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DIRECT FOREIGN INVESTMENT AND THE ENVIRONMENT: AFRICAN MINING SECTOR

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ABSTRACT:

The history of the development of the Mining Sector in Africa is reviewed and it is shown that direct foreign investment has been the only successful investment strategy over the past 150 years. The present status of direct foreign investment worldwide is reviewed and it shows that despite the possible downsides, it is still the only likely strategy which will succeed in the African Mining Sector because the risk capital, sophisticated skills and technologies, and the global market access needed for such projects to succeed cannot be generated domestically in the largest part of the continent.

The nature of the Mining Sector is reviewed and it is shown that this sector has a very huge risk profile, the management of which by the mining companies requires them to be good corporate citizens. This requirement has shaped the "best practice" philosophies towards environmental management practices of both Governments and International Mining Companies. Policy positions developed by the World Bank have also been successful in shaping the role, capacity and intervention of the State with

respect to the core competencies and functions to manage the mining sector in an environmentally responsible fashion.

The perspective of stakeholders in respect of environmental impact resulting from mining evolved over the past decade, particularly in Africa, to include both the physical impact and the social impact of mining. The response of Governments, Mining Companies and the local communities to this change in perspectives are analyzed. It is shown that companies, realizing that it makes good business sense to implement responsible environmental practices to manage these impacts, are far ahead of Governments in managing these impacts. Various Government approaches to the social impact mitigation are reviewed.

The current best practices with respect to the management of physical environmental impacts of mining are reviewed, and it is shown that these have a much smaller long term negative impact than subsistence farming, communal pasturing and widespread poverty associated with deforestation etc. have. The economic integration of mining resulting from DFI could, if well managed by Governments, result in long term integrated rural development, with consequent beneficial environmental consequences.

The proposals of the King II report on Corporate Governance for companies listed on the Johannesburg Stock Exchange are briefly discussed, and it is shown that the "triple bottom line" reporting proposed, opens the way for public scrutiny with respect to the physical and social environmental impacts of mining by mining companies. This provision also opens the way for enabling all stakeholders to evaluate the compliance of companies with respect to ISO 14 000.

Considering all relevant aspects, it is concluded that DFI has and will remain the driver for the development of a mining sector in Africa. It is also shown that mining is the most important development path for the continent, and that a range of global pressures, reporting frameworks and accepted best practices can effectively mitigate negative environmental impacts and ensure physical and social rehabilitation after mine closure.

I. INTRODUCTION

A. HISTORY OF THE MINING SECTOR IN AFRICA

The history of the Mining Sector in Africa over the past 150 years can be classified into three quite distinct phases which closely mirror the political evolution of the continent and which have all had their own socio-economic characteristics. During the colonial period (roughly between 1850 and 1960) the Mining sector developed very rapidly and resulted in a world class industry in a number of regions on the continent which were producing a very large range of important minerals. Whereas the Colonial Governments provided the political, administrative and scientific knowledge frameworks for the industry, the capital, initiative and skills were mainly provided by private companies and individuals with equity raised on the European Stock Exchanges or through private stock issues. The development of the mining industry thus resulted largely through a form of direct foreign investment even though the investments were in a way captured investments by individuals or companies from the specific colonial power in their own colonies.

During the independence period (1960 to 1990) the ownership pattern of the Mining Sector in large parts of Africa changed as a consequence of political interventions by the New Governments. These interventions ranged from direct nationalization (Ghana and Zambia) to greater Government participation, and direct Government involvement in the management of the Mines and the Mining Sector. This process resulted in uncertainty and significantly raised the risk profile of new mining investments and hence resulted in a reluctance of the private companies (both foreign and domestic) to invest further in the mining sector in Africa and as a consequence no new private sector investment took place and the investments moved elsewhere in the world. No new investments meant that no new exploration took place, and this over time resulted in an erosion of skills through emigration and natural aging. As the existing mines became unprofitable Governments increasingly resorted to aid finance (Sysmine of the EU being a good example), to political objectives finance (mainly from former Communist Governments) and to loan finance (WB, AFDB, etc.) to finance the upgrading of mines or to finance new ventures. All these financial avenues failed to turn the mining sector around, and decline continued until the nineties.

Since about 1990 most African Governments, donors and particularly the financial institutions realized that the process had failed completely, the mines had become obsolete and dysfunctional, the government projects had failed disastrously and all that remained was the massive African debt burden. In the early nineteen nineties, therefore, it was realized that a complete new strategy had to be developed to revitalise the mining sector in Africa. It was further recognized by the World Bank, the EU and by many African Governments that the highest potential for economic growth on the African continent would, with the exception of two or three Countries, be the mining and agricultural sectors (primary production) and that these are perhaps the only realistic short term development options for a continent with a very small skill base and low levels of education. The political and cultural problems associated with land use have throughout the period placed a cap on the potential for commercial agriculture and it was hence realized that this sector was perhaps the most difficult development option of the two, and mining was thus the logical preferred development option.

The strategy developed by the World Bank during the early nineties rested upon a number of fundamental economic and political premises which have

proved themselves exceptionally well as triggers for the development of the mining sector elsewhere in the world. These principles recognized that:-

- Very high risk investments in exploration and exploitation can and /or should be the responsibility of the Private Sector both as DFI and direct indigenous investment
- Governments should play an enabling role by lowering the risks (geological, political, economic etc.) by managing the allocation of licenses and by assuming the responsibility for safety and the environmental management.

Most African Governments accepted the World Bank strategies in the nineteen nineties and instituted policy, legal and administrative regimes to implement these strategies with some good examples of success (Ghana, Mali and Mauritania).

From the above history of the evolution of the Mining Sector in Africa over the past 150 years it is clear that the development of the sector has gone through a full circle from relying on DFI, to relying on aid and soft loans to Governments, back to the original successful mechanism of DFI. This

history basically proves the point that the global Mining Sector has and will be a sector driven by DFI everywhere in the developing world.

B. HISTORY OF THE IMPACT OF MINING ON THE ENVIRONMENT

The evolution of the associated environmental management practices throughout this period is also quite illuminating. During the colonial period when very limited, if any, public accountability, especially in the colonies, existed for the governments, the industry was essentially uncontrolled and hence resulted in considerable and widespread environmental damage. During the period of direct Government participation the same lack of public accountability continued as a consequence of dictatorial or one party governments and the environmental degradation continued or even increased, because of the financial constraints under which the mines operated. This was also more or less the case in the Eastern European countries at the time. It was mainly in the seventies and eighties when global public opinion, notably in Europe and North America, became concerned with the state of environmental degradation that accountable governments, and accountable mining companies had to take steps to develop a framework for a controlled industry within which environmental damage could be restricted, and which ensured environmental reclamation.

In countries where governments were immune to these pressures, i.e. Eastern Europe, Africa and Asia, the process of degradation continued and when Governments themselves were involved in mining it remained an uncontrolled industry and hence environmental decay continued.

The above history thus shows that irrespective of the funding model or who is actually mining, it is the ultimate pressure by the world which ensures that mining takes place in a controlled environment. The imperative of public accountability is thus critical to the issue of environmental management. The history also shows that, because of the public pressure, mining has become a controlled business. As further global integration takes place, so public accountability will continue to grow as a global concern with no place to hide for offenders.

II. DIRECT FOREIGN INVESTMENT AND THE MINING SECTOR

Since the end of the cold war the flow of direct aid funding, either as soft loans or as grant funding has remained stagnant and even declined. Over the corresponding period the flow of DFI has increased from about \$200 billion in 1993 to about \$1,2 trillion in 2000, with an expected short-term decline over the next few years. Since all the DFI capital is raised and

invested by the private sector, and by its nature is invested in new business ventures, these investments all target the production of commodities, products and services and have profits as their main objective. By its very nature DFI will thus create wealth and increase government tax revenues in the recipient countries, which is in sharp contrast with "aid funding" which was at the discretion of governments and which could be expended on social and military programmes without any new investments or production. An analysis of the breakdown of DFI flows, however, shows that the share of developing countries is roughly 16% and that this share has declined as a percentage of total DFI since the beginning of the previous decade. The share of Africa has remained below 0,16% throughout this period.

Although it is recognized that DFI is not necessarily the only instrument to drive economic development in Africa, it has over the past 10 years been reasonably successful in parts of the continent, i.e. Mali, Mozambique, Senegal and Benin. It is also recognized that, like any other development trigger, DFI also has both upsides and downsides, and that the global competitiveness for access to DFI has the tendency to place pressures on governments to abandon sound government policies through the granting of policy exemptions with respect to things such as labour practices, tax laws

and environmental policies etc. The unintended downsides to DFI, such as crowding out domestic producers, eroding indigenous skill bases, etc. are increasingly being understood better, but few of these consequences actually apply to the mining sector which is dependent on finding and/or developing a specific unique deposit with no possibility of playing of Governments against one another. Despite these real and/or imagined downsides the history of mining in Africa has shown that the development of a future strong Mining Sector in Africa can and will only take place through DFI from established mining companies. Not only do these international companies have access to the enormous amounts of capital that are necessary to establish new mining ventures, but they are perhaps the only institutions who can manage the very high risk profiles of such investments. In addition, these companies are the only sources of the diverse ranges of skills and expertise needed to find, develop and successfully manage these very sophisticated industries. Lastly, through their international linkages and partnerships, these global companies also have a far better global market access, in a very sophisticated global market segment.

Despite the fact that no substitute for DFI exists in the Mining Sector, it is still possible for governments in recipient countries to maintain favorable business climates without having to compromise on good government practices. During the past decade the World Bank has developed guidelines for Governments in Africa and Latin America on the global "best practices" to apply in the Mining Sector. These global best practices specifically address the institutional reforms in Government Departments responsible for mining in order to develop the policy and legal frameworks to manage the administrative, fiscal, environmental and investment risk regimes optimally and transparently. This global best practice with respect to the management, control and reclamation of environmental damage draws on sound environmental impact assessments, advanced monitoring procedures and the application of advanced technological processes to minimize environmental damage. In many cases it also provides for financial provisions to rehabilitate mines after mine closure.

Acceptance of these best practices by Governments and Companies has thus established an operational framework for the management of the environmental risks associated with mining and ensured that mining takes place within a control regime.

From the perspective of the Governments in Africa the above approach has basically two problems. The most severe of these is the technical and administrative ability of the government to manage such a sophisticated administrative system. The availability of qualified bureaucrats to manage the controls and the framework is still problematic and the weak link in the control environment. The second government perspective revolves around the social environmental problems associated with mining impact. In a very "people centered" cultural environment which is a characteristic of Africa, this problem is perhaps the more difficult impact to manage. I will return to this aspect later.

III. NATURE OF THE MINING INDUSTRY

In order to understand the philosophy and approach of the mining companies it is necessary to review the nature of this industry:-

- Mining is a global industry which is truly international in every respect and hence exposed to global trends, paradigms and competition at all times.

- Mining Companies cannot choose where they would like to mine - they have to do so where the best deposits occur.
- Because mining projects have a long lead-time, often exceeding 10 years, and as they have long payback times and remain exposed to political and economic risks in the country where the mines are throughout these periods, companies must remain sensitive to local public opinion.
- Disinvestment from a country automatically results in the forfeit of the mine, because the latter cannot be transported.
- Commodity prices are cyclic, often volatile and globally determined; hence the economic risk profile remains high throughout the lifetime of a mine. The industry is furthermore dependent on non-renewable, wasting resources which remains locality bound. Opening a mine already foresees its closure.
- Mining has a large and diverse stakeholder group which is ill defined and thus impossible to deal with individually.

Because of this very high risk profile, and the fact that the company remains linked to a specific government and a specific community throughout the lifetime of the investment, mining companies have realized that they must

be good, responsible citizens if they wish their investments to be successful over protracted periods.

IV. MINING COMPANIES AND THE ENVIRONMENT

During the first half of the previous century mining companies focused exclusively on making money for their shareholders and hence they regarded any expenditure on environmental protection as an additional and unnecessary cost which their clients didn't want to pay for. The view was that they pay their taxes and hence the government had to look after the environment. During the second part of the previous century, public opinion and particularly the pressure from governments in the developed world caused the mining companies to review this situation. The public opinion led to the enactment of environmental legislation in most countries which transformed mining into a controlled industry and this required mining companies to implement strategies and practices to control and minimize environmental damage, and file mine closure plans in advance. During the nineties the focus on environmental damage started expanding from an emphasis on the physical environment to an emphasis on the social environment. This shift is not very pronounced in the developed world yet

but in the developing world, particularly in Africa, it is a growing public concern. At present mining companies worldwide tend to follow environmental policies which address both the physical and social dimensions of the environment.

A. PHYSICAL ENVIRONMENT

The most visible physical impact which mining has on the environment is the fact that mining requires the physical excavation of rock and involves the movement of such rock material from one place to another leaving behind large holes and in some cases large dumps of waste products. To the average citizen and particularly so in the case of the environmental lobby, this physical impact has and continues to be the emotional focus of the damage caused by mining. As will be shown later this is an emotional rather than rational assessment and constitutes for the largest part an unreasonable perception. This physical and visible impact is, however, always confined to a relatively small area and can usually be reclaimed successfully when mining has terminated and mine closure has taken place. The present “best practice” in the design of waste dumps is such that the leaching of toxic materials can be minimized or obviated, and land reclamation can be done. The existing technologies for back-filling, re-

vegetation and the management of topsoil are such that the long-term consequences can be mitigated successfully. This area of environmental impact is insignificant compared to impacts resulting from production in other sectors of the economy.

The second area of physical impact, often considered as a serious problem is the effect of mining on bio-diversity (fauna and flora) in delicate and/or sensitive areas. Over the last decade most responsible mining companies have developed considerable skills on fauna censuses, as well as in the understanding of the behaviour of sensitive indicator species which can be used to monitor environmental impact. Mining companies have also developed considerable skills in floral censuses in order to document floral bio-diversity prior to and during mining. Most mining companies have developed a considerable expertise in using tissue culture to propagate plant species and to manage nurseries in order to ensure that unique bio-diversity is not destroyed by mining activities. Very few mines will today be developed unless the above steps to safeguard bio-diversity have not been implemented. In this respect the procedures to mitigate the consequences of mining are far better developed than in most other industries including the nature conservation and the tourist industries which generally also have

severe environmental impacts that are often not well understood or managed. In any case these latter industries do not have the same financial resources to ensure sound management practices.

Most mining companies are also aware of the less visible but far more destructive effects which mining can have on the atmosphere and particularly the hydrosphere. Here again companies have a whole range of sophisticated technologies on which they can, and in fact do draw to monitor and remedy the impact of mining on the atmosphere and water systems. Most mining companies either develop or fund fairly large research and development projects aimed at developing appropriate technologies for specific applications to mitigate this environmental impact of Mining.

Although the environmental lobby has had a beneficial impact on the development of best practices with respect to environment management by mining companies and Governments, this lobby group has, as can be expected, rather over-stated the impact of mining and hence resulted in a situation where mine development is opposed for the sake of emotional rather than rational reasons. In Africa, where communal land use and

subsistence farming associated with overgrazing and inappropriate tilling practices exist, the environmental impact of poverty and a lack of economic development result in orders of magnitude more severe permanent and widespread environmental degradation than mining. This important aspect is usually ignored when contesting land development options have to be evaluated. The fact that mining is controlled and confined, whereas subsistence farming is uncontrolled and widespread is usually ignored. What is consistently overlooked is the fact that mining, both from the fact that it creates a large economic activity and that it triggers the development of new infrastructure, is an important link in integrated rural development which mitigates rural poverty, and hence contributes to sustainable development in an environmentally sustainable way.

B. SOCIAL ENVIRONMENT

The impact of mining on the social environment, specifically in the rural parts of Africa, which is almost exclusively where mining takes place, has been probably as severe as the physical impact. The establishment of a mine in these areas usually resulted in an "island" development where sophisticated mining technology is applied, first world standards of housing,

water provision, electricity provision, schools and hospitals are created amid an area of widespread underdevelopment and poverty. In many cases the establishment of the mines relies to a large extent on imported supplies and exports the minerals or metal with very few linkages to the surrounding area. Only in the case of super giant deposits, which are very rare, does the mine justify the establishment of railway connections and a local industrial sector, as was the case on the Zambian Copperbelt.

The perceptions of the different stakeholders regarding the social environmental impacts are considerably diverse and presently undergoing a number of changes. The mining companies traditionally adopted the view that their responsibility is to mine, to make profits for their shareholders, to obey the environmental, health and safety laws and to pay their taxes. Over the past decade this perception has changed considerably and companies have increasingly become aware of community relations for a number of reasons but primarily because it makes good business sense to do so.

Mining companies have become increasingly aware that the support of the local community for its mining venture holds a number of sound business advantages whereas opposition by the local community could result in disastrous outcomes, irrespective of the legal standing of the company. Most companies have developed strategies to obtain a sound

understanding of community issues in order to develop an “implied” socio-economic contract with these communities. Unlike in the past where the community interactions were built on philanthropic actions such as the opening up of the facilities as a social benefit to nearby communities, the present notion is to develop joint projects with community organisations, NGO’S etc. The companies typically provide funding for these programmes but also make available, on an on-going basis, inputs of technical and human skills. A characteristic of these partnerships is that they are managed along strictly business principles targeting specific deliverables within specific time lines. Although many of these projects still target sectors such as health, education and new business development, the emphasis is on the communities assuming the ownership of the projects. The communities are expected to manage the projects with a view to achieving long-term stability and sustainability after mine closure has taken place. Over the last two years, it has, however, become apparent that mining companies have started recognizing that strategies to achieve integrated sustainable development should be devised. The recognition that mining is a resource consuming industry prompted this realization and hence the Global Mining Initiative was created by the most important transnational

mining companies. This initiative basically seeks to devise strategies to deal with the post-mine closure liabilities.

Governments, particularly in Africa have also gone through an evolution in thought and have increasingly become aware of the social consequences of mining both during the operational phase and particularly subsequent to mine closures. Over the past two to three decades Governments have become aware of the impacts of mining on the local communities, the mineworkers and the economy of mining districts. Most of these consequences manifest themselves when mines become unprofitable and then continue well beyond the life of the Mine, and hence the management of these liabilities becomes the financial responsibility of Governments. Notable impacts include occupational diseases, HIV/AIDS, unemployment and a rapid decline in the economy of the Mining district. In order to address some of these issues Governments are increasingly resorting to measures such as requiring companies to engage local business partners and communities in the shareholding of the mine. The philosophy underlying this notion is that the local partners and communities are more likely to reinvest in and/or diversify the regional economy, providing future economic stability. It is, however, clear that Governments must still develop

appropriate financial instruments in partnership with the industry to manage the long-term social impacts of mining, long after mine closure.

The view of local communities, who are directly affected by the impact of the development of mines is generally motivated by their insistence of a more direct participation in decisions and actions which affect their neighborhood. In the economic sphere the local groups exert pressure to ensure that a larger part of the financial benefits and development efforts be concentrated in their area, and hence they prefer the mining companies to manage the community relations directly rather than through the tax system and the Central Government. They realize that outsourcing of services and supplies to nearby communities result in an economic driver. Mining companies have been quick to recognize that without the backing the local community, they will be in serious trouble. The interaction between companies and the local community thus usually focuses on social development such as joint projects with community organizations aimed at human and technical skills development and integrated sustainable economic development. Numerous examples where the Mining Company-community partnerships have been very successful exist in Africa, Asia and Latin America.

To quantify the environmental and social costs for a specific mining project for Mining Companies is almost impossible because company accounts do not usually disclose such social and environmental costs. Even if the costs were disclosed they would probably not be very significant, because the additions are built into the way projects are set up and into the capital component of mining projects. A survey of gold companies in 1993 showed that environmental cost provisions on average amounted to some 3 per cent of operating costs, whereas the average totaled some 12% of the feasibility and 14% of the development costs. The significant point is, however, that this expenditure during the feasibility and development stage probably would have happened in any case as the expenditure also leads to higher capital efficiency and lower future production costs. An analysis of the cost per ton of copper produced in the US has, for instance, shown a decline from roughly \$100 in 1970 to about \$50 in 1998, with a concomitant increase in productivity from 30 to 110 tons of ore produced per employee. The above took place over the period where the expenditure in environmental and social costs showed their biggest increase. Whilst a number of factors contributed to the above productivity gains, the important point is that the shift in productivity growth in the sector away from capital towards technology and improved work practices assisted the industry to

respond to growing social and environmental costs. The introduction of environmentally acceptable technological innovations and more enlightened public relationships have thus more than off-set the environmental costs due to better work practices and fewer disruptions.

An estimate of the multiplier effect of mining on the regional economy through backward and forward linkages has been estimated in the case of the Chilean copper production and this yielded 1,8 and 1,28 as closed and open systems respectively, which is fairly average when compared to all the other economic sectors. A similar estimate for the employment multipliers across all sectors showed that the mining sector yielded a multiplier of between 2,04 and 2,76 in open and closed systems respectively, for the established mining sector (government owned) and 4,1 to 6,71 for the newly established DFI companies. The latter, interestingly is the highest multiplier effect of all economic sectors in Chile, and is closely followed by the utilities sector. An analysis of the multiplier effects between the older established mines and the new private sector mines showed that the above difference is mainly a consequence of private companies outsourcing a great part of their activities in Chile. Whereas it is not possible to distinguish the environmental component of the above differences in multipliers, clearly

the notion of a social compact with the community does yield a significant benefit for the country's economy.

The sustainability of many of the Mining Company Community projects beyond mine closure is still untested and over the next decade or two this aspect of impact on the social environment will have to receive attention.

V. MINING COMPANIES AND CODES OF CORPORATE GOVERNANCE

Changes in the structure of the mining sector over the past decade, mainly as a consequence of globalization, have had a profound impact on the financing of new mining and even exploration projects. The present structure relies heavily on financing which is obtained on a number of capital markets in the developed world. Just about all capital used for direct foreign investment in the mining sector in Africa is thus raised on a small number of stock exchanges in Europe, North America, Australia and South Africa, and all these institutions over time developed codes of Corporate Governance which require transparent financial public disclosure.

Over the past decade, mainly as a consequence of a global growth in the public understanding of the social and environmental impacts of

investments in all sectors, and the fact that these aspects constituted a very significant portion of business risks, a tendency has developed to require public disclosure of social and environmental impacts too. As public pre-occupation with social and environmental impacts grows, Stock Exchanges will come under increasing pressure to change their codes of Corporate Governance and make regular disclosure on these issues a prerequisite for listing and/or raising capital.

The South African experience, where a very comprehensive review of the King report on Corporate Governance has been underway over a period of 3 years, is relevant in this regard. In the draft of the revised code, the King Report on Corporate Governance of South Africa 2001, commonly referred to as “King II” it is proposed that companies should also report on some non-financial issues. This is called the “triple bottom line” approach and includes aspects such as a balanced and integrated economic, social and environmental approach. In this regard the report recognises amongst others the following non-financial issues: -

- Safety, health and the environment.
- Societal and transformation issues (the latter is uniquely a South African issue at present, but could be relevant for DFI).

- Stakeholders, social and ethical accounting, auditing and reporting.

The reporting proposed requires that companies should regularly report to their shareholders and as a consequence to all stakeholders on their policies, procedures and the systems in place to monitor and verify its compliance in respect of the above issues. The public disclosure should be governed by the principles of materiality, relevance and verifiability. Specifically, the environmental corporate governance must reflect current South African law by the application of the “best practical environmental options”. The latter option thus also includes the possibility to use ISO 14000 as the benchmark upon which the external auditing of environmental compliance can be based. The above provisions, if they are accepted by the JSE as a pre-requisite for the listing of a company, would mean that an additional safeguard to ensure that environmental responsibility, both from a physical and social perspective, exists which will require any company which is involved in Direct Foreign Investment in Mining to adhere to best practices.

The acceptance of the principle of “triple bottom line” reporting in South Africa could pave the way for the introduction of similar measures in the codes of Corporate Governance elsewhere in the World, and this would,

assist the Mining Sector in Africa to ensure environmentally acceptable practices. Since these environmental measures, which affect the issues of Corporate Governance in the developed world, will be subject to the scrutiny of essentially the consumer and investor segments of the minerals and metals value train. It is likely to be as effective, if not more effective, than the local community in fulfilling a watch dog role to ensure acceptable levels of environmental management. It would, however, be an addition check and balance on Governments which could be tempted to sacrifice good government practices to obtain DFI, or are unable to ensure adequate Government monitoring of compliance because of a lack of skills or the possibility of bribery and corruption of underpaid officials.

Placing too high a reliance on codes of Corporate Governance too, has a number of downsides, and these, include amongst others paternalism, the destruction of the self confidence and the making of the decision taking process of Governments in the developing world subject to the public opinion (real or imagined) in the developed world. The latter point specifically requires some measure of consideration in order to ensure a balanced approach.

VI. CONCLUSION

From the above discussion it is concluded that the Mining sector is the most likely trigger for economic development in Africa. It is clear that the development of this sector will only take place through DFI. Whilst the danger always exists that physical and social environmental management could be jeopardized by Governments, the various operating systems in the sector are such that the problem can be managed. The diversity of stakeholder interest group is, however, large enough and diverse enough, to ensure that policy and procedure “over-rides” by any one stakeholder can be detected and exposed easily and effectively. Because of its global visibility and dependence on goodwill, the mining sector is perhaps the sector in which the problem can be best controlled and managed.