

Room to Manoeuvre?

Mining, biodiversity and protected areas

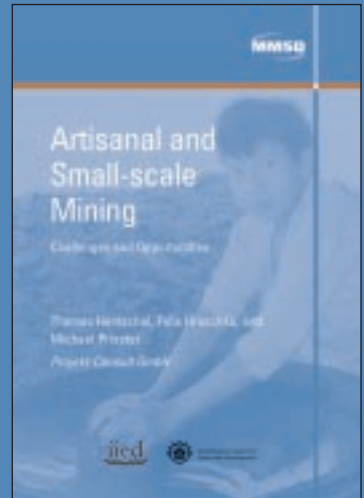
Izabella Koziell with Eileen Omosa





Breaking New Ground is the final report of the Mining, Minerals, and Sustainable Development Project (MMSD), an independent two-year process of consultation and research that aimed to understand how to maximise the contribution of the mining and minerals sector to sustainable development at the global, regional, national, and local levels. *Breaking New Ground* contains proposals for global change in the mining and minerals sector.

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World Business Council for
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1

Introduction

This paper provides a brief analysis of some of the dilemmas surrounding the issue of whether or not to mine in or around areas of valuable biodiversity. It also presents some suggestions on a way forward, whilst acknowledging that there are still many information gaps, uncertainties and differences of opinion.

The information contained in this paper has been taken from the debates and written material compiled under the ‘Mining and Biodiversity’ process of IIED’s Mining Minerals and Sustainable Development (MMSD) project. Two workshops with stakeholders from different groups across the world were held under this process, in June and October 2001 which were supported by a series of technical papers¹ and literature reviews. As part of the process, two papers were particularly influential in steering the discussions and influencing the content of this paper and the MMSD discussions. One by David Richards, Principal Environment Adviser, of Rio Tinto plc and the other by Professor Adrian Phillips, Senior Adviser to IUCN. Both papers discussed mining, biodiversity and protected areas issues from mining and then from conservation perspectives.²

The two workshops also created a forum whereby industry could engage in constructive dialogue with the conservation community, and with government. This dialogue, and particularly inputs from the above-mentioned papers, helped contribute to the establishment of the current programme of work between IUCN and ICMM on mining and biodiversity.³

Special acknowledgements for inputs to the MMSD Mining and Biodiversity process have to go to: Richard Sandbrook, Dave Richards, Adrian Phillips, Pedro Andres Garzon, Libby Wood, Assheton Carter and Eileen Omosa. Out of the industry partners Rio Tinto plc, Placer Dome and WMC Australia were the most active participants. IUCN played a lead role in representing the conservation community, but Conservation International, Fauna and Flora International, Friends

of the Earth and WWF-UK also attended the meetings. Some leading academics provided valuable research inputs, and some overseas government departments were also present.

Other material has been taken from the 'Protecting Sensitive Areas: Access and Management Issues' session of the Extractive Industries and Sustainable Relationships workshop held at the Royal Institute for International Affairs (RIIA) in October 2002.⁴

The issues in this paper reflect the author's interpretation of the discussions and written materials, and every effort has been made to present the range of issues as objectively as possible. None of the issues presented should be attributed to any of the individuals, organizations or companies who engaged in either of these processes.



2

Background

Certain geographical areas are considered more ecologically valuable than others because they contain unique or special biological characteristics (see Box 1) which help sustain life on earth and contribute to the smooth functioning of the biosphere. When disturbed, these characteristics are easily obliterated – often with negative consequences. The removal of diverse vegetation in a water catchment area, for example, can reduce water flows downstream and disrupt water supply over a wide area.

Throughout history, societies have protected areas they consider biologically valuable. Protection has taken many different forms, including setting aside land for national parks or sacred sites, or imposing use restrictions on rare or endangered plants or animals.

BOX 1 Why are some areas more ecologically valuable than others?

Such areas are sensitive because they contain and support one or more of the following elements of biodiversity:

- rare ecology, e.g. endemic or Red-Listed* species
- charismatic species, such as elephants, or spectacular landforms
- critical environmental services, such as watershed protection or evolutionary functions
- exceptionally high species diversity
- particularly fragile habitats, e.g. arid lands or wetlands
- indigenous peoples, still pursuing 'traditional' lifestyles based on 'wild' resources
- other natural heritage assets, such as sacred sites, etc.

See www.redlist.org

As populations grow and their consumption increases, so does the drive to extract more economically valuable resources more rapidly – be it minerals, timber or food. Until recently access to most areas was granted quite freely, but increasingly land previously untouched by the key economic sectors is now being scrutinized. It so happens that a large proportion of this land holds considerable biodiversity – the unexploited value of which cannot compete with the price put on the other more economically valuable resources that it also contains. In the absence of adequate controls, unregulated exploitation has led to the loss of critical biological values. Unchecked pollution and habitat destruction have destroyed locally valuable resources, for example, resulting in resource-intensive compensation claims, violent conflicts, or rapid increases in poverty among local communities. Careless land-use methods have resulted in significant losses of species, which has led to local and global extinctions.

Uncontrolled encroachment undermines the biological value of these lands. Despite prevailing concerns about the negative effects of biodiversity loss on the smooth functioning of the biosphere, however, not enough is being done to make protection efforts more effective. Instead protected area budgets are dwindling and political commitment for effective conservation remains weak.

Given the potential threats to life support systems that the loss of biodiversity presents, there is now a real need to find effective ways to safeguard biodiversity's critical values. It is likely that this will require close collaboration between those groups whose activities have the most direct damaging effects on biodiversity and the conservation community. Given that the pressures to extract valuable resources from these areas are so great, antagonistic stances alone are unlikely to work. Compromise solutions need to be sought out as a matter of urgency.

To date, the search for solutions has been hampered by a lack of consensus among biologists and within the conservation sector about which biodiversity is most valuable, where it is found, and how much of it must remain to ensure the smooth functioning of life-sustaining processes. This lack of agreement has been used by certain economic interests as a loophole to undermine effective conservation. Weak governance in many mineral- and biodiversity-rich countries has made resolving this dilemma all the harder. The situation continues to provide opportunities for less scrupulous interests – more willing to twist the rules – to continue operating.

There are still many ongoing questions around mining, biodiversity and access to protected areas: How can different perspectives and priorities be reconciled? What are the respective governance responsibilities of governments, international

NGOs, financing institutions and companies? When should initiatives be voluntary and when mandatory? How can differentials in power be addressed? How can those not sitting around the table become engaged? What about the 'less-visible' miners – are we concentrating too much on high-profile companies? Or are we listening too much to NGOs? Where is there room for manoeuvre to bring about concrete action?



3 Perspectives and Perceptions⁵

The issue of mining, biodiversity and protected areas is a very sensitive one. Industry, government, NGOs and local communities have different and often highly contradictory beliefs about how to use and manage areas considered valuable in biodiversity. However, it is the issue of access to land and the resources held within protected areas that has become increasingly contentious in recent years. Finding solutions has been difficult because the arguments presented by the mining and conservation communities are equally strong, when set in the context within which each community finds itself.

Despite improvements made by some of the major players, the mining industry carries with it a legacy of environmental mismanagement, disrupting local communities' lifestyles, and engaging with corrupt governments. The conservation sector, on the other hand, has a history of imposing land-use restrictions with a minimum of consultation, and creating highly disruptive resettlement schemes to make way for protected areas. Such past performance has undermined both sectors' credibility, and made both sides suspicious about the other's motives.

In response to concerns about mining threats to biodiversity, some conservation NGOs have demanded that access to all extractive activities within protected areas be restricted. These demands were captured in 2000 by the IUCN World Conservation Congress in Amman, which recommended that 'IUCN's State members prohibit by law, all exploration and extraction of minerals resources in protected areas corresponding to IUCN Protected Area Management Categories I-IV' (IUCNa). The recommendation also called for tight controls over any mining in Categories V and VI, exacting procedures to govern any boundary changes to permit mining, and strict regulation over any mining near a protected area. It emphasized the need for all concerned to adopt best practices to guide every stage of the mining process.

Whilst many of the more responsible mining companies agree that, in principle, there are areas where extraction is not compatible with the protection of ecological, cultural and landscape values, they have been reluctant to sign up to the Amman Resolution for a wide variety of reasons – but in particular because they have reservations about whether the areas of greatest biodiversity value always coincide with IUCN Protected Areas Management Categories I-IV.

Recent efforts by some mining companies to adopt better practice, along with moves to ‘humanize’ conservation, have brought each sector slightly closer together. This has enabled some constructive discussions to take place – a significant step forward from the uncompromising ‘go’ or ‘no-go’ demands that had been a feature of the many previous debates. Five years ago, who would have expected that the World Conservation Union (IUCN) would be actively engaged in a dialogue with the International Council for Mining and Metals (ICMM)?

Following the MMSD process, a formal dialogue has been taking place between IUCN and ICMM, with a strong lead from Rio Tinto plc. It was initially announced at WSSD (IUCNb). The associated discussions have helped move the debate forward significantly and on August 20th 2003, ICMM made a landmark announcement – that its member companies (15 of the largest mining companies) would no longer mine or explore within World Heritage Sites (IUCNc)! Other important recent initiatives, such as the ‘Energy and Biodiversity Initiative’ (www.ebi.org) convened by Conservation International and the ‘Speaking a Common Language’ project (see Box 6 on page 21) have also contributed significantly towards a more effective dialogue between the groups.

3.1 Conservation Perspectives

The conservationists believe that there is now considerable evidence that mining threatens protected areas. A recent survey, for instance, identified 44 World Heritage Sites now affected or potentially affected by mining.

The conservation community has pressed the major mining companies to come out in support of a moratorium on mining within World Heritage Sites and Category I-IV Protected Areas. It believes that if major mining companies want their commitment to sustainable development to be taken seriously, they should respect the requirement, especially because it means restricting access to approximately 6 per cent of land.

BOX 2 Protected areas

IUCN has categorized protected areas according to the main objectives of their management. The IUCN approach to mining in relation to protected areas is based on these categories. The six categories are:

- I. Strict Nature Reserve or Wilderness Areas – for scientific purposes or wilderness protection
- II. National Parks – for ecosystem protection and recreation
- III. Natural Monuments – for conservation of specific natural features
- IV. Habitat or Species Management Areas – for conservation through management intervention
- V. Protected Landscape or Seascapes – for landscape protection and recreation
- VI. Managed Resource Protected Areas – for the sustainable use of natural ecosystems

World Heritage Sites are classified under the UNESCO Convention on the Protection of the World Cultural and Natural Heritage (1972). These areas are both natural and cultural sites that are considered to be of 'outstanding universal value', and have been evaluated against internationally agreed criteria.

Given this rigorous process, there are claims that these areas are of such absolute value that they should be protected above all other areas. WHSs cover less than 1 per cent of the Earth's surface (138 natural sites and 23 mixed natural and cultural sites), with many falling under increasing threat.

Source: IUCN, 1994

Although some in the conservation community acknowledge the growing better-practice attitudes within the mining industry, there is continuing concern over whether or not better practice can be implemented more widely. There is also concern that what the major players commit to will not necessarily apply to others – there are always less legitimate players willing to 'bend the rules'. Furthermore, accidents do occur even in the best-run operations, which can have enormous negative consequences if they happen on or adjacent to protected areas. A significant tailings dam breach or cyanide spill could, for instance, threaten the viability of an entire protected area, resulting in the loss of not only biodiversity but also other natural and cultural values, as happened in Los Frailes in Spain (see Box 3).

There are also the unintended 'side effects' that occur as a result of, for example, opening up an area for large-scale industrial processes: this can herald a rush of other applications to exploit nearby resources. Such pressures, which are the direct result of mining operations, can trigger some damaging secondary effects – such as opening up previously remote areas and increasing population pressure that can outlast the mining activity itself.

BOX 3 The Los Frailes–Boliden Apirsa zinc, lead, and copper mine, Spain

The Los Frailes zinc, lead and copper mine in southern Spain is operated by Boliden Apirsa SL, a wholly owned subsidiary of Boliden Ltd. It is at Aznocolar, in the Iberian Pyrite belt, some 45 kilometres northwest of Seville, near the Doñaña National Park, and mining in the region dates back to Roman times. In 1979, Andaluza de Piritas (APIRSA) started exploiting the Aznalcollar open-pit ore body and constructed a tailings storage facility. In 1987, APIRSA was acquired by Boliden and production continued from the Aznalcollar open pit until 1996, when reserves were exhausted. Boliden had located another ore body, called Los Frailes, and in 1997 production from this deposit started. The same tailings storage facility was used by both companies and for both deposits.

In April 1998, Boliden Apirsa halted production after one wall of the tailing storage facility failed. The failure released 4.5 million cubic metres of tailings into the Rio Agrío and the Rio Guadiamar. The flow reached the marshlands on the eastern edge of the Doñaña National Park, 60 kilometres to the south, where it was halted by a series of rapidly constructed dikes. The tailings, which had a pH of 2-4 and contained elevated levels of copper, lead, zinc and iron, inundated more than 2000 hectares of farmland.

The Spanish government reported that the spill caused massive fish-kill and destroyed many aquatic species in the river system. There was no immediate effect on the Doñaña National Park, although there was concern about the contamination of the aquifer that underlies the park and the subsequent impact on bird life. Some estimate that the damage resulted in 5000 job losses in agriculture, fishing, tourism and nature conservation. The cost of the clean-up operations – more than 16 billion pesetas (US\$135.7 million) – and other financial problems forced the company to file for bankruptcy protection. Had the national and regional environment authorities not taken quick action on dike construction large tracts of the park would certainly have been destroyed.

Sources: Ramos (2000); Sassoon (1998); Mineral Resource Forum website, www.mineralresourcesforum.unep.ch/accidents/losfrailes.htm; Mining Technology website, www.mining-technology.com/projects/los_frailes

At the same time, conservationists view industry's emphasis on integrated land-use management as a ploy to weaken protected areas' legislation and gain access to national parks and other areas previously excluded from minerals development. If conflict on these issues is to be avoided, and 'win-win' outcomes achieved, transparent and inclusive planning processes are essential. A good example where this worked well was in Manitoba, Canada. The 'Protected Areas Initiative' involved consultations with resources industries, as well as with First Nations' and other communities on proposals for protected areas establishment. As a result, since 1990 protected areas have increased from 0.5% to 8.5% of the province and an additional 5.3% has been financed by the mining industry.

The challenge, however, is to get such participatory planning processes to work effectively in other parts of the world, especially where there is resistance to more inclusive decision-making. There is also a great deal of suspicion around proposals to have 'rotating' parks that would temporarily remove some of the conditions of protected status. And there is concern that some of the innovative mechanisms

being proposed, such as offsets, might not create the exact array of natural and physical attributes that are found in the original protected areas they are supposed to replace.

Mining Sector Perspectives

3.2

The major mining companies acknowledge the imperative of conserving species, habits, and natural systems such as watersheds, and are keen to make a positive contribution to this end. They say that their reluctance to accept existing IUCN Protected Area Categories I-IV as ‘no-go’ areas stems from inconsistent application and the discriminatory approach – it should be applied across all sectors and not only in the extractive industries. There is also concern that protected area systems must in the long run allow for new areas to be protected, and badly managed and degraded areas to be deregulated. Not all protected areas warrant their current designation, and some areas outside protected areas are currently insufficiently protected.

While governments clearly play a key role in assigning the categories, the mining sector also wants proof of ‘good faith’ from the conservation community, who they feel should actively support reforms to achieve rigour, consistency and transparency in how the protected areas selection and categorization system is applied by governments.

According to the mining sector, society does not yet know which minerals it might need in the future, let alone where these are located. Some of the larger mining companies feel it is enough that, in practice, they rarely seek access to protected areas with characteristics that are incompatible with mineral development activities. Moreover, not disturbing areas with unique biodiversity, landscapes and cultural or other values is already part of the internal decision-making process of many companies, as such impacts are a source of risk and can affect revenues, trust, and their license to operate now and in the future.

Mining companies also argue that technological development has gradually reduced the likelihood of negative impacts on protected areas. Modern processes of mine construction and systems of management and pollution control mean that some new mines can now operate as closed systems with minimal impact on the surrounding environment. Furthermore, mining can be an attractive activity for communities around protected areas, as it can generate much more revenue compared with alternative forms of economic activity. The sector also argues that – given the right policy and institutional frameworks – mining revenue could be used to manage more effectively biodiversity and protected areas.

BOX 4 Balancing biodiversity conservation with economic development

Since 1986, Rio Tinto and its subsidiary QIT Madagascar Minerals S.A. (QMM) have been assessing the potential for a 50 to 60-year ilmenite (titanium dioxide) mine near Fort Dauphin in south-eastern Madagascar. The project is potentially the most important in the industrial history of the island – a US\$350 million investment with US\$20 million in annual revenue predicted for the state, including mining royalties, of which 70 per cent is to be returned to the region. Together with the possible 30 per cent local employment commitment, it appears that the project has the potential to bring some economic benefits to the region.

However, the mineral deposit is located on or near remnant fragments of a unique littoral ecosystem that contains several endemic species. Elsewhere, these forests have been largely degraded or removed, so these sections, while patchy, have gained conservationists' attention. They raised serious concerns about the proposed mine, and requested a two-year moratorium during which alternative development options, such as eco-tourism, were to be explored. But no significant eco-tourism developments materialized.

QMM commissioned a team of specialists to undertake various social and environmental baseline studies – perhaps one of the lengthiest such exercises ever conducted in the mining industry. This information was summarized and presented as a social and environmental impact assessment (SEIA). Some of the basic assumptions in the SEIA have been questioned, however – such as the speed at which forest will be depleted. (Conservation International believes that a significant reduction in the rate of forest depletion could also be achieved in the absence of the mine.) Overall, however, the SEIA has covered new ground in linking both social and environmental issues, and in tackling biodiversity issues explicitly.

The SEIA concluded that the forest fragments are already under pressure for charcoal and building materials, and that given its current rate of depletion, and without any new planting of fast-growing species, the remaining forest would be destroyed within the next 20-40 years. These facts and predictions were key in the pro-mining argument – that is, that the forests would disappear anyway and the mine could help reduce local dependence on forest resources.

QMM proposed various activities that would help offset further impacts, such as planting fast-growing species to provide a sustainable alternative source of fuel and timber. Various tests were conducted to identify the most suitable species, as there are distinct ecological constraints, such as the thin and fragile topsoil, as well as social challenges regarding the management of these forests. QMM also intends to protect almost 1000 hectares of littoral forest remnants in three or four conservation blocks, rehabilitate all wetland areas and about 600 hectares of native forest, and establish monitoring procedures for the forest. These are encouraging steps, but while the plantations are likely to offset some of the demands it is unlikely that, given the intense pressures, they can offset all of them. Additional planning, in concert with government efforts to tackle the root causes of forest loss, will be necessary for more lasting and widespread success.

Some observers continue to believe that mining is simply not a viable option here, and that any and all mitigation attempts will be inappropriate. The social and environmental plans are ambitious and the constraining factors great. If the mine goes ahead – it is currently in feasibility study stage – there is no guarantee that they can be overcome. QMM, however, intends to invest in a Regional Planning Process, and seems determined to try and get it right. Their significant social and environmental investment in the project seems to indicate a genuine intention to implement a considered and responsible project. If the mine does go ahead, it should provide some extremely valuable lessons and, if the various programmes are successful, it could be a useful model.

Sources: QMM S.A. (2001); Porter et al. (2001); Nostromo Research (2001)

Government Perspectives

3.3

Governments – including relevant sectoral departments, permitting agencies and the legislature – play a fundamental role in establishing the ‘enabling framework’ within policy, planning and legislation that will determine the rules of the game with regard to access to land for mining and how mining operations are managed. The role of government in helping to resolve mining, biodiversity and protected areas issues is therefore critical – yet it is often the weakest link, especially in developing countries. With dwindling resources, governments are rarely well equipped to make decisions and implement actions that can lead to effective, equitable, and sustainable land-use management. The absence of clear policy and institutional frameworks on mining and other land uses have often exacerbated differences between the mining sector, conservation organizations and local communities.

Some of the factors that constrain the more appropriate resolution of such land-use conflicts by governments include:

- outdated and uncoordinated policy frameworks and legal regimes that are poorly administered;
- confusion over respective roles and responsibilities of government, communities and the mining industry in land-use planning and management;
- a lack of information, tools and know-how focused specifically on identifying ‘best bet’ solutions for minerals development and mining in sensitive areas and, where these do exist, poor access to them;
- hegemonies of decision-making on minerals development and mining issues, with stakeholder involvement still weaker than in other areas of sectoral decision-making;
- an aura of mistrust arising out of a history of less accountable or rigorous land-use decision-making regimes and a lack of understanding and appreciation of different value systems and world views; and
- no incentive and weak capacity within government to address these issues proactively.

Governments should be much more fully involved in wider and international policy debates concerning these critical issues.



4

Policies and Actions

Policy as a plan of action has always been and will continue to be a key part of the governance framework for the mining and conservation sectors. Some of the current perspectives and perceptions of the various stakeholders are a result of existing international, national and organizational policies and activities. Effectively implemented, laws emanating from policy frameworks should create a level playing field by generating consistent incentives for responsible behaviour for all companies and other actors, regardless of their size. The effective application of law is rarely simple, however. Laws alone achieve nothing without effective and capable agencies to administer them, or effective access to a functioning court system to enforce and protect the rights they create. Laws can also be tools for the powerful in some countries, helping one group to the exclusion of others. Getting the right balance for the distribution of both risks and opportunities and costs and benefits presents all policymakers and implementers with great challenges.

Laws and actions to guide the mining and conservation sectors should be aimed at peaceful co-existence.

Attempts to conserve biodiversity have been made at all levels and have been a feature of cultures around the world throughout history, whether for environmental, religious or aesthetic purposes. What protection actually entails, and which areas warrant greatest protection, have always been subject to widely differing interpretations, because as yet there is imperfect understanding of what is 'best', ranging from the exclusion of all forms of human activity to approaches that allow certain levels of interaction. The following policies, laws and agreements are, perhaps for now, a necessary evil, given both the prevailing uncertainty about what is 'best' and the huge operational complexities.

4.1 International Policy and Actions

4.1.1 Industry initiatives and partnerships

The mining industry operates in a very dynamic business climate that increasingly demands successful adaptation to both changes in social values and public expectations of corporate behaviour. At the corporate level, respect for both the physical and social environment is now becoming an essential element of good business practice. Most major mining companies are increasingly committed to the continuous improvement of their environmental and social performance including by using voluntary industry codes of practice and management systems.

At the international level, for example, the International Council for Mining and Environment (ICME), now The International Council on Minerals and Metals (ICMM), established an Environmental Charter that was developed and endorsed by its members. The Charter originally encompassed environmental stewardship and product stewardship. Following consultation with its stakeholders, ICME adopted a Sustainable Development Charter. More recently, as ICMM, it committed its members to action on biodiversity – encapsulated in the Toronto Declaration agreed in May 2002 (ICMM, 2002). Following that a group on Natural Resources Conservation was established, which has been working closely with IUCN on protected areas, land-use planning and governance issues. Many of the issues that this group will deal with were raised by the MMSD project.

The International Petroleum Industry Environment Conservation Association (IPIECA), and the Oil Industry International Exploration and Production Forum (E & P Forum) have produced a number of environmental guidelines in collaboration with other international organizations.

The Energy and Biodiversity Initiative, convened by Conservation International and involving BP, Chevron Texaco, Shell, Statoil, IUCN, and Fauna and Flora International is bringing together better practice guidance for the oil and gas industries in key areas such as information, protected areas, etc.

4.1.2 Intergovernmental agreements

UNESCO World Heritage Sites

World Heritage Sites are classified under the Convention concerning the Protection of the World Cultural and Natural Heritage (1972). It is argued that these are both natural and cultural sites that are of ‘outstanding universal value,

subjected to critical evaluation against internationally agreed criteria'. Given this rigorous process, there are claims that these areas are of such absolute value that they should be protected above all other areas. The ICMM, whose membership comprises 15 of the world's largest mining companies has recently agreed not to mine or explore in World Heritage Sites.

UNESCO's Man and Biosphere approach

The UNESCO Man and Biosphere (MAB) Programme recognizes that conservation and sustainable development can only succeed if they express the 'social, cultural and economic needs of society, and are also based on sound science' (see www.unesco.org/mab). During the last thirty years MAB has established a network of Biosphere Reserves which aim to promote a balanced relationship between people and nature. There are now 393 sites located in 94 countries and they are governed by a statutory framework, which is 'soft' law. The UNESCO Governing Council has not specifically broached the issue of mining within Biosphere Reserves, but many Biosphere Reserves have extractive activities of some sort within them. Mining is allowed as long as it follows 'best practice' and does not impinge on the 'core area', which is devoted to long-term protection, according to the conservation objective of the biosphere reserve.

The UN Convention on Biological Diversity

The UN Convention on Biological Diversity represents a concerted attempt to provide a legally binding policy framework for biodiversity based on international consensus.

The CBD is legally binding, and over 180 countries have now ratified it. It takes a broader approach than some of the other biodiversity-related conventions to biodiversity and also encompasses indigenous peoples' issues. It has three overall objectives: conservation, sustainable use, and fair and equitable sharing of the benefits derived there from. It calls for the development of biodiversity action plans that aim to convert all three objectives into activity (see www.biodiv.org). Any extractive operation integrating the three objectives and other relevant articles of the Convention into its strategies and action, would, if implemented correctly, be taking sufficient precautions for protecting sensitive areas. Some groups have argued that if an oil/gas or mining company mainstreams the CBD properly, this will provide a suitable safeguard for sensitive areas.

Social conventions

With regard to protecting indigenous peoples' homelands, the 1989 Indigenous and Tribal Peoples in Independent Countries Convention provides basic rights for

BOX 5 Other international conventions influencing access and management of sensitive areas

- The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971. Amended 1982, 1987
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1973. Amended 1979, 1983
- Convention on the Conservation of Migratory species of Wild Animals 1979. Amended 1985, 1988, (Also called the Bonn Convention.)
- The Montreal Protocol on Substances that Deplete the Ozone Layer, 1987
- The UN Framework Convention on Climate Change, 1994, and Kyoto Protocol, 1997
- UN Convention to Combat Desertification
- Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989. (Also called the Basel Convention.)
- International Convention on Oil Pollution Preparedness, Response and Cooperation. 1990
- Convention on Environmental Impact Assessment in a Transboundary Context, 1991
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992
- Convention on the Transboundary Effects of Industrial Accidents, 1992

indigenous and tribal peoples. The rights include respect for their traditions and property. The 1998 Aarhus Convention establishes rights to information, public participation in decision-making, and access to justice.

4.1.3 NGO-led initiatives

NGOs have initiated and advocated for policies and actions at the international, regional and local levels. One of the recent agreements was that formulated at the IUCN World Conservation Congress in Amman, Jordan in 2000. The agreement recommended that: 'IUCN's State members ... prohibit by law, all exploration and extraction of mineral resources in protected areas corresponding to IUCN Protected Area Management Categories I-IV'. This recommendation is not legally binding, but carries a lot of political clout. The conservation community has been pressing major oil, gas and mining companies to come out in support of this recommendation. But there is considerable concern that focusing on Categories I-IV will mean that other valuable and sensitive areas that fall outside these Categories will be overlooked.

BOX 6 'Speaking a Common Language'

This is a joint-initiative research project involving Cardiff University and Equilibrium Associates in partnership with IUCN and its World Commission on Protected Areas and the UNEP World Conservation Monitoring Center. It aims to assess the ways in which the IUCN protected area management categories can be used to further conservation action on the ground.

The objectives of the project are to:

- Establish the impact and effectiveness of the 1994 IUCN guidance, and previous incarnations, in terms of the adoption and influence of the categories system, nationally, regionally and internationally.
- Examine what needs to be done to develop and promote the objectives-based system of protected area categories, and consider how it should be linked to other initiatives in protected area planning and management.
- Involve a wide range of stakeholders in the work, notably through the World Parks Congress and other related events.
- Guide the programme of work on protected areas of the Convention on Biological Diversity.
- Provide technical advice on the Category System to a proposed programme of work on protected areas for IUCN.

The project outputs will review progress of the implementation of the IUCN protected area management categories system, leading to recommendations for the system's refinement and development.

Source: www.cf.ac.uk/cplan/sacl/

'Speaking a Common Language' is a research project led by Cardiff University, IUCN and Equilibrium Associates to assess the ways in which the IUCN protected area management categories can be used to further conservation action on the ground (see Box 6). The project outputs will review progress of the implementation of the IUCN protected area management categories system, leading to recommendations for the system's refinement and development. These outputs are to be presented at the World Parks Congress in September 2003.

There is also an ongoing process to look into the management and effectiveness of and certification for protected areas. It is a collaboration between IUCN World Commission on Protected Areas, UNESCO World Heritage, and WWF.

There have also been many other industry-NGO partnerships. For instance Fauna and Flora International has been working closely with the Kyrgyzstan Community and Business Forum to promote informed dialogue between various stakeholders to build partnerships and encourage sustainable benefits around the Kumtor Gold Mine in Kyrgyzstan.

4.2 National Policies and Processes

In most countries there are numerous national sectoral policies, laws, and action plans that govern access to, or the management of, sensitive areas. It is normal to find that many of these overlap, or are outdated or unable to cope with new or rapidly changing scenarios.

Protected areas legislation defines areas for conservation, e.g. national parks, and activities allowed or prohibited therein. In most developing countries it has proved increasingly difficult to monitor and enforce protected areas legislation given the intense pressures on land and the politicization of this natural resource. Furthermore, legislation governing extraction and mining – such as minerals and mining acts – is usually more powerful than conservation legislation. National environmental protection and management acts, which include requirements and guidelines for environmental impact assessments, could play a more significant role in minimizing mining impacts within sensitive areas. This tool has not always been suitably applied, however. Even where good mitigation measures have been proposed, governments have not always had the capacity to ensure that these mitigation measures are put into place.

National governments provide the legislative framework for the mineral industry, and national or sub-national legislation is the route through which most legal rights and obligations attach to companies and the many others with whom

BOX 7 Other relevant laws and agreements at national level

- Biodiversity Action Plans. Under the CBD, each country is required to have a BAP, which identifies key issues and necessary activities.
- Land-use Planning Acts identify the procedures and authorities for controlling changes in land-use.
- Land tenure legislation determines the rights of land ownership.
- Community/traditional rights legislation includes rights of access for cultural reasons and for the collection of wild products.
- Water resource acts include the regulation of water resource use, groundwater abstraction, water pollution laws, and effluent standards.
- Clean air acts include air pollution and emission standards.
- Natural resource legislation includes agriculture, livestock, and forestry. Conservation of soils and prevention of erosion may also be covered.

Source: IUCN 2002.

they must deal. For regulators, a clear-cut and enforceable framework is essential to control the activities of the industry effectively. For citizens, the framework protects them against the risk of loss of livelihoods or property, or unfair and arbitrary treatment, and gives them opportunities to improve their position. For industry, it provides a regulatory system that is stable, transparent, and appropriate to the conditions of the country.

Governments could do more to establish the right policy and institutional frameworks and to build consensus and facilitate the appropriate partnerships that might be necessary to encourage best practice around sensitive areas. Government (especially at local level) is however often the weakest link. There is a real need to strengthen government's capacity and will to engage, by creating the necessary incentives and equipping governments with effective policy, planning and decision-making tools and mechanisms.

At the local level, the method and level of interaction between the company, the regulatory authorities, and the community can be critical to the success of the project. At the Lisheen mine in Ireland, the company Anglo American spent five years collecting baseline data and communicating with the relevant groups in order to design a project that was acceptable to all and met the legislative requirements (see Box 8).

There is a need for governments to take the lead in setting standards to ensure that sustainable development takes place at the national and local levels.

BOX 8 The Lisheen zinc/lead mine in Ireland

Before construction could start on the Lisheen mine, Anglo American had to obtain a planning permit, an Integrated Pollution Control (IPC) License, and a mining lease. They also had to convince the local community and the regulatory authorities that a mine at Lisheen would bring considerable benefit to the region and not damage the environment. The mine is located in the rural heartland of Ireland.

The main areas of concern were the deposition of tailings and the potential contamination of the groundwater. It was agreed that 51 per cent of the tailings would be mixed with cement and used as backfill underground, while the remaining 49 per cent would be deposited in a fully lined tailing storage facility located on a peat bog. The company also undertook to sink replacement boreholes for the farmers. Before granting the IPC license, the authorities required the company to lodge a bond in excess of US\$16 million to pay for closure and rehabilitation costs.

The company decided to adopt a policy of transparency, and held meetings and consulted some 20 local groups. As a result, the company received positive support from the local communities and the licenses were granted without the need for a public hearing.

Source: MEM (1998); Stokes and Derham (2000)

Some of the steps that need to be taken are:

- Countries with significant mineral development could consider a comprehensive review of their legal framework and mining's impacts on sustainable development. While the review should be respectful of the need for investment, it should focus on how to turn this investment into opportunities for sustainable development. This review would be most beneficial if it is conducted through an open discussion that involves all of the key actors in industry, government, and civil society.
- The government bodies responsible for managing the impacts of minerals development – social, economic, and environmental – must have adequate resources – comparable to the resources available to the various state departments charged with managing mineral wealth and turning investment into opportunities for long-term development. This will require analysis of the ability of government at all levels to use project revenues effectively for development purposes. This review could be carried out in a manner in which relevant stakeholders at the national level could forward their views.
- Individual governments need to develop or strengthen the policy and regulatory framework relating to the minerals sector at all stages of the life cycle. This will ensure that social and environmental issues are properly considered along with investment and economic development objectives. Some of the key and interrelated elements of a regulatory framework are: integrated impact assessment, Community Sustainable Development Plans, and integrated planning for closure. Governments also need to ensure effective participation by stakeholders, and build linkages among governance structures at different levels and between departments to improve coherency and strengthen capacity.
- Individual governments need to ensure that effective enforcement provisions are in place. Alternative instruments based on voluntary processes should be considered in cases where there is insufficient capacity.
- Governments in control of significant mineral resources need to develop effective mining legislation. Mining Acts, as the principal regulatory instrument governing mineral exploration and production activities, should define both the rights and obligations of the mining titleholder and the power of government officers. The government's first role is to regulate the sector at all levels, including domestic exploration and exploitation of extraction, as well as primary mineral processing.

The Financial Sector

4.3

The various guidelines, policies and directives used by the World Bank have been widely adopted by the finance community. Some private lenders have used social and environmental criteria in assessing the risk related to a potential loan. Some have gone further and are starting to explore the utility of more comprehensive sustainable development-related risk factors.

Many of the international banks now require environmental impact assessments to be carried out and environmental management plans to be developed. In some countries, national banks and funding agencies may not have such requirements, or if they do, they may be less strict.

Socially responsible investment, or SRI (which includes ethical investment and ethical banking) has been established to consider investments specifically for their social and environmental as well as financial performance. SRI looks for commitment to continuous improvement, responsibility for such issues from Board level down, and integration of social and environmental criteria into core management systems. Investors tend to adopt other international instruments as baseline standards, so that there is a level playing field, e.g. if the US government grants access to the Arctic National Wildlife Reserve in Alaska, it is unlikely that an investor would continue to restrict access to its clients as this would create unfair advantage.

Company- and Organization-specific Efforts

4.4

Some of the larger mining companies have begun to take steps to address biodiversity issues. Many have formulated biodiversity policies; some have followed this up with innovative actions in planning, design and operations management. Evidence of such remedial actions is encouraging but still they remain largely restricted to a few major players, and even within this group, some are doing much more than others. Adopting 'biodiversity-friendly' practices remains hugely challenging, especially for smaller companies and peripheral players. This is partly because governments, while perhaps committed on paper to biodiversity, have found it difficult to create the incentives and apply the necessary regulations that could encourage all players, from the individual miner to the large company and the other economic sectors, to conserve biodiversity.

Companies, conservation organizations and governments have also written their own best practice and guidelines documents. Some of these are listed below as examples, but there are many more:

- **To Dig or Not to Dig: Criteria for Determining the Suitability or Acceptability of Mineral Exploration, Extraction and Transport from Ecological and Social Perspectives.** *A Discussion Paper for WWF.* Nigel Dudley and Sue Stolton. (WWF, February 2002)
- **Reinventing the Well: Approaches to Minimizing the Environmental and Social Impacts of Oil Development in the Tropics.** Amy Rosenfeld, Debra Gordon and Marianne Guerin-McManus. (Conservation International, 1997)
- **Protected Areas and Oil/Gas Operations: An Explanation of IUCN Categories and Advice on Best Practice.** Part of the Energy and Biodiversity Initiative. (Prepared by IUCN)
- **Environmental Sustainability Guidelines on Mining and Petroleum Extraction Activities in Arid and Semi-Arid Zones.** Peter-John Meynell and Ruth Golombok. (Prepared for IUCN and the Convention to Combat Desertification, November 2000)
- **Biodiversity and Opencast Coal Mining. A Good Practice Guide.** (Scottish Natural Heritage and RSPB, WHEN?).
- **Biodiversity and Minerals. Extracting the Benefits for Wildlife.** *A Guide to Planning, Operating, Restoring and Managing Mineral Sites for Biodiversity.* (English Nature, SAMSA and Quarry Products Association, 1999)
- **Rehabilitation and Revegetation.** *Best Practice Environmental Management in Mining.* (Environmental Protection Agency, Commonwealth of Australia, June 1995)
- **APELL for Mining.** *Guidance for the Mining Industry in Raising Awareness and Preparedness for Emergencies at the Local Level.* Technical Report No. 41. (UNEP, 2001)
- **The Oil and Gas Industry.** *From Rio to Johannesburg and Beyond. Contributing to Sustainable Development.* (International Association of Oil and Gas Producers, International Petroleum Industry Conservation Association (IPEICA), 2002)
- **Biodiversity and the Petroleum Industry.** *A Guide to Biodiversity Negotiations.* (IPEICA, 2000)

Some companies have developed biodiversity strategies, and Rio Tinto has taken their strategy forward into a wider internal process for mainstreaming biodiversity into their mining activities.



5

The Way Forward

Protecting sensitive areas from mining and other development activities presents many challenges. There are still too many inconsistencies and too many uncertainties. For instance:

- The lack of resources for the provision of effective guidance means that some protected areas have been incorrectly classified under the IUCN categories system, e.g. an area that warrants Category IV designation may be classified as II.
- The values upon which some protected areas were originally categorized as I-IV are now degraded, some beyond repair.
- Advancements in science have led to an evolution in understanding and shifts in biodiversity conservation priorities. This means that some valuable areas remain unprotected, whilst others may now be considered less worthy of categories I-IV protection.
- Restricting the extractive sector from areas containing valuable biodiversity, including protected areas, may not reduce other threats to these areas, e.g. from the local population seeking new land, or exploitation by other sectors.
- Some protected areas now have significant mineral potential that was unknown before.

Decisions over whether or not to mine in or around sensitive areas should also acknowledge some of the following:

- The extraction of different minerals can have widely differing types and degrees of impact.
- Some sensitive areas are of much greater value – either locally or globally – than others, and this might not be reflected in national protected areas designation and classification.

- Some impacts may cause irreversible changes that lead to extinctions, but some environments are more resilient and changes might be reversible.
- Some impacts may only cause local extinctions, not global ones.
- Mining could deliver much-needed resources for conservation, if the mining agreements drawn up with host governments articulate such conditions.
- Other activities, such as agriculture or timber extraction, may continue to threaten the sensitive area even in the absence of mining activity.

Decisions over whether or not to mine in a sensitive area should therefore be governed by principles that recognize the diversity of extractive operations and their impacts, the varying levels of the robustness of ecosystems and their differing socio-economic contexts. That said, some form of protection is clearly essential, but decisions on where to apply extra care or land-use restrictions should be made on a case-by-case basis, be better informed, more transparent, and based on accountable land-use planning processes. Decisions should also recognize that biodiversity preferences and values will differ. None of this can be done with a ‘one size fits all’ framework. Only a framework that is relevant and useable at a local scale and which recognizes diversity will do.

Further constructive work will require a carefully managed process that provides the necessary space for building the trust and confidence necessary to continue the dialogue on mining, biodiversity conservation and protected areas. It remains critically important that the debate should not forget that areas within or around protected areas are often occupied by some of the financially poorest and most politically marginalized peoples and that these people are the most frequent losers, whether this follows a mining development or the establishment of a protected area, as both these activities, if inappropriately managed, can restrict their access to land and resources.

Some of the critical elements of such a process – which have been articulated by participants at the MMSD and RIIA meetings – are elaborated on below.

5.1 Engage in Equitable and Diverse Partnerships to Build Trust

With few exceptions, there is a lack of trust between mining companies, conservation organizations, governments, and local communities. Yet trust is an essential prerequisite for collaborative action on pertinent issues. Protecting sensitive area values has the greatest chance of success if all stakeholders work

BOX 9 'The Kyrgyzstan Community and Business Forum'

The Kyrgyzstan Community and Business Forum was established to promote informed dialogue between the various stakeholders, build partnerships, and encourage sustainable social, economic and environmental benefits around the Kumtor Gold Mine. The Kumtor Gold Mine is by far the largest single business in Kyrgyzstan, and is a joint venture between the Canadian and Kyrgyz governments.

The Community Business Forum (CBF) was established following a cyanide spill in May 1998. A steering committee, with nine representatives from local and national NGOs, government, and business was established. The UK NGO Fauna and Flora International became involved in its facilitation.

The area constitutes quite a diverse ecosystem, with many endemic and endangered species as well as wild relatives of various domesticated species, such as apples, walnuts and apricots. It offers some commercial opportunities through tourism and agriculture. Biodiversity is also intrinsically linked with the cultural and social aspects of local life, like folklore. However, there is poor institutional capacity between state and local NGOs to do anything about it; economic opportunities are limited, and there are high levels of pollution, even though the company has tried to improve the area.

The Forum recognized that there was a need to look at wider social and economic development issues as well as environmental and conservation concerns. The Forum engaged with local and national government and used the media to disseminate information. CBF activities built relationships by conducting mine site visits and national and local workshops. There has also been information sharing using newsletters, local consultations, and the Internet. CBF also promoted models for action through a small grants programme and by producing an emergency response plan.

The CBF has provided a greater voice for local communities and improved NGO capacity and experience, especially at the local level. There is a better understanding between the local groups, and CBF has provided an example to learn from and build upon. It has opened up opportunities for support to protected areas and conservation, through promoting a positive and proactive approach to mining and biodiversity issues.

The holistic approach adopted proved critical to the success of the process. It allowed differing and even conflicting perspectives to be incorporated without having to achieve consensus on all issues.

Source: O'Keefe (2001)

together for more productive outcomes. There is a need for the oil, gas, and mining industries to work together more, and in partnership with governments and a diverse group of NGOs and civil society organizations. Trust is most likely to be effectively built by establishing joint programmes of work on issues where consensus already exists, or where it is beginning to emerge. If successful, this might then lead gradually to furthering dialogue, even agreement, on areas where there is currently disagreement.

Building effective relationships is a complex, slow and contested process. It is important to enable the groups involved to make their own decisions and decide on their own initiatives rather than forcing demands upon them. Providing access to information is important, but most important is to ensure that the information is appropriate. Flexibility and learning are important, as many outcomes from such

dialogues are completely unexpected. Trust can sometimes be built more effectively through action, and the joint sharing of experiences, rather than just through dialogue.

Possible next steps

- i) Establish more active but technical partnerships at all stages of a project cycle. For instance at the pre-bid stage, the mining sector could work with research institutions on biodiversity assessment and database review. At the exploration stage, there could be collaboration around threats and opportunities assessments; during mine development and operations, civil society organizations could engage in monitoring activities. At decommissioning, there is much scope for research and non-governmental organizations to work together with government and the mining sector on rehabilitation. In such engagements, there should be clear advantages for each party that might arise from involvement.
- ii) Collaborate in developing better practice case study material and guidelines. There is much scope for the oil, gas and mining industries to work together on key issues of mutual concern.
- iii) Participate constructively in key conferences addressing issues of concern to each sector. For instance, the mining sector should be present in key sustainable development and conservation fora, and the conservation sector should be present at key fora for the extractive industries. Wherever possible joint presentations and dialogue between the sectors can help move forward the process of identifying appropriate trade-offs.

5.2 Improve Coherence of and Accessibility to Information on Biodiversity

Not all areas are of equal biodiversity conservation concern. Thus, any intrusive sector, be it agriculture, mining, commercial logging, or infrastructure, must be informed on the specific locations of zones of greatest biodiversity value or most critical conservation concern, so that it is clearly understood where mitigation measures must be in place.

At the global level there are several ‘global’ biodiversity priority areas based on different approaches such as hotspots, endemic bird areas, important plant areas and eco-regions.⁶ At the national level, criteria such as the IUCN protected areas

categories system, World Heritage Sites, and countries' own priorities as expressed in National Biodiversity Action Plans or Conservation Strategies are used to establish areas of most conservation interest. These do not always coincide with global priority areas, however, and not all global priority areas fall within formally designated protected areas.

While such priority setting exercises are a useful first approximation, they are not suitably linked, nor are they necessarily spatially coincident and they use different proxies for biodiversity, making it difficult for outsiders to know which ones to prioritize. Scientists disagree about which proxies to adopt, mainly because biodiversity per se cannot in all its complexity be quantified by any known all-embracing measure, and knowledge of it is constantly evolving. Given that everyone has different interests in, and understanding of, biodiversity, whether any chosen proxy is the 'right' one is always open to debate. For instance, aspects of biodiversity that have compelling value to one group may mean little or nothing to another: a hunter-gatherer's view of which plants warrant conservation may vary markedly to that of a Western botanist or a specialist in traditional Chinese medicine. Selection of proxies is therefore predicated on value judgments and scientific assumptions about which facets of biodiversity matter more than others.

Global mapping exercises have also proved too coarse a resolution for use in local land-use planning or zoning, and few provide accurate geo-references. At the same time, valuable information that is available at the site-specific level, e.g. research reports held by local herbaria, has often not been systematically catalogued or peer-reviewed and is therefore inaccessible to decision-makers. Many key databases, such as the World Database of Protected Areas, are not being regularly updated, as there is a lack of resources. Innovative mechanisms – such as the internet – are needed to peer review such data and ensure that it remains within the host institution's memory, especially given the rapid decline in the availability of resources for systematic and ethno-biological survey activities.

Progressive under-investment by the public sector in systematics and taxonomy (the identification and enumeration of different species) has also hampered progress in presenting more coherent and up-to-date thinking on priority biodiversity conservation areas and methodologies for their identification and assessment. Only 1.7 million species have yet been named out of a possible 20-100 million. Existing taxonomic expertise is also skewed towards certain groups, such as mammals, rather than invertebrates or the plant kingdom. Links between Western and indigenous classification and assessment mechanisms are weak as well. Governments in both industrial and developing

countries have lost interest in such activities and are at times openly skeptical about their importance.

The consequence is that many scientific institutions that previously housed invaluable expertise, herbaria, or zoological collections have run short of finance, and irreplaceable knowledge and data have been lost. Such information gaps produce uncertainty, and so it has become difficult to draw conclusions about what is being lost – or the consequences of these losses. At the same time, the funding and execution of surveys, research and publications on biodiversity has been largely taken over by international NGOs, multilateral agencies, and the private sector.

The mining industry has collected a considerable store of biodiversity and environmental information. The purposes for which it was collated differ, as do the circumstances under which it was collected, so it tends to be highly variable. As a result, it has generally not been placed within the public domain, as there are questions surrounding ownership and intellectual property issues. Any attempt to overcome these practical problems could be very beneficial, as it could help promote enhanced sharing of information between the mining industry and the range of stakeholders engaged in biodiversity conservation and sustainable development.

That said, while the private sector and NGOs should continue to play a key role in information activities, they need strong central coordination and independent peer review. Otherwise, individual agendas may begin to dominate, raising concerns about impartiality.

BOX 10 Environmental Excellence in Exploitation

The initiative known as 'Environmental Excellence in Exploration', or E3, initiated by a consortium of mineral exploration companies and driven by the Prospectors and Developers Association of Canada, has been designed to help improve environmental performance throughout all phases of global minerals exploration.

By pooling company expertise and filling in gaps in knowledge, E3 will encourage sound environmental management practices by the exploration of community improved education and understanding of this by stakeholders. The initiative recognizes that exploration crews and their contractors, as the first people into an area, must be capable of creating a positive impression through the manner in which they manage and mitigate environmental impacts: failure to do so can jeopardize the license to operate afforded to companies by the local community and others.

The E3 project will document best practices drawn from international experience. An E3 database and e-manual (which will enable rapid access by those 'on the ground'), will be available by subscription and will be continuously updated. E3 will also act as a source document to educate the public, government, and non-governmental stakeholders, as well as a training tool for companies and their contractors.

Source: Prospectors and Developers Association of Canada, at www.pdac.ca

Possible next steps

- i) Improve access and coherence of information on biodiversity priorities – relevant conservation organizations, public academic institutions, the mining industry and other key interests need to work towards establishing user-friendly, regularly updated and linked information systems on global and local priority areas. It will be particularly important to achieve some level of consensus between specialists on which proxies are best used for biodiversity, and why. Such work could also feed into biodiversity indicators development for EIA procedures.
- ii) Address funding shortfalls for biophysical science – if rigorous decision-making on sensitive areas, biodiversity and its conservation is to continue, and if conflicts are to be minimized, governments – especially in industrial countries – must acknowledge the need to maintain public investments in science that contribute effectively to quality land-use decision-making. There are many opportunities for the private sector to stimulate and contribute to research partnerships in this area, but private funding alone cannot solve the rapid decline in relevant and independent scientific capacity.
- iii) Where scientific uncertainty with regard to conservation priorities prevails, fully participative dialogue around land-use priorities should fully inform decisions.

Continue Reviewing and Improving Protected Area Categorization and Classification Systems

5.3

The first challenge is to improve mechanisms for identifying the most valuable areas to be protected, and the second is to make this information on priority protected areas easily accessible to land-use decision-makers and planners (as described in 5.2). The third challenge is to ensure that this information is used effectively to identify, demarcate and protect the right areas on the ground.

While it is generally accepted that the IUCN categories are a good system for initial designation of protected areas, there is concern that the current system has been inconsistently interpreted and applied by governments within and between countries, and that decisions have not always been transparent and inclusive. Questions have therefore been raised over whether the ‘right’ protected areas fall into the ‘right’ categories, and whether incorrectly categorized protected areas should be reclassified.

Indeed, many Category I-IV protected areas were established when scientific understanding of biodiversity was much less advanced, and decisions were often made with no regard for local needs and priorities. Furthermore, the lack of management resources for these areas has led to the deterioration of their original values, whereas other important areas remain unprotected. To add to this, the categories system has been interpreted differently in different countries – hence what might be considered a Category II in one country may be a Category V in another. This does not provide a level playing field.

Consequently, many of today's protected areas do not coincide with what is now considered 'best fit' for biodiversity, although many enjoy the benefits of their continued existence. However, as science, and the knowledge it generates, is constantly evolving, so is understanding of what might be 'best' for biodiversity conservation and hence where protected areas might best be located. The biodiversity of the deep seas was previously thought to be impoverished, for instance, but recent research has found it to be more complex even than comparable terrestrial fauna, with high rates of endemism. A good example is the Caribbean – which was initially excluded from Conservation International's ranking exercise in 1990 – but a decade later was listed as one of the three highest ranking 'biodiversity hotspots' in the world. Resolving inconsistencies around the categorization of protected areas will also require working with governments, as it is governments' responsibility (not IUCN's) to assign categories to their protected areas.

Furthermore, as the management of protected areas has often been nominal, or even absent, this has led to the degradation of values on which the original categorization was based, meaning that the protected area may be less effective than it should be. This does not mean, however, that such protected areas warrant de-designation, as only a thorough analysis of whether the lost values can be restored can draw conclusions about how 'degraded' a protected area really is. Such issues have, however, led to inevitable confusion over the role and functioning of the category system.

Although some protected areas designations may not be in tune with recent science, many still continue to maintain some ecosystem services or other critical natural or cultural values. An additional complication is that some protected areas now have significant mineral potential that was unknown when the area was originally selected for protection. This raises some difficult dilemmas. Clearly, there are areas of valuable biodiversity that remain unprotected, while other areas encompassing biodiversity that is now considered less valuable remain protected. And the latter may contain valuable mineral sources hold other natural or cultural

values. What should be done where such ‘older’ areas continue to exist? There is a great deal at stake here, as conservation interests place value on certainty and permanence in protected areas. Embarking on a de-listing process, however well-managed, could result in providing sufficient reason for rapacious land grabbing within protected areas by interests that are perhaps less legitimate.

There is also concern that a robust and globally representative system of protected areas has not yet been achieved. Set against the increasingly exploitative pressures on land, achieving such a global system is proving very challenging indeed. Many protected areas do not pay for themselves and are starved of resources. Even though protected areas bring many environmental and social benefits, they also involve costs. There are both the direct management costs and the opportunity costs that may arise from preventing exploitation.

Unless additional resources are made available, the effectiveness of protected areas will be severely diminished, and the creation of new ones deferred or cancelled – with serious implications for ecosystems and other natural and cultural values that remain underrepresented globally. Innovative mechanisms for generating adequate funding for managing protected areas must be a key priority for these poorer countries. The proceeds from mining could be used to fund protected areas and other conservation activities through offsets or set-asides, thus ensuring the long-term viability of such areas. However, provisions would have to be made to ensure that this funding does not cease once the mining industry is gone. There is still much work to be done before there are sufficient levels of trust to enable this to happen, as some from the conservation side are yet to be convinced that the mining sector can provide benefits commensurate with the environmental costs. Yet if the mining sector is to be excluded these potentials will not be realized.

There are certain activities that are likely to be acceptable to both mining and conservation interests, mainly pertaining to land under Categories V and VI and adjacent to protected areas. If successfully implemented, embarking on a short-term programme to collaborate could help build trust and confidence between the two parties, which is necessary if further dialogue and any understanding is to be achieved in the medium to longer term. However, the needs and interests of those usually marginalized by such discussions must counterbalance such solutions brokered at global or national levels. The challenge lies in making fully representative decisions that are a better balance for all of society’s concerns and priorities, as any solutions will most likely involve some elements of compromise on all sides.

Given these dilemmas, there is increasing interest in looking at other tools to conserve biodiversity across the landscape, that is outside protected areas on managed lands as well as within protected areas. There are a number of relevant tools emerging: integrated landscape/ecosystem management approaches, bioregional planning, co-management, the UNESCO Man and Biosphere Reserve concepts, etc. Adopting such approaches is especially important as the ecological integrity of protected areas often depends on biodiversity held outside protected areas, and yet the level of investment in such approaches has, so far, been limited. There is therefore a need to invest more in improving the effectiveness of such approaches as they can offer a means of achieving an appropriate balance between conservation and use, but they are complex, costly and not easy to apply. There have been some pioneering efforts in Canada and Australia, and despite the heightened constraints faced by developing countries, the conservation community (WWF and IUCN have sources of information on these developments) has been working on these approaches in the South.

Possible next steps

- i) IUCN in collaboration with other members of the Union and the IUCN World Commission on Protected Areas (WCPA) need to explore how to strengthen governments and protected areas agencies' capacity to improve the consistency and strengthen the application of the IUCN categories system. This might require:
 - a. Developing more technical guidance on the application of the IUCN categories system, based on previous experience from Europe and Australia.
 - b. Identifying how to incorporate a broader range of stakeholder perspectives into PA categorization and decision-making and how to build in the latest scientific advancements in biological, social and economic assessment.
 - c. Encouraging governments to carry out periodic reviews of their PA systems, which could help provide critical information on underrepresented ecosystems and could be done in conjunction with updates of the World Protected Areas Database.
 - d. Developing a proposal to establish a certification system for protected areas – to ensure that a protected area category has been correctly assigned and that the area is being managed according to its categorization.

- e. Developing a demanding set of principles and strict procedures that should be applied where, for instance, a government decides to designate a protected area or adjust its boundaries.
- ii) The key stakeholders should work together to develop a package of published ‘best practice’ guidance, possibly in collaboration with other relevant sectors, notably the oil and gas industry, which might be showcased at key fora, on:
 - a. Extraction in IUCN protected area categories V and VI, dealing especially with criteria for determining if extraction is appropriate, and if so how it might best be conducted.
 - b. Innovative concepts for managing the trade-offs between conservation and mining, such as offsets.
- iii) Key biodiversity institutions should undertake a high-resolution mapping exercise that will identify the scale and extent of threats posed by mining and other sectoral activities to protected areas.

Work Towards Developing More Effective Land-use Planning Systems

5.4

Land-use planning which is inclusive, transparent and well-informed could help make the case for the trade-offs between biodiversity conservation, protected areas and minerals development. Trade-offs are necessary if more sustainable land-use regimes are to be achieved. ‘Integrated’ land-use planning could lead to the generation of comprehensive development and land (or water) use plans that maximize the range of economic, social and ecological objectives for the nation and for local communities. These multiple land-use perspectives should be derived from an assessment of the distribution of costs and benefits presented by different land-use activities.

Implementing effective land-use planning in connection with minerals development has been made difficult because:

- rapidly increasing human populations place demands on land for many alternative uses that may be seen as inconsistent with mineral development;
- many of the areas in which the mining sector operates have relatively intact undisturbed ecosystems with highly marginalised populations;

- few land-use planning systems have the capacity to link the available environmental data sets, economic, social and ecological impacts, and cost–benefit analyses of different land uses with international and national conservation and development targets;
- many of the suitable areas are inhabited by peoples with distinct cultures, with different views of the value and use of land, and with livelihoods tied to subsistence activities that may be disturbed by development. For such groups the strength of social, cultural and philosophical ties to land associated with traditional activities may mean irreversible cultural impacts when mining occurs;
- cultural differences may lead to conflict, most commonly because of the emphasis placed by traditional peoples on occupation, usufruct rights, and communal labour and ownership versus the private ownership conferred by the state through legal title held by individuals and organizations; and
- the reality of land management is that there are multiple decisions going on all the time about the maintenance of ecosystem integrity, stable and functioning communities, and infrastructure that interact with specific land-use decisions.

Any effective planning system clearly needs to reconcile competing claims and interests. These may relate to indigenous territories, compensation problems, the difficult issues of resettlement, and environmental management, among others. The process should recognize legal patterns of land ownership, but also the reality of land use, as it exists – including when the uses are traditional or informal – and the expectations of local communities based on those uses.

In most countries effective land-use planning is extremely hard to achieve. Coordination across different sectoral departments is often very weak. Different sectoral departments, each with their own set of statutes, policies and regulations – which across sectors are often incompatible or contradictory – feel that they have equal stakes in using the same land for their own purpose. This in turn can promote a focus on individual biases and agendas, hence promoting conflict and resulting in fragmentation of decision-making over land use. For instance, there have been incidents where mining concessions have been granted, and the subsequent passing of new legislation has then restricted access to these areas (see Box 11). This can lead to very serious disputes.

Establishing effective land-use planning regimes is, therefore, often a highly sensitive and complex exercise that requires considerable skill, time and resources.

BOX 11 Harmonizing policy, planning and legislation in Indonesia

In Indonesia, the enactment of Forestry Law No 41 prohibited any open-pit mining activity in any forest reserve. This has instigated streams of complaints from developers who had already invested capital for exploration and from regional governments who suffered significant losses in revenue. Whilst a team has been established to try and resolve the dispute, and extraction may now proceed within 22 working areas, the debate has become extremely controversial in Indonesia – and internationally – and has raised many questions over sovereignty, compensation and equity.

Where there was close collaboration between the Mining and Marine and Fishery Ministries in Indonesia, the same controversy has not arisen. Whereas mining is now prohibited in small islands, before the prohibition was instituted several working areas for mining were identified and permitted, on the condition that sensitive areas would be protected, compensation claims resolved and equitable benefit-sharing arrangements put in place.

This example highlights the need to maintain close cross-sectoral collaboration during the formulation or adaptation of policy and legislation and to introduce collaborative processes that assist and support proper land-use planning, rather than exacerbate conflict.

The challenge of moving towards integrated and effective land-use planning in developing countries should certainly not be underestimated. Whilst there have been some successes emerging from Canada and Australia, effective and sustainable land-use planning presents huge challenges in developing countries where land tenure and rights issues are hotbeds of contention and land is highly politicized.

BOX 12 Mining and graded land-use policies

There is considerable interest in integrated land-use planning approaches that encompass a set of graded policies reflecting the varying degree of sensitivity of natural values to mining (as in the UNESCO Man and Biosphere Programme or as advocated by the Ecosystem Approach developed by the Conference of the Parties to the Convention on Biological Diversity).

These graded policies could include:

- Areas in which rules will be relatively relaxed (though mining proposals should always be subject to careful prior examination through EIAs for their environmental and social impact, and indeed general principles of stewardship).
- Intermediate zones where higher ‘hurdles’ would apply, such as longer and more costly up-front EIAs, higher stewardship standards, greater investments required for impact mitigation, and putting in place financial bonds to cover closure and emergency costs.
- Finally there would be ‘no-go’ areas, protected by being off limits to mining and other development altogether (the issue addressed by this paper, of course, is how these ‘no-go’ areas should relate to protected areas).
- Commitment by the industry to best practice whenever it operates, if necessary exceeding the requirements set by the government concerned (‘beyond compliance’) where these fall short of what is internationally recognized as responsible conduct towards the environment and local communities.

Some believe that the net area for biodiversity conservation and other ‘natural services’ could increase by applying broader processes of land-use designation and innovative mechanisms, such as offsets.

There is a need to explore how planning can realistically become more inclusive and transparent in such contexts. It is particularly important to learn from past ‘bad’ practice – there have been too many land-use planning failures over the last few decades, repeating the same mistakes over and over again.

Possible next steps

- i) Strengthen the capacity of governments at all levels to engage in effective and integrated land-use planning. This could involve working with bilateral donor agencies currently supporting relevant programmes at country level, or through engaging with UNEP, or other professional land-use planning networks.
- ii) Gather information on how to develop more effective land-use planning systems. This is likely to involve developing frameworks for consultation, benefit-sharing, and dispute resolution, and instituting the principle of free, prior, informed consent in land-use decision-making. An essential component of such work is to identify what needs to happen in policy and legislation at national and international level to create the right incentives for effective land-use planning.
- iii) Develop an integrated approach to land-use management that recognizes competing interests and attempts to negotiate the most appropriate course of action, bearing in mind the ecological and social limits of the areas. In an ideal world, integrated land-use planning requires, first, a solid database about current land-uses and use potential. Establishing this can be complicated by imperfect information: the planners do not know the mineral potential and many other values of the land, from the wildlife species that inhabit it to its support of livelihoods of local villages. Second, the needs and preferences of those currently based on the land need to be canvassed. Third, a negotiation or arbitration mechanism is needed that seeks to balance local, regional, and national priorities. A mechanism is also needed to compensate those affected by development or by the loss of land or land-dependent livelihoods – or to resettle those who may be displaced.
- iv) It is primarily the role of the state to define the rights of landowners and occupants and to ensure that the mining sector recognizes these rights in negotiating land access. It is at this stage that provisions of the mining tenure regime should come into play. For governments, the main challenges with respect to tenure are the clarification and recognition of informal but legitimate landowner/occupier relationships with the state and negotiation with the occupants of a suitable management regime for such lands.

BOX 13 Land-use planning frameworks

In the various MMSD workshops and discussions around the land issue, the following broad themes came to the fore for national governments to act on:

- Integrated land-use planning and decision-making processes should be based on a clear definition of property rights that will satisfy local aspirations, but still create an environment in which development can take place.
- All should have in place the mechanisms for equitably negotiated settlements of land claims and competing land uses; these should recognize the rights of the directly affected community to say no when there is a clear indication from a well-established collective or traditional decision-making process that the proposal has been rejected.
- Statutory exploration and mining codes of conduct that will incur penalties if breached should be in place.
- All should be encouraged to devise a code for interacting with indigenous groups that lays down specific and enforceable procedures, including respect for customary protocols.
- All should suspend operations that do not conform to the requirements of state and international law.

The existence of a fair and neutral dispute resolution system is a prerequisite for getting things right. If there is no functioning court system capable of independently setting compensation that is trusted by the community, then such a system must be created, and some form of arbitration must be available for people to turn to if they are dissatisfied with the compensation offered.

Pull Together and Disseminate Best Practice Experience

5.5

The articulation and implementation of better practice on biodiversity is a critical step towards building partnerships and consensus between the conservation and mining sectors.

There has been considerable progress in recent years with some individual mining companies making concerted efforts around biodiversity – Rio Tinto, for instance, is developing a company-wide biodiversity strategy. More widespread adoption of better practice still does present many challenges. Despite the proliferation of best practice documents, understanding how to implement best practice principles efficiently and cost-effectively remains incomplete, and some players still remain unconvinced. Ensuring that ‘juniors’ or smaller companies also commit to better practice is not easy. Such companies often cannot afford the additional investments necessary to implement good practice, or they simply slip through the loop.

The business case for better practice is growing in importance, however – many of the large companies now recognize that a poor reputation has detrimental impacts on business. For instance, a company with a poor reputation cannot attract quality employees, a poor reputation can also adversely affect relationships with regulators and principle investors.

Best practice is perhaps most challenged by the closure and rehabilitation of mines, especially with regard to orphaned and abandoned mines or mines that have been operating for long periods of time, often with a history of multiple ownership. There are often significant cost implications with few willing to foot the bill. In future, up-front bonds could help cover the costs of closing down a mine. Such mechanisms can affect profitability, and can be fraught with legal complications. There are other mechanisms, such as those implemented by some countries, such as Canada, where a permit to mine cannot be obtained until the closure plan has received government approval.

Encouragingly there are now increasing numbers of post-closure success stories. These include the Billiton mine in the Cape in South Africa where the original landscape was recreated, and certain wild species, such as elephants, were re-introduced. The area now boasts significant tourist potential. Richards Bay Minerals Operations near St. Lucia in South Africa and the bauxite mining in western Australia (Alcoa) provide other good examples of good closure practice. And of course, the largest quarry rehabilitation project in the world – the Eden Project in Cornwall, UK⁷ – which has resulted in one of the largest and most biodiverse hothouses in the world. It is rapidly becoming one of the most visited tourist destinations in the UK.

Possible next steps

- i) There is need to inventorize, ‘codify’ and disseminate best practice and standards. This could be done by pulling together an inventory and compendium of all existing relevant best practice documents, guidelines, standards and partnership experiences. This could be presented in an easily accessible clearing-house type arrangement.
- iii) There is now a need to focus on the development of policy and institutional incentives that will encourage implementation of better practice.
- iii) Direct outreach to the smaller companies and ‘juniors’ will help raise awareness within this group on biodiversity principles and better practice.
- iv) Decisions regarding closure need to be taken more proactively at the beginning of the mine cycle, so that necessary measures are incorporated into the mine site land-use plan. These decisions and plans need to be revised throughout the mine cycle, as the closure requirements are likely to change over time.

Institute More Rigour and Independence in Environmental Impact Assessment Processes (EIA)

5.6

The need for EIAs is well established, and they are now mandatory for most large-scale development projects. EIAs could play a key role in minimizing direct impacts on biodiversity and protected areas. However, implementation is often weak, with biodiversity criteria used too loosely⁸ to be meaningful. Another core problem is that the international community has yet to set firm technical standards on, for example, identifying key flora and fauna, assessing archaeological remains, or predicting acid drainage. This uncertainty allows EIAs to drift down to the lowest common denominator and discourages professional excellence. Reputable consultants who insist on sound methodologies find it hard to compete with others who are willing to take short cuts – especially if regulators are not sufficiently well informed to be able to reject substandard work.

Environmental and social assessment tools should also be combined to enable a transition to integrated impact assessment. This information could then contribute to the development of the Sustainable Development Plan – which should be standard requirement for each mine site. There is now considerable interest in ensuring that other issues, like the potential for spreading HIV/AIDS or for local economic development, are included in the assessment to incorporate analysis of all relevant variables in a single coordinated process.

To gain the full benefits an EIA should become part of an environmental management system (EMS) that seeks to integrate environmental responsibilities into everyday management practices through changes to organizational structures, responsibilities, procedures, processes, and resources. An EMS provides a

BOX 14 EIA leads to mining refusal in South Africa

The eastern shores of St. Lucia Lake in South Africa contain valuable reserves of titanium, and in the 1970s and 1980s the government granted mining rights to Richards Bay Minerals. In addition, this area of forested dunes is a valuable source of biological diversity. In 1986 it was designated as a wetland area of international importance within the International Convention on Wetlands.

Between 1989 and 1993 the post-apartheid government in South Africa undertook an environmental impact assessment. The research was entrusted to over 50 scientists and other experts and was presented in the form of individual reports that were commented on by the various stakeholders. A Review Panel was charged with using this information to determine whether mining would be compatible with nature conservation and tourism. As a result of this rigorous exercise, mining permission was refused and in 1999 the area was declared a World Heritage Site. Not all believe that this was the 'right' decision, given South Africa's current economic situation.

Source: Porter (2000); King (2000)

structured method for company management and the regulating authority to gain awareness and control of the performance of a project that can be applied at all stages of the life cycle – from identification of a deposit to mine closure. The stages in an environmental management system cycle are:

- 1 Organizational commitment
- 2 Environmental policy
- 3 Socio-economic impact assessment
- 4 Environmental impact assessment
- 5 Community consultation
- 6 Objectives and targets
- 7 Environmental management plan
- 8 Documentation and environmental manual
- 9 Operational control and emergency procedures
- 10 Training
- 11 Emissions and performance monitoring
- 12 Environmental and compliance audits
- 13 Reviews

Many international organizations, such as the UN, the World Bank, the World Health Organization, and financial institutions now have their own operating guidelines that include environmental and social issues. However, there does need to be a push for higher standards in the production of EIAs and for the incorporation of the EIA into an EMS. This will make a major contribution not just to better practices in mining, but also to sustainable development generally.

Possible next steps

- i) Clearer international standards for EIA practice need to be developed in a variety of areas to begin to make EIAs a more effective tool of environmental management.
- ii) There is also a real need to ensure that those commissioning, conducting and reviewing environmental impact assessments make significant improvements in the quality and usefulness of this process.

- iii) The standards used in an EIA should meet with either be those of the country in question or international standards, whichever is the more demanding.
- iv) An alert list of stakeholders, including government, NGOs, donor agencies and scientific bodies, should be informed as new EIA documents are posted to ensure that time for comment is adequate.
- v) A process should be put in place that involves more consensus between EPAs and the mining companies so as to produce more timely payments to the authorities for remedial operations.

Ensure that Finance Agencies Apply Better Practice Criteria Consistently

5.7

One of the arguments in making the business case for sustainable development is that improved sustainability performance will result in lower risks for the financial institutions that provide debt and equity funding as well as insurance to the industry. If these institutions were able to recognize good environmental and social performance, they would reward companies with lower costs of capital and insurance premiums. Thus, the financial institutions are potentially an important leverage point to improve sustainability performance.

The World Bank has a set of detailed environmental and social guidelines for its lending activities to industry, through the International Finance Corporation (IFC) and for insurance services offered through MIGA, as well as some specific policies on the mining sector. Private lenders broadly apply these, including export credit agencies, regional banks, and others – even where no World Bank financing is involved. Banks make significant efforts to analyse risks, and many expect adherence to World Bank and IFC guidelines as a minimum. In this regard, the standards of the multilateral banks (led by the World Bank) have become important global policy instruments. They have challenged the borrower countries to implement their requirements.

National export credit agencies (ECAs) – considered the quiet giants of mining finance – have somehow managed to remain outside the public debate and avoid vociferous NGO lobbying. They have remained less rigorous in their application of social and environmental criteria and less accountable for the environmental consequences of their finance – although exceptions include the UK, Australian, Canadian and US ECAs. By not adhering to broad standards ECAs lower the standards of other finance agencies.

Possible next steps

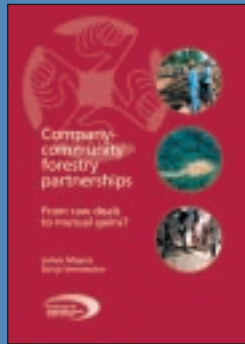
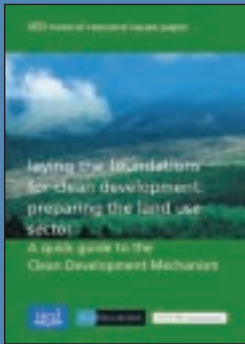
- i) Establish a supranational finance body to vet/approve extractive industry projects with respect to corporate responsibility – a sort of international ombudsman – that could help maintain consistency.
- ii) OECD governments must continue work on harmonizing Export Credit Agreements with best practice.

ENDNOTES

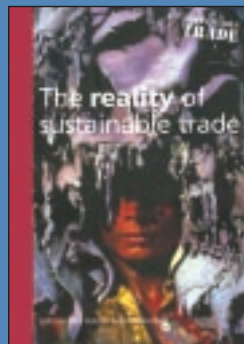
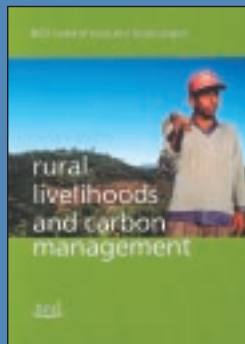
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- ³ See www.icmm.com/html/biodiversity.php
- ⁴ See www.riia.org
- ⁵ Much of the material in this chapter was taken from the two papers presented at the MMSD October 2001 workshop by Richards, D. (2002) Mining and Protected Areas. Prepared for the MMSD October 2001 workshop on Mining and Biodiversity. London: IIED and WBCSD. Phillips, A. (2002) Mining and Protected Areas. Prepared for the MMSD October 2001 workshop on Mining and Biodiversity. London: IIED and WBCSD. See www.iied.org/mmsd/activities/biodiversity.html. However, the material presented here is the author's interpretation of the material contained in the papers.
- ⁶ Hotspots are characterised by both high levels of endemism and high levels of threat, see Myers et al. (2000). Endemic bird areas contain two bird species that have a breeding range of less than 50,000 sq km, see ICBP (1992). Eco-regions are large units of land or water with distinct climate, ecological features, and plant and animal communities. They are considered to be some of the richest, rarest and most endangered areas, and hence of critical conservation concern; see <http://nationalgeographic.com/wildworld> (a WWF initiative called Global 2000).
- ⁷ See www.edenproject.com
- ⁸ A report on biodiversity and EIA commissioned by the International Association of Impact assessment has gone some way towards addressing the integration of biodiversity into EIA systems, but further work is needed.

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Throughout history, societies have protected areas they consider biologically valuable. But as a population grows and their consumption increases, so does the drive to extract more economically valuable resources more rapidly – be it minerals, timber or food. There is little consensus – even among biologists – about the most appropriate ways to do this. This paper tries to answer some of the many ongoing questions around mining, biodiversity and access to protected areas.

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