Sustainability and Reporting in the Minerals Sector – A Developing Country Perspective

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ABSTRACT

The minerals sector plays a significant role in the development of many Southern African economies. In the Southern Africa region, as in other developing regions, economic development is seen as the key contributor to poverty alleviation and social upliftment. The significant economic contribution of the minerals sector may be reduced by negative impacts on the biophysical environment and on the communities where mines operate. A critical variable in determining the net contribution of mining companies to SD is the degree of transparency with which the companies operate. Transparency is increasingly emphasised as an essential aspect of good governance and SD, but it is also difficult to establish, and is a sensitive issue for mining companies as they compete with each other for minerals sales. Transparent reporting could ensure that the interests of all stakeholders are addressed as company data is subject to informal 'auditing' by any interested party. This paper assesses published reports of five companies over a number of years to establish whether it is possible to make an assessment of the companies' contribution to SD.

INTRODUCTION

Company reporting has changed significantly since the first environmental reports were produced in the last decade. These early reports were largely public relations exercises and provided little information for assessing the impacts of mining operations. The World Summit on Sustainable Development (WSSD) in Rio de Janeiro, in 1992, led to a critical re-assessment of the benefits of high impact industries to society. This resulted in pressure on mining companies to report more comprehensively, transparently and consultatively on their activities. The Global Reporting Initiative (GRI), and, in South Africa, the King 2 Report, added impetus to the improvement in reporting, which, in itself, is an indicator of progress towards SD.

Increasing numbers of mining companies now produce comprehensive reports on the impact of their activities on health, safety, environment and society. Leading companies produce stand-alone

corporate sustainability reports, as well as sustainability reports for individual operations. Despite this, only a few mining and metals companies produce reports that can be used to assess their progress towards sustainable development (SD). These companies are creating benchmarks for SD reporting.

This paper assesses the changes in the real costs and benefits of doing business for three of these companies. Anglo American, BHP Billiton and Rio Tinto are global, diversified companies whose principal interests are mining and metals. All three have substantial operations in southern Africa. The reporting practices of two South African-listed companies are also reviewed. Lonmin Platinum and Impala Platinum are considerably smaller than the three multinationals and have only recently started to produce comprehensive reports. All data used in this assessment have been extracted from reports published by these companies. The value of normalising published data by company profit to allow companies to benchmark their performance against each other, based on their contribution to wealth creation is also assessed.

SUSTAINABLE DEVELOPMENT

The Southern African Development Community's vision for sustainable development (as presented by Hoadley *et al.* [1]) requires: acceleration of economic growth with greater equity and self-reliance; improvement of the health, income and living conditions of the poor majority; and equitable and sustainable use of the environment and natural resources for the benefit of present and future generations. The real costs and benefits of wealth creation by mining companies in Southern Africa should be assessed against this vision.

REPORTED INDICATORS

The companies assessed here have different commodity profiles and are affected differently by commodity cycles. Their wastes and effluents production depends on the nature of their activities. Their operations are not evenly distributed geographically and they are also differently affected by the development status of their host countries. These differences are not considered in this paper. All of the indicators presented below are considered in terms of net effect on SD.

Figures 1 - 6 below show trends in selected key indicator groups for the three multinational companies over five years. These indicator groups have been selected as proxies for the principal components of SD: economy, environment and community. Governance is less directly measurable, but can be inferred from indicators such as percentage of ISO 14000 accreditation (not assessed here – see Limpitlaw and Hoadley [2]). Reporting in terms of the Global Reporting

Initiative (GRI) guidelines is also regarded as an indication of good governance. Indicators have been selected to provide information of company performance in the social, environmental and economic spheres of sustainable development. This list is not exhaustive, but provides insight into important areas of SD.

Economy

Company turnover, shown in Figure 1, is an indicator of the level of participation by the company in the economy. Greater levels of participation may provide greater social development benefits and so justify greater environmental costs. The level of participation must therefore be borne in mind when assessing indicators in other components of SD, such as environmental impact.

Profit (Figure 1) reflects the wealth generated by a company, and is a measure of the economic efficiency of company operations. Unprofitable companies cannot make a contribution to SD. The graph in Figure 1 shows that, exchange rate variations and commodity cycles notwithstanding, all three multinational companies report an upward trend in profits over the period for which data are available. These companies are creating more wealth over time, and are in a position to make positive contributions to SD. More profitable companies pay greater amounts of tax, improving the fiscus and potentially enabling the government to improve service delivery within a country.

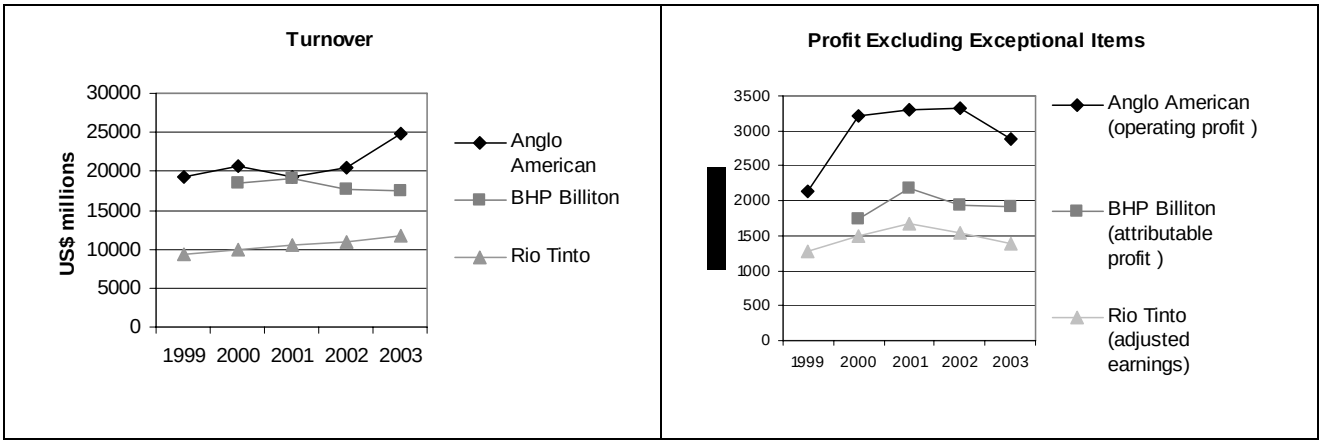


Figure 1: Reported indicators of economic activity (Anglo American [3], [4], [5], [6]; BHP Billiton [7], [8], [9]; Rio Tinto [10], [11], [12], [13]).

Lonmin and Impala's contributions to development are not expected to be of the same magnitude as those of the multinationals. Between 2000 and 2004, Lonmin reflected a peak profit of US$ 490 million (2001), followed by a dramatic fall in profits and a recovery trend culminating in US$ 303 million in 2004 (Lonmin [14], [15], [16]). Over the same period, Impala's profits peaked at US$ 605 million in 2001, up from US$ 352 million in 2000. In 2004, the company reported a profit of US$ 377 million (Impala [17], [18]). Profits reported by both Lonmin and Impala are highly

dependant on the commodity cycles of platinum group metals and the exchange rate of the South African Rand.

One of the most direct impacts that companies have on local economic development is through wages and salaries paid. Figure 2 shows that employee numbers are either declining (Anglo American and BHP Billiton) or static (Rio Tinto). While fewer people are directly employed by the companies, the average remuneration is increasing, to the benefit of the employees remaining with the company. However, direct contributions to livelihoods in the broader society are reduced as jobs are lost. This is particularly important in developing countries, where each wage earner may support more than six dependants. Progress in SD becomes difficult to assess under these conditions. The company's increase in productivity can contribute to development through increased tax revenues and by becoming more globally competitive, but increased unemployment in local communities can reduce the sustainability of these communities.

The data presented in Figure 2 under-represents the direct economic benefit to society, as contractors are excluded. In many instances, these are a significant proportion of the total workforce.

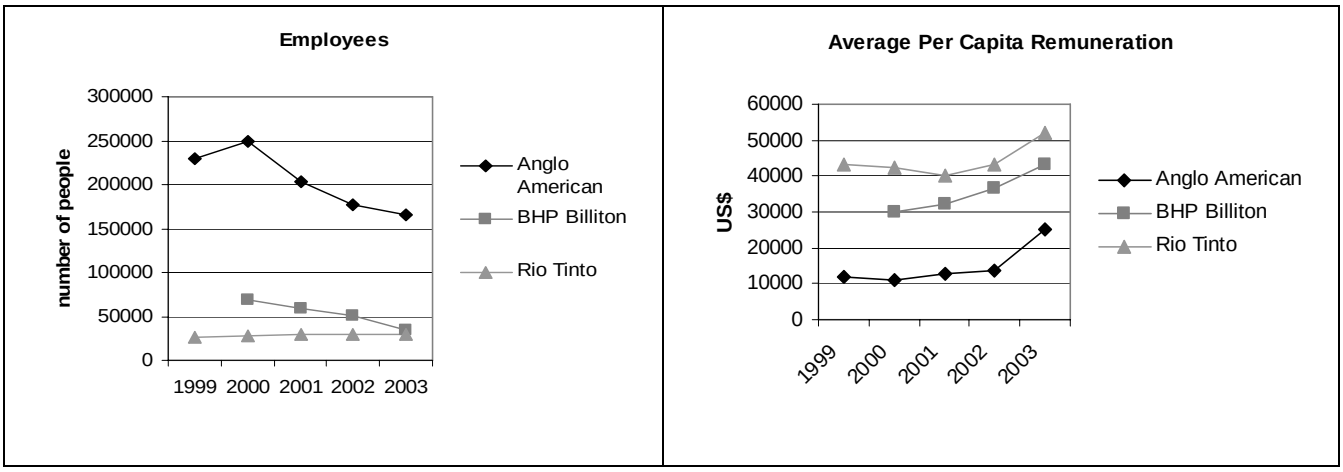


Figure 2: Reported indicators of socio-economic activity (Anglo American [3], [4], [5], [6]; BHP Billiton [7], [8], [9]; Rio Tinto [10], [11], [12], [13]).

The real improvement may be masked by fluctuations in the rate of exchange between the US dollar and local currencies, as most minerals-based currencies have appreciated against the dollar recently. The same declining trend in job creation is apparent in the two South African companies. Lonmin's employment figure decreased from 32,027 in 1999 to 20,931 in 2004, although the decrease reported in 2004 is not as dramatic as that reported in previous years (Lonmin [14], [16]). Impala Platinum reports the least significant decrease in employment of the companies under review – from 28,700 in 1999 to 27,500 in 2004 (Impala [18], [19]).

Environment

Environmental impacts of multinational mining companies can be divided into those that have global significance, such as the emission of green house gases (GHGs), and those that have important localised effects, such as land surface disturbance.

Energy use and GHG emission are closely linked indicators of the global-scale impact of a company's operations. The three multinational companies show a year-on-year increase in energy consumption. The graph of BHP Billiton's energy consumption in Figure 3 demonstrates the importance of the commodity profile of each company. That company's extensive metal smelting and iron and steel operations result in relatively high energy consumption. The divestment of its iron and steel division in 2003 substantially reduced the group's energy demand. Anglo has experienced an average annual increase of 15% over the period shown in Figure 3. Rio Tinto has increased by 5% per annum and BHP Billiton has decreased by an average of 8% per annum. The South African platinum producers do not have a long history of reporting on energy consumption and analyses of trends are difficult. In the 2003 Lonmin Corporate Accountability Report (Lonmin [14]), the company states that there was a 26% increase in the total amount of electricity used during the year compared with 2002. No mention is made of fossil fuels. These increases in energy consumption mean greater pollution loadings on the environment and greater consumption of natural resources, decreasingly sustainability.

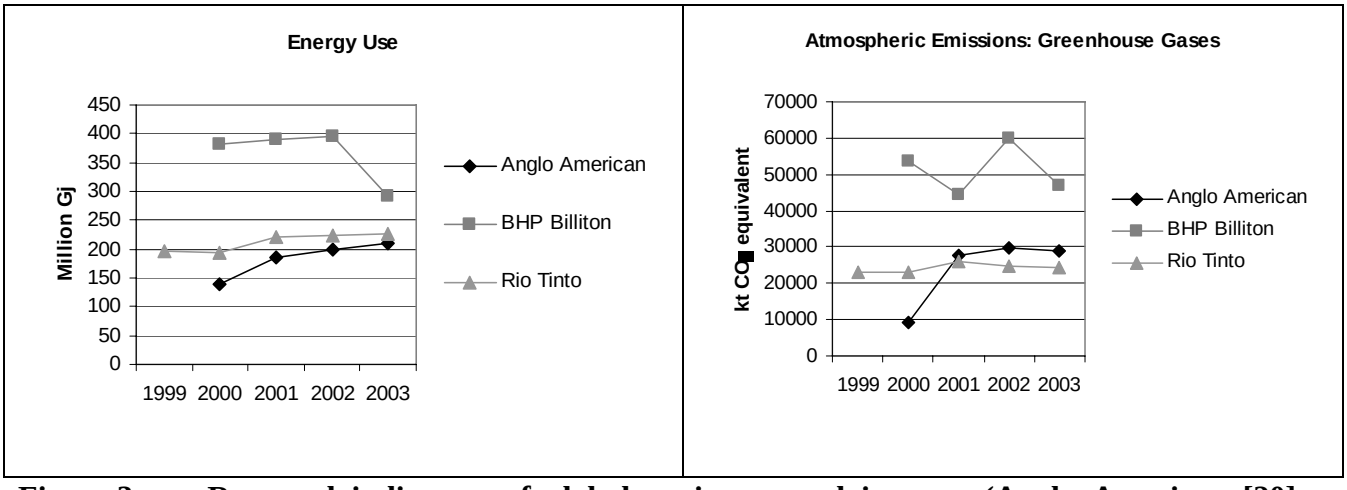


Figure 3: Reported indicators of global environmental impacts (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]).

BHP Billion's reported GHG emissions fluctuate due to its changing group structure. Anglo American's emissions increased by more than 18,000 kt of CO_2 equivalent between 2000 and 2001 before stabilising at just below 30,000 kt. Rio Tinto's emissions have remained relatively constant

over the period. In 2003 Impala produced 2,004 kt of CO_2 equivalent and Lonmin produced 1,184 kt.

The physical area occupied by the three multinational companies increased steadily over the period 2000 – 2002. In 2003 Anglo American and BHP Billiton's annual reports reflect a decrease in the footprint of their operations. The figures represent the total amount of disturbed land less the amount rehabilitated (see Figure 4).

Substantial increases in Anglo American's consumption of fresh water arise due to improved reporting, which now includes non-mining divisions previously excluded. Lonmin's water consumption has increased from 8,847 in 2001 to 11,595 thousand cubic metres in 2003 (Lonmin [16]). Impala consumed approximately 14,000 thousand cubic metres in 2003 (Impala [18]).

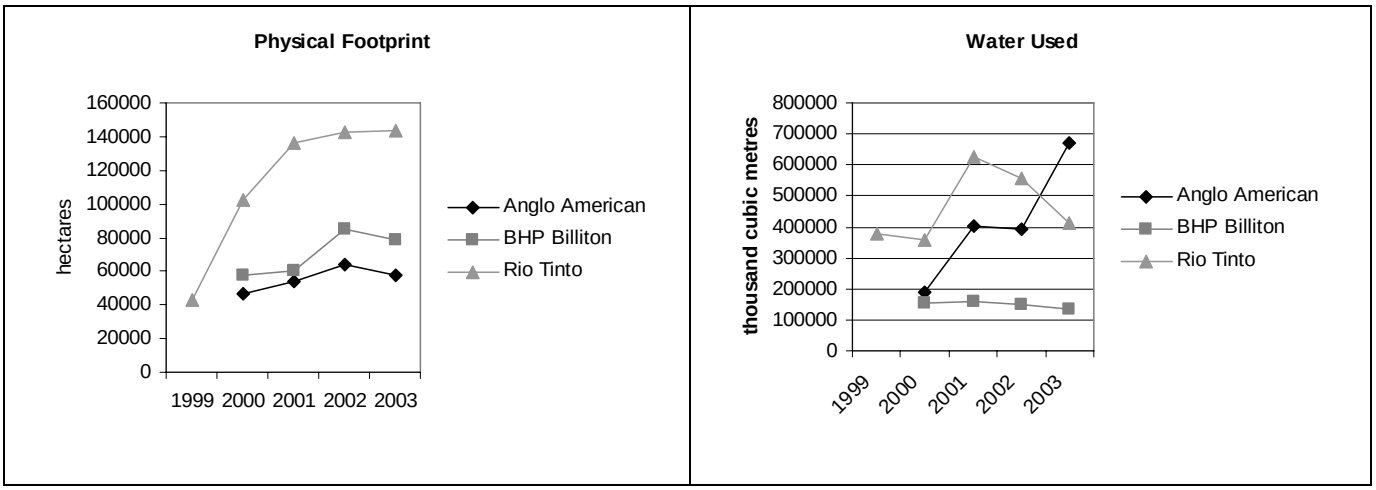


Figure 4: Reported indicators of environmental utilisation (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]).

Governance Systems and Management of Safety

All three companies report fines imposed for environmental and safety infringements. Reporting on amounts spent on fines provides an indicator of the will within the company to behave transparently. Different jurisdictions have greater or lesser capacities to fine companies and so those operations in strictly monitored environments record greater fines than similarly performing sites in unmonitored jurisdictions.

The three major companies have reduced the number of fatalities occurring on their operations. BHP Billiton shows consistent improvement over the period with an average reduction in fatalities of 33%. Rio Tinto has maintained its very low rate and Anglo American reversed a trend of increasing fatalities. In 1999, Lonmin recorded 5 fatalities (Lonmin [33]). This increased to 11 in

2002 before decreasing to 6 in 2003 (Lonmin [32], [19]). Fatalities at Impala decreased from 13 to 10 between 2001 and 2004 (Impala [17], [18]).

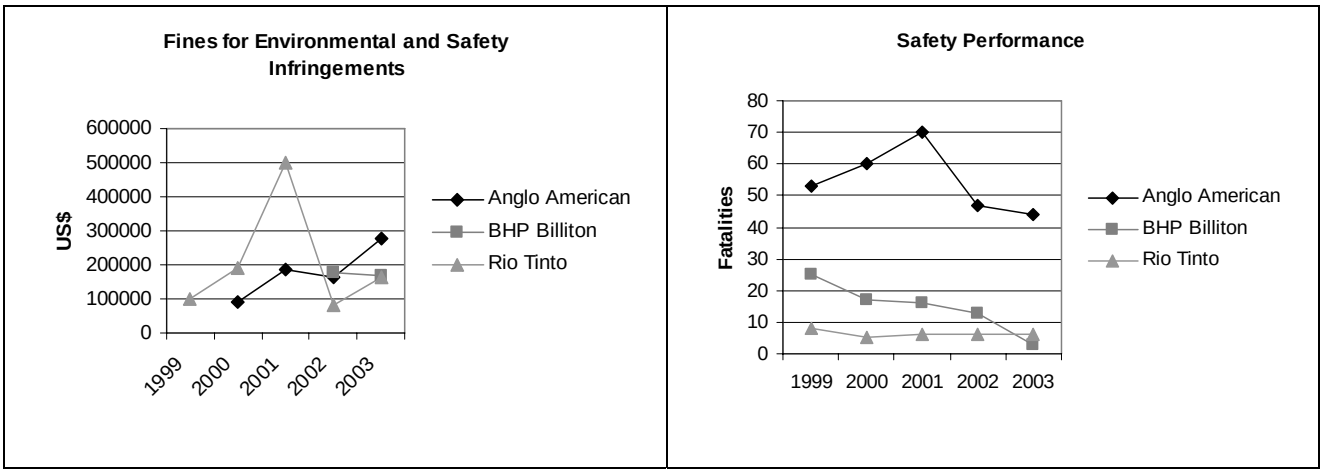


Figure 5: Reported indicators of safety performance (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]).

Society

Reporting on community initiatives remains fraught with uncertainty and vagueness. It is difficult (and undesirable) to measure progress in SD from financial contributions only, as these do not indicate the impact that the investment has on the community. This is the only comparable and quantitative indicator that is currently consistently used. Figure 6, reveals an upward trend in expenditure. Community investments made by Lonmin and Impala also show an upward trend.

There is still considerable debate around indicators for this aspect of SD. BHP Billiton, Anglo American and Rio Tinto are all developing key performance indicators for their operations. Lonmin has developed a tool for assessing neighbouring community perceptions.

The individual business units of Billiton, Anglo American and Rio Tinto produce their own safety, health, environment and community (SHEC) reports. These are not reviewed in this paper, but the development indicates a realisation of the significance of local impact on sustainable development. It also involves a greater degree of involvement by local communities, as these reports are presented to the community for verification. These aspects are both indicators of a move towards SD.

All the companies reviewed in this paper report in terms of the requirements of the GRI. This requires, in the corporate reports, a broad overview of community development. The operational reports ideally provide detailed information on particular development projects and their sustainability. In particular, a notable gap in community development reporting is year-to-year reporting on projects. In 2003 BHP Billiton reported on the different SD components of the

significant closure of Rietspruit colliery. The community in the vicinity of this operation is particularly vulnerable to post-closure impacts, and follow-up reports would make an assessment of the sustainability of community initiatives possible.

Although most reporting on community/social development is reflected qualitatively, rather than quantitatively, increasing prominence is given to the requirements for sustainable livelihoods. However, in the corporate reports, sustainability reporting seems to be problematic. Many projects are described in terms of the nature of the project and the amount invested in it, but no quantitative information is given on, for example, the number of jobs created, the benefits of a particular initiative, the number of people affected by a project or the long-term viability of a project, particularly in relation to the post-closure phase.

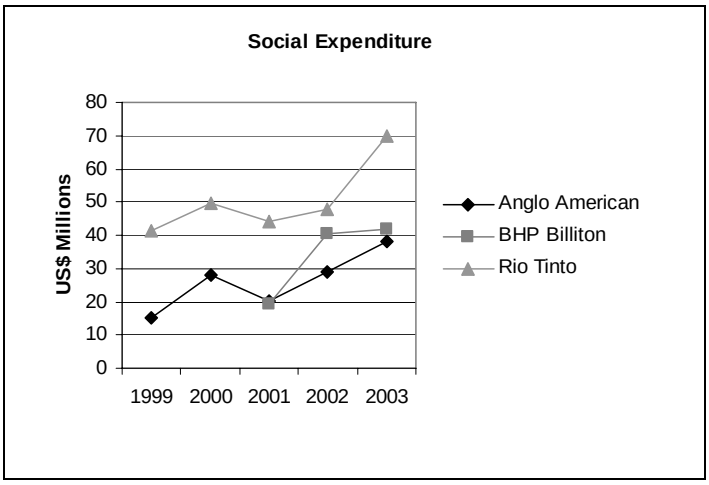


Figure 6: Reported indicators of contributions to society (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]).

It is informative to identify the general trends that corporate reports reveal over the period covered by this paper. Issues of sustainability are accorded greater emphasis, and there is a growing concern with aspects such as local employment and indigenous land-use and cultural rights. However, corporate reports are concerned with policy, rather than practice, and recourse to the operational-level reports is necessary to assess whether policy is being effectively translated into practice.

PROFIT-NORMALISED INDICATORS OF USEAGE INTENSITY

The indicators discussed in the first section of this paper are directly reported by companies in annual sustainability reports. These are absolute numbers, and do not show how efficiently the company employs various types of capital (natural, social and financial) to generate wealth. The indicators below are normalised by the wealth created by the company (profit), and allow companies to benchmark their performance against each other. This identifies best practice and,

where information sharing takes place, allows improvements in performance. Such normalisation makes it possible for a medium sized company, such as Lonmin, to compare its performance with large multinational, such as Rio Tinto.

In absolute terms, Rio Tinto uses slightly more energy than Anglo, and BHP Billiton uses substantially more than Rio Tinto. Normalised by profit, the lower level of energy intensity within Anglo American's operations becomes evident. The sale of BHP Billiton's iron and steel division places it below Rio Tinto in terms of energy intensiveness. Similar trends are evident in GHG emissions, although the high levels of GHG's arising from aluminium smelting keep BHP Billiton at the top of the log. Although limited data are available for the two South African companies, the charts in Figure 7 show that Lonmin uses relatively little energy for each million dollars of profit generated. Similarly, Impala emits fewer tonnes of CO_2 equivalent per unit of profit.

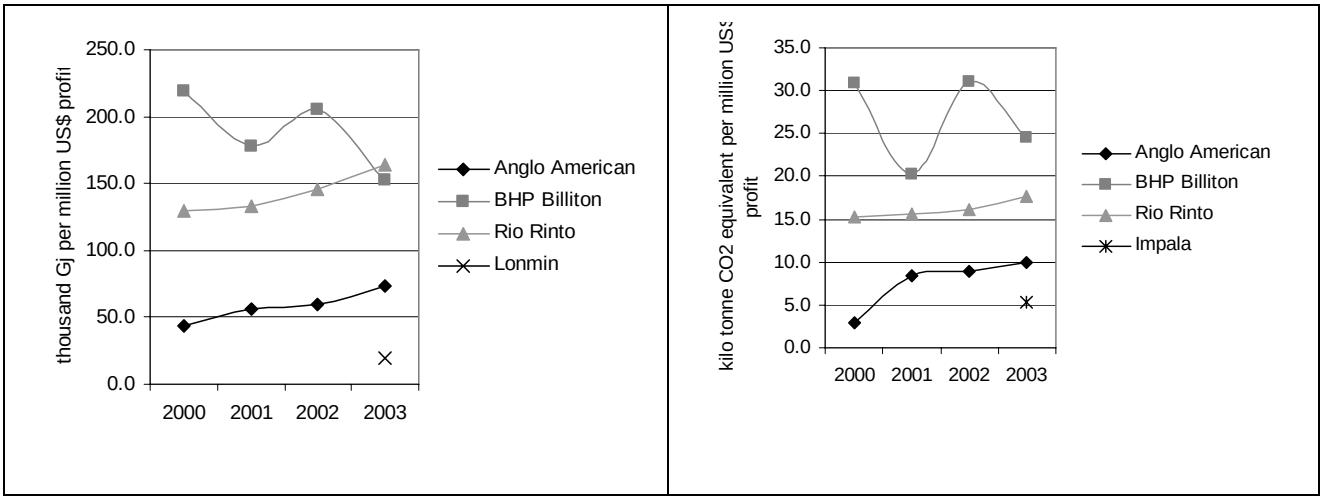


Figure 7: Profit-normalised indicators of global environmental impact (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]; Lonmin [19]; Impala [34]).

The upward trends shown by Anglo and Rio Tinto for both indicators is of concern, but it may only reflect the diminishing profit margins on increased production levels due to reduced commodity prices.

The two normalised indicators of local environmental impacts show different trends. As in the raw data, land use per million dollars profit shows increasing use of land over time. Rio Tinto, in particular, has to employ ever larger tracts of land to generate a unit of profit, but all three of the multinationals are increasing their use. Lonmin has data for two years, and these show a decrease in use. Both platinum companies used two orders of magnitude less land to generate a unit of profit than BHP Billiton and Anglo American in 2003 (see Figure 8).

Normalised by profit, the general trend is towards lower levels of consumption of fresh water. The exception is Anglo American, but this may be due to improved reporting. Levels of water use intensity are sensitive to technological innovations and are more easily driven down than land use. Once again, the platinum companies are more efficient than the diversified multinationals.

All companies are reporting on the use of recycled water. This is an important sustainability indicator, especially in regions where water is becoming progressively scarcer. So too, all companies report extensively on water management plans.

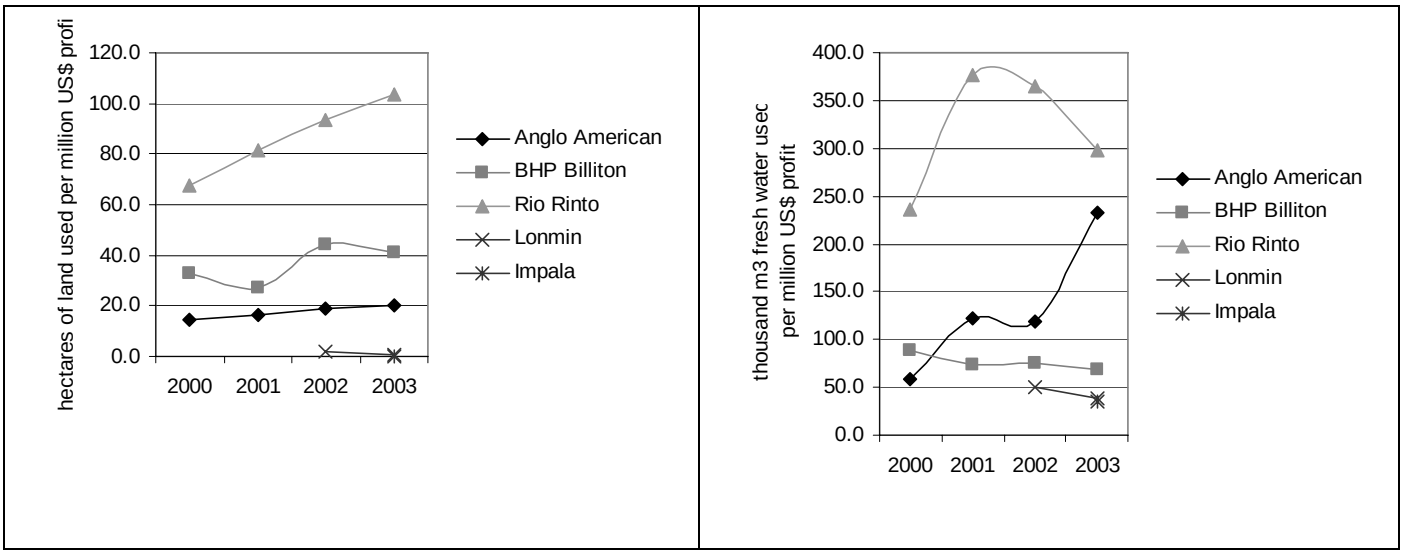


Figure 8: Profit-normalised indicators of local environmental impact (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]; Lonmin [32], [19]; Impala [34]).

In Figure 9 the global companies show decreasing numbers of employees per unit profit. The South African platinum companies are considerably more labour intensive, but show different trends for the two years of data available.

Progressively, fewer fatal accidents are occurring per million dollars of profit generated. The exceptions are Rio Tinto's consistent performance - this is admittedly from a very good starting position - and Impala's increase. The majors out-perform the platinum companies in this indicator.

All companies are increasing the amount of social spend per unit profit. The South African platinum companies are at the lower end of the scale.

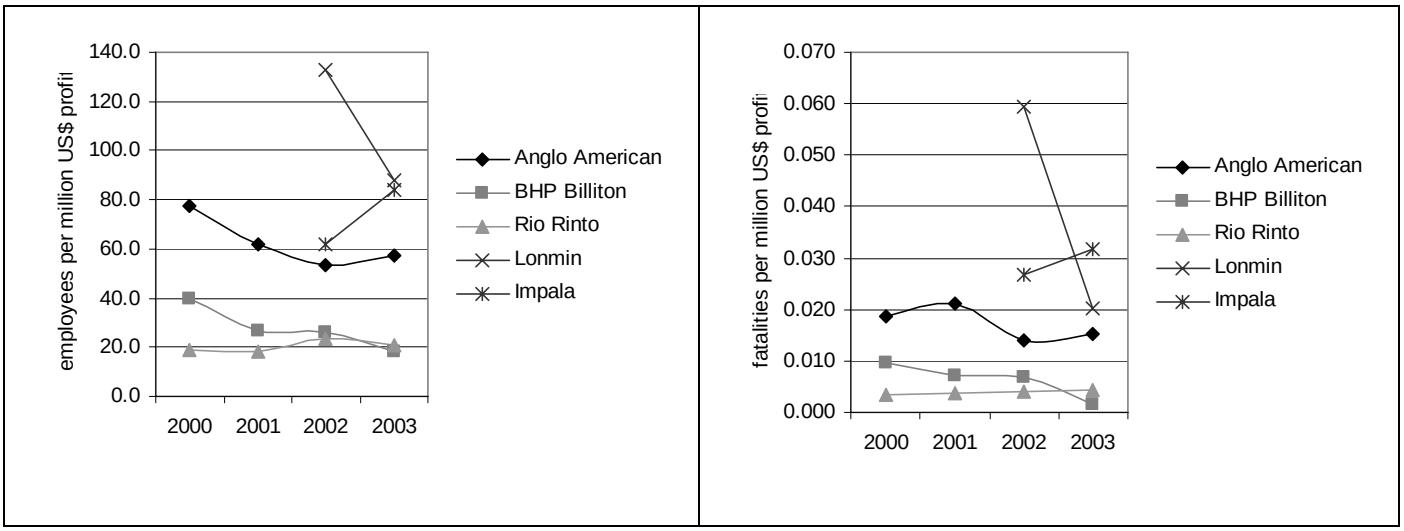


Figure 9: Profit-normalised indicators of direct social impacts (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]; Lonmin [32], [19]; Impala [34]).

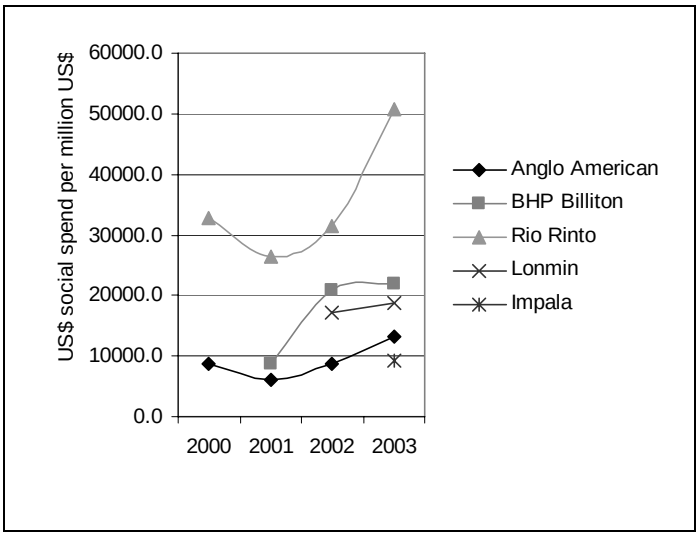
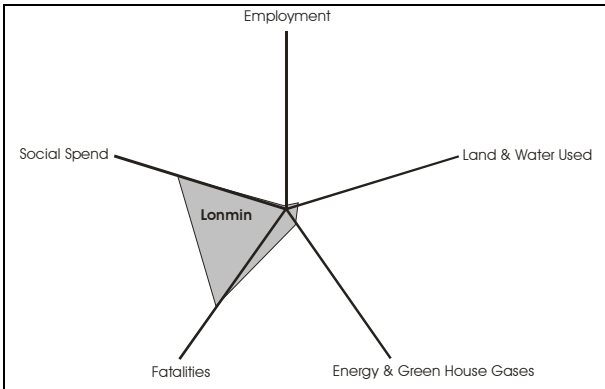


Figure 10: Profit-normalised indicators of indirect social impacts (Anglo American [20], [21], [22], [23]; BHP Billiton, [24], [25], [26], [27]; Rio Tinto, [28], [29], [30], [31]; Lonmin [32], [19]; Impala [34]).

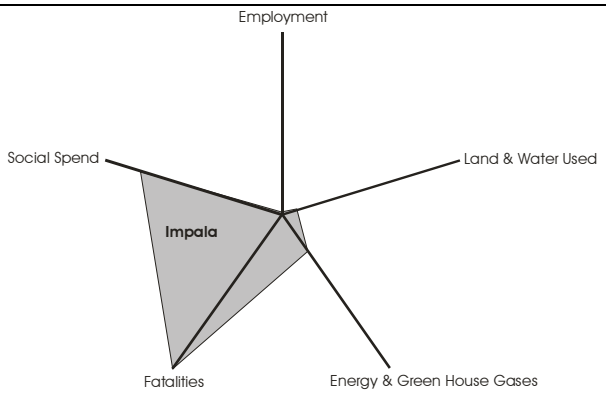
Overall Performance: Ranked Contribution to SD as measured by profit-normalised indicators

The graphs in Figure 11 were produced by projecting the profit normalised values for each indicator onto a scale of 0 to 5. The largest value (i.e. largest impact) is set to a value of 5, except where the largest value is a positive impact: employment and social spend. In the latter case, the largest value is set to zero. For environmental indicators, an average value was calculated for each of the global and local impacts indicator pairs. A company is performing better than another company if it

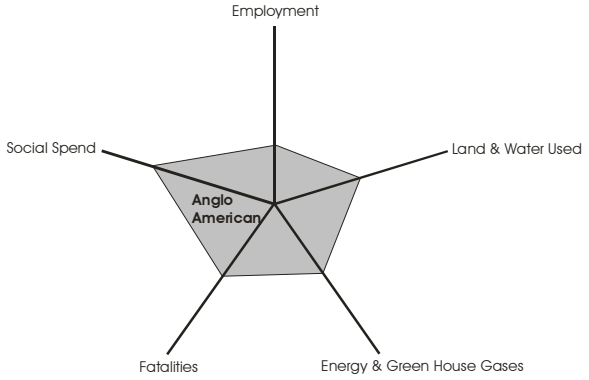
scores closer to zero on any given axis. Overall performance is better if one company has a graph polygon with a smaller surface area than another company.



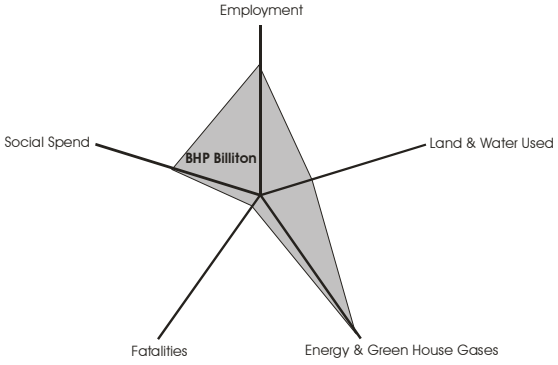
Lonmin is strong in employment and environmental resource use intensity and weaker in social spending and safety.



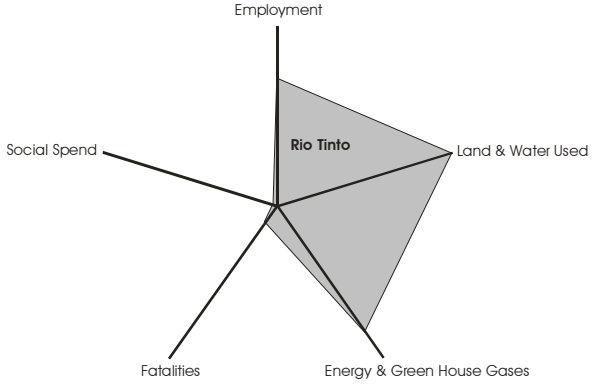
Impala has a similar patter to Lonmin.



Anglo American performs adequately in all indicators



BHP Billiton is very strong in safety and good in local environmental impact mitigation, but weak in global environment resource use intensity.



Rio Tinto is very strong in fatalities and social spend, but weak in providing employment and in environmental resource use intensity.

Figure 11: Company SD impact comparisons.

CONCLUSION

Current best practice in company reporting still contains too few indicators for a holistic assessment of contributions to SD to be made. Considerably more work needs to be done to develop indicators that will reflect progress in SD holistically. The GRI's proposed new indicators for the mining and metals sector should go someway towards addressing some of the gaps in reporting. As an example, the reporting requirements on land use and rehabilitation are more stringent, and this is an area where some company reports are lacking (GRI [35]).

There is still a tendency to report in tentative terms on a number of aspects of community development – such as community engagement procedures, guidelines, management plans and the development of indicators – and to refer to policies and intentions, rather than guidelines.

Anglo American, BHP Billiton and Rio Tinto are amongst a small number of mining and metals companies producing reports that can be used to critically assess their performance. If the sector is to make the contribution to SD envisaged by the Mining, Minerals and Sustainable Development project (MMSD [36]), then many more companies will have to follow their lead.

The two platinum companies have made considerable progress in their reporting practices over the period under review. In 2004 Lonmin received an award for the Best Board Communication Award for Non-FTSE 100 Companies. Both Lonmin and Impala have some considerable way to go to equal the sustainability reports of the large multinationals, but they have submitted themselves to a process from which there is no return. The use of the cross-referencing system of the GRI is an extremely useful quick check-list for interested parties to get a global view of what a company is doing. However, this does not, of itself, ensure transparency, and it is still possible to report without doing so comprehensively, qualitatively and in sufficient detail.

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