Energy and Environment Foundation has evolved through comprehensive research and consultation with numerous stakeholders.

For an industrial economy, Australia has a relatively high level of dependence on the minerals sector. *Facing the Future* does not argue that the sustainable development of Australian society necessarily depends on the viability of the minerals sector. Minerals development will play an important role in the continuing health of the Australian economy. But it seems likely that the sector is entering an important transitional phase. Mining may take a less prominent role as the industry moves further down the value chain – exploring the economic benefits of the reuse, recycling, and reprocessing of metals. Such a strategy might offer more efficient management of minerals resources.

Facing the Future 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 regional, remote, and indigenous communities. Broader 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 through difficult economic times.

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 *Facing the Future* suggests that 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, that compliance levels are appropriate and enforced, and that they contribute to significantly improved performance. Given the social contract implicit in 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.

MMSD Australia research addressed issues of critical concern to Australian stakeholders and areas where Australia had particular experience to share with other minerals-producing regions. It also helped to frame the project's substantial stakeholder engagement program.

Facing the Future identifies seven critical issues, defined in a series of regional multistakeholder workshops conducted during February 2002:

- the sustainability of the Australian minerals sector and its capacity to support the social, economic, and environmental processes that underpin sustainable development;
- the need to improve governance of the sector, including clearer definition of roles and responsibilities, increased transparency, inclusiveness, and accountability, and new mechanisms to deliver sustainability;
- the need to improve resource valuation and management of minerals resources and ecological values, of the human, intellectual, and community resources that drive development, and of the social and cultural heritage values that enrich the quality of life and define humanity's relationship to each other and to the natural environment;
- the need to improve stakeholder engagement, recognizing the technical and political complexities inherent in more open and transparent engagement processes;
- fairer distribution of costs and benefits to ensure lasting equitable social benefit from the exploitation of mineral resources;
- the promotion of inter-generational benefits by improving understanding of sectoral impacts on the health, economic well-being, and cultural and social relations of communities, by developing social baseline data for all operations, and by establishing effective monitoring systems to measure long-term benefits to local communities; and

- the promotion of the rights and well-being of indigenous communities by ensuring that operations receive the free and prior informed consent of local indigenous communities, that traditional owners are able to assess and respond to mining proposals, and that there is an equitable distribution of benefits between companies, communities, and government.

Facing the Future proposes specific actions to enhance the minerals sector's contribution to Australia's sustainable development. The most important of these are:

- The dialogue and cooperation established by the project should continue. Future stakeholder engagement processes should ensure the broadest stakeholder participation in defining governance structures, processes, and objectives.
- The sector should recognize the rights of stakeholders to participate in decisions that affect their lives and interests. It should define the precise nature of stakeholder rights and work collaboratively to establish the most effective means of presenting those rights and ensuring their implementation.
- The sector should consider – in an open and participatory manner – the need to establish independent mechanisms for stakeholder complaints and complaints resolution, and should report on the nature and outcomes of stakeholder complaints.
- Companies should make clearly articulated statements of business principles and sustainable development policy commitments. They should develop the systems necessary to ensure those commitments are reflected in strategic and operational decision-making; in the allocation of capital, staffing, and other resources; and in process monitoring, evaluation, and reporting.
- Companies should introduce independent third-party verification of their social and environmental performance and reporting standards.
- The sector should explore the economic case for increasing the emphasis on minerals processing and other value-adding activities.
- The environmental, social, and other costs of resource extraction and processing should be reflected in the price of minerals products. This will require dialogue and the engagement of all key stakeholders.
- Some areas are off-limits to exploration and mining activity. These should be identified through stakeholder consultation, informed by rigorous risk assessment processes, and communicated in a manner that is accessible and appropriate to stakeholder needs.
- The sector should improve understanding of mining operations' impacts on community health, economic well-being, and cultural and social relations. It should establish social baseline data and establish effective monitoring systems – based on sound social science methodology and community participation – to measure long-term effects on local communities.
- The sector should respect indigenous communities' right of prior and informed consent to minerals development on their lands. This will require provision of comprehensive information on proposals, access to independent advice and expertise, and appropriate time frames in which to respond to proposals.

Western Europe

As a result of early meetings with stakeholders, a decision was made to focus specifically on the questions surrounding metals in use through a desk study incorporating commentary and interviews with key actors. This activity was limited in extent and not meant to replicate the more extensive processes of engagement undertaken elsewhere.

The following key questions were addressed in the report:

- Who are the key stakeholders when it comes to European Union (EU) environmental policy-making? What is their function, how do they work, and what power do they have?
- What are the main principles of EU environmental policy-making and how does this affect the non-ferrous metals industry? What do different stakeholders think about it?
- How do the EU Waste Management Strategy and the Revision of the Chemicals Policy affect the non-ferrous metals industry's licence to market? What drives these policies? What are the different stakeholder perspectives?
- What stakeholder processes/dialogues have been set in place (at EU or European national level) around mining and metals related to sustainable development in Europe? What are they about? How do they function? Who is taking part?

Western Europe, together with the US, is the largest user of metals. Europe uses around 25% of the global total of major non-ferrous metals while it produces only 2–3% of the global metal ore production. Further, the European mining and mineral sector plays an important role in the development of the economic activities of the European Union. Around 190,000 people are directly employed in the European minerals and metals mining industry, which generates a turnover in excess of 5 billion euros.

The sector for construction minerals is by far the biggest employer, with direct employment of about 140,000 people. Many others are employed indirectly in associated industries such as equipment manufacture, exploration, processing, and manufacturing industries. In the European non-ferrous metals industry, for example, thousands of associated companies of different sizes employ more than 1 million people. European consumption trends indicate that Europe has a significant role to play in determining the patterns of metal use needed to make the transition to sustainable development.

The regional study focuses on the perspectives of key stakeholder groups with regard to six initiatives that have implications for practice and consumer trends in Europe with respect to the use of metals. These are the EU Strategy for Sustainable Development, the Sixth Environmental Action Plan, the precautionary principle, risk assessment strategies, the EU waste management and minimization strategy, and the revision of the EU Chemicals Policy, all of which have implications for the mining, minerals, and metals sector. This summary addresses the issues raised by the European Union Sustainable Development Strategy and the use of the precautionary principle.

In 2001, the European Commission proposed an EU Sustainable Development Strategy, later endorsed by the European Council, which was based on the need to integrate sustainable development into planning within the EU. From an industry perspective, the Sustainable Development Strategy raises several questions. One of the biggest concerns is to make sure that it does not limit industry's space to innovate; technological innovation must be placed at the heart of environmental strategy and not be impeded by over-regulation. Fabrizio d'Adda, Chairman of UNICEF's Environment Committee and CEO of the Italian company Enichem, states that 'autonomous initiatives by companies are the main source of cost-effective progress in many environmental areas' as opposed to the 'command and control' regulation of the European Commission.

Environmental organizations are also critical of the Sustainable Development Strategy and criticize the failure to tackle the international footprint of the EU's agriculture, fisheries, and trade activities. It is maintained that the strategy risks creating an 'ecological Fortress Europe'. Tony Long of the Brussels office of the World Wide Fund for Nature notes that the EU has for long been 'strong on words and weak on action'. The lack of clear targets and a timetable supports his observation. The European Environment Bureau, an NGO, regrets that the European Council did not adopt the phasing out of environmentally perverse subsidies, environmental tax reform, greening of public procurement, and strict environmental liability.

Another key debating point is the operationalization of the precautionary principle. The non-ferrous metals industry believes that the EU has given the impression that its use implies a search for zero risk. The principle should only be used after the completion of a risk assessment (that is, of exposure to risk) and when there is scientific uncertainty and reasonable grounds for concern as to the potentially dangerous effects of a substance.

Equally, there is a sense that the definition of an 'acceptable level of risk for society' has become politicized. Restrictions on the marketing and use of certain substances (subject to precaution) will hence be driven by a political agenda rather than scientific evaluation. Measures based on the principle should be proportionate and be preceded by a cost/benefit analysis that takes into account the impact of substitution of materials.

The environmental movement is aware that a 'zero-risk' environment is impossible to achieve, but wants to stimulate the prevention of harm. It is therefore in favour of an approach that includes:

- early action on the basis of reasonable suspicion of harm;
- the reversal of the burden of proof, because the traditional approach, which lies with legislators, may cause considerable delays before action is taken;
- the substitution principle: if safer alternatives are or may be available, they should be considered; and

- transparency and democratic decision-making to decide about the acceptability of technologies and activities and the ways to control them.

Some consider that environmental issues will increasingly come to the fore in the EU's policy agenda – this will affect the sector. It is widely recognized that the production and the use of target metals must be environmentally acceptable. A key debate is centred on precaution as a tool to manage hazard and risks from certain substances. This is an important debate for the non-ferrous metals sector since certain uses of some metals have the potential to present risks to public health and the environment. Examples of this are lead in gasoline and cadmium in batteries, if not properly recycled.

The report makes several key recommendations:

- Development of a proactive stance (as opposed to a reactive one) towards legislation – The non-ferrous metals industry needs to share responsibility with authorities and civil society groups.
- Maintenance of an ongoing stakeholder dialogue, through which knowledge and information is shared – Different interest groups need to recognize their mutual dependency. The European Aluminium Association and Friends of the Earth Italy, for instance, cooperated on a study on the environmental performance of aluminium in road vehicles in the EU member states, plus Norway and Switzerland.
- Initiation of more meaningful dialogue at a national level between national associations, NGOs, governments of member states, and others – The United Kingdom Stakeholder Forum on Chemicals, for example, was set up by the UK Department of the Environment, Transport and the Regions in 2000 to promote a better understanding between different stakeholders (government, business, environment, and consumer groups) of people's concerns about chemicals in the environment.
- Increase in exchange of data and information between producers and downstream users.
- Development of more effective public policy and greater transparency to influence the growth and evolution of patterns of production and consumption.
- Development of better systems for determining the transboundary impact of metals use within the community on other states and environments outside the EU.

National Baseline Studies

Baseline studies were also commissioned at the national level in some countries. These projects were generally restricted to desk studies, but with the incorporation of perspectives gained from a limited consultation with key stakeholders. The national studies do not attempt to replicate the full stakeholder engagement process undertaken at the regional level.

In general, the national studies were developed according to specific terms of reference and tailored to address key issues in the respective countries. Baseline studies were commissioned to increase understanding of:

- the main areas of contention and conflict associated with the sector, including legacy issues;
- the structural and political constraints to progress in key areas;
- key drivers of change in particular areas;
- good practice in particular areas of activity; and
- new initiatives that are being proposed and ones that are currently under way.

India

The study on India was prepared by the Tata Energy Research Institute in Goa.

India produces as many as 84 minerals – 4 fuel, 11 metallic, 49 non-metallic industrial, and 20 minor minerals. The aggregate production of minerals for 1999–2000 was about 550 million tonnes, from approximately 3100 reporting mines, producing among other things coal, lignite, limestone, iron ore, bauxite, copper, lead, and zinc.

More than 80% of the mineral production comes from open cast mines. Mining leases numbering 9244 are spread over 21 states and about 13,000 mineral deposits occupying about 700,000 hectares, which is 0.21% of the total land mass of the country. The aggregate value of minerals production in 1999–2000 was more than Rs.450 billion (approximately US$10 billion).

The contribution of mining and quarrying to gross domestic product has declined marginally – from 2.47% in 1993–94 to 2.26% in 2000–01. The 1991 census data indicates that out of the total work force of 286 million main workers, the mining sector employed about 800,000 workers. Employment of women in the

mining and quarrying division was 68,600, which is about 10% of the total employment in the organized mining and quarrying sector, although this is believed to be in decline.

The National Mineral Policy of 1993 has been revised in the form of the Mines and Minerals Act (Regulation and Development, 1994 and 1999) and Mineral Conservation Rules (1988). These revisions allow foreign equity in projects up to a level of 50%. They also sanction private-sector exploitation of the 13 minerals previously reserved for public-sector mining companies (iron ore, manganese ore, sulphur, chromite, gold, diamond, copper, lead, zinc, molybdenum, tungsten, nickel, and platinum group of minerals), and include the requirement for effective mine planning, including environmental management provisions that have to be approved by the Indian Bureau of Mines. Other amendments include provisions for the review of mining plans after five years, including foresight planning for a further five years, the payment of compensation to landowners, the requirement for rehabilitation of mining lands, and restrictions on the use of forestland.

Key issues revolve around land and the lack of a clear rehabilitation and resettlement policy by central government. Equally, the relationship between mining companies and communities has been characterized by a lack of consultation with local communities, which means that their needs and concerns are only marginally satisfied and that they are rarely involved in decision-making. The result has been a relationship in which confrontations, tensions, and conflict have been predominant.

Campaigns against unjust mining by people's organizations and social action groups have been prominent and have pressed for people's rights over natural resources. Land acquisition is an issue around which many social action groups have agitated for change, forcing companies and government to address that issue along with resettlement and rehabilitation. Policy reform, while potentially far-reaching, is still evolving. Other issues include displacement, human rights violations, environmental degradation, and health hazards.

The negative public perception of the mining industry will not change overnight. The mining industry must re-establish the connection between its products and the people who use them through a comprehensive public outreach effort accompanied by a need to re-examine each mining operation and to improve or maintain community relations programmes and sustainable environmental management systems. In addition, the sector must come to grips with the economic, environmental, and ethical consequences of closure of mines. There are several priority areas.

Developing tri-sector partnerships in mining areas – There is a need for multidimensional research that integrates activities ranging from the technical to the social, including training and capacity building for partnerships among companies, government, and communities.

Mine closure – Presently there is no specific legislation in India requiring environmental protection during the closure of a mine. Viable economic alternatives post-closure may include transforming mined land to areas for crop production. Timing new mining projects in the region to follow on consecutively would help local economies. Adequate planning is a key to, among other things, reducing tensions and conflicts with local communities.

Small-scale mining – In India, there are more than 10,000 small-scale mines, many of which are not illegal. In particular, there is a need to better understand occupational health and safety issues related to small-scale mining, issues related to women and child labour, the improvement of the legislative framework, and improvement of the linkages between large and small-scale mining.

Policy reforms – In spite of an elaborate mining legislation and policy framework in the country, there exist a number of gaps. There is a need to make the minerals investment process more user-friendly and the licensing system less bureaucratic, to increase private-sector participation, to clarify the compensation system, and to overhaul the tax and royalty systems. There is also a need for policies and practices that encourage openness and transparency from all stakeholders.

Indonesia

The baseline study on Indonesia was prepared by Dr R Wiriosudarmo of Yayasan Ecomine Nusa Lestari (Ecomine) in Jakarta.

According to the Indonesian constitution, both land

and minerals are under the control of the state. According to Agrarian Law No. 5 of 1960, state control over land covers the power of the government to regulate the use and maintenance of land as well as the legal relationship between humans, land, water, and air space.

Rapid economic development in the last two decades has increased competition for land use. Mining projects, which have a long gestation period, could not compete in the race for land. Land use conflicts between mining and other industries, as well as between mining and communities, have increased. Mining no longer enjoys any priority in this respect.

Further, Indonesia is a country of diverse cultures, and the traditional laws governing land ownership are not well codified. As a general rule, it is safe to assume that most communities, particularly outside Java, are strongly influenced by varieties of cultural law (*hukum adat*). Each area may have completely different traditional rules and tolerance for different types of land use.

Land problems associated with mining have been escalating in complexity for the last three years. To some extent, this problem has affected mining investment and has led to the postponement of exploration activities and the closing of mining operations. It has also become the prime source of conflict, triggering anti-mining sentiment. Unless an acceptable resolution is found, it is predicted that the land problem will escalate. Specific problems include:

- repressive intervention from the local authority,
- absence of sustainability criteria in assessing the value of compensation, and
- the loss of cultural values associated with the loss of land.

The complexity of cultural land ownership would not be a barrier to investment if industry were willing and prepared to deal with it. One of the problems with cultural land ownership concerns boundaries, which while uncertain in a formal legal sense are definitive among the tribal communities. Legal boundary demarcation in turn confuses issues of compensation. In general, the mining industry may have no objection to the payment of land compensation. The problem arises when the status of land ownership is uncertain. Ideally, codification of cultural land ownership throughout the country would assist investors.

Post-mining land use in Indonesia is not well regulated. Mining Law No. 11 of 1967 and other subordinate mining regulations only stipulate the responsibility of the mining industry to compensate and conduct land rehabilitation after mine closure. The move towards regional autonomy is expected to foster the implementation of spatial planning at the regional level to address such issues.

A general lack of government interest in the social aspects of mining is evident throughout the structure of the Department of Energy and Mineral Resources (DEMR, formerly the Department of Mines and Energy). There is no single agency or even a desk in the DEMR that deals with the social aspects of mining. Further, the government has not established a policy framework for the accommodation of social considerations associated with mining. Social issues are commonly approached through the narrow window afforded by the environmental impact assessment regime. The relationship between the mining industry and the community has never been part of the development framework. This lack of attention to community perspectives has created the perception that the community is a liability to the sector rather than an asset that can be nurtured for mutual benefit.

Mining is also associated with an adversarial approach to recruiting local and particularly unskilled labourers, most of whom are poorly qualified. For certain job specifications, pre-employment training would be a practical option to increase the capacity of local labour to fill such positions; a policy rarely practised by mining projects, particularly those with short timelines.

The absence of a government social policy framework and the voluntary nature of community development have succeeded in separating development implementation from the integrated planning of mining projects. Most mining companies do not even think of community development as a strategic issue. There have been many complaints from mining companies that they have spent heavily on development, but the present framework narrows the chances of a successful outcome.

Lack of transparency in the mining industry is another issue. While the mining companies perceive transparency as a controlled flow of official information from the company to the public, people perceive it as the right to know. This is a question of

good will versus good governance. The first is voluntary, while the latter should be obligatory.

Despite laws to the contrary, environmental impact assessment reports and data obtained from environmental monitoring and environmental audits, for example, are not always available to the public. Further, the government is often reluctant to release information concerning environmental issues. This situation is exacerbated by the inability of the government to collect information concerning environmental baseline conditions. In the event of environmental conflict, the government relies greatly on information provided by the mining industry.

Past development in Indonesia has created imbalances between the wealthy and the poor. These imbalances are not acceptable to any standard of human values. The current multidimensional crisis in Indonesia is an expression of these imbalances. One group enjoys excessive benefits from the development of natural resources, while the other struggles for existence without the means to produce even a bare subsistence livelihood. Within this context, the mining industry is perceived as one that creates social injustice.

Several key points emerge from the Indonesia national report:

- Development practised in the past supported increases in economic output that depended on unsustainable depletion of natural resources and the life-support capabilities of the ecosystem.
- The development practised in the past systematically excluded large segments of society, which has resulted in alienation and social conflict. Inclusiveness means that everyone who chooses to be a productive, contributing community member has a right to the opportunity to do so and to be recognized and respected for these contributions.
- The discussion of land use for mining should include use during exploration and production periods and post-mining, as well as the right of the landowner to reject mining.
- The role of the community in mining is controversial. Work is needed to build the capacity of communities and to explore procedures for involving communities in decision-making.
- The devastating impact of illegal mining has negated the positive values of small-scale mining. The challenge is to establish a concept of community-based small-scale mining.
- On the question of regional autonomy, two main issues surfaced. What is the role of local government? And what adjustments does the sector have to make to work within a sustainable regionalized structure?

Throughout the Indonesia baseline study, several areas have been identified in which the perspective of the various parties concerned are not in accord:

Land access for mining – In preparation for the reform of land policy, industry should initiate with others a discussion of land use for mining, which should include land use during exploration, the status of land during production, rehabilitation of land after mining, and the right of the landowner to reject mining. Access to traditional land for mining is another issue that needs research and in-depth discussion in a series of extensive stakeholder engagements.

The role and position of the community in mining – The role of the community in mining is controversial and in need of in-depth research to understand the capacity of the community for involvement in decision-making and to explore procedures for community involvement and the prospect of establishing a legislative framework to enable this.

Small-scale mining – The challenge is to establish a better understanding of community-based small-scale mining. Research and stakeholder discussion should cover issues that may relate to the linkages between SSM and large-scale operations, environmental management, socio-economic and socio-cultural development, technical assistance and funding possibilities, marketing prospects and assistance, and institutions.

The role of local government in mining – Regional autonomy is being implemented in Indonesia. Two main issues subject to discussion and research are the role of local government in mining and the meaning of regional autonomy for mining in terms of sustainable development of mineral resources.

Philippines

The study on the Philippines was done by M V Cabalda, M A Banaag, P N T Tidalgo, and R B Garces, other independent consultants, and a Steering Committee in Manila.

The Philippines is well endowed with metallic and non-metallic mineral resources. In the past two decades, the growth of the industry has been seriously impeded by lack of foreign investment due to political instability, a 60:40 limitation on foreign ownership; soft metal prices; excessive taxation; high operating, production, labour, and energy costs; civil unrest; and a series of natural disasters.

The approval of the long-awaited new Mining Act in 1995 gave hope to the industry's impending resurgence and was met with enthusiasm by both local and foreign mining investors. Not long after, however, the act became the target of NGOs and the central focus of opposition, primarily because it allowed wholly owned foreign mining companies to operate mines within the country and was regarded as giving them tacit permission to plunder the national patrimony at the expense of the environment and the Filipino people.

Meanwhile, the local mining industry has been hard pressed to meet current regulations as well as societal expectations, despite applying a lot of effort to these demands. Given the industry's precarious situation, however, progress towards this end has been slow.

The government, on the other hand, is faced with accusations that it is in collusion with the industry and is not doing enough to punish errant mining companies. Yet government is at the same time being accused by the industry of being an 'anti-mining NGO', because of what is seen as a highly prescriptive approach to regulation as well as the lengthy and tedious period needed to permit a mine and to complete a mining contract.

One thing is certain, a culture of change – a paradigm shift – must be integrated into the way in which mineral resources development is undertaken in the country, one that considers the concerns of the government, industry, and other stakeholders.

In terms of regulation, the Philippine Environmental Impact Statement system was formally established under Presidential Decree No. 1586. Under the system, mining (and quarrying) projects are classified as 'environmentally critical projects', hence they require an Environmental Compliance Certificate prior to development.

The Contingent Liability and Rehabilitation Fund is the primary financial mechanism for mine rehabilitation. Multi-partite monitoring is mandated through the Mine Rehabilitation Fund (MRF) and damage compensation through the Mine Wastes and Tailings Reserve Fund. The MRF is established and maintained by each operating mine as a deposit to ensure the availability of funds for the satisfactory compliance with these statutes and commitments.

The Philippine Mining Act of 1995 in one of its governing principles clearly states 'the grant[ing] of mining rights shall harmonize existing activities, policies and programs of the government that directly/indirectly promote self-reliance, development and resource management'.

Current regulations mandate mining contractors to rehabilitate land disturbed by mining activities to a physically and chemically stable and self-sustaining ecosystem, based on a final land use more productive or approximating to the original land use as agreed with communities and local governments; to establish safety and health management systems and ensure continual improvement of safety and health performance based on a risk management approach; to contribute to the establishment of sustainable/ alternative livelihood opportunities and skills for the host and neighbouring communities during and after the operation of the mine; and to share equitably the economic benefits derived from mining with major stakeholders – national and local government and communities. The overriding objective is to guarantee that future environmental conditions are not compromised, that social stability is maintained, and that no financial liability is absorbed either by the government or the community.

The Mining Act notes that 'activities, policies, and programs that promote community-based, community-oriented, and process development shall be encouraged, consistent with the principles of people's empowerment and grassroots development.'

The challenges that need to be faced in the Philippine Mining Sector include:

- addressing the low level of government support;
- a lack of local government unit acceptance – the industry needs strong national government leadership to work with local government units in assisting investors to meet requirements;
- industry conservatism – the industry needs to showcase new 'world best practice' mines, and the government must strategically support remaining development proposals that demonstrate examples of best practice;
- a lack of clarification or codification and clear land title for all stakeholder groups, which impedes access to 'ground';
- the fiscal regime for foreign mining companies – an acceptable agreement on the fiscal regime is needed that allows for an equitable sharing of revenues between the government and the investing company;
- the Supreme Court challenge to the Mining Act – investors will not make high-risk investments in mining while there is uncertainty over the unresolved Supreme Court case on the constitutionality of the Mining Act filed in 1997; and
- the indigenous peoples' rights act – uncertainty will continue until this matter is resolved and it is determined who owns the mineral resources of the Philippines.

Other key issues include:

- environmental degradation – contamination of water and crops, water depletion, and siltation of water bodies, and so on;
- land disputes – conflict between mining claims, tenurial rights and other claims (with indigenous people, for example), and the comprehensive Agrarian Reform Law;
- land conversion or use; and
- the presence of large-scale mining companies that results in the displacement of panning and small-mining activities within neighbouring areas, leading to competition for scarce resources.

Papua New Guinea

The Papua New Guinea (PNG) study was prepared by Dr Glenn Banks, independent consultant – Australian Defence Force Academy at the University of New South Wales.

The current mining industry in PNG ranks as one of the largest in the Asia-Pacific region. There are five operating mines, and a vibrant small-scale sector involving up to 50,000 small-scale miners.

PNG has seen several dramatic changes that undermine, or make largely irrelevant, existing policies, including:

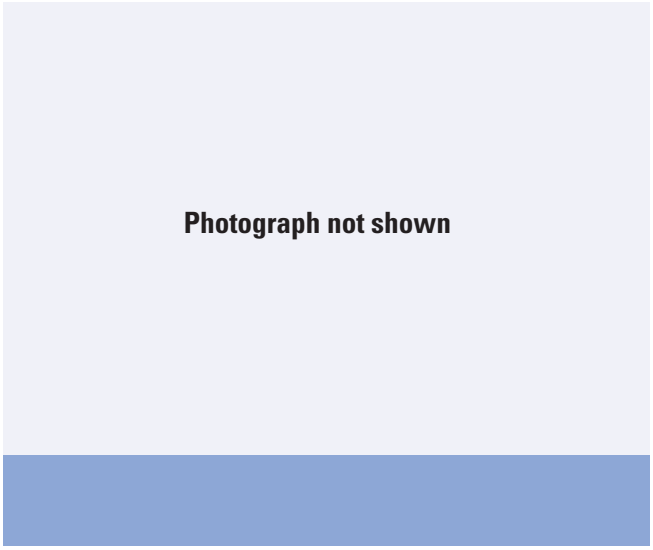
- greater emphasis on the involvement of local communities in the mineral development process before any mining plan is submitted,
- a marked shift in the distribution of revenue flows from mining operations from central government to local communities and institutions, and
- the de facto surrender of state sovereignty over mineral resources with the payment of the full value of royalties from the sector to local communities and provincial institutions.

Some of these changes have led to an exodus of large companies from the country.

The small-scale mining sector is increasingly being recognized as a significant contributor to gold production and, more important, local livelihoods across at least 10 provinces in Papua New Guinea. Small-scale mining has considerable economic impact estimated at K100 million in gold and silver per year, with high-end estimates placing production closer to K150 million, or over 1% of gross national product.

Local communities, while always involved in or affected by mining in PNG, came to prominence as stakeholders in the minerals sector in the late 1980s. This period was marked both by the beginnings of the 'minerals boom' and the closure of the BCL mine. The two events meant that local communities became engaged in negotiations and discussions to a far larger extent than they had previously. The Mining Act 1992 enshrined this participation in legislation, and subsequent developments have seen communities become major economic beneficiaries of large-scale mines.

Any brief discussion of mining and community issues is sure not to reflect adequately the variety and complexity of the issues at different mining operations. Mining has wrought massive social and economic changes for local communities in Papua New Guinea. Three areas where new initiatives of note are proposed



or currently under way are the development of a national-level mine closure policy and guidelines, a sustainability policy for the minerals sector, and some of the initiatives occurring in terms of the relationships between mining corporations and local communities and governments.

The development of a sustainability policy for PNG will focus on:

- definition and measurement of the economic sustainability of the industry and the implications of this for communities,
- definition of the interface between the social and environmental impacts,
- effective arrangements for benefits distribution,
- development of systems or institutions to ensure the development initiated by a mine project can be sustained after mining ceases,
- identification and establishment of sustainable income replacement economic activities for communities post-mine,
- measures required to sustain essential services provided by the mining company beyond mine life, and
- the creation and management of long-term funds to provide resources for the continuation of sustainable development activities.

The PNG mining industry has experienced a boom in the past decade, and despite the problems described, it has continued to operate – in some places very successfully for most stakeholders. Given this experience, there are a number of key areas where in particular the structure and management of relationships between stakeholders in PNG could provide positive models applicable more widely.

Four of these are:

- *The Development Forum* – premised on the view that all key stakeholders should be involved in discussions concerning a potential mine from the time that the developer submits a proposal for development.
- *Communication and relationships* – developed using a number of different means of communicating with local stakeholders. These various channels seek to provide information to other stakeholders, to receive information about the community, or both.
- *Local-level initiatives* – focusing on facilitating and nurturing the capacity of local-level government and institutions so they are able to deliver, on a sustainable basis, community-level development. This is an important shift in emphasis from previous corporate efforts that had sought to provide local-level infrastructure and governance directly.
- *Sustainability and Mine Closure Policy* – The Department of Mining and the Office of Environment and Conservation drew up a draft policy and set of guidelines for mine closure in late 2000. This comprehensive document seeks to ensure that mine closure is an integral part of mine development and operational planning. There is provision for mine closure bonds and trusts, and detailed guidelines for both physical (environmental) and social aspects of mine closure. Following discussions with industry, NGOs, and government departments, and the receipt of a World Bank loan for mining sector institutional strengthening, the social aspects of mine closure were incorporated into the development of the sustainability policy.

While there has been a raft of studies and reports on various aspects of the industry, particularly in the last decade, the understanding of a number of critical aspects is still relatively thin:

- *Economic impact of the industry at the national level* – The recent mining and hydrocarbon fiscal review drew largely on Internal Revenue Commission figures, and did not, for example, calculate the contribution of the personal income taxes of mining company employees, nor import duties paid by the companies.
- *Revenue flows and utilization at the local level* – An assessment of how these revenues can better

contribute to sustainable development requires a more complete knowledge of the variations that exist within the sector.
- *Processes of change in communities.* – While there have been a number of detailed and high-quality studies on processes of community change in Papua New Guinea, the vast majority of these have been limited in terms of the time period over which the research has been carried out.
- *Communication* – Linked to the above issue, there is a need for more detailed work on the form and effectiveness of current mechanisms for communication between mining companies, local-level government, and affected communities.
- *Long-term impacts on flora, fauna, and water quality* – There is still a need to draw together and summarize more effectively the environmental information gathered from the various mining projects over the years.
- *Policy* – There is a need for a more coherent policy focus within Papua New Guinea in terms of the minerals sector.
- *Practice* – Three areas where efforts by corporations and governments can be targeted to improve practice are communication, links between local authorities, and the mining operations and social monitoring.

There are also three areas of significance where capacity needs to be strengthened to enhance the ability of the minerals sector to contribute to sustainable development: government regulators, community affairs sections, and provincial and local-level governments.

Kyrgyzstan

The Community and Business Forum was responsible for the baseline study on the mining industry and sustainable development in Kyrgyzstan.

Kyrgyzstan is fortunate to have a geologic database containing technical information that can be favourably compared with and sometimes exceeds those of many other countries. Yet the organization of this database is not compatible with modern computerized information systems.

Since the demise of the Soviet Union, the industry has been beset with problems, including:
- the deterioration of equipment, the absence of a high-quality repair base, and a lack of funds for maintenance of equipment at operational capacity or for reconstruction and modernization;
- an inability to comply with state health and environmental standards;
- the insolvency of domestic consumers and unregulated increases in prices for equipment and services;
- an antiquated legislative system, especially with regard to taxation (in particular, an extremely high rate of royalty of up to 30% for gold; 12% for lanthanide, mercury, and antimony; and a custom duty of 70% for rare-earth elements), which hinders the existence and development of the industry; and
- ineffective mechanisms for the production, sale, and purchasing of materials – functions that are loaded onto enterprises that have little experience in this field.

The industry has also gone through profound crisis and transformation, including:
- drastic increases in the cost of fuel for energy,
- increased burden of social infrastructure costs after the collapse of the former Soviet Union,
- the loss of markets for and production of antimony and uranium to Russia and Kazakhstan,
- the need to export all production, and
- the need to import most raw materials.

At present, the cost of labour in Kyrgyzstan is low in comparison to world standards due to an oversupply of labour. So as the Kyrgyz economy opens to the international market, the wage component will be treated with increased concern and will inevitably lead to reductions in labour. One of the key problems for the industry is the emigration of highly skilled and experienced staff to Russia and other republics. Regardless of production decreases, the importance of the industry for the economy of the republic is still great.

The industry has also gone through a major restructuring in a struggle to reduce production costs, which has led to job losses of 50–70%. In some instances, minimal subsidies have been granted to the worst affected communities. Counter to this, the government has also been taking measures to try and improve the contribution of the mining and minerals sector to the development of local communities. The Government of Kyrgyzstan has developed a long-term plan for the development of new mining enterprises in all regions of the republic in an attempt to create jobs

and increase foreign exchange.

At present, potential investors, when making marketing, legal, financial, and project decisions, generally resort to the services of international experts who are well known but unfamiliar with local conditions. It is necessary to build up a native infrastructure and expertise base that can contribute to decision-making and that factors in market conditions, local circumstances, and leading-edge thinking, while still reflecting local specificity and national concerns.

With regard to the regulatory environment in Kyrgyszstan:

- Deposits are state-owned.
- The developer is obliged to pay a royalty for the right to exploit the deposits and a one-time 'bonus'.
- There is mandatory reclamation and rehabilitation of land and natural heritage sites after mining
- The law favours investment and mining business development.
- Foreign investors are encouraged and capital repatriation is allowed.
- The transfer of licences to third parties is permitted with the authorization of an appropriate governmental body.

In the present environment, small enterprise development can play an important role in strengthening the Kyrgyz economy. Small deposits can be developed by using comparatively inexpensive portable equipment, and this sector does not require the same degree of extensive infrastructure, which allows a reduction in the volume of inputs and the degree of financial commitment, as well as a potential reduction in the degree of environmental and social impact. Further, the rehabilitation of small areas involves less environmental performance cost. Reduced costs also allow the entry of local developers into the sector. The development of small deposits can create the new jobs that are important in the absence of other economic activity and helps to support local development through contributions to revenues, providing that local administrative systems facilitate the use of such revenues to achieve development-focused objectives.

Other challenges include the legacy of uranium mine tailings left after the demise of the former Soviet Union, which used Kyrgyzstan as a major source of supply until the late 1970s. Present estimates determine that 18 closed mines have been responsible for 520 million cubic metres of waste stored in 63 dumps, and 56 million cubic metres of beneficiation and metallurgical processing wastes stored in 44 tailings and slag carriages. Few funds are available for rehabilitation, although a draft law on 'tailings and dumps' is pending.

The Ministry of Environment and Emergency is not well enough organized, lacks appropriately prepared personnel and equipment, and is unsure of its roles and responsibilities. Further, existing legislation in the field of environmental protection is based on the practices extant in the former Soviet Union and does not consider the specific environmental problems caused by these hazards.

Citizens and public unions are able to take part in decision-making related to the siting of tailings disposal facilities. People living on land near tailings dumps are entitled to receive compensation for damage caused by radiation and other forms of pollution that exceed specified concentrations. Since the break-up of the former Soviet Union, such payments have not been maintained.

In terms of a way forward for Kyrgyzstan, a provisional list of challenges has been grouped according to stakeholders. First, there is a need for national level reporting on decision-making and policy development that is transparent and accessible to the public through the media and other sources. There is also a need to develop clear rules around the use of information as well as procedures that outline the responsibilities of all stakeholders. Better knowledge and policy is required around whose interests are affected by a particular project. While the country has signed the Aarhus convention, there is no such legislation at present. There needs to be investment in increased skills education for government employees involved with the sector. Policy needs to be developed for the integration of impact assessment on a wider scale for projects. Equally, policy frameworks need to be more favourable to investment for the development of local communities, observance of environmental requirements, and community health.

There are several areas in which international organizations could assist through consultation and financing: sociological studies (awareness, attitude, participation, and so on); publication of independent

research, analysis, and assessment results; organization and support of public hearings on mining sector issues; assistance in the provision of modern technologies, especially in health care and environment protection areas; knowledge transfer in the area of assessment of the nature and scale of environmental and social impacts; public participation; involvement of national experts in decision-making processes; and improved legislation and law enforcement practices.

Mining companies can facilitate the move to a more open sector that contributes more fully to sustainable development through the publication of concise accessible reports on their activities, facilitating with government public hearings on anticipated projects, and providing briefings and press releases as appropriate and in discussion with stakeholders. Companies can also provide support for some of the activities of local NGOs in acting as facilitators on certain issues. Companies should cooperate in the establishment of policies that recognize the rights of local communities, particularly with regard to compensation issues, and should conduct surveys to assess community response to any project proposal. Policies should also be established for the conduct of social and environmental impact assessment.

Local communities might have a greater interest in the presence of mining companies on their territories if they were informed, regarded as partners, and afforded different forms of participation (including revenue distribution, development of appropriate business opportunities and the nomination of representatives for inclusion in the decision-making process).

The main value of interaction with the NGO sector lies in the establishment of partnerships. The main obstacle to this is that the non-governmental sector has a weak infrastructure at present and is uncoordinated. NGOs can assist with, among other things, independent studies, analysis, and assessments and the collection and distribution to the public and other interested parties of impartial information about mining. NGOs can also help with the public monitoring of environmental requirements by mining companies and with ensuring the participation of independent qualified experts, the monitoring of human rights observance as outlined in national legislation and international agreements, and assistance with training and educational seminars to increase awareness of project implications.

Increased capacity is required in the education system to train the specialists required in each of the areas outlined above, and for the provision of courses at all levels to increase public awareness of the issues.

Republic of Khakassia

The baseline study on Khakassia in the former Soviet Union was prepared by Strana Zapovednaya of the Protected Land National Fund.

The Republic's mineral resources are represented by deposits of coal, iron, gold, molybdenum, polymetallic ores (lead and zinc), marble, barites, bentonites, limestone, rock phosphorites, asbestos, uranium, gypsum, jadeite, nephrite, and mineral waters. There are good prospects for developing deposits of manganese, wolfram, antimony, cobalt, oil, gas and gas condensate.

More than 100 enterprises are engaged in recovering commercial minerals in the Republic, including two iron ore mines, four gold mines, six open cast mines and two pits for recovering hard coal, the Sorsk molybdenum combine, two combines mining for marble and granite, more than 30 artels and small enterprises mining gold, and 36 enterprises extracting widely distributed commercial minerals.

The 20 main mining enterprises in the Republic contribute almost 20% of the tax revenue to its budget and provide permanent employment for 8% of the population. Virtually all of Russia's molybdenum is mined in the Republic, and recovery of coal, gold, and iron ore constitutes respectively 3%, 1.5%, and 4% of the amount for Russia as a whole. There are no enterprises in state ownership, and shareholdings are being turned over to the private sector.

The success of the mining, minerals, and metals sector in the republic is currently constrained by:

- a lack of significant investment,
- the progressively ageing industrial base of the sector,
- the low level of added value in the mining enterprises' products,
- a weak legislative and regulatory base, and
- difficulties in promoting export production from Khakassia.

According to V. Tsyganok, First Deputy President of the Government of the Republic of Khakassia, the state is faced with the need to reinforce state control

in the whole field of the use of natural resources and protection of the natural environment, setting out a system of precise and transparent relationships of authority with the business community that exploits natural resources, and laying the basis of a balanced regional policy on a range of issues.

The private sector is currently undergoing a process of reform. IPG Sibal's approach, for example, has been to move towards preventing harmful environmental and social impacts through:

- the introduction into the production process of world-class methods and technologies that are environmentally safe and save resources;
- the certification of production output in accordance with international standards;
- increased control of solid wastes, of emissions into the atmosphere, and of effluent and reduction in the levels of harmful emissions and sewage as well as increased recycling of solid wastes;
- constant monitoring of the ecological situation in the regions where IPG Sibal enterprises are located;
- active liaison with the environmental protection movement and ecological awareness training among employees at the Group's plants;
- computer classes connected to the internet in institutions of general education in a number of Russia's regions; and
- funding for construction of the Holy Trinity Church in the city of Abakan as well as other sponsorships.

Yet privatization and the sale of previously state-owned property to companies outside the republic has destabilized production and often means that concern by the owners for the social conditions of their employees in such enterprises is minimal.

The baseline study was still undergoing final editing when this report went to press, but the interim agenda for change noted the following:

- There are few resources for the improvement of the an official tax register of ownership, boundaries, and value of real property.
- Some of the regulations with regard to mining and in particular with respect to nature protection and natural resources legislation are incompatible and require revision.
- Expert assessment of existing projects and proposals is constrained by lack of funding and expertise.
- Federal regulations 'on expert ecological assessment' are not fully adhered to by the territorial authorities for monitoring and supervision.
- Projects in special land use areas are often not submitted for assessment and there is inadequate liaison between state and federal bodies.
- Site information relating to environmental protection and conditions for the use of natural resources are not reported in full.
- Public discussion of expert state ecological assessment for projects is inadequate.