4. RECOMMENDATIONS AS TO HOW THE MINING AND MINERALS SECTOR IN SOUTHERN AFRICA CAN BEST CONTRIBUTE TOWARDS THE REGIONAL TRANSITION TO SUSTAINABLE DEVELOPMENT.

MMSD SOUTHERN AFRICA’S research and stakeholder engagement programmes identified a wide range of recommendations for ways in which the mining and minerals sector can contribute to the transition to sustainable development in the region. These recommendations have been made within the context of the goals for sustainable development in the southern African region, reflected in Figure 4.1.

The area of convergence in the centre of the figure represents the state of sustainable development. When social, economic and environmental concerns are equitably addressed, convergence occurs. The key challenge for the mining and minerals sector in southern Africa is to expand this area of convergence.

In addition to the above goals, the selection of recommendations was guided by:
- the generic framework derived for MMSD outcomes (see Table 5.1),
- regional priorities, and
- criteria set by MMSD SOUTHERN AFRICA.

4.1 Regional priorities

The recommendations set out in this chapter are not intended to be read as a manual, but as guidelines for the implementation bodies, who will need to expand them into detailed action plans.

Stakeholders prioritised certain over-arching issues that have to be addressed if progress towards sustainable development is to be achieved. These priorities appear as crosscutting issues in the recommendations. The critical issues in the region are:
- poverty alleviation,
- capacity building and skills training,
- gender equity,
- job creation, and
- governance.

Figure 4.1: Sustainable Development (based on the SADC vision for sustainable development in the region).
The mining and minerals sector comprises a number of stakeholders. These include: academia, CBOs, consumers, government, industry, industry associations, labour, NGOs and small scale miners. Some of the recommendations identified by MMSD SOUTHERN AFRICA apply to only one stakeholder group, but, because of the concerted effort required to enable the mining and minerals sector to contribute to the transition to sustainable development, many of the recommendations will require co-operation between groups.

The following sections identify key issues, elaborate on them and highlight the key recommendations to address these issues. The issues have not been prioritised by MMSD SOUTHERN AFRICA, but follow the same order as that of the research reports.

Figure 4.2 provides a key to classification of the recommendations that follow.
4.2 Small scale mining

The sub-sector employs an estimated 1.5 million people, and several million more benefit directly or indirectly from its activities (RT1 ITDG). Its size and nature mean that it has the potential to contribute to sustainable development in terms of livelihoods, employment and contribution to GNP. Small scale miners are highly mobile, can mine areas which are not viable for large-scale mining companies and are active in more than one sector of the economy, e.g. agriculture and mining. They also benefit the local communities by creating a demand for goods, such as food, and services.

However, current practices make the activities of the small scale mining sector unsustainable. The sector is expected to grow rapidly (see Section 3.3.3) and there is an urgent need to assist small scale miners to align themselves with the principles of sustainable development, as small scale operations are a threat to social, economic and biophysical systems in the region.

Recommendation 1: small scale miners recognise their role in the economies of the region and commit themselves to cooperation with the other stakeholders in the sector to align small scale mining activities with the principles of sustainable development.

4.2.1 Inadequate national governance frameworks for small scale mining

The extreme mobility of small scale miners, the quasi-clandestine nature of their operations and the remote areas in which they carry out their activities make a census of the sector extremely difficult. Their activities are difficult to control and monitor, and accurate and up-to-date data is impossible to obtain. The difficulty of controlling the sub-sector, and tapping its economic potential, is increased by insufficient capacity to implement a legal or fiscal framework for small scale miners (RT1 ITDG). Currently the sub-sector is not an attractive investment proposition. Government commitment would make it more attractive for companies, NGOs, and donors to invest in the sub-sector, both financially and by skills training.

The small scale mining sub-sector can currently offer little security, such as security of tenure, to access funding. Small scale mining presents a high risk to investors as frequently no geological assessment of deposits has been undertaken.

Because of the unregulated nature of small scale mining activities, it is difficult to monitor them in any way - health and safety, environmental impact and contribution to national economies. A lack of monitoring results in continued unsustainable practices and a failure to consider and use alternative technologies.

As they operate largely outside a legal framework, small scale miners do not pay taxes and are not accountable for compliance with environmental legislation. On the other hand, they cannot benefit from any existing social security system (Hentschel et al. 2001).

Formalisation and legalisation will enable governments to collect revenue from the sub-sector. This revenue can be used to fund the upgrading of the sub-sector as envisaged in Recommendations 5 and 6. The benefits envisaged in Recommendations 2 and 4 should be clear to small scale miners, and the administrative procedures required from them to enter the formal sector should be simplified.

Recommendation 2: national governments support the transition of small scale mining to the formal sector through the implementation of policies specifically geared to this sub-sector.
Small scale mining is a regional phenomenon, and the sub-sector is active in every country in the region. These countries are at different stages of policy development. Some have legislation in place to regulate the sub-sector, whilst in others governments have historically tended to ignore it. Tanzania and South Africa have recently formulated policies that recognise the sector and attempt to provide an enabling framework (Hentschel et al. 2001).

Because of the nature of their activities, small scale miners tend to migrate across borders, sometimes in their thousands. Their activities do not contribute to regional development and cooperation, and can lead to clashes with local small scale miners and indigenous communities. It also leads to the exploitation of the migrants, as the local authorities charge them a tax to get 'legal' status (RT1 ITDG).

**4.2.2 Inadequate regional co-ordination of small scale mining activities**

There is a lack of associations for small scale miners, and where these do exist, they are frequently handicapped by poor leadership, a lack of planning and management skills, poor communication with their members and a lack of alternative sources of funding for their activities (RT1 ITDG). A small scale miner acting alone, or in a small group, has little bargaining power to access finance and is also disadvantaged in negotiations with minerals buyers. The individual operator finds it difficult to access training and skills development opportunities, and has little or no opportunity to participate in information exchange (RT1 ITDG).

**Recommendation 3:** SADC creates a forum to promote the development of a harmonised regional legal framework to enable the activities of small scale miners to be conducted in an orderly and systematic manner.

**4.2.3 Lack of associations for small scale miners**

Lack of basic knowledge of how to manage an enterprise is a major hindrance to sustainable growth of small scale mining operations, even if natural resources are promising and production is reasonable (RT1 ITDG). The sub-sector operates outside any regulatory framework, and this encourages the adoption of casual business methods. Market research is frequently ignored, and this, together with ignorance of the laws applying to business operations, makes miners vulnerable to exploitation, particularly by the buyers of their minerals.

A lack of business skills means that many miners are unable to approach finance institutions with a bankable document containing a sound business plan and evidence of financial management skills. Other factors make it almost impossible to raise working capital. There is a lack of trust and accountability in the sub-sector, and small scale miners are highly mobile, abandoning one site and occupying another virtually overnight.

Existing facilities for small scale miners to access loans, grants and credit all have serious drawbacks. The miners are in a weak bargaining position with regard to loans from buyers of their products, and the requirements for loans from institutions are frequently too complex and strict for the ordinary miner. Often the administrative and management costs associated with disbursement of the loans or grants are much higher than the capital provided (RT1 ITDG).

It has proved difficult to set up sustainable revolving loan schemes, or to establish the use of third party guarantees that would enable
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Many small scale mining operations rely on manual labour, which is not only economically inefficient but also dangerous. Miners frequently burrow into the hanging, and the resultant collapse of the tunnels causes injury or death. Other examples of poor technology include the sinking of underground shafts without adequate ventilation or support (RT1 ITDG).

Small scale miners usually work in rural areas, beyond the reach of postal, telephonic and electronic communication. It is difficult, even impossible, for them to access the information that is available and that would assist them to carry out their activities in a more sustainable manner and widen their technology choices. These miners have basic technical skills and geological experience but need training in and regular updating on appropriate technology. A lack, for example, of appropriate minerals processing technology limits their ability to match market demand and optimise profits.

Lack of geological information leads to unsystematic exploration. Information on the potential of a deposit, and its suitability for small scale mining, are essential for successful exploration. Currently the approach to exploration is unsystematic and wasteful of time and money (RT1 ITDG).

Inadequate and inappropriate technology inflicts severe environmental damage, including water contamination, siltation and the destruction of the landscape by alluvial mining. Many of the beneficiation techniques applied pose significant environmental and human health risks. Little effort is being made to minimize these risks (RT4 Ashton et al.).

Appropriate technology for small scale mining has been identified in a number of cases, but the promotion and dissemination of this technology is not effective (RT1 ITDG). Information on improving health and safety conditions is also not freely available.

Minerals processing is a stage in the mining cycle where high human health impacts occur and environmental damage is likely. This is the area where technology skills are most needed in small scale mining. There is a need for raising awareness about the negative social and environmental impacts of their operations, and training in the skills of avoiding such impacts.

**Recommendation 5:** education institutions, in partnership with companies and government, develop and offer appropriate training programmes for comprehensive business skills acquisition by small scale miners; and financial institutions (banks, development agencies), government, companies and NGOs facilitate access to credit adapted to the specific requirements of small scale miners.

**Case Study: The use of mercury in small scale mining in Mozambique**

In Manica and part of Niassa provinces, the use of mercury in the amalgamation process for recovering very fine gold is common. Gold amalgamation consists of mixing the pre-concentrate of gold with mercury to obtain an amalgam, which is then heated in the open air, and the gold is recovered. Mercury, a highly toxic heavy metal, has the capacity to collect microscopic gold particles to form Au-Hg amalgam. In the process of amalgamation, part of the mercury is released directly into the river system, part of it inhaled by the processor, as no masks are used, and part of the mercury is released into the atmosphere. Gold amalgamation is often done near a river and in open places (RT1 ITDG).

**Recommendation 6:** education institutions, in partnership with government, companies and donors, develop and offer information gathering and sharing mechanisms and appropriate capacity building programmes for comprehensive technical skills acquisition by small scale miners.
There are few examples of collaborative partnerships between small scale miners and larger operators in the mining and minerals sector. On the contrary, the relationship is frequently one of conflict. The coexistence of large and small scale mining activity in an area can create conflict over land. Larger companies are concerned about the impact of illegal and uncontrolled small scale mining activities on their concessions, and small scale miners resent their larger counterparts’ refusal to allow them to exploit resources that are not viable for larger operations.

Successful examples of collaboration exist. A collaborative approach, resulting in a successful relationship, has been established at an Ingwe colliery in South Africa (Hentschel et al. 2001). In Tanzania, TANSCAN and Anglo American Exploration have been active in collaborating with the small scale miners (RT1 ITDG), but in the same country there have been violent clashes between large- and small scale operators. Large-scale industries have access to smelters and markets, to in-house training facilities and information about prospecting and processing. Small scale miners do not have access to these, and very few of them are involved in collaborative partnerships with large mines. While they have core competencies, they do not have the opportunity to build on these. They do not have linkages with technical partners and exchange programmes, which would facilitate the development of a common sustainable development agenda between them and large companies.

**Recommendation 7:** Small scale miners’ associations form collaborative partnerships with companies for mutual benefit.

**Case Study: Relationships between small and large-scale mining in Mozambique**

Conflict resulted between exploration companies and small scale miners because small scale miners mined in the concessions of the large mining companies, sometimes at night. In 1998 police had to guard the exploration concession area of North Rand Company in Manica day and night. Small scale miners sometimes mine areas already rehabilitated by big companies, as in Manica at Chua River alluvium, where artisanal miners worked in areas rehabilitated by the ALMA/BENICON company. Large- and small scale mining can interact favourably if small scale miners are allowed to mine areas that are not economically viable for large-scale mining companies. The small scale miners can mine and sell their product to the company. At Great Dyke in Zimbabwe, small scale miners, organised in co-operatives, mine chromite ore and sell it to Zimasco and ZimAlloys. In Mozambique small scale miners were allowed to operate in the ALMA/BENICON concessions with the obligation of selling their production to the company. The positive impact of this interaction is the guarantee of a market for the small scale miners and the possibility of having working tools supplied by the large-scale mining company. The negative impact is related to social benefits of the miners, working hours, safety regulations, and pricing of the product, which is determined by the company. This case creates a situation of over-exploitation of the small scale miners by the large-scale mining companies (RT1 ITDG).

**4.2.6 Lack of gender equity in the small scale mining sub-sector.**

Women lack access to credit and finance, and are consequently trapped at the subsistence level of mining. A UNIFEM study found that 6% of women miners had been able to access loans for their operations (Hentschel et al. 2001). It is also difficult, often impossible, for a woman to obtain a licence. Lower levels of technical knowledge and literacy among women compound these barriers. There is little by way of training in technical areas, business management or in special skills development programmes.
Traditional patriarchal views make it difficult for a woman to advance in the industry, and her full participation is inhibited by her perceived primary role of homemaker. There are a number of very successful women miners, but their initiatives and achievements are not publicized (RT1 ITDG). The perception is that, for women, small scale mining means employment at the lowest level. This perception is reinforced by cultural beliefs. In some areas, the presence of women at operations is believed to invoke bad spirits (RT1 ITDG), or to make the gemstones disappear (RT3 Ranchod).

Policy commitment to empowering women exists within government, the trade unions and within SADC, but translating this commitment into practice remains a key challenge (RT3 Ranchod). Associations for women miners also exist: the SADC Women in Mining Trust, for example, focuses on women working in small scale mining. All countries in the region have such associations for women in mining. There does not, however, seem to be effective coordination and implementation of strategies to materially change the conditions under which women work.

Collaboration is widespread on issues such as advocating and lobbying for marginalized groups like women, but there is always the danger that such collaborative groups can fall under the control of a few influential individuals. There are few support associations for women, and where associations for marginalized groups, such as women miners and child labourers, do exist, they need special support to strengthen their role in the sub-sector (RT1 ITDG).

The empowerment of women in the sub-sector has the potential to alleviate rural poverty. Women tend to spend their incomes on family needs, whereas men may be tempted to spend on prostitution, gambling and alcohol (Hentschel et al. 2001).  

**Recommendation 8:** associations for women miners use existing instruments, such as the Beijing Platform of Action, the United Nations Convention on the Elimination of All Forms of Discrimination Against Women and the SADC Heads of Government Declaration on Gender, 1997, to lobby government to ensure equal opportunities for women in small scale mining.

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**4.2.7 Child labour in small scale mining**

The issue of child labour in the southern African small scale mining sub-sector has been largely neglected. Figures for child labour are not available, but at one site in Tanzania alone, 3,000 children are employed in mining tanzanite, even though the International Labour Organisation’s (ILO) Programme on the Elimination of Child Labour (IPEC) is operational in Tanzania (RT1 ITDG). Poverty has an obvious relationship with child labour, and to many mining families, children are a source of additional income. The degree of involvement of children in small scale mining ranges from children who join their parents after school to those in bonded child labour as a result of poverty and the lack of a social security network (RT1 ITDG).

Inadequate, non-existent or unaffordable schooling also contributes to the phenomenon of child labour, as children are left with nothing else to do but work. The problem of child labour is a global one. Children work in small scale mines in Africa, Asia and Latin America. They work long hours without protective equipment and are exposed to health hazards such as gases, fumes and extremes of temperature and humidity levels. Physical strain, fatigue and musculature and skeletal disorders are further factors that make for a poor prognosis for healthy maturation.

ILO Convention No. 182 aims at eliminating the worst forms of child labour, including that in mining. The International Programme on the Elimination of Child Labour (IPEC) aims, by progressive steps, to ultimately end child labour.

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*Children at a small scale mining operation (courtesy of Intermediate Technology Development Group)*
Recommendation 9: all governments adopt and monitor the implementation of ILO Convention No. 182 and IPEC to ensure the elimination of the worst forms of child labour in mining.

Recommendation 10: governments, donors, NGOs and small scale mining associations provide adequate, accessible and affordable schooling and day-care for the children of small scale miners.

Recommendation 11: where appropriate, areas for small scale mining activities are identified within local development planning processes; environmental management and assessment tools, such as strategic environmental assessment and cumulative effects assessment, are applied to determine the operating and rehabilitation guidelines for small scale miners within a framework of sustainable development.

ILO Convention No. 182 is operational in most SADC countries, and a number of them also have policies in place to eradicate child labour. However, the problem persists as governments lack capacity to enforce child labour laws and, where applicable, the implementation of this Convention (RT1 ITDG).

The number of AIDS orphans in the region increases daily, and there is every likelihood that many children who are forced into providing for siblings will turn to the small scale mining sector as a source of income. Their youth, their need for a livelihood and the lack of monitoring means that the opportunities to exploit them are considerable.

There are serious challenges to be overcome if the small scale mining sub-sector is to contribute to sustainable development in the region. However, given the extreme poverty of the sub-sector, and the spillover effects of this poverty, such as child labour and environmental degradation, it is imperative that this is seen as a challenge to all the stakeholders in the mining and minerals sector, and one that can only be met by concerted action. Apart from the recommendations detailed above, there are a number of other actions that would facilitate the move towards sustainable development of this sub-sector. These include increased access to water and affordable fuel, as well as easier access to appropriate mineral deposits. Exclusive Prospecting Orders should be reduced to provide more equitable prospecting opportunities across the mining and minerals sector.

In small scale mining areas, infrastructure and social services are sadly neglected. Rural and tertiary roads are impassable after rains, and health and good educational facilities are located at some distance from the mining areas.

Currently employed methods for environmental assessment and management, such as environmental impact assessment (EIA) and environmental management programmes (EMPs) are complex and expensive and thus not appropriate for small scale mining. Strategic Environmental Assessments (SEA) can be used for areas in which small scale mining occurs to ensure that cumulative environmental degradation is properly managed and that generic operating guidelines are drawn up for operations.

Other activities, even rudimentary ones such as informal buying and selling at markets and stalls, should be encouraged and facilitated. Small scale mining has the potential to be a source of income and employment for rural communities. If the sub-sector is organised and regulated, secondary economic activities become possible. The introduction of technology means that machinery has to be purchased and serviced, materials will be needed for the production system and roads may have to be built or maintained (RT1 ITDG).
4.3 HIV/AIDS

HIV/AIDS is arguably the most significant threat to sustainable development in southern Africa. A decade ago, HIV/AIDS was regarded primarily as a health crisis. Today, it is clear that the disease is a development crisis (see Section 3.3.4).

4.3.1 HIV/AIDS and poverty

Poverty has been identified as a key risk factor in the spread of HIV/AIDS (RT2 Elias et al.), especially in rural areas. Two factors that encourage the spread of the virus are the gender inequity in these societies and their supply of labour to the mines. A lack of comprehensive development plans, and AIDS deaths, compound the problem of poverty in the rural areas.

Poverty also encourages migration as people move from rural to urban areas to find work. This leads to the breakdown of traditional lifestyles, and the development of behavioural patterns that are conducive to the spread of HIV/AIDS.

**Table 4.1: Global HIV/AIDS statistics, end of 2001 (UNAIDS, 2001).**

<table>
<thead>
<tr>
<th>Region</th>
<th>Epidemic started</th>
<th>People living with HIV/AIDS</th>
<th>New HIV/AIDS infections</th>
<th>Adult prevalence rate</th>
<th>Per cent of HIV-positive adults who are women</th>
<th>Main modes of transmission of HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Saharan Africa</td>
<td>Late 70s / early 80s</td>
<td>28.1 million</td>
<td>3.4 million</td>
<td>8.4 per cent</td>
<td>55 per cent</td>
<td>Hetero</td>
</tr>
<tr>
<td>N. Africa &amp; Mid. East</td>
<td>Late 80s</td>
<td>440,000</td>
<td>80,000</td>
<td>0.2 per cent</td>
<td>40 per cent</td>
<td>Hetero, IDU</td>
</tr>
<tr>
<td>S. &amp; SE Asia</td>
<td>Late 80s</td>
<td>6.1 million</td>
<td>800,000</td>
<td>0.6 per cent</td>
<td>35 per cent</td>
<td>Hetero, IDU</td>
</tr>
<tr>
<td>S. Asia &amp; Pacific</td>
<td>Late 80s</td>
<td>1 million</td>
<td>270,000</td>
<td>0.1 per cent</td>
<td>20 per cent</td>
<td>IDU, hetero, MSM</td>
</tr>
<tr>
<td>Latin America</td>
<td>Late 70s / early 80s</td>
<td>1.4 million</td>
<td>130,000</td>
<td>0.6 per cent</td>
<td>30 per cent</td>
<td>MSM, IDU, hetero</td>
</tr>
<tr>
<td>Caribbean</td>
<td>Late 70s / early 80s</td>
<td>420,000</td>
<td>60,000</td>
<td>2.2 per cent</td>
<td>50 per cent</td>
<td>Hetero, MSM</td>
</tr>
<tr>
<td>E. Europe &amp; Central Asia</td>
<td>Early 90s</td>
<td>1 million</td>
<td>250,000</td>
<td>0.5 per cent</td>
<td>20 per cent</td>
<td>IDU</td>
</tr>
<tr>
<td>W. Europe</td>
<td>Late 70s</td>
<td>560,000</td>
<td>30,000</td>
<td>0.3 per cent</td>
<td>25 per cent</td>
<td>MSM, IDU, hetero</td>
</tr>
<tr>
<td>N. America</td>
<td>Late 70s / early 80s</td>
<td>950,000</td>
<td>45,000</td>
<td>0.6 per cent</td>
<td>20 per cent</td>
<td>MSM, hetero, IDU</td>
</tr>
<tr>
<td>Australia &amp; NZ</td>
<td>Late 70s / early 80s</td>
<td>15,000</td>
<td>500</td>
<td>0.1 per cent</td>
<td>10 per cent</td>
<td>MSM</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>40 million</td>
<td>5 million</td>
<td>1.2 per cent</td>
<td>48 per cent</td>
<td></td>
</tr>
</tbody>
</table>

Hetero = heterosexual transmission; IDU = transmission through injecting drug use; MSM = sexual transmission through homosexuality.

Recommendation 12: Government, labour and industry initiate and support development plans aimed at alleviating rural poverty in labour sending areas and making affected rural communities less dependent on income from migrant labour. People living with AIDS are able to lead a productive life if given proper care, but frequently they are abandoned to sink even deeper into poverty. If they have not been retrained in appropriate skills or encouraged to participate in benefit schemes, their financial resources are drained. A review of a community home-based care program in Zimbabwe shows that most home care programs are more expensive than hospital care. The cost of one home care visit equates to between one and three days in hospital (RT2 Elias et al.). In South Africa, companies such as Gold Fields, AngloGold and Anglo American have found that home-based health care is cheaper than hospitalisation for terminal patients (Reichardt, pers. comm. 2001).
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The financial impact of HIV/AIDS could be more efficiently managed through benefit schemes. Workers are not encouraged by their labour organizations to join these schemes, which companies could administer and governments could subsidise. Little is done to retrain medically boarded employees so that they can still, albeit in a reduced capacity, be economically active.

Case Study: Community home-based care: the Bambisanani Project Model The Bambisanani Project, based in Kokstadt in the Eastern Cape Province of South Africa, is being used by TEBA to develop a model for extending home-based health care and of other health-related development interventions to mineworker-sending areas. TEBA acted as the lead agency to play a co-ordinating and implementing role, but the project is a true partnership, involving:

- the mining industry, which provides funding (initially from Gold Fields, with additional support from Bristol-Myers Squibb),
- unions, who represent their membership,
- government, which assists in design and implementation, as well as directly providing grants, e.g. for orphans,
- NGOs (initially the Planned Parenthood Foundation, Eastern Cape, Hospice, Equity) and,
- researchers, who were primarily interested in the evaluation of income-generating projects.

Support for mineworkers with AIDS is placed in the context of the entire community because care requires a broad range of impacts to be addressed, including: stigma, poverty and loss of economically active people, support for care-givers (particularly the elderly and school-age children), provision of affordable funeral services, increasing food production and relief of pressure on health and social support services. Notably, orphan-care was not part of the original programme, but has had to be included subsequently, because it is now a major issue.

To encourage sustainability, participation in the programme is made conditional on communities organising and electing care supporters independently. This approach makes it more likely that the care-givers and trainers will be trusted. (RT2 Elias et al.)

Recommendation 13: governments, labour and companies, in co-operation, investigate financially viable programmes to enable workers to join medical benefit schemes so that workers who contract HIV/AIDS are able to receive care without additional financial distress, and government, labour, companies and NGOs initiate and support community home-based care programmes.

4.3.2 A Multistakeholder Approach to Combating HIV/AIDS

A multistakeholder approach is essential to deal with a challenge as great as that of the HIV/AIDS pandemic. Mining companies have played a leading role in this respect in southern Africa, sometimes accepting a leadership role at national level, as did Debswana Diamond Company in Botswana (RT2 Elias et al.). However, neither the responsibility nor the capacity rests with one stakeholder group.

Numerous problems face the establishment of a multistakeholder model. These need to be confronted and addressed, so that trust and a common purpose can be created, which enables stakeholders to build on each other’s strengths. A multistakeholder model could:

- allow genuine cooperation between all stakeholders,
- allow open and transparent communication,
- accommodate the priorities of all stakeholders,
- recognise the value of the resources that different stakeholders can provide,
- recognise the constraints that different stakeholders face, and
- allow different stakeholders to take responsibility to avoid domination by one group (RT2 Elias et al.).

The constraints and difficulties involved in setting up multi-stakeholder initiatives are outweighed by the possible benefits from these partnerships. Constraints that have prevented the implementation of such models, and that impact on initiatives to control the spread of, and manage HIV/AIDS, include:

- the different needs and capabilities of stakeholders, which can create unequal power relations,
women, and children. It is estimated that, if these trends continue, current efforts to prevent the spread of HIV/AIDS will not be sufficient to achieve UNAIDS' Target 5 and will leave considerable gaps in the achievement of the MDG's and the Millennium Declaration's goals.

Case Study: The Ernest Oppenheimer Hospital in Welkom, which is part of Anglo American group health services, is shortly to become an accredited HIV/AIDS vaccine-testing centre. Such accreditation brings opportunities to participate in cutting-edge research and development, and the possibilities for stakeholders associated with these organisations to be amongst the first to benefit from innovations. (RT2 Elias et al.)

Several multistakeholder HIV/AIDS interventions have been launched in southern Africa.

- **Mpumalanga (Powerbelt) Project** - launched in 2000, this is still in the process of being implemented. It is unique in attempting to address a variety of sectors (e.g. mining, power-generation, water supply, etc.), through a comprehensive approach, including: prevalence surveys, awareness education, door-to-door peer education, wellness programmes, STI and tuberculosis treatment, micro-business development, housing and workplace discrimination.

- **The Tabelopele VCT initiative** in Botswana is a collaborative multistakeholder project, established to create a network of free, anonymous, voluntary HIV counselling and testing (VCT) centres throughout Botswana. The government and the Centre for Disease Control (Atlanta, USA) are the two main stakeholders. However, Debswana Diamond Company became an active partner in March 2001. Company participation also benefits the larger community and not just its own employees.

- **The Wellcome Trust** recently initiated a 3-year project in Harare, Zimbabwe, to investigate primary health care in small and medium-sized enterprises (SME). By bringing together researchers, donors, companies and employees, the project provides an arrangement from which each stakeholder can benefit (RT2 Elias et al.).

The projects have uniformly delivered positive and encouraging results in terms of metrics such as knowledge, attitude and practices (KAP) statistics, condom use, and reductions in both the incidence and prevalence of HIV, STI's and tuberculosis. However, they suffered from similar characteristic problems, namely:

- as the scope of projects increases, so does their cost, implementation timescale, management complexity and potential lack of co-ordination between stakeholders, and
uncertainties about the future of some projects once initial project funding comes to an end (RT2 Elias et al.).

A lack of financial resources is a key problem for those involved in HIV/AIDS initiatives, and the use of available funding needs to be prioritised. Donor organisations, which focus on national economic indicators when allocating funding, could interact with NGOs and government to establish the underlying situation and so target their funds effectively. Although Botswana and South Africa, for example, are classified as middle-income countries, large numbers of people still live below the poverty line (RT2 Elias et al.).

**Recommendation 14:** all stakeholders in the sector develop national HIV/AIDS management programmes in partnership with each other and with international donors and the pharmaceutical industry.

**4.3.3 Gender inequity as a contributory cause of HIV/AIDS**

Table 4.1 shows that 55 per cent of adults who died of AIDS during 2000 were women. In South Africa, by 2020, mortality for women is predicted to peak in the 30-34 age group (RT2 Elias et al.).

There is a close relationship between gender issues and the spread of the epidemic. As a result of values and traditions, many women in Africa are not empowered to refuse sex or to insist on the use of condoms. If they were, it is unlikely that the epidemic would have reached such an enormous scale. Many men believe that women, apart from their own wives, have many sexual partners and that women in general are "responsible" for spreading HIV (RT2 Elias et al.).

It is common for boys to grow up in the belief that sex at will is their right, and girls are commonly socialised into believing that they have a ‘duty’ to satisfy male sexual needs. One of the reasons why women contract HIV at a faster rate than men is because men have more sexually active partners and thus more opportunities to transmit the disease to women. In addition to such cultural and traditional issues, women are also biologically more vulnerable to infection than men (RT2 Elias et al.).

Poverty is a key risk factor in the spread of HIV/AIDS, and women suffer most from the effects of poverty. They are among the most disenfranchised and marginalized sectors of the population, and their personal empowerment must be facilitated by economic empowerment.

Migrant labourers have money and leisure time at their disposal, and very often their main choices for entertainment are sex and alcohol. The commercial sex trade in mining communities is a flourishing one, but largely unregulated and illegal. Because of the disempowered position of sex workers, who are trying to earn a living, they are not in a position to negotiate safe sex, and they become a conduit for the transmission of HIV. The reality of the trade should be accepted, so that it can be regulated and appropriately managed.

The system of single-sex housing at mines also impacts on women with regard to HIV/AIDS. Separated from their families, men indulge in increased sexual activity with women in the mining communities who are selling sex to earn an income. ‘Survival sex’ relationships, in which a woman is disempowered by her need for an income, are a further indication of the effects of poverty on women (RT2 Elias et al.).

**Recommendation 15:** women are made less vulnerable to HIV/AIDS infection through economic and educational empowerment, and governments, NGOs and companies support such empowerment.
Case Study: Employer initiatives changing living conditions

Several Billiton group companies have maintained HIV prevalence at levels substantially less than those of the surrounding communities. Prevalence is 11% at Hillside Aluminium, located in KwaZulu-Natal, where adult prevalence exceeds 30%. Predictive modelling indicates that, by maintaining prevalence around 10%, Billiton will reduce the effect of HIV/AIDS on costs to around 2-3% if medical costs can continue to be borne by medical aid schemes. These promising results are attributed to company policy to reduce risk factors by:

- giving preference to the local recruitment of labour,
- phasing out hostel systems and moving to individual housing allowances, and maintaining a family-friendly environment where hostels still operate,
- placing a greater emphasis on qualifications by increasing the proportion of employees with matriculation, and
- requiring compulsory participation in private medical aid schemes (introduced in 2001).

These steps were taken in addition to more common measures including vigorous STI campaigns, and the use of periodic presumptive treatment amongst sex workers. Anglo American have had a similar experience at their Namakwa Sands operation in the Western Cape province of South Africa, where the predominantly locally recruited workforce has a prevalence of only 2% (RT2 Elias et al.).

Recommendation 16: where practical, affordable and supported by residents, the move towards replacing single-sex hostels, which have been identified as one of the critical channels for the transmission of HIV, with family housing units, is accelerated.

4.3.4 Migrant labour as a contributory cause of HIV/AIDS

Migrant labour favours the increased transmission of HIV, as men, including mineworkers, who are predominantly migrant single men, are infected by casual sex partners. Further transmission is likely when migrant workers return to their homes for leave or on the expiry of their contracts. The quality of the transport infrastructure, which is very good throughout most of the region, promotes the rapid spread of HIV into the rural areas.

4.3.5 Employment opportunities

People living with AIDS (PLWA) frequently find themselves out of work and shunned by the community. There is, however, great potential for them to be gainfully employed and to make a positive contribution to HIV/AIDS initiatives. They can be trained to develop and implement information and awareness programmes in the workplace, and used as counsellors. People will find it easier to disclose their status to somebody who has AIDS than to clinic staff, who are often over-worked and unsympathetic. PLWA who are seen to be leading a productive life can help to dispel the stigma attached to AIDS, and the resultant discrimination against colleagues and community members who are HIV-positive.

Organisations who have implemented such employment of PLWA have reported positive impacts (RT2 Elias et al.) and the practice should be extended, not only in companies but also in NGOs, CBOs and other stakeholder groups.

Some mines have considered encouraging HIV-positive employees to take early retirement by retraining them and re-scheduling benefits. They would then still be well enough to undertake alternative income-generating activities outside the mine (RT2 Elias et al.). If they were trained in HIV/AIDS support, other stakeholders who do not have the capacity to undertake such training could take them into employment.

Companies should consider retaining medically boarded employees in different capacities more appropriate to their state of health. With proper care, HIV-positive employees can make positive contributions to companies for many years.
Several mining companies are investigating innovative methods to reduce the impact of HIV/AIDS on the families of mineworkers who are unable to continue working. At Lonmin’s Western Platinum operation, HIV-positive employees who are faced with medical boarding can nominate candidates as possible replacements. This provides an important opportunity for employment benefits to remain within the immediate or extended family of the affected person. The impact of the loss of income is therefore mitigated. This solution is, however, only likely to be practical for jobs that do not involve high levels of skills (RT2 Elias).

**Case Study: Encouraging the HIV-positive to take early retirement.** Several mining companies are investigating innovative methods to reduce the impact of HIV/AIDS on the families of mineworkers who are unable to continue working. At Lonmin’s Western Platinum operation, HIV-positive employees who are faced with medical boarding can nominate candidates as possible replacements. This provides an important opportunity for employment benefits to remain within the immediate or extended family of the affected person. The impact of the loss of income is therefore mitigated. This solution is, however, only likely to be practical for jobs that do not involve high levels of skills (RT2 Elias et al.).

**Recommendation 17:** where feasible and appropriate, stakeholders, especially companies and labour, facilitate the retention of people living with AIDS as productive members of the workforce for as long as possible.

**4.3.6 Lack of commitment to good governance**

Although mining companies are well positioned to play the leading role in such a multi-stakeholder approach, government is a key player. As HIV/AIDS is a regional problem, SADC and national policies need to be harmonized. However, much can be done before such accord is achieved, and individual companies have taken the initiative and begun work with their stakeholders, even where regional accord is not established.

Health authorities in the region are among the weakest and least capacitated in the world, and governments have not managed the epidemic effectively. Critics of governments point out that they focus on policy rather than implementation, and that they do not do enough to build capacity in NGOs or involve them fully as partners (RT2 Elias et al.).

There are numerous areas in which governments need to accept responsibility as the overall curator of the health and well being of their people. The number of AIDS orphans has reached crisis proportions, and land, facilities and resources are urgently needed to address the problem. Education and interventions aimed at children are vitally important and need to be entrenched in national curricula. With respect to funding of NGOs and CBOs, donors come and go, and government is the only possible source of permanent funding. HIV/AIDS has to be made a mainstream budget item, with the creation of full-time posts (RT2 Elias et al.).

Reasonable, sensitive and accessible healthcare should be provided. In Africa most patients with sexually transmitted infections (STI) are unlikely to get effective treatment in under-resourced clinics (RT2 Elias et al.). Healthcare is the responsibility of governments, and they have to take the lead in this respect, while industry and labour should play a supporting role.

HIV/AIDS cannot be managed in an unstable environment. The main causes of instability in the southern African region are the breakdown of civil society and economic failure. Governments rightly bear the bulk of the responsibility for maintaining stability, but all stakeholders can and must play a supportive role to achieve stability in the region (RT2 Elias et al.). The environment of poor health services, poverty and instability is emphasised in Article 128 of NEPAD:

*Africa is home to major endemic diseases. Bacteria and parasites carried by insects, the movement of people and other carriers thrive, favoured as they are by weak environmental policies and poor living conditions. One of the major impediments facing African development efforts is the widespread incidence of communicable diseases, in particular HIV/AIDS, tuberculosis and malaria. Unless these epidemics are brought under control, real gains in human development will remain a pipe dream.*

(Government Communications, 2001b).

**Recommendation 18:** all stakeholders, led by governments, commit themselves to good governance, so that the HIV/AIDS pandemic can be effectively managed and their people are protected from the escalation of the disease.
4.4 Mining and society

Economic and social systems are intimately linked. Consequently, the mining and minerals sector, an important component of the regional economy, has a significant impact on society. The large number of jobs the industry provides, the role it plays in the settlement patterns of people, the services it provides and the social disruption it causes are examples of this influence. The poverty of many southern African people is in stark contrast to the mineral wealth of the region. A primary goal in southern Africa must therefore be to utilise this mineral wealth to improve the health, income and living conditions of the poor majority.

An awareness of the social risks associated with the mining and minerals sector is the first step towards reducing negative impacts and enhancing the positive contributions the sector can make. To ensure that the costs and benefits of a mining project are more equitably distributed, a participatory approach, with clear division of responsibilities agreed upon early in the process, is required.

Poor community/mine relations can lead to tension and violence and hinder progress towards long-term sustainability. All affected stakeholders must be involved in planning and decision-making to promote the sustainability of the mining project and the community within which it occurs.

"It is only those opportunities with high levels of sustainability and couched within the resource capacity of participating stakeholders that should be at the core of interactions between mining companies and communities." (RT3 Choshi)

4.4.1 Poverty and resettlement

Resettlement programmes inevitably have the greatest impacts on rural communities, which are already poor. Resettlement must not add to their poverty, but there is a very real threat that it could do so.

- **Landlessness.** A failure to reconstruct or replace lost production systems (land) with income-generating employment can result in landlessness and impoverishment.
- **Joblessness.** The risk of losing employment is high. Unemployment or under-employment results from resettlement if not addressed immediately after relocation.
- **Homelessness.** For some resettlers a worsening in housing standards or loss thereof is a reality. A decline in housing conditions increases if compensation for lost housing is assessed at market value rather than replacement value.

- **Marginalisation.** Displaced persons lose economic power, skills become redundant, markets become closed and social and psychological depression results. The resettled person, viewed as a stranger, is denied opportunities in the host community and experiences a drop in social status, lack of confidence, feelings of injustice and heightened vulnerability.
- **Food insecurity** results when resettlement goes wrong. Malnourishment results from deficient calorie-protein intake, and the incidence of morbidity and mortality depend on the effectiveness with which landlessness and joblessness are dealt.
- **Increased morbidity and mortality.** Malnourishment, stress and anxiety cause health levels to decline. Unsanitary conditions favour parasitic and vector-borne diseases such as malaria and bilharzia. The young, old and frail are particularly susceptible.
- **Loss of access to common property resources.** Income loss and a decline in living standards result from the loss of common property such as grazing lands, woodlands, water and burial grounds. Resettlers tend to encroach on protected areas and on the host community’s resources.
- **Social disarticulation.** Displacement breaks patterns of social organisation and interpersonal ties. The net loss of social capital and information compounds the loss of natural, human and physical capital. The social capital is usually unperceived and uncompensated by the responsible development projects.

The goal must be to re-establish individual livelihoods and communities with as little delay, and as little disruption to both the re-settlers and the receiving community, as possible. Host communities may experience risks such as increased pressure on resources and services and environmental impacts. Therefore, it is important to provide opportunities and compensation to the host communities as well (RT3 Sonnenberg & Münster).

Resettlement is not always avoidable, but a carefully designed programme, which avoids delays in implementation and compensation, can minimise the risk of deepening poverty in the resettled community. The question of compensation, which should be sufficient and appropriate, has given rise to numerous disputes.

Compensation must cover the time lag between resettlement and
Resettlement programmes commonly only have sufficient funding to relocate affected communities and reconstruct their houses. This does not allow for adequate planning before resettlement occurs, nor for the re-establishment of livelihoods after resettlement. Planning that encompasses the interests and concerns of all stakeholders necessitates their involvement from the earliest opportunity, and throughout the process.

Resettlement policies are inadequate and not harmonised across the region, in spite of the availability of guidelines such as the World Bank Operational Directive - 4.30 Involuntary Resettlement and the World Commission on Dams Report. Use of these guidelines in the development of national resettlement guidelines, policies and laws, can improve resettlement practice (RT3 Sonnenberg & Münster).

Mining companies and associations must develop an approach to resettlement which recognises that joint planning is required between mining companies and communities. Any company-initiated process must interact with government processes, and where a government process does not exist, industry and communities must take the lead in initiating their own process. Detailed planning and comprehensive engagement are essential to develop voluntary guidelines that can apply to individual companies and industry associations.

**Recommendation 19:** companies institute resettlement policies which are formulated in close consultation with the affected communities and which ensure that the disruption of the livelihoods and development of individuals and communities is minimised.

**Recommendation 20:** if resettlement is unavoidable, companies determine whether there are national guidelines for resettlement and, where no guidelines exist, use the following guidelines 1) World Bank Report OD430 and 2) the report of the World Commission on Dams.

The inflexibility of many Resettlement Action Plans (RAPs) and their budgets, together with a lack of detailed early planning, often result in the need for large cash injections later. Increased poverty and food shortages result from short-sighted planning which does not take the cropping cycle into account when planning the timing of resettlement. Resettlement plans that are run only for the period of the actual physical resettlement do not address the losses to the community arising from missed growing seasons and other time-related activities. If guidelines which aim to minimise the impact of resettlement are to be developed, comprehensive monitoring is necessary during and after the actual resettlement.

**Recommendation 21:** to guide resettlement, governments develop guidelines and legislation, implemented in partnership with companies, that are used to support integrated social development plans, and are flexible and include sufficient economic data for decision making.

**4.4.2 Local development**

A mining operation has the potential to benefit the surrounding community in a number of ways:
- multiplier effects can be localised to facilitate local skills development and economic upliftment,
- technical and financial support to build economic self-sufficiency,
- training in skills such as management, governance and
Richards Bay Minerals was established in a largely underdeveloped area with inadequate infrastructure and facilities, especially in neighbouring rural areas. This led to the establishment of a number of community partnerships focusing on the provision of schooling, health services, job creation and community development.

These partnerships are based on five principles: meaningful community involvement adopting a bottom-up approach, partnerships rather than benevolence, development at the pace dictated by the community, skills transference and, ownership and self-sufficiency.

The funding and development of the Tisand Technical High School, in partnership with the KwaZulu-Natal Department of Education and Culture, pre-empted global trends towards acquiring practical knowledge and skills. In 1996, this project received international recognition by winning the "Global Best" award for "Community Development through Partnerships". The school has workshops to provide training in the electronics, metal work, motor mechanics and electrical fields. It also has technical drawing rooms, chemistry and physics laboratories, a computer centre, a library and a career guidance centre. There is also an indoor sports centre as well as outdoor sports facilities. Apart from preparing pupils to enter higher education or to be prepared for the world of work, the school further serves the wider community through its outreach programmes. It also makes its facilities available for training, sporting events and functions.

A mine has a finite life, and closure often leaves the local community without alternative sources of income. Training in marketable skills during the lifetime of the operation, both for the workers and the local community, would increase the sustainability of any local development initiative beyond the life of the mine.

The lack of involvement of local authorities in mining and minerals operations is responsible for inappropriate development projects and technologies. Consequently, such projects do not always meet the requirements of the local communities. Some countries have policies in place, such as the South African Local Economic Development Policy, which provide guidelines for municipalities to be involved at every level of local economic development initiatives in their areas. However, the mining sector does not play a significant role in the development plans of most municipalities (RT3 Choshi). This is partly due to undemocratic local structures, lack of capacity at local level and the continuing control of local structures by national parent organisations.

Mine projects have the potential to serve as catalysts for local economic development, especially when they are aligned with integrated development planning. There are opportunities associated with each stage of a mining project’s life cycle. These opportunities range from employment, human resources, small businesses and infrastructure development to service delivery, the generation of revenue and post-closure local economic development. Effective stakeholder interaction at the planning phase of mining projects is critical as it allows participating stakeholders to benefit from each other’s resources (RT3 Choshi).

In many communities, constraints such as an unfavourable location and a lack of access to credit inhibit the development of local enterprises. Tailoring local development opportunities to the needs of the mine can offset such constraints.

Local development is multidimensional, and requires a multifaceted, multi-stakeholder response. This can only occur through the free flow of information. Stakeholders are often ignorant of developments that affect them because public information campaigns using local radio stations, the print media and poster campaigns are seldom conducted.

Recommendation 22: stakeholders, particularly companies, government and NGOs, through consultation, capacity building, information sharing and, where possible, joint decision-making, ensure that the surrounding community is fully informed of, and involved in, any developments which affect it.

Case Study: Richards Bay Minerals: Social Investment
Richards Bay Minerals was established in a largely underdeveloped area with inadequate infrastructure and facilities, especially in neighbouring rural areas. This led to the establishment of a number of community partnerships focusing on the provision of schooling, health services, job creation and community development.

These partnerships are based on five principles:
- meaningful community involvement adopting a bottom-up approach,
- partnerships rather than benevolence,
- development at the pace dictated by the community,
- skills transference and,
- ownership and self-sufficiency.

Promoting technical education
The funding and development of the Tisand Technical High School, in partnership with the KwaZulu-Natal Department of Education and Culture, pre-empted global trends towards acquiring practical knowledge and skills. In 1996, this project received international recognition by winning the "Global Best" award for "Community Development through Partnerships". The school has workshops to provide training in the electronics, metal work, motor mechanics and electrical fields. It also has technical drawing rooms, chemistry and physics laboratories, a computer centre, a library and a career guidance centre. There is also an indoor sports centre as well as outdoor sports facilities. Apart from preparing pupils to enter higher education or to be prepared for the world of work, the school further serves the wider community through its outreach programmes. It also makes its facilities available for training, sporting events and functions.
Most of the benefit from mining does not accrue at local level, and no incentive regimes exist to encourage companies to promote local social development and so improve local benefit. Local development plans, which do not emphasise mining, do not organise and optimise the opportunity for communities to benefit from mining.

In many parts of the region, undemocratic systems operate within local government, hindering progress towards sustainable development. Capacity building and education programmes for local government have been inadequate, even though these are important tools with which to bring this tier of government in line with the requirements of democracy (RT3 Choshi).

A framework is required for the formulation of policies governing the interactions between mining and communities. Poor relations between stakeholders retard local development initiatives. Where responsibilities have been clearly defined and objectives expressed, stakeholder relationships are stronger, to the benefit of development.

**Recommendation 24:** governments establish incentives for companies to promote local social development and all stakeholders co-operate to clearly define responsibilities and objectives in local development initiatives.

**Recommendation 25:** governments establish stakeholder fora, guided by planning frameworks, to direct privatisation and restructuring and to implement social impact assessment and post-implementation monitoring of a social fund.

**4.4.3 Privatisation & social management**

Government, private investors and international financial organisations see privatisation as a viable way of reviving underperforming state assets. This process frequently leads to redundancies. Communities are deprived of what may be their only livelihood. In the absence of effectively designed and implemented interventions, drawn up participatively by all the stakeholders involved, the resultant social problems are likely to deepen the distress of the community. Without ongoing interaction between stakeholders in the planning, implementation and monitoring of restructuring or privatisation, potential benefits of privatisation will not be realised nor shared equitably.

Possible effects of privatisation cannot be determined without undertaking a comprehensive social assessment before embarking on the privatisation of a state asset or restructuring a private asset. Due diligence studies determining the nature of investment and possible socio-economic impacts will support this.

Weaker stakeholders, such as communities, do not benefit from privatisation conducted without comprehensive planning frameworks. These frameworks must contain clear socio-economic development objectives, developed by the state. The inclusion of social concerns in project planning and approval processes affords vulnerable communities some protection. If the project is to be sustainable, social values should be an integral part of the newly formed organisations and of state departments.
**RECOMMENDATIONS**

**4.4.4 Gender equity**

**Women in the community**

The mining environment has never been gender-sensitive. There are few opportunities for women in communities around mine operations, and they are rarely there as workers— they are simply the wives of mine employees.

Even if women have marketable skills, the isolation of mining sites, the lack of credit and insecurity of tenure make it extremely difficult for them to participate in economic activities.

Women are seldom consulted, or their views listened to. They are not identified as a stakeholder group in their own right, and consultation with the community is not broad-based enough to include women as a group with specific concerns (RT3 Musvoto).

**Recommendation 26**: Companies ensure that their community consultation policies are broad-based enough to include women as a stakeholder group in their own right so that their concerns are given fair weighting.

Women in mining communities have little economic opportunity. They are not prioritised when mines outsource services, and little encouragement is given to them to subcontract and provide services. Lack of access to finance, either from financial institutions or the mine itself, means they cannot start a business of their own. In many mining communities the markets are small, and even selling food is difficult, as women have to compete with the farmers around the community who produce food for sale themselves.

Skills training is, in general, restricted to the mineworker. Women function as providers of food and child-minders. In the event of a loss of the spouse’s income, they are expected to carry out these responsibilities on a reduced income, and they are not equipped to supplement the household income by undertaking income-generating activities. Materially and psychologically, women thus feel the effects of mine closure or downscaling more sharply than men.

The houses the women live in belong to the mine, their spouses’ income is derived from the mine, and they are aware that a mine is of a temporary nature. When it closes, or downgrades, their homes, schools and other community infrastructure may be lost, as would be any informal activities, such as vending, that they carry out in a market which is mine-related.

It is not only her role in the family structure that disempowers women, but her lack of access to financial opportunities, which keeps her in a subordinate position in the family and community, with no voice in decisions. She is further disempowered by the failure of mine management to ensure that critical information, such as retrenchment or a downgrading of social services, reaches her. This information is usually conveyed to the spouse, and there is no guarantee that the woman will hear about it until the event occurs.

**Recommendation 27**: Companies, NGOs, governments and the community itself ensure that women have an equitable opportunity to share in the benefits accruing to the community, whether these are local development initiatives, employment opportunities or skills development.

Mining companies assist communities in areas such as health, education and infrastructure development, and have assisted in establishing small enterprises which benefit local people. There are no gender-disaggregated data on the beneficiaries of some of these community projects, but indications are that fewer women have benefited. In a community irrigation scheme sponsored by a mining company in Zimbabwe, only 20 per cent of the plot holders are women and they are not poor, but powerful landholders. This ignores the fact that, as plot holders, women could control crop production and enhance household food security. The criteria used to select plot holders effectively discriminated against single women, widows and the poor (RT3 Musvoto).

Four dimensions of poverty, which need to be addressed in the context of women in the mining community, are: economic opportunity, capacity, security and empowerment (RT3 Musvoto).
Research in the mining sector in southern Africa does not adequately address the situation, and issues of women who are resident at large-scale mining settlements are poorly represented in research, as evidenced by the absence of literature on the topic (RT3 Musvoto).

Women in the Workplace

Compared to other industries, the integration of women in the mining industry has been slow, and the industry remains a male-dominated one. Currently, there is no industry strategy for integrating women into the sector in southern Africa (RT3 Ranchod).

The reasons for the under-representation of women in the industry are poorly quantified. Some of these relate to acculturated attitudes, such as those that maintain that women will distract men in the workplace and that they belong in the home. In some cases, legislation acts as an impediment to employing women on an equal basis. In Zambia, the law does not allow for women and youths below the age of 21 to work underground except by virtue of an exemption, which can be granted upon application (Masialeti, pers. comm., 2001).

The mining industry is not proactive in its recruitment of women. On average, skills and development training are not freely available to them, and they are seldom specifically targeted for bursaries and scholarships. Their promotion and advancement within the industry are slow (RT3 Ranchod).

The situation is bleaker for black women. Because of historical patterns of education, black women are found mainly in unskilled positions, while white women occupy professional posts. There are a few women in management positions, and they are largely white (RT3 Ranchod).

There is very little published research on women in mining in the SADC region. This lack is also noticeable globally, and the area of gender and mining appears to be vastly under-researched.

A lack of reliable (rather than anecdotal) data hampers efforts to create equitable conditions for women to enter and remain in employment in the industry. It also inhibits the development of legislation that is gender-sensitive. Knowledge gaps that need to be addressed include race/gender dimensions and health and safety. Particularly in regard to the latter issue, scant information is available on the health risks of employing women underground. Uncertainty about what kind of work women can and cannot do is a barrier to their free access to employment.

Recommendation 28: companies and labour adopt proactive policies to facilitate women’s entry into the workplace and to promote their advancement; financial institutions, development agencies and learning institutions support these initiatives.

Recommendation 29: NGOs, research bodies and education institutions investigate issues around gender and mining, and government, companies and labour provide appropriate support for such research.

Recommendation 30: SADC and individual governments in southern Africa develop and implement a regional strategy for the integration of women into the mining sector.
Mining depends on finite natural resources. It is an extractive process that consumes land and water while exhausting ore bodies. In addition, mining and metallurgical processes generate large quantities of wastes that have resulted in environmental pollution and degradation.

Mining practices have improved dramatically over the last century. New technologies allow for cleaner production and more effective waste management, and stricter environmental legislation ensures improved care of the natural environment. International standards such as the ISO 14 000 series drive the move toward cleaner production and waste minimisation. In southern Africa, much of the legislation is sound, but the capacity of relevant authorities to implement and monitor environmental performance is limited. Major biophysical environmental challenges that face the mining and minerals sector are:

- to reduce land alteration and degradation,
- to effectively rehabilitate previously mined areas,
- to minimize water consumption,
- to implement cleaner production technologies and practices, and
- to minimize pollution of air, soil and water.

Global environmental issues, such as biodiversity and climate change, now influence the ways in which mining companies have to act when deciding where and how to mine, as well as throughout the mining process and after mine closure. Since the livelihoods of many of southern Africa’s people depend on the land, mining can have far-reaching impacts, not only on natural systems, but also on the people who depend on these resources for their livelihoods. This implies that people’s access to land and other natural resources becomes relevant when mining companies decide to exploit a particular ore body. Many southern African people have no formal tenure system, but utilise resources as they have done for centuries. These informal rights are often disregarded and, as a result, people are denied access to assets that they consider to be theirs.

Mining has the potential to irreversibly destroy indigenous natural areas, some of which may make a significant contribution to biodiversity. Although the intention of rehabilitation is sound, it often cannot re-create lost or modified ecosystems.

4.5 The natural system

Significant areas for biodiversity conservation should be identified as part of regional planning processes to ensure that appropriate environmental management measures are triggered should mining occur within those areas (see recommendation 39).

4.5.1 Rehabilitation

Much is made of the fact that mining is not a sustainable activity. Extraction of ore from a finite deposit in the earth’s crust must ultimately come to an end. It is this temporary nature of mining that provides an opportunity to contribute towards sustainable development by vacating land that it occupied for subsequent use. For mine land to be useable, effective rehabilitation must be carried out. Unrehabilitated land is frequently not fit for use and may degrade surrounding land through water and air pollution.

Mining impacts on the land surface in three ways: through surface excavations such as pits, through subsidence resulting from underground mining and through the deposition of waste materials on surface.

Surface mine excavations require complete removal of vegetation, soil and overburden from over the ore body. Soil stockpiles and overburden dumps may be established adjacent to the excavations. These activities result in extensive modification of the area’s topography. Fertile topsoil and soil fertility may be lost, the new surfaces may be very susceptible to erosion and the local hydrology may be changed (Chisholm & Dumsday, 1987). This results in land degradation - substantial decrease in land’s biological productivity and usefulness (Johnson & Lewis, 1995).

Such impacts are not limited to surface mining. The removal of waste rock and ore from underground mines, which is frequently accompanied by groundwater pumping, may result in surface subsidence and collapse. This alters drainage patterns and often renders land unusable. The deposition of wastes, such as waste rock and tailings, may further degrade land. The deposits sterilise land by covering valuable topsoil and often contain deleterious compounds such as iron sulphides (in coal discards), cyanide (gold tailings) and heavy metals (base metal wastes). Mine waste deposits are highly susceptible to erosion due to a lack of vegetation, steep slopes and the presence of fine dispersed particles (Chisholm & Dumsday, 1987). Eroded materials from
the dumps may be deposited in neighbouring streams or on adjacent farmlands, reducing the economic potential of these resources.

The impacts of mining on land can be ameliorated, in many instances, through effective rehabilitation. A first step in rehabilitating mined land is recontouring of the surface. This should follow the original land contours as far as possible. This is not only for aesthetic considerations, but also to ensure long-term stability of the new surface. The same geomorphic agents that shaped the unmined landscape will act on the new surface, and therefore reinstated landscapes that look natural and aesthetically appealing are likely to be more stable than unnatural landforms (Limpitlaw, et al., 1997).

**Case Study: Dune Rehabilitation, Richards Bay Minerals**

At the core of forest rehabilitation is the initiation of ecological processes which will result in the development of a dune system similar to that which existed prior to mining. An environmental rehabilitation programme has followed RBM’s mining of sand dunes since its inception. At the onset of mining, some 60% of the Tisand mining lease area comprised exotic plantations, whereas some 20% was covered by disturbed grasslands and 20% by indigenous coastal dune forests. The rehabilitation programme aims to establish an indigenous coastal dune forest on one third of the area being mined by the company. The remaining two thirds of the area is revegetated with Casuarina equisetifolia for the development of a local charcoal industry. These proportions are determined by the landowner. Continuing development of the vegetation occurs with the natural establishment of broad-leaved forest tree species such as Natal Mahogany (Trichelia emetica), Coastal Red Milkwood (Mimusops caffra) and White Ironwood (Vepris lanceolata). These species colonise the areas in the shade of the Sweet Thorns 12 to 14 years after the initiation of dune regeneration. The recovery of the dune vegetation is associated with the development of a variety of animal communities. These animals colonise the rehabilitating habitats of their own accord. Only two of the 18 species recorded in nearby mature forests along the coastline have not colonised the areas that have been under rehabilitation for some 20 years. The development of plant and animal communities enables mined areas to mature into self-sustained dune forests typical of the region (RBM, 2001).
Preserving topsoil is of key importance in rehabilitating mined land. Sub-soils and underlying rocks are expected to take decades to centuries to weather, and they represent an inhospitable environment for plants in the short to medium term.

Plant species that will not only control erosion, but will provide vegetative diversity, should be re-established on disturbed land. Through natural succession, these species should contribute to a stable ecosystem, compatible with the surrounding landscape (Tewary, et al., 1996).

The goal of sustainable development with regard to the natural system is to ensure equitable and sustainable use of the environment and natural resources for the benefit of present and future generations. To achieve this, the mining and minerals sector will have to:

- minimize the impacts of their activities on land, water, air and biological communities,
- operate within the carrying capacity of the ecosystems in which they are located,
- foster an understanding of the value of the area’s natural heritage, and
- minimise the exhaustion of non-renewable resources by, for example, sponsoring and promoting research and development in product recycling, waste minimisation and the search for alternative raw materials.

Since water is a critical resource in semi-arid southern Africa, and due to the need to focus in the short time period available to produce this report, the biophysical research concentrated on the water resources and water quality of the region.

This report assesses the Zambezi, Limpopo and Olifants catchments, as these are rivers of great importance in southern Africa (see Figure 4.3). These river systems supply water across national boundaries, and numerous large and small mining operations are located within their catchment areas.

However, stakeholders recognise the need for additional research to address specific issues and recommendations, for example, how issues such as atmospheric emissions, biodiversity loss, groundwater impacts and noise impacts of mining can be mitigated in the region. An important consideration is that attention should be extended to mining and mineral processing impacts on land, air and near-shore marine ecosystems. The report on the global MMSD process, of which this report forms a part, discusses a wide range of environmental challenges which are relevant to southern Africa. These include the management of large volume waste, acid mine drainage, mine closure, energy usage and threats to biodiversity. The global report can be accessed at www.iied.org/mmsd/.

The recommendations relating to the three catchments covered in this study, shown in Figure 4.3, could be applied to other catchments in the region.

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**Recommendation 31:** to assist the sector to manage the impacts of mining and minerals processing on the natural environment that were not covered by the MMSD research component, detailed research programmes are commissioned in the region to focus on those additional aspects.

Small scale mining has severe negative impacts on the natural systems. Specific concerns relate to accelerated erosion of de-vegetated areas adjacent to workings and increased suspended sediment loads in nearby streams and rivers (RT4 Ashton et al.). Many of these small operations do not have cost-effective and efficient technology to manage their operations in a sustainable manner, and the environmental costs of their activities are frequently externalised.

Several organisations are doing successful work to help the small scale mining sector to pursue its activities in a less environmentally damaging manner. Although the general attitude towards the sector is often dismissive and negative, there are signs that these organisations and other stakeholders, who are also affected by small scale mining activities, are prepared to assist small scale miners to improve their environmental performance.
A recommendation that would assist the small scale mining sector, and also other stakeholders, is to ensure a wider appreciation of available effluent treatment technologies by the exchange of technical information between stakeholders. Additional treatment technology manuals should be published and small scale mining associations should ensure that these are accessible and affordable to their members (see recommendation 6).

**Recommendation 32:** stakeholders, particularly government and mining companies, adopt collaborative approaches, including cumulative effects assessment, to develop a framework for the management and mitigation of the biophysical impacts of mining.

**4.5.3 A lack of harmonization in SADC legislation, policies and databases**

The issue of water is a regional one, and needs to be managed on a regional level. Currently there are incipient disputes over access to, and utilisation of, shared water resources in many SADC countries. Many of these originate in disagreements over the precise positions of international boundaries between countries, but most are "up-stream/down-stream" disagreements. The recent SADC Protocol on shared watercourse systems provides a useful framework for resolution of many of these disputes.

Individual countries maintain their own records and seldom share these with neighbours. The ability of countries to act in concert with one another when it comes to resolving water supply and water pollution problems in shared river basins is reduced as a result of this. Many databases contain incomplete data and several river systems are not yet monitored. This hampers effective management of environmental impacts and decreases the ability of individual countries to predict likely future changes in water quantity and quality. The situation can be improved dramatically if the countries concerned can agree on standardised data collection and curation procedures.

Each SADC country has several policies, standards and pieces of legislation that are designed to control and manage impacts on the biophysical environment. Because several different government
departments often administer these, the overlap and lack of clarity and cohesion limits effective management. The problem is compounded by the fact that different countries that share the same water resource often have conflicting policies and legislative requirements. This situation can be addressed if all the countries and their relevant government departments co-operate to harmonize their respective statutes and legislation.

Case Study: Water pollution resulting from the use of mercury in small scale mining
The contamination of water and rivers is not only due to mining in Mozambique. The Mazoe, Luenha, Revue and Zambezi rivers, flow through Mozambique to the Indian Ocean, from Zimbabwe, Zambia and Malawi, where the use of mercury is also a common practice, and contribute to water contamination downstream. In the long term, this could lead to mercury accumulation in river sediments, which is likely to become methylated through microbial activity and transformed into highly toxic methylmercury. If this occurs, methylmercury, which is readily accumulated in fish and other aquatic organisms, can undergo biomagnification up to the food chain.

The communities in the vicinity of the mining sites are exposed to mercury through inhalation and/or drinking of contaminated water. The non-gold mining communities, especially downstream, are also at risk of exposure to methylmercury by consumption of mercury-contaminated fish. Vegetables grown on the riverbank are irrigated using contaminated river water (RT1 ITDG).

Recommendation 33: SADC governments harmonize their legislation and database compilation to optimise the management of environmental impacts and to minimize disputes over shared natural resources.

Several specific water pollution problems of concern have been identified for mines located in certain geographic areas. The most important of these are:

- heavy metals, such as chrome, vanadium, copper, lead, cadmium and zinc in mine seepage,
- mercury in effluents flowing from alluvial gold-mining operations,
- arsenic from mines located in Greenstone belts, and
- acidic and highly saline seepage from most mines exploiting sulphide ore bodies, (RT4 Ashton et al.).

The presence of excessive heavy metals, cyanide and other components of mining effluents have widespread toxic effects on most living organisms in rivers and streams. In addition, these
substances also reduce the fitness of the water for human consumption and other uses.

Most of these problems can be alleviated by effective seepage collection systems and effluent treatment, using processes designed to remove the specific metal of concern. Several mines have already implemented such collection and treatment systems with great success. This practice needs to be extended to other operating mines that do not have effective collection and treatment systems.

The presence of cyanide in effluent from gold mines can be effectively dealt with by following the latest guidelines on cyanide management, *South African Guideline on Cyanide Management for Gold Mining*, prepared by a multistakeholder committee, through the Chamber of Mines (CMSA, 2001).

An important issue that is common to most mines relates to the need to minimise water use and water loss. This is particularly important in view of the fact that most SADC countries are facing increasing water stress and shortages. Useful advances in minimising water use and water loss through improved tailings management have been achieved by several mines operating in drier areas of southern Africa.

**Recommendation 34:** companies and regulatory authorities adopt policies that effectively reduce the negative impacts of seepage on the environment and minimize water loss and water use.

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**4.6 Managing mineral wealth**

Without accelerated economic growth, coupled with greater equity and self-reliance, there can be no sustainable development in southern Africa. The statistics on wealth creation per capita and distribution of basic social services indicate that the region is severely poverty-stricken (see Table 3.5). A clean and healthy environment, access to agricultural land, ability to establish small scale mining operations and employment in the formal mining sector, have been identified as key factors in poverty alleviation (RT5 Cawood). In addition to these requirements, equitable distribution of wealth is fundamental to sustainable development. The equitable distribution of mineral rents also has the potential to alleviate poverty if indigenous rents are managed separately from other government revenues.

**4.6.1 Poverty alleviation and employment**

Mineral development has historically caused much conflict between the various stakeholders involved. Frequently, a failure to identify and consult with stakeholders early in the project, and to reach consensus on how benefits are to be shared, has increased the likelihood of subsequent conflict. Positive actions in this regard could motivate stakeholders to co-operate to increase the benefits of a mining project, manage stakeholder expectations and maximise their benefits.

The following can promote sustainability of the benefits of mining:
- all recipients of rent must share the common vision of maximising rents,
- the costs and benefits of mining projects must be assessed and equitably distributed between stakeholders - Figure 4.4 is a possible example of such equitable distribution,
- adequate consideration must be given to the social and environmental cost of mining in the assessment,

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7 Southern African economies should be globally competitive, self-sustaining and not reliant on foreign aid to balance their budgets.
8 Indigenous rent is that part of the mineral rent due to the local or aboriginal community by virtue of their historical occupation of the land. For details, see RT5 Cawood, p19.

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**Case Study: Anglo Coal Water Management Project**

In 1995, Anglo Coal started a comprehensive water management project to eliminate, prevent or minimise pollution of surface and groundwater. Reduction in water use is an important part of the strategy to minimise water pollution and maximise the reclamation and re-use of waste water. Substantial reductions have been achieved over the past five years, and Anglo Coal currently uses 80 litres of water per run of mine tonne (romt). The division has set a goal to use less than 30 litres/romt in opencast and 60 litres/romt in underground mines. Whereas some of their opencast collieries in South Africa have historically used up to 120 litres/romt, most of these are now close to achieving the target. (Anglo American, 2000)
• an enabling investment environment, which optimises rent for all stakeholders without eroding the natural resource base, must be established, and,
• a portion of the revenues must be invested in activities that will promote long-term economic stability (MMSD, 2001a).

Historically, host-countries were responsible for the distribution of mineral rents to the various stakeholders. However, many of the benefits of mining were absorbed by government administrations, which triggered a need to propose an alternative distribution model allowing for optimised stakeholder engagement and equitable allocation of rents (RT5 Cawood).

In recent years, international law has placed greater emphasis on the rights of indigenous peoples. Initiatives in this regard are encouraging, but steps need to be taken to ensure that these initiatives culminate in sustainable benefits for local and indigenous communities.

Recommendation 35: governments and companies ensure that early consultation with stakeholders occurs and that consensus is reached on how benefits and costs are to be shared.

Formal employment rates in Africa are extremely low and the continent is in desperate need of employment opportunities, as indicated by the low GDP income per capita shown in Section 3.1. Government policies in the region should aim to increase employment rates to above 50%.

The small scale mining and agricultural sectors are known for their potential to distribute economic benefits widely. They can provide a whole range of economic, social and environmental services because of their potential for rural employment, enterprise development, food security and consequently, alleviation of poverty. However, the recommendations in Section 4.1 will need to be adopted if small scale mining is to contribute to poverty alleviation.

Recommendation 36: governments adopt policies aimed at creating an enabling environment for job creation in large- and small scale mining and minerals industries, and introduce specific incentives and support mechanisms to encourage and marry agricultural and small scale mining activities in rural areas.
Apart from geological information, there is a need for information that will facilitate stakeholder engagement, such as geographic information on language, indigenous rights, tribal councils, environmentally sensitive areas, land and mineral ownership, and any information that will reduce the expectation gap of stakeholders.

## 4.6.2 Skills development, capacity building and information dissemination

The finalisation and enhancement of the geological database currently being established for the SADC region will have significant advantages.

Decisions around mineral resource development need to be made with the widest possible regional picture in mind. Geological features cross state boundaries and such a database would facilitate co-operation between neighbouring states in issuing trans-boundary mineral leases. This has the potential for an increase in volume from a single reserve, rather than the exploitation of a number of uneconomic ones, fragmented by state boundaries.

Faster decision-making as a result of readily available essential information will also increase investor confidence in the region. SADC has already identified this need in its Five-Year Strategies developed in 1992 and 1997 and some progress has already been made in this regard (RT5 MacFarlane). One of the major challenges in establishing a regional database is the backlog of geological mapping in some of these states. Angola, Zambia and the DRC are cases in point.

Apart from geological information, there is a need for information that will facilitate stakeholder engagement, such as geographic information on language, indigenous rights, tribal councils, environmentally sensitive areas, land and mineral ownership, and any information that will reduce the expectation gap of stakeholders.

### Recommendation 37

The geoscience organisations in the various southern African states accelerate the current endeavour to establish a common geological database for the region and extend the information system to include information that will facilitate greater stakeholder engagement.
Currently, natural capital is not quantified or reflected on a national level, and policy makers do not have access to quality data to guide their policy decisions. The adoption of UN International Accounting Standards to include natural capital in national accounts could address this shortcoming.

**Recommendation 40:** best practice international accounting standards are used to develop guidelines for a system of valuation standards which reflect natural capital and the associated development costs in the systems of national accounts for the region.

At a company level, much progress has been made through the Global Reporting Initiative, and many leading companies now include sustainability reports with their annual financial reports. Such comprehensive reporting promotes key requirements for sustainable development transparency, information sharing and multistakeholder dialogue. It would also be an essential source of information for the compilation of a national resource base, but, in order to serve this function, all companies must undertake such reporting, and global companies must report separately on a country-by-country basis for the southern Africa region.

**Recommendation 41:** all companies produce sustainability reports as part of their annual financial report, and global companies provide statistics on a country by country basis for the southern African region.

**4.7 Implementation and inter-linkages**

**4.7.1 A multistakeholder forum.**

The move towards sustainable development can build on the wealth of experience, knowledge and skills in the sector and the region. The momentum that has been created by the MMSD project must not be allowed to dissipate. If all the stakeholders in the sector bring their strengths to a multistakeholder forum to carry the process forward, the mining and minerals sector can make a real and lasting difference to ensure an equitable dispensation for all aspects of sustainable development - governance, society, economic growth and the environment.

A mechanism for implementing these recommendations through a multi-stakeholder forum will be introduced in the following chapter. The idea for such a mechanism arises from the concerns expressed by stakeholders that this report could mark the end of this process, with the possibility of no implementation.

**Recommendation 42:** a high-level multistakeholder forum is established to implement the recommendations of this report.
4.7.2 The overarching issues.

Section 4.2 refers to the five overarching issues identified by stakeholders as critical for progress to sustainable development. These issues have not been dealt with in focussed research reports, but appear as crosscutting issues in the six research reports and in the recommendations listed above. A brief guide to the recommendations dealing with each critical issue shows their prevalence in the recommendations. Because these are crosscutting issues, such a categorisation is to some extent artificial. For example, the recommendations relating to governance would, if implemented, impact on poverty alleviation, job creation, gender equity and capacity building.

Poverty alleviation:

Recommendations: 2, 5, 11, 12, 13, 15, 17, 19, 23, 27, 35, 36

In a region where the average daily income is just above US$ 2, per capita it is to be expected that poverty alleviation is a critical issue. It is notable that no expectations of “hand-outs” were articulated in stakeholder interactions. The most important way in which poverty can be alleviated in the above recommendations is through involvement of all stakeholders. The processes involved include education, policy making and facilitating means of avoiding increased poverty, such as joining medical benefit schemes (Recommendation 13). Job creation and capacity building are recommended as means toward poverty alleviation in recommendations 5, 23 and 36, and specific emphasis is placed on the small scale sector of the economy.

Job creation:

Recommendations: 5, 6, 23, 27, 28, 36

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

Capacity building and skills training:

Recommendations: 2, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 17, 20, 21, 22, 23, 24, 26, 27, 28, 29, 31, 32, 33, 35, 36, 37, 40, 41

A lack of skills and capacity is prevalent in the southern African region, and is a challenge in the move towards sustainable development. The recommendations envisage capacity building by a variety of means: education (as in recommendations 5 and 6), government policy (as in recommendations 2, 21 and 35), self-regulation within a stakeholder group (recommendation 7) and consultative and collaborative approaches (recommendations 22 and 32). An imperative in the move to sustainable development is multistakeholder co-operation. This is an aspect of the majority of recommendations, and is epitomised in recommendation 14 which proposes co-operation across a broad spectrum of activities by all stakeholders to deal with the threat of HIV/AIDS.

Governance:

Recommendations: 1, 2, 3, 4, 7, 8, 9, 11, 12, 14, 16, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42

Very few of the recommendations are proposed without the supporting framework of good governance. If the wealth generated by the mineral sector is to be managed sustainably, and shared equitably between all stakeholders, government policies will determine whether such an enabling environment exists or not.

However, while government should take the lead role, governance is not just the responsibility of the state, but of all stakeholders, and the benefits accruing from good governance affect all stakeholders. A healthy and normalised childhood is envisaged in recommendations 9 and 10. Sound governance is needed to address the situation of marginalised and disempowered sectors of the community, such as women (recommendations 26-30), resettled communities (recommendations 19-21) and those infected with HIV/AIDS (recommendations 12, 13, 14 and 16). Good governance promotes regional co-operation in recommendations 33, 37 and 38. Recommendations 32, 33 and 34 aim to protect the natural environment, and this also needs implementation of enabling policies. In recommendations 35 and 36 the equitable
distribution of the rents from mineral exploitation is ensured by good governance.

The emphasis on good governance in the recommendations aligns with the principles of NEPAD as discussed in Section 3.2.2.

**Gender equity:**

**Recommendations: 8, 15, 26, 27, 28, 29.**

In a region where the majority of the population are poor, women are among the poorest. Culturally, historically and economically they are also disempowered and form a significant marginalised group. The recommendations address all these issues, and, in addition, recommendation 8 urges women to take steps to alleviate their position themselves. The main thrust of the recommendations is the empowerment of women, because equity will flow from this. This empowerment is either educational (recommendations 15 and 28), economic (recommendations 15 and 27), job opportunities (recommendations 27 and 28) or by recognition of their status as legitimate stakeholders (recommendation 26).

Although gender issues were singled out for attention by stakeholders, all the recommendations in this report are intended to benefit all stakeholders, including women.

### 4.7.3 Conclusion

The above discussion does not purport to be an exhaustive examination of the issues and concerns raised by the research reports and by stakeholders. The recommendations discussed were selected on the basis of the "Criteria set by MMSD SOUTHERN AFRICA" listed in the introduction to this section. Readers are referred to the five research reports mentioned in this section for a more detailed exposition of the recommendations and the issues that give rise to them. Reference should also be made to the proceedings of the MMSD SOUTHERN AFRICA Multi-stakeholder Workshop held in Johannesburg on 18/19 September 2001. These documents can be accessed on the CD accompanying this report, by request from hoadley@egoli.min.wits.ac.za or on website [http://www.mining.wits.ac.za](http://www.mining.wits.ac.za).