

This report is the Draft Final Sustainable Development Framework for the Mining Sector for the Ministry of Mines (GoI) and the third deliverable of Phase I under the contract signed between the Ministry and ERM India Private Limited (ERM). This Draft Final Report has been prepared incorporating various comments from the Ministry of Mines, members of the working group and other stakeholders who have provided feedback on the draft SDF report.

0.1**BACKGROUND**

Historically, the extraction of mineral reserves has always resulted in varying degrees of environmental resource degradation and social impacts, including displacement, all across the globe. Whilst acknowledging that no mining can be entirely free of all negative impacts, there is sufficient ground to suggest that all-round performance on this subject in the mining sector needs to be urgently and substantially improved in the country.

0.1.1***Existing mining scenario***

The Indian mining sector has been facing severe criticism on several issues relating to its performance vis-à-vis sustainable development. . Some issues highlighted are:

- To a great degree, minerals, forests and tribals tracts are concentrated in the same geographic areas;
- Notably, several areas with very high mining activity are in the poorest districts. This brings home the reality that in recent decades, mining activities have resulted in little local benefit, and in fact, has been at the cost of environmental degradation;
- This situation has greatly contributed to general social dissatisfaction and unrest in these mining belts; further exacerbated by undervaluation of lands that were acquired by the government for development of mines. Long pending and pertinacious resettlement (legacy) issues have contributed to a deep local mistrust of mining and all associated activities (including exploration studies) and continues to colour all discussions on the subject;
- This is not helped by the fact that the issue of land ownership is a highly complex one, layered with a variety of rights granted over its use- some of which are customary and traditional, and may not be recognised under law; this is perhaps most problematic in tribal areas. To illustrate, the recent provision for the settlement of forest rights for forest dwelling communities creates a whole new challenge for the

mining companies and the administration to settle those rights, and a long demanded opportunity for the communities to claim those rights;

- The coincidence of rich biodiversity with mineral bearing areas, is understood but not adequately factored into the comprehensive assessment and mitigation of long term impacts, leading to inadequate response from the project proponents and the regulators;
 - The recent boom in the demand for low grade iron ore has contributed to intensifying the above issues in addition to giving an impetus to illegal mining;
 - Legal and regulatory loopholes and inadequate policing has allowed the illegal mining operations to flourish and grow;
 - Commentators point out that the boom is also responsible for unforeseen profits across the board from small to large mining and associated operations, contributing a substantial increase, especially over the last 7 years. Internationally dropping standards of acceptable grades of iron ore have led to mines being re-opened, mine life being revised, even old over-burdens being mined (as what was previously waste, is now a resource). This may also happen in the case of nickel in the over burden from chromite mines, in the coming years;
 - Even as it is hard to ignore the contribution that the resultant economic development has made it has been at a very high cost, the impacts of which, environmentalists and social activists feel have not been fully understood and appreciated;
 - More intensive use beyond sustainable limits has been contributing significant pressures on land, air, water, forests, biodiversity , especially due to the increased pace resulting from market demands and made possible through newer, improved technologies;
 - Immediate and long term damages sustained as a result of this increase have already severely compromised the lives of the local communities (even as some sections have benefitted economically from it), and are set to manifest into longer term damages in terms of health, livelihoods and overall living quality; and
 - Community benefit-sharing as managed by mining companies (eg. truck transport contracts for ore movement to local community) in several areas has resulted in severe environmental degradation which has come to be institutionalised into a vicious circle that, on the one hand has become hard to break because it is profitable for the beneficiary community, and on the other, goes unregulated as part of the business of mining, has added to the list of conflicts associated with the sector.
- Unorganised/artisanal mining has come to be characteristic of certain mining areas (North-eastern states) as a result of the occurrence of easily minable resources, market demand for the mineral and the community's ability to easily mine them. This has contributed to the community's economic gains but is also a problem in that the mining is unscientific, unorganised, with multiple cumulative impacts that are not addressed by anyone. Additionally, there is also less willingness to

Range of Conflicts

Community vs Mining
Mining vs Environment
Community vs Environment

regulate this, on the part of the government given how much employment it generates and the large number of people dependent on it, in certain geographies.

- Enforcement is a key drawback with regulatory arrangements in the sector and is the biggest point of criticism from all stakeholder groups involved. It has been stated during several discussions on the subject that it is **better enforcement**, rather than more regulation that can begin to remedy the ills plaguing the sector today;
- Regulators at all levels are also severely limited by the lack of adequate and usable information/ data, as also clarity and definition on several aspects pertaining to mining operations. This lack compounds the issue of inadequate enforcement and also creates the necessary gaps for illegal operations to carry on, unchecked. A case in point is Hospet-Bellary in Karnataka, a most glaring example of how several levels of illegality can flourish, in terms of boundary violations, over-extraction, under-reporting production and export, among others, though lesser degree violations are also rampant in other mining regions of the country.
- Mandated government agencies like IBM, DGM, SPCBs also report significant lack of capacity to perform their regulatory functions to the levels required.
- Capacity issues within mining companies (small and medium) in terms of technical know-how and an understanding on environmental and impact aspects limit their ability to undertake scientific mining. Mining engineers, required to prepare, understand and follow the provisions of mining plans are in short supply, especially with smaller mines.
- The rate of extraction is currently seen to be a function of market demand alone (and the capacity of the miner to extract) - not taking into account the stress on existing (and limited) network infrastructure. Fluctuations in the market make planning for peak flows on infrastructure networks difficult. Several mining areas in the country report more acute problems faced by the resident community, in terms of vehicular pollution, traffic jams, dust and road conditions, than about the mining activity itself.
- While there are some economic benefits that may be gained by the communities living around mining areas in terms of employment and business, it is the vulnerable sections: women, children and old people, who sustain several negative impacts, and have more limited coping mechanisms.
- These impacts range from health, reduced access to resources, increased drudgery, insecurity due to influx of outsiders and finally little benefits from mining

IBM: Capacity Issues

Current capacity within IBM can cover only about 2500 leases, while there are approximately 7000 leases and 5000 operational mines in the country. Each operating mine can be visited no more than once a year. Since the priority is to monitor larger mines, small mines can hardly be covered. As an added consequence, exploration activities get neglected

- Mining companies are the biggest defaulters on issues like provision of safe working environment, labour health and safety and human rights issues especially in quarry sites (classified under minor minerals, thus poorly regulated). While small mines provide the most significant employment opportunities in this sector, they also demonstrate a poor record on and commitment to, these issues.
- The classification and consequent provisions for **major** and **minor** minerals has raised several debates that bring into question their current management, regulation and control. Irregularities, illegality, under-reporting, widespread violations of labour and safety norms, persistence of child labour, poor working conditions, and a general disregard for environmental safeguards have all been reported in the minor minerals segment.
- The situation is made more difficult with multiple agencies responsible for regulation, the lack of proper documentation and approvals **in practise**, where significantly more stringent regulations apply to the minor minerals segment, **on paper**. This wide gap, recognised in commentary, has thrown up several suggestions for the proposed resolution and management of the emerging issues.
- Several states would like more complete control in regulating minor minerals without sharing that responsibility with IBM, which they suggest, should play a more 'national-level' role. They feel that state level specificities to do with minor minerals are better appreciated at the state level and will be better managed with more localised regulation and control.
- Some states have demonstrated improved administrative practises by using royalty-sharing arrangements to target fund provision for local area improvement, infrastructure finance, while also demonstrating a closer, consequent relation between mining and area improvement in the same geography. Eg. Gujarat provides for 90% of the royalties collected by the state (from the minor minerals segment) to flow back to the source district, and 20% of that to be allocated to the source tehsil, for development of the area.
- Communities local to the mining areas and mining companies, on their part, raise concerns on such arrangements regarding royalties and the imposed cesses, questioning their appropriate utilisation by the tehsil/district administration.
- What has come to be known as the landmark "Samatha judgement" opened up a range of highly controversial issues to

Samatha Judgement

- In 1997 the Supreme court of India ruled that mining in Schedule V areas should not be allowed without the participation of the local people.
- The judges laid out certain duties for any entity that mined in Scheduled areas:
20% of net profits to be set aside as a permanent fund for the establishment and maintenance of water resources, schools, hospitals, sanitation and transport facilities, reforestation and maintenance of ecology, among others
- It suggested to the state government to organise cooperative societies solely composed of scheduled tribes, to undertake mining operation in those areas

In the last few years, various state governments have been seeking clarification on these issues. The implementation of these provisions in the judgement remain in a impasse and have yet to be implemented.

do with mining activities in Schedule V areas. Even as there is a current impasse on the acceptance and implementation of this judgement, it has brought into sharp focus the complex issues of land alienation around mining areas and the need to share direct benefits with local communities, to continue uninterrupted business.

- The Hoda commission, set up in 2005 to review the status and explore the potential for increasing investment in the Indian mining sector was a thorough exercise that brought out several issues and made recommendations for sector development. The need for a sustainable development framework to apply to the Indian mining sector, was first flagged in this report.
- A National Mineral Policy was drafted to reflect several recommendations and policy provisions proposed in the Hoda Commission Report.
- As the next logical step, the Mines and Minerals (Development Regulation) Act 1957 is currently under revision to address, among others issues, benefit sharing arrangements especially in tribal areas, a National and State Mineral Development Fund to address the existing gaps of network infrastructure supply and maintenance in mining areas.
- The industry is largely in agreement with the findings in the Hoda Commission report¹ and is keen to see its recommendations on promotion of investment in the sector and its development in the Indian context translated into reality. Environmentalists however have reservations on the recommendations to reduce public consultation obligations in some categories of mines

0.2

NEED FOR SUSTAINABLE DEVELOPMENT IN MINING

The Hoda Commission, in their review the National Mineral Policy recommended that apart from introducing best practices in implementation of environment management, there was also a need to take into account the Global trends in sustainable developments. The High Level Committee specifically studied the impact of mineral development with the need to develop principles in mining, best practices, and reporting standards which may be measured objectively.

In their assessment the High Level Committee relied quite extensively on the Sustainable Development Framework (SDF) modelled by International Council of Mining and Metals (ICMM)/ International Union for the Conservation of Nature and Natural Resources (IUCN). The committee accordingly recommended development of an SDF specially tailored to the Indian context taking into account the work done and being done in ICMM & IUCN. The SDF was to comprise principles, reporting initiatives and good practice guidelines.

(1) ¹ This High Level Committee was set up under the Chairmanship of Shri Anwarul Hoda, Member, Planning Commission in the year 2005, to review the National Mineral Policy

This assignment follows through on the commitment of the committee on the SDF.

0.2.1 *Sustainable development in mining: a working definition*

A working definition for ‘Sustainable Development’ in the mining sector was outlined, based on consultation with sector experts, secondary sources on the subject and the Indian context. The definition provided the framework and boundaries for the ERM team to analyse and prioritise issues while developing the SDF.

“Mining that is financially viable; socially responsible; environmentally, technically and scientifically sound; with a long term view of development; uses mineral resources optimally; and, ensures sustainable post-closure land uses. Also one based on creating long-term, genuine, mutually beneficial partnerships between government, communities and miners, based on integrity, cooperation and transparency”.

A further clarification of some terms is given below to more fully illustrate and define the task at hand.

- socially responsible: mining operations that have a broad-based social license to operate- creating lasting social and economic wealth- which will outlast the life of the mine.
- environmentally, technically and scientifically sound: implying proper management of natural resources
- long term view of development: as opposed to a short operational point of view (ref- mine closure , rehabilitation, later development,) one that goes beyond the life of the mine
- uses mineral resources optimally: with reference to the Mineral Conservation and Development Rules, 1988 (MCDR), for conservation and systematic development of minerals

Even as the concepts of Sustainable Development weave through the entire set of processes and functions in the mining sector, the provisions in this document alone cannot address all the issues afflicting the sector today. Overall progress of the sector based on Sustainable Development principles will essentially have to include reform in other areas of functioning that are not within the mandate of this exercise.

Underlying assumptions, implicit in adopting a sustainable development approach, include ethical functioning in all aspects of business and governance. This in turn, assumes not only material compliance to applicable law and regulations, but also respect for the regulatory and governance related processes, in their spirit. Whilst harder to implement and monitor, this is in effect the internal guiding factor for a fuller integration of sustainable development in practice.

0.2.2 *A framework approach*

The SDF (a framework approach), takes into account the biggest issues facing the sector in the context of existing laws and regulations and defines a set of

principles that collectively progress the sector towards sustainable development.

It incorporates not only regulatory requirements, but goes beyond that and recommends practices and best-in-class aspects to address the challenges of sustainable development more fully.

It provides a path towards achieving sustainable development aided by guidance steps, measurable outcomes and reporting and assurance. The framework approach is a flexible one in that allows for the achievement of sustainable development objectives without being too prescriptive and formulaic.

Since 'continual improvement' is the key, the framework approach allows for players in the mining sector at different levels of performance to become compliant over a period of time and continue to improve thereafter. This is significant given the wide diversity in the mining sector's profile and performance in different parts of the country.

The approach anticipates the incorporation of some of the key elements not already in the regulatory regime to become law in the near future, raising the bar on the sector's performance in terms of sustainable development. The MMDR bill currently being finalised already includes this approach and introduces new regulatory provisions accordingly.

0.3 ***USING THE SDF DOCUMENT***

0.3.1 ***How can it be used?***

At the very least, the SDF provides guidance for the mining companies to improve performance on environmental and social aspects, however, over time it can also become the common benchmark against which all mining operations may be evaluated in terms of their comparative performance on sustainable development terms.

The SDF can be used by mining companies to demonstrate commitment to sustainable development, and may be submitted to regulators at the time of seeking clearance or renewal or extension. It may also be used by regulators to evaluate the mining company's commitment to achieving environmental and social goals. Investors and financiers may use this to assess risk and could additionally use it to demand better performance of the associated mining operations.

MoM has to engage with other permitting agencies to integrate this more fully with their existing processes.

In spite of challenges and current practical constraints, the framework sets the highest bar on principles defining the path to sustainable development in the

mining sector, and should not be diluted to facilitate its immediate practical application across the board.

0.3.2 *Who is it for?*

This document has been prepared on behalf of the Ministry of Mines, Government of India, for all concerned stakeholders in the mining sector (non coal, non-fuel, non-atomic minerals, not covering off-shore mining). It is intended to be in the public domain for anyone to access freely. Even as it has a wide audience, the principles are clearly directed at key stakeholder categories involved in the sector, with focused guidance notes for each.

Key stakeholder groups associated with the mining sector include regulators: central and state government, mining lease holders/operators, impacted community, civil society organisations, NGOs, CBOs, activists and advocacy groups, academic institutions, research and training institutes.

0.3.3 *Who will drive the SDF process?*

The SDF is a document owned by the Ministry of Mines, which, together with its departments and institutions, will undertake to ensure its up-take with the mining sector covering major and minor mineral categories and be the agency in-charge of driving it.

The process of driving the SDF will include several initiatives:

- Inclusion of some elements of the SDF into regulation;
- Inter-departmental cooperation for jointly reviewing performance against the SDF; and
- Evaluating applications and bids using additional criteria from the SDF for environmental and other clearances.

It is expected that the industry could, over time, choose to drive the wider adoption of the SDF as demonstration of performance and commitment to sustainable development goals

Civil society and the local community could use the SDF to drive mining companies and regulators for increased accountability and mining performance related disclosure.

0.3.4 *Who will monitor it?*

A key aspect of the SDF is that it requires mining companies, the state government and the ministry of mines to report on their SDF performance (as relevant) on a regular basis. By disclosing this report, the SDF opens up the reportee for scrutiny by a whole range of stakeholders, whereby increasing accountability and dialogue. In addition there is a provision of assurance that will enable the SDF report to be whetted and assured by independent auditors on its authenticity and factual accuracy. Agencies like the MoM, IBM, state department of mines and geology and the MoEF will use these audited report to assess applications for mining leases, expansions, environmental clearances

etc. So the key monitoring mechanism is self reporting on SDF performance in addition to monitoring by regulatory agencies which may cover some aspects of the SDF for their own purposes. In time, when the SDF becomes more institutionalised and entrenched in the mining sector permitting and evaluation process, the Ministry of Mines should consider setting up of an independent monitoring body to monitor SD performance of monitoring companies.

0.4

LAYOUT OF THE DOCUMENT

This document is in two parts:

- Part I: Introduces the SDF and presents the framework that comprises eight principles, detailed in the eight sections that follow
- Part II: presents the implementation related details: proposed institutional arrangements at various levels, roles and responsibilities of key stakeholders along with

challenges to implementation and rolling-out. Also included are guidance notes to state governments and mining companies on their role in implementation. A more immediate set of steps is also included as suggestion on a possible way of taking this process forward

Part I: SDF Principles

- Incorporating Environmental and Social sensitivities in Decisions on Leases
- Strategic assessment in Key Mining regions
- Managing Impacts at the Mine Level through sound management systems
- Addressing land, resettlement and other Social Impacts
- Community Engagement, Benefit Sharing and contribution to socio-economic development
- Mine Closure and Post-Closure
- Assurance and Reporting

1 **PRINCIPLE I:**
INCORPORATING ENVIRONMENTAL AND SOCIAL SENSITIVITIES IN
DECISIONS ON LEASES

1.1 **CONTEXT**

1.1.1 ***Conservation of Environmental Resources Vs Mining of Mineral Reserves***

The historical and ongoing conflict between mining mineral reserves and conserving environmental resources will continue to exist even in future as India's forests, mineral bearing areas, major river watersheds, tribal habitat regions and most backward regions overlap significantly. A closer look shows that many of these share a common geography with the most ecologically rich and culturally sensitive areas in Orissa, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan, to name a few.

A report published by Kalpavriksh in 2003, *Undermining India – impacts of mining on ecologically sensitive areas* found that at least 90 sanctuaries and National Parks and hundreds of other ecologically sensitive areas across the country – in the Western Ghats, Eastern Ghats, Aravalis, coasts, central forest belt, Northeast hills, Western Himalaya, and natural desert areas are threatened by existing or proposed mining activities. The list includes over fifty Important Bird Areas (IBAs). The report recommended that to safeguard such vital environmental resources appropriate land-use planning and comprehensive designation of ‘off-limit’ areas where no mining can be permitted must be enforced.

Such conflict situations demand a process of rationalisation that takes into account various adverse impacts and suggests the least-damaging proposition. A decision needs to be taken to clearly categorise areas based on ecological, environmental, and socio-cultural significance for the nation (National Parks, sanctuaries, areas occupied by primitive tribes, among others), so that some of these areas are preserved, to the extent possible, while mineral development is encouraged in other areas.

However, this process of decision making requires an information base regarding the location of viable mineral ore bodies generated out of a more thorough, systematic and scientific assessment along with the areas of overlap and potential conflict.

The Hoda Committee Report clearly points out that the Indian mining sector is still largely dependent on evidence of ancient mines that are still being worked, surface manifestations and geological maps, for search of minerals instead of scientific evidence based on exploratory work. This gap needs to be addressed before informed decisions can be taken to more-completely address inherent conflicts.

1.1.2

Gaps and Issues

Identifying environmental and social sensitivities at the earliest possible phase of the mine life cycle and integrating them in mining and mineral development decision-making process is vital to ensure sustainable mining to the extent possible.

The extant process of mining lease award does not take into consideration overlaps with forests, protected areas, areas inhabited by vulnerable communities etc., at an early enough stage thus missing the more timely opportunity to identify areas of higher risks and impacts, to allow the regulators to take appropriate decisions on environmental management, and mining companies to take long term, rational business decisions. This has resulted in several conflict situations that could have been avoided. Additionally, there have also been cases where exclusion areas (for environmental and ecological justifications) have been declared on existing mining leases based on environmental and sometime social considerations, retrospectively, thereby adversely affecting legitimate mining businesses.

Such situations create uncertainty amongst stakeholders, demonstrate a lack of clarity and policy direction whilst severely compromising long range planning for the businesses, the area & its people and, the aim of ecological and environmental protection is also not achieved.

Consultations with representatives of the mining sector brought out that they preferred that clear decisions be made on excluded areas, even if this meant a reduction in potential areas available for mining, as opposed to the current situations of uncertainty and, in their perception, “arbitrary decisions”. Some went to the extent of suggesting that exploration and prospecting activities in the excluded areas also not be allowed for mining companies.

These considerations suggest that a more systematic approach is required to categorise mining areas based on identified sensitivities associated with their particular geographies.

1.2

PRINCIPLE

This principle integrates sustainable development concepts at the earliest phase of the mining life cycle and helps mining companies evaluate the risk associated with different or alternative leases available against the potential value of the mineral and take business decisions accordingly.

This principle aims to categorize mining land based on risk¹. Ideas underpinning the existing impact-based approach for categorising projects are taken forward and broadened to reflect current challenge of sustainable

(1) ¹ Risk based approach over an impact based approach: : Risk is the likelihood of a specific event of known impact occurring, in a given time frame. All three issues are interdependent, most obviously with tail risks which have a very high impact but very low likelihood of occurrence. High impact risks consequently should have low likelihood of occurrence

development in mining .this means that instead of only looking at the potential impact of the mining on environmental and social receptors, mining companies and regulators should also consider a wider range of risks from the project to such receptors as well as risks to the project from such receptors at an early stage of decision-making.

This principle is focussed on the Ministry of Mines and the State Government as they will lead the process of categorising mine leases based on risk.

1.2.1 *Incorporate environmental and social sensitivities on lease areas as early as possible to minimise adverse impacts of mining in the most sensitive areas/sectors.*

- Categorise mineral reserves and resources at the State levels, into high and low risk groups based on environmental and social sensitivities.
- Over a map of all the mining leases in the country, overlay environmental and social sensitivities using available databases covering at least subjects like protected area (PAs), dense forests (high canopy cover and endangered species as per Red Data book), and schedule areas (defined in the Constitution of India as V and VI), to begin with. Eventually, ensure the incorporation of other key sensitivities like water resources, fragile ecosystems, dense habitations etc.
- Through such an overlay, identify mine leases that fall into the high and low risk categories. Provide this categorisation, as well as its associated risks for each new lease area as well as those that are already in operation.
- Initially, for operational mining leases, the categorisation would be more focussed on impacts rather than risks, and would include elements like pollution levels, water quality, health indicators in the area etc which would indicate potential and ongoing impacts of the mining activity,
- Classify as No-Go zones areas that are statutorily declared as prohibited or protected zones under various central, state and local government regulations and international conventions.
- Exclude these No-Go areas from mining considerations. Decisions of declaring and reviewing these statutory No-Go areas will rest with the Ministry of Environment and Forests.

1.2.2 *Assess Sustainable Development capacities during bidding*

- Include the risk criteria as information and decision input for bidders at the bidding stage for new leases. Provide the risk criteria even for operational leases to inform the lease holders;
- Include demonstrated sustainable development capacities as one of the criteria for selection of mining companies in bidding out high risk leases (new).
- Require environment and social management systems and operational procedures in mining companies that are appropriate and commensurate to the environmental and social risk classification of mine leases.
- Periodically review the categories and revise as necessary in consultation with stakeholders.

- Share the risk categorization with the Ministry of Environment and Forests to consider during environmental clearance.
- Disclose criteria used for arriving at categorisation of lease areas and the locations of areas by category.
- Appropriately scaled maps of all leases under consideration (and awarded), overlaid on the sensitivity categorisation, to be disclosed on State and Ministry of Mines website (updated 6 monthly).

1.3 *COVERAGE*

This principle addresses the sector as a whole and is intended for use as a decision-making tool by the centre and state governments as well as by mining companies.

Whereas it applies to leases to be awarded in the future, it may be used to re-assess the risks associated with existing leases, for mid-course correction, in terms of environmental and social impact management measures in place. Overall coverage of this principle is in a phased manner.

1.4 *POLICY AND REGULATORY ANCHOR*

Current policy and regulatory frameworks in both mining and environment sectors do not have any similar provisions as envisaged in this principle. As brought out earlier, the regulatory framework for environment (FC, EC processes) is triggered only before the mines are to be operated irrespective of location-specific sensitivities. Even then mines that are less than 5ha in size¹ are not covered by the environment regulatory framework irrespective of type of mineral, location sensitivities, mining methods and other factors etc (though Forest regulations have no such drawback as it is applicable on all diversion of forest lands for non-forest purpose irrespective of the size and scale of the mines). Mining sector regulators issue mining lease subject to project proponent obtaining all necessary and statutory clearances and permits.

The principle outlined here attempts to vacate such scenario and provides an opportunity to government and regulators to play a proactive role in managing the mining sector in a sustainable way. It allows mining companies to identify and assess the risk level of the lease they are either operating or proposing to bid for, and take business decisions accordingly. It allows the state government to evaluate companies on their capacities to manage social and environmental risks as well as impacts when they bid for leases in the high risk areas.

MoEF has initiated a similar such procedure with regards to coal mining sector by declaring Go and No-go areas in the identified coal mining blocks.

(2) ¹ The revised draft MMDR Bill prevents new leases of a size smaller than 5ha and existing mining leases smaller than that are encouraged to voluntarily undertake suitable environment management

This initiative of MoEF has been undertaken using the powers vested with MoEF under the Environment Protection Act, 1986, it can be expected that soon this initiative will be codified and extended to other sectors as well to give a firm policy and regulatory footing. In recent notifications, the MoEF has also showed an inclination to make mining proposals in high risk/ forests areas more difficult to be cleared. This principle is therefore aligned to the current thinking in the MoEF and other relevant departments and ministries.

One another initiative undertaken by Central Pollution Control Board (CPCB) in collaboration with State Pollution Control Boards (SPCB), research and academic institutions in the early 1990s is the District Zoning Atlas project. The project aims to assign and identify areas for different category of industries at district level (Red, Orange and Green category of Industries which is the standard categorisation of industries followed all over the Country). This project is similar in approach, as it uses a risk based approach for siting of industries. Notably, this project has not been well received and hence only partially completed across the country in the last two decades.

1.5

INSTITUTIONAL ASPECTS

In order to effectively implement this principle consistently and uniformly across the country in both major and mineral sector, a dedicated institutional mechanism at central and state government levels will be required. The MoEF still retains the mandate of designating areas as Go/No-Go. In addition, capacity augmentation of the existing institutions - Ministry of Mines at the central government level, the IBM and Directorate of Mines and Geology at the state government level, will have to be undertaken to enable them to understand what sustainable development in the sector means and can be achieved through.

The principle envisages a periodical review and update of the environment and social risk database at country, state and district levels while ensuring wider stakeholder participation in the process. Co-ordination with sector administrative agencies (National, State and local level agencies that administer sectors as varied as mineral (geological), environmental, forest, social, archaeological, religious etc) and agencies that are specialising in spatial data analysis and mapping services (NRSA, RRSAC, State Remote Sensing Agency etc) will be required to effectively implement the principle. Ministry of Mines along with Department of Forests (MoEF) have already started the process of overlaying mining lease boundaries on updated forest maps. This process can be further built-upon with additional overlays of relevant information.

1.6

OUTCOMES

- A better awareness of the risk levels of all mining leases in the country;
- More informed business decisions at early exploration stages;

- More robust evaluation of capacities of mining companies during bidding for mining leases in high risk areas;
- Reduced environmental and social conflicts in areas awarded for mining activity; and
- Greater clarity for all concerned stakeholders, on excluded areas and areas available for mining.

Also see Annex for indicators on the performance of this principle.

1.7

CHALLENGES

The expected challenges in the implementation of this principle are given below:

- Building stakeholder consensus regarding criteria for categorisation, with the MoEF, MoTA, MoRD, as also, and equally importantly, at the state-level
- Development of the decision making tool (upon which this principle is premised) to ensure that pertinent, coherent, updated, reliable, comparable and consistent data is input at regular intervals, to make the tool usable.
- Capacity issues within the administrative machinery, regulatory and monitoring agencies
- Application of the principle on currently operating mines and those that have applied for fresh/extension/renewal leases will be a challenge. An intermediate, transition strategy will need to be developed to address this.
- In addition, delays will occur in the case of areas under PL and RP, as the risk categories will take some time to be defined and become operational.

**PRINCIPLE II:
STRATEGIC ASSESSMENT IN KEY MINING REGIONS**

2.1 CONTEXT

Mining activity whether surface/open cast or underground, has significant environmental and social footprints much beyond the physical boundaries of mining lease boundaries. Adding to that, the in-situ beneficiation and long distance transportation of minerals also significantly contribute to expand the mining footprint over a geographically large area. Impacts of mining are felt much beyond the physical boundaries of individual mining leases and more the number of mining leases operating in an area, larger is the environmental and social footprint of mining in that region.

As the Indian mining sector rapidly grows due to favourable market demand, supported by policy and investment climate, the mining footprint either grows in spread or intensity of adverse impacts on environmental and social aspects. These issues accumulate significantly leading to deteriorating quality of life at places across the mining belt. Mines clustered in a region intensively use the same natural resources like water and land, use the same available infrastructure like roads, and source their labour from the same hub of communities, hence the cumulative impacts on the local environment and communities are significant and often not adequately considered during award of fresh leases and environmental clearance.

2.1.1 Status, Issues and Gaps

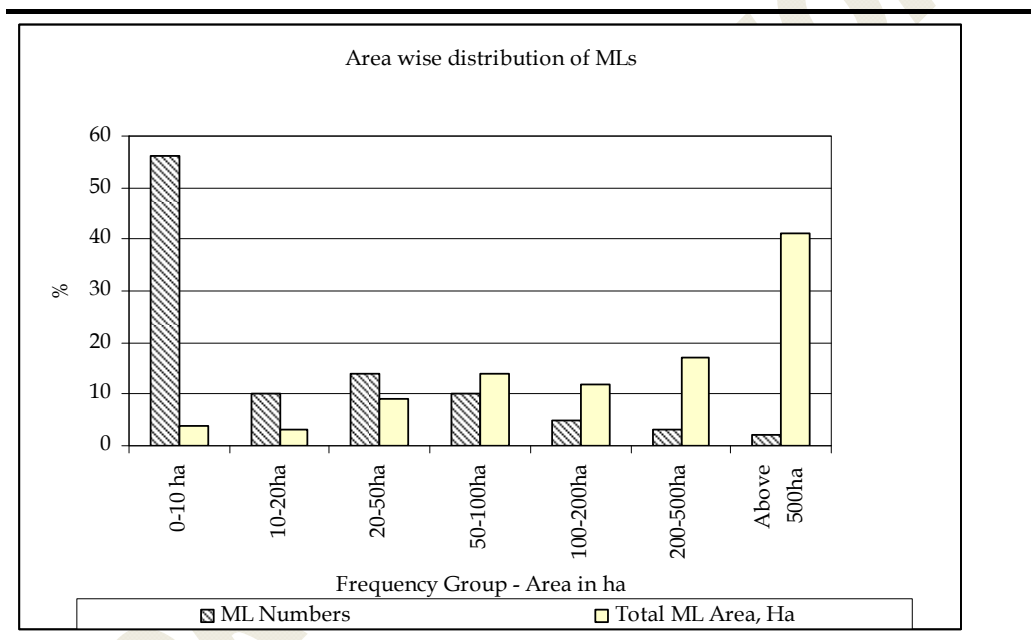
- Currently, mine sector administrators or environment- sector regulatory mechanisms do not adequately take into consideration regional environmental and social impact assessments or studies based on “carrying capacity” for planning mine leases and overall mine development in regions. As discussed earlier, mine leases smaller than 5 ha in size¹ – irrespective of type of mineral, mining method, location specific sensitivities etc – are not subjected to careful environmental scrutiny or appraisal by the concerned regulatory authorities. There is limited or no capacity to undertake comprehensive regional planning exercises that take into account cumulative impacts and risks (and thus no strategies in place to control/manage this cumulatively or even strategically).
- Ideally, at the regional level, a mines and mineral development plan must assess aspects such as: local infrastructure capacity, number and type of mining leases in an area; beneficiation requirements, prevalent mining methods; ore transportation alternatives etc. before suggesting an optimal number and amount to be mined. This concept is not incorporated in the current mining lease administration regime; thus, issues of individual

(3) ¹ As mentioned earlier, the revised draft MMDR Bill prevents new leases of a size smaller than 5ha and existing mining leases smaller than that are encouraged to voluntarily undertake suitable environment management.

sizing of mining leases; mining lease layout plans; and an overall cap on mineral production across individual mine leases as also for the region is a function of market demand, not taking into account the adverse environmental, social and economic costs borne by the local area.

- In India, small scale mines and artisanal mines form a major proportion though their geographical area of operation may be small (see *Figure 2.1*). Out of the 9416 mines (excluding fuel, atomic and minor minerals) in the Country, there are about 5345 (56%) number of mining leases that have a lease area less than 10ha in size. However, their cumulative lease area is 21,000 ha which is 4% of total mine lease area in the country. There is no reliable information on the physical distribution pattern of mining leases in the minor mineral sector wherein small and medium scale mines and artisanal mines of less than 5ha in size dominate.

Figure 2.1 *Mining Leases Distribution (excluding fuel, atomic and minor minerals)*



Source: <http://ibm.nic.in/mldistribution.pdf>

Regional Environmental Impact Assessment Studies

In the last decade, given the increasing number of critically polluted areas either due to industrial sector or due to mining sector, the concerned regulatory authorities have undertaken regional EIAs to assess the regional impact scenario and formulate appropriate management strategies. It was ascertained during stakeholder consultation process that States like Orissa, Karnataka, Gujarat and Goa have either conducted Regional EIA for critically polluted areas in their respective States or propose to conduct such studies in the future. These regional EIAs have been commissioned more as a reactive management strategy rather than a proactive planning strategy which this principle attempts to bring into the mining sector management. In January 2010, MoEF placed a moratorium on development activities in areas classified as “Critically Polluted” based on the Comprehensive Pollution

Index¹, - though this has been lifted in some areas, the current thinking at MoEF is in the direction of regional environmental impact assessments, to strategically plan the way forward. Goa has been advised to commission NEERI to undertake such comprehensive EIA of mining activities in the State. During the nation-wide stakeholder consultation process held as part of formulating these SDF principles, there has been a broad acceptance to undertake regional impact assessment specific to mining sector activities and formulate mineral development strategies based on such assessments. This principle is based on the above approach and integrates it with state /region and mineral specific outlooks.

2.2

PRINCIPLE: UNDERTAKE STRATEGIC ASSESSMENT OF KEY MINING REGIONS AT PERIODIC INTERVALS

Major elements of this principle are as below.

- Identify “Special Mining Regions” for regional strategic focus, in consultation with key stakeholders, at the state level. This list must be periodically reviewed and revised
- Undertake at the level of the selected mining region², a mine sector specific, strategic environmental and social impact assessment to determine a sustainable “regional capacity³”, at periodic intervals⁴. This may only apply to identified mining regions with concentrated mining and related activity, to begin with. This identification is proposed to be taken up at the state level⁵
- Based on the above assessment, evolve a Strategic Plan for the Mining Region to address environmental and social impact issues and drive the internalisation of their management and the associated mitigation costs (eg., mine waste management; conservation, protection and development of water and ecological resources; regional social issues etc.)
- Formulate management systems to implement supporting regional strategies for sustainable mineral development and ensure that the plan is reviewed, updated, audited and reported periodically.
- Continually focus on conservation of biodiversity and include such strategies in the plan.
- Overall, the Strategic Plan for the Mining Region would include, but not be limited to :
 - Regional resource planning including land use, biodiversity, infrastructure, water resource, mine waste and social resources for the mining activities

(4) ¹ The Central Pollution Control Board (CPCB) in collaboration with IIT, Delhi has applied the CEPI for environmental assessment of 88 Industrial Clusters across the country. 43 such industrial clusters having CEPI greater than 70, on a scale of 0 to 100, have been identified as critically polluted

(1) ² Region- this may be taken as the most feasible administrative unit, or set of units (block, tehsil/taluka, district); boundaries of watersheds/sets of micro-watersheds may also be considered based on their suitability for the assessment.

(2) ³ Loosely based on the concept of ‘carrying capacity’ it must be a dynamic measure that takes into account key determinant changes like status of technology and infrastructure, new systems and methods, other impacting aspects,

(3) ⁴ The periodicity of these assessments must itself emerge from the first assessment and may vary from region to region.

(4) ⁵ See Part II of this report, Implementation arrangements

- Assessment of cumulative impacts and setting threshold limits and monitor-able indicators for performance on the identified criteria.,
- Optimising the number of mines, size of individual leases, scale of operations; suggested alternate mining methods, beneficiation technologies for mineral conservation, mineral storage and transport; energy conservation; common infrastructure facilities and their management; local community and social infrastructure development etc.
- Clustering strategies/implementation mechanisms (Special Purpose Vehicles or a cooperative society, to name a couple) and to encourage small scale miners (of lease size less than 5ha), to prepare and follow common management plans to achieve and comply with the overall regional plan, using shared resources (this is already part of current thinking at MoEF regarding the minor minerals sector)
- Formulating strategies to deal with illegal mines operating in that region with active involvement of all concerned stakeholders and a strong focus on enforcement.
- Facilitate and encourage responsible mine design; deployment of efficient machinery; efforts for energy conservation; and use, re-use, recycling and disposal of mine products and wastes All these to ensure the combined and cumulative negative impacts of mining activities in such regions is minimized and future development is undertaken with a certain degree of planning.
- Prepare and regularly update mine and quarry tenement register covering all mine/quarry activities and both legal and illegal mining/quarrying operations using geo-spatial technologies such as satellite imageries and remote sensing. Publish updated tenement registry and maps for wider stakeholder information and knowledge. [This database, when ready must be integrated with the overlays proposed for P1]
- Institute and seek continual improvement processes on sustainability parameters, monitoring, assurance and reporting systems and ethical functioning, in line with other principles for sustained environment, safety, health and social performance at sector level. Establish sector and mine level sustainable performance threshold limits and indicators for performance reporting¹.
- Continuously engage with all stakeholders in developing this regional plan.
- Prepare and disclose performance periodically, covering the sector on Environment, Health, Safety and Social aspects based on agreed indicators in the Regional Mineral Development Plan [Ref Principle on Reporting and disclosure]

(5) ¹ Draft first-cut indicators have been annexed to Part II of this report

2.3

COVERAGE

The principle applies to key mineral bearing areas (non-coal and non-fuel) irrespective of the classification of major and minor minerals. The principle aims at an overall, integrated assessment based on sustainable development criteria that addresses the impacts of both major and minor mineral mining over a defined study area or “Special Mining Regions”, specifically identified for this kind of focus.

The individual boundaries of the regions requiring this approach should be determined by each State, based on criteria deemed most suitable to its purposes. The boundaries may be based on administrative units, the ore body, watershed boundaries, or other, and could vary from one region to another. Coverage of regions in need of such an approach may be gradually achieved. It is suggested that critically polluted areas, and areas assessed to become critically polluted in the coming 3 years may be taken up in the first phase. It is recommended that all areas of concentrated mining activity be covered in a 4-5 yr time-frame.

2.4

POLICY AND REGULATORY ANCHOR

Currently, there is no policy or regulatory requirement to undertake such regional assessments either under the provisions of the mining or environment departments. However, environmental regulatory authorities can commission such regional assessment or studies on “carrying capacity” based on the powers vested in them under Environment Protection Act, 1986 and other environmental statutes. As pointed out earlier, regulatory authorities have used these powers to commission Regional Environment Impact Assessment studies in a few states -Orissa, Karnataka, Goa, Gujarat etc. The CPCB Comprehensive Pollution Index is another useful (though limited) tool that may be incorporated.

Among regulators in the sector, Indian Bureau of Mines (IBM) has the mandate to play a proactive role in minimising adverse impacts of mining on the environment by undertaking environmental assessment studies on a regional basis¹. Though the approach advocated under this principle has been built into the mandate of IBM (which was formed in 1948), it has thus far not exercised this, and may not currently have sufficient internal capacities to do so either.

Taking a more reactive stand, the MoEF (as a one-off case) has asked the State of Goa to undertake a comprehensive EIA (along lines similar to those mentioned in this principle) of the mine sector to determine cumulative impacts and arrive at a “carrying capacity” for the region.

In sum, though the approach advocated under this principle is largely agreed upon by all stakeholder groups and is also being implemented on a case -by-

(6) ¹ <http://ibm.nic.in/functions.htm>

case basis across the country, mechanisms to roll this out routinely, where required need to be set-up and reflected in the mining sector policy and mining regulations.

2.5 *INSTITUTIONAL ASPECTS*

There is no institutional body at the regional level or state level that is currently competent to handle this kind of regional assessment and development plans with a mining focus. An option that may be tested at the state level as a pilot is the setting up of regional SDF units (for the Special Mining Region) within the District Mineral Foundation (proposed to be set up under the draft MMDR bill, headed by the District Collector).

To implement emerging solutions from the Strategic Plan for the Mining Region document, one option is to form an SPV with representation of the miners in the area, the state Department of Mines and Geology and infrastructure development agencies to undertake the planning and implementation. The SPV would also be responsible for sourcing funds (contributions, multilateral funding agencies, FIs and applicable government schemes) or even undertaking projects within the plan on a commercial basis for cost recovery. Some of this fund can be used to incentivise smaller players to come together to share resources and facilities and reap benefits of economies of scale. The SPV can catalyse this process by seed funding. More clarity on viable options will emerge as states begin to take up this strategic planning exercise and make space for different implementation options.

2.6 *OUTCOMES*

Key outcomes:

- A Strategic Plan for the Mining Region for selected mining areas.
- Addressing key regional and cumulative impacts of mining through coordinated and collective action.
- Controlled and regulated development of the mining sector and its associated activities to prevent overstressing regional systems and networks.
- Opportunity for clustering of small operators to become more competitive, and compliant.

2.7 *CHALLENGES*

Major challenges envisaged to effectively implement this principle include the following:

- Acceptance by State government stakeholders – Implementing this principle will essentially bring in an additional mandate of undertaking periodic sustainability assessment on the State government agencies. Besides the additional workload, the principle will change the way the mine sector is managed especially in the minor mineral sector.

- Institutional challenge – to identify and agree upon the most suitable institutional arrangement to coordinate this process given that it spans several sectors and needs to deal with other activities that may be also impacting the same region. Inter-agency coordination will be key.
- Capacity challenge - Creating new capacities on a permanent basis at the State government level across the Country to provide consistent implementation of this principle.
- Funding – sustained funding resource will be needed to undertake periodic sustainability assessments at the State level and a second level of support to undertake emerging initiatives for regional development
- Engaging government sector and community stakeholders on a continual basis through the mine life cycle.

FOR DISCUSSION

3 ***PRINCIPLE III: MANAGING IMPACTS AT THE MINE LEVEL THROUGH SOUND MANAGEMENT SYSTEMS***

3.1 ***CONTEXT***

The context and background to this principle can be grouped under the following sub-heads:

- Gaps in the regulatory framework
- Lack of continual improvement approach and its enforcement
- Duplication of management and monitoring systems
- Ethical functioning

3.1.1 ***Gaps in the Current Regulatory Framework***

The prevailing regulatory regimes enforced by both mining and environmental sector administrators provide for mine or lease level environmental and social impact assessment (EIA) and management systems by verifying them during the lease permitting and environmental clearance process respectively. However, environmental regulatory regime – most stringent of the two – do not cover all the mines operating in the non-coal and non-fuel mining sector.

Under the environmental regulatory regime, undertaking mine level EIA and formulating management plans (EMP) are mandatory for seeking Environmental Clearance (EC) under EIA Notification, 2006. Mining projects that have a lease area more than 50 ha in size are classified under Category A and need EC from National level Environmental Impact Assessment Authority created with MoEF in GoI. Mining projects that have a lease area between 5 ha to 50 ha are classified as Category B projects and require EC from SEIAA created with respective State Department of Environment in the State Government. Mine leases smaller than 5 ha in size is not covered under the EC process initiated by EIA Notification, 2006.

There is also discussion on the subject of overlaps between the abovementioned regulatory requirements, one from the IBM and the other from the MoEF, both addressing the issue of environment, for the same set of activities. The difference, however, is in the scale, detail and focus of the two regulatory requirements. Suggestions have been made to attempt to combine the two into a more rationalised format, preventing the duplication.

Considering the Indian mining sector scenario wherein small and medium scale mines and artisanal mines dominate especially in the minor mineral sector, majority of them can be expected to have lease areas less than 5 ha in size and do not fall within the purview of EIA Notification, 2006. Reliable data on number of mines not coming within the purview of EIA Notification, 2006 is not available especially in the minor mineral sector. Illegal mining that continues unchecked or flies under the radar, also adds to number of mines

that operate without prior environmental and social assessment and appraisal by appropriate authorities.

Under the mine sector regulatory regime, environmental protection and mineral conservation has always been accorded high priority. Specifically, the following mining regulations provide for environmental protection by integrating it as part of mining plans:

- Mines and Minerals (Development and Regulation) Act, 1957: Section 4A provides for powers to terminate lease holdings in case of detrimental to environment due to mine operations and Section 18 provides for ensuring environment protection along with mineral development.
- Mineral Concession Rules, 1960: Section 22(5) states that mining plan shall incorporate environmental assessment and management.
- Mineral Conservation and Development Rules, 1988: Chapter 5 covers the Environmental protection issues comprehensively.

State Minor Mineral Concession Rules stipulate environmental protection as basic and minimum requirement for quarry license issuance and operations.

Significantly, the mining regulations cover all mines that operate legally unlike environmental regulations which do not cover mines less than 5 ha in size. However, lack of enforcement of mining sector regulations have rendered the above provisions in different mining regulations ineffective and notional in terms of management of environmental and social impacts.

3.1.2 *Lack of Continual Approach elements in the Management Systems*

A repeated observation by government appointed expert committees and independent consultants has been the poor quality of environmental and social impact assessment and management systems that are prepared and submitted in requirement of various regulations especially the earlier EIA Notification enacted in 1994 and now in 2006¹. With respect to mining sector, there is also the issue of the inadequacy of the proposed management systems; these not being commensurate with the envisaged impacts. The environmental clearance conditions and management plans approved by appropriate authority under EIA Notification, 2006 remains static till the mining lease comes up for renewal implying that EC conditions and the approved EMP remains relevant without incorporating any continual improvement elements that are now standard in any of the ISO systems for the entire lease period of 20-30 years. This is a significant gap and does not encourage mine operators to adopt better technologies and sustainable alternatives that could emerge in the intervening period. There is no regulatory procedure for intermittent review and appraisal of performance during the mine lease period.

Notably, the mining plan format prescribed by IBM under Mineral Conservation and Development Rules, 1988 for EMP requires that a 5 year

(1) ¹ http://www.sustainabledevelopment.in/pdf/dr%20gsv_prest.pdf

rolling plan is presented¹, this however, is compromised by inadequate on-ground appraisal and enforcement by mining regulators.

3.1.3 *Duplication of Management and Monitoring Systems*

Regulatory agencies, IBM and MoEF, require different environmental assessment and management systems resulting in duplication of efforts. An EMP has to be prepared under Mineral Conservation and Development Rules, 1988 and got approved by IBM. However, this EMP is not acceptable to the MoEF. The miner has to prepare two EMPs separately – one for IBM and another for MoEF². Similarly, the monitoring and supervision of operational mines is conducted by multiple agencies such as RO, MoEF; SPCB; and IBM (and a host of other sector agencies). These agencies undertake monitoring and supervision with very little co-ordination among themselves, and functioning in silos. Hence despite institutional arrangements in place for monitoring performance, enforcement remains weak and uncoordinated.

3.1.4 *Ethical functioning*

While there is the strongest case for enforcement to be strengthened to ramp up the levels of compliance to laws, going forward, there is also the recognition that there needs to be parallel voluntary and internally driven actions. The sector has to now recognise that another key external pressure is now become increasingly forceful and influential – and this is pressure from the community and civil society, and increased scrutiny from investors. This pressure has shown that with concerted action and mobilisation, miners are being slowly brought to book, for poor performance on sustainability parameters.

The other strong pressure, beside enforcement of regulations, should arise from erosion of reputation and consequently loss of investor trust. Investors today can play a very influential role in defining the governance of an investee. Most investments in the mining sector are limited to a few large players who have demonstrated capacity to operate mines and have the confidence of shareholder and investor. It is telling that smaller mines today reportedly, do not source their major funds from formal banking sources which will require a certain degree of corporate governance and compliance to law (though even this requirements varies from bank to bank). Investors do not put money in small mining (which constitutes a major chunk of mining in India) because the risk profile is high. Several factors contribute to this risk profile of which the lack of accountability and assurance is one key factor, the uncertainty about the deposits and technology constraints the other, and most importantly the very specific funding needs of this segment that do not suit the lending profile of banks and financial institutions). On the other hand, smaller miners may selectively invest in better technology and explorations but maybe not in better corporate management systems because many of them

(2) ¹ <http://ibm.nic.in/msgl.htm>

(3) ² Section 3.47 from Hoda Committee Report, 2006

are into mining for a short period of time (to reap the benefits of the spurt in market prices), invest speculatively, have few drivers to invest in the long term

This is not to say that there are no exceptions. There are mining companies that have demonstrated that by openly committing to doing responsible business, adopting good practices and management systems, being more transparent about their performance and intention to improve, and standing to scrutiny by all their stakeholders by reporting on their performance in public domains, they have managed to garner more support and a social licence to operate even in extremely sensitive environments.

Whether small or large mining companies, and operating in diverse environments, they have shown that by functioning ethically, following what they have stated as their guiding policies, mining can be seen as a viable and chosen option for development.

3.2 ***PRINCIPLE 3: MANAGING IMPACTS AT THE MINE- LEVEL THROUGH SOUND MANAGEMENT SYSTEMS***

Major elements of this principle are presented below.

3.2.1 ***Impact Assessment:***

- Scope out the key environmental, social and health and safety issues early to resource the subsequent ESIA appropriately. Seek involvement of stakeholders in identifying risk issues.
- Undertake Mine Lease level Environmental and Social Impact Assessment in commensurate with risk classification of mineral bearing land as per Principle 1.
- For mining in High Risk areas, ensure that the ESIA is comprehensive in assessment of sensitive issues that forms the basis of its categorisation as High Risk area.
- Focus on conservation of biodiversity in the mine management framework whenever the mining activity has to take place in forest areas or non-forest areas with significant wildlife and biodiversity.
- Disclose the ESIA to the local community and seek their inputs on mitigation measures and in choosing alternatives.
- Use this mine level impact assessment for both mine related as well as environmental related clearances.

3.2.2 ***Management framework and systems***

- Formulate mine level, Environment and Social management framework and systems that are periodically reviewed, updated, audited and reported.
- Include, formulate and implement community health and safety management strategies as part of mine management framework.

- Include, formulate and implement occupational health and safety management strategies.
- Implement risk management strategies including effective emergency response plans in partnership with stakeholders.
- Align mine lease level environment and social management framework and systems to regional framework management plans and strategies evolved as per Principle II.
- While not required to conduct comprehensive ESIA's, small mining leases or quarry leases (that are less than 5 ha in size) to adopt environmental and social management systems that are in line with regional framework management plans and strategies evolved as per Principle II and commensurate with their scale of operation.

3.2.3 *Continual Improvement*

- Institute and seek continual improvement process, monitoring, assurance and systems in line with Principles VII and VIII for sustained environment, safety, health and social performance at mine level.
- Establish periodical mine level sustainable performance threshold limits or standards to be achieved and indicators for performance reporting.
- Report on the status of performance on key environmental and social indicators.
- Continuously engage all stakeholders and involve them through the entire process of assessment, management, monitoring, auditing and reporting.
- Prepare and publish Sustainability Reports covering the mine performance on Environment, Health, Safety and Social aspects on a periodical manner.

(This principle needs to be read together with Principle IV on Land, Resettlement and Social Impacts).

3.2.4 *Development and implementation Internal Policy*

- Evolve a policy containing guiding principles for functions and practises of the mining operations in the manner of an SDF. This is already part of standard practise at several mining companies that use it to inform good practises on social, environmental, ethical and economic fronts, to perform in excess of compliance required under law.
- Disclose and display the policy statement and ensure that functions, especially to do with compliances, impact assessment and management, and other activities associated with mining operations are guided by it, in letter and spirit.

3.3 *COVERAGE*

The principle applies to both major and minor minerals as per the prevailing regulatory mechanism. As for mines or quarries that are less than 5ha in size in both major and minor minerals sector, the principle applies to the extent of adopting the management systems and approaches formulated as an outcome of Principle 2.

3.4

POLICY AND REGULATORY ANCHOR

Current regulatory regime seeks mine level EIA and management systems as part of clearance process. However, the following issues have to be incorporated in the regulatory framework in line with the principle:

- In line with Hoda Committee report recommendations, a composite EMP format agreeable to all regulators specifically MoEF and IBM needs to be formulated and published.
- Periodical review by regulators and appraisal of environmental performance by mines needs to be included in the prevailing sector management procedures. . Regulatory reporting would need to be extended to also include performance reporting on key indicators.
- Integrated monitoring mechanism to avoid duplication among various regulators such as RO, MoEF; SPCBs; DoMG and IBM.

3.5

OUTCOMES

Key outcomes expected of implementing this principle include the following:

- A robust E&S Management framework enabled with continual improvement systems guiding sustainable development of mine and which is commensurate to risk category of mineral bearing area as enunciated under Principle I. Overall policy statement from the mining company to guide mine-level functions.
- Sustainable Mine Development strategy covering the entire life cycle of mine that is reviewed and updated periodically
- Focussed and time bound community development and engagement initiatives
- Sustainability reporting at mine level with a goal to meet regional/national benchmarks leading to continual improvement by individual miners and collectively as a sector.
- Focussed and intensive monitoring of individual MLs leading to less of abandoned mines/orphaned mine issues.
- Illegal mining in the sector may come in for intensive stakeholder scrutiny as geo-spatial information regarding mining activity will be a published periodically.
- Intensive use of geo-spatial and geo-scientific information at mine level for assessment, planning, management and monitoring of the mining sector

3.6

CHALLENGES

Major challenges envisaged to effectively implement this principle include the following:

- Acceptance by State government stakeholders – Implementing this principle will essentially bring in an additional mandate of intermittent reviewing and appraisal of mine performance. Besides the additional

workload, the principle will change the way the mine sector is managed especially in the minor mineral sector.

- Engaging government, sector and community stakeholders on a continuous basis through the mine life cycle.
- Significant resistance to change can come from small and artisanal mines if they have to adopt, follow and implement E&S Management systems and subject themselves to monitoring and auditing in line with Regional framework enunciated under Principle 2.

FOR DISCUSSION

**PRINCIPLE IV:
ADDRESSING LAND, RESETTLEMENT AND OTHER SOCIAL IMPACTS**

4.1 CONTEXT

While environmental performance is largely regulated, social performance and management is yet mostly unregulated and left to the discretion and voluntary commitments of the project proponents. Land acquisition and resettlement are the state's responsibilities, and the mine developer's main responsibility is to deposit the compensation amount with the state and support the government in the process. The only social aspect that is regulated is one related to labour and working conditions, and even here, the performance of the mining sector, remains erratic and often poor. In not addressing core social impacts due to loss of land and livelihood, displacement and loss of access to natural resources, the mining sector has eroded its community support, and is perceived to be doing more harm than good. These and related issues are addressed by this principle.

4.1.1 Status

The most significant social impacts arise from land acquisition. Land for mining can be either directly purchased or leased from land owners (as is mostly in the case of small scale mines) or acquired by the Government for the mine under the provisions of the Land Acquisition Act, 1894). Land requirements for mining activities and all their associated facilities can be significant.

The LA Act is currently being modified to link it with the resettlement and rehabilitation (R & R) aspects of land acquisition. The draft version of the act seeks to make resettlement and rehabilitation enforceable, includes livelihoods, habitats, cultural and natural resources as critical areas of impact to be compensated and addressed, and, modification of the clause of 'public purpose' for acquisition. It also provides for valuing land at replacement value and not market value as is the status today. The revised bill however is yet to be tabled before the Parliament. Land acquisition is still being done under the Land Acquisition Act 1894, amended in 1984. The delay in reforms in the land acquisition regulation has resulted in different states adopting different strategies, creating confusion and uncertainty and has frequently resulted in enhanced conflicts over land.

The Forest Rights Act (2006) establishes a process by which forest dwelling and other forest dependent communities can claim and get their rights settled. Settlement of forest rights is still at an early stage and only some states have initiated the settlement process. A number of projects, including mining projects, are being asked to investigate forest rights, even in the case of some who have already received forest clearance and environmental clearance. The settlement of forest rights may become one of the most challenging aspect of mine development in the near future.

Social Impact Assessment is currently mandated under the EIA notification 2006, during diversion of forest land under the Forest Conservation Act, 1980, and under the National Policy on Resettlement & Rehabilitation 2007 (NPRR) which is triggered when more than 400 people are displaced for a project. The proposed Land Acquisition Bill also makes a social impact assessment mandatory when resettlement of a certain scale occurs.

Projects do not need a separate permit or clearance on the basis of social impacts. The Environmental Clearance (EC) process does query on land and resettlement issues, but the depth of questioning and the requirements from an SIA can significantly vary. Provision for an SIA has been included in the NPRR, which, however, remains a policy directive and not law, and hence not enforceable or mandatory. The SIA clearance process has not yet been operationalised

Issues/gaps

Under the acquisition process, it is now commonly agreed that land is significantly undervalued and the true value of land is not given. This is a key reasons why land owners are increasingly refusing to give land under this act. The most controversial aspect of the LA Act is the provision of forced or involuntary acquisition of land for “public purposes”. The land owner does not have a right to refuse. The draft version indicates a decreased role of the state in acquiring land for private projects, with the onus on the project developer, to demonstrate that a majority of the community/land owners are willing to give their land for the project.

.....Farmers in an area of real estate boom or high circle rates like Haryana are more likely to be willing to part with their land than farmers in poorer states. It is not an accident that land acquisition is harder in backward states like Orissa, West Bengal and parts of Uttar Pradesh. The poor get a poorer deal in a poor state.

Land acquisition is also a bone of contention in another important debate: decentralisation. The one area where rights of the local government are routinely sidelined is land.

Quoted selectively from a recent article on land the Indian Express by Pratap Bhanu Mehta, President, Centre for Policy Research. The Indian Express, Aug 19, 2010.

Long term livelihood impacts are not considered while compensating land under the acquisition process. Experience has repeatedly shown that monetary compensation is never enough to provide for a lifelong livelihood support for the affected people, making them worse off than before.

Informal, customary and traditional use of land and resources are not assessed, identified or compensated under the land acquisition process. This is especially true in the case of revenue or government land taken for the project, where such informal, sometime deemed illegal, and traditional rights generally exist. The process of establishment of user rights of sharecroppers and agricultural labour, or customary rights of a community is weak enough

to result in many of such families not being compensated and hence significantly impacted by the land acquisition process.

Detailed guidance and rules for the interpretation of the Forest Rights Act are still being developed. While it recognises individual as well as customary rights, in absence of detailed guidance and rules, the settlement process is marred with inconsistencies in interpretations and often the non-recognition and settlement of customary rights. Recent developments in Orissa where two large projects have been put on hold on the issues of non-compliance to the FRA points out towards the challenges ahead.

The track record on resettlement in mining has been very poor. The National R & R policy sets the minimum benchmark for resettlement and rehabilitation. The key issues that it still needs to address is that it only get triggered when there is significant displacement, rehabilitation is focussed on monetary support and not on the complex and difficult process of livelihood restoration. It also does not provide guidance on private sector projects where the government may not be involved in the resettlement process.

Social impacts assessment, in most EIA studies, remain at best, a collation of secondary research based data (mostly Census of India information) supplemented by some interviews and stakeholder consultations. Critical issue of impacts of land acquisition on individual households, incidence of landlessness or marginalisation of farmers, severance of access to natural resources on which there could be significant dependence, gender based impacts, impacts on children, specially around mining areas and informal mining activities, and cultural impacts get assessed only in rare reports, in many cases as a response to public protest and stakeholder pressures, rather than it being a genuine effort to understand and address such impacts early in the project.

4.2

PRINCIPLE

This principle demands a comprehensive assessment of social impacts and displacement of mining projects at the household, community and mining region level, and management commitment to address those impacts through mitigation measures and management plans.

4.2.1

Seek a broad-based local support for procuring land for mining and minimize land take

- Use the proposed Community Consultative/Dialogue mechanism set up early in the project (see the following Principle on Community Engagement) to discuss the land requirements of the project and the most preferred mechanism to get land as a part of regular consultations and dialogue, and with adequate lead time before the actual time for land take.

- Prefer purchase of land for mining on a willing buyer/seller arrangement, rather than acquiring the land through the Land Acquisition Act.
- Demonstrate through baseline studies, data and design that the most productive agricultural land or land with strong cultural dependence of the community, is brought or acquired for mining only as a last resort, and only when it is not avoidable for technical reasons.
- Use efficient technology and scientific mining practice to minimize land requirements. Invest in options like underground mining where technically feasible. In case of smaller mines, or mines located in clusters, share infrastructure and facilities to reduce costs as well as land requirement.
- Rehabilitate land after closure to a use most valued by the community and return it back to the community and land owners for their long term use. Enhance the value of returned land (also see Principle VI on the mine closure)

4.2.2 *Settle all rights before the land is brought/acquired*

- Wherever land rights are disputed or in conflict, provide adequate lead time and resource to the concerned agencies to settle/resolve these rights before land is acquired for mining
- Ensure all rights under the Forest Rights Act are settled at the individual and community level if there is any forest area that will need to be diverted. Seek the expertise of tribal specialists and anthropologists to ascertain these rights in a fair and reasonable manner.

4.2.3 *Specific provisions in Scheduled Areas*

- For land in Scheduled Areas, seek free, prior and informed consent of the Gram Sabhas for both major and minor minerals under PESA before starting the process of land take (purchase or acquisition). The consent process needs to be clearly defined in a manner and a timeframe that gives a fair chance to both parties to negotiate.
- To ensure that the consent process does not get reduced to a tool for negotiation, consider putting on hold the mining proposal for a reasonable period of time – say 10 years if the community does not give consent. The community needs to be aware that the consent decision has to be taken very responsibly, keeping in mind the immediate as well as long term ramifications.
- Ensure that the social impact assessment in a scheduled area has a specific focus on impacts on tribal groups and their way of life and their social, cultural and religious choices. Experts on tribal communities should lead such an impact assessment.

4.2.4

Assess social impacts at every stage of the mining activity

- Establish a baseline of the community and identify sensitive social issues at the reconnaissance stage through stakeholder analysis, consultations and focus group discussions. Include this baseline assessment, proposed risk mitigation measures and a consultation strategy during explorations as a part of the PL application. Report on the implementation of the strategy as a part of reporting on prospecting activities.
- Comprehensively assess the social impacts of a mining project through its lifecycle before the start of any mining activity as a part of the mining lease application. Ensure that gender based impacts and impacts of children living around mining areas are an integral part of the impact assessment. Revisit the SIA before any mine expansion, significant change in mining technology or activity and before mine closure.
- Develop a Social Management Plan and specific mitigation measures to address these impacts. In case of displacement of families, prepare a resettlement action plan as one of the mitigation measures. The SMP should be submitted as a part of the EMP and should be considered by a group of social experts during the environmental clearance for major minerals and for approval of the mining plan by IBM in all cases.
- Disclose the SIA and SMP reports to the community as a part of the disclosure for public consultation. Incorporate feedback and suggestions on mitigation measures and management plans from the community. In addition, disclose these as a part of the mining plan in the Ministry of Mines website.
- Report on the SMP implementation on a regular basis to the district administration and the state regulatory agencies.

4.2.5

Provide for resettlement and rehabilitation of project affected families in all cases involving physical, economic and cultural displacement

- Avoid displacement to the extent feasible. Consider resettlement as a highest risk issue and a critical consideration during the analysis of alternatives for the project site and design.
- Assess resettlement impacts and develop either compensation and rehabilitation procedures (for small scale displacement or projects involving displacement of less than 100 people) or a full Resettlement Action Plan for project involving displacement of more than 100 people)
- Provide adequate time for consultation, assessment of impacts and for development of an entitlement framework that has the consent of the project affected families.
- Ensure that no construction or project development activity takes place before all displaced people have been shifted, allocated the entitlements due to them, and being provided support for livelihood restoration.

- Make every effort to provide alternate housing/resettlement site as close to the project as possible to allow the displaced families to reap the benefits of proximity to the mine.
- Make the outcomes of resettlement a key sustainability performance indicator for the mine, to be closely tracked and monitored.

4.2.6 *Restore livelihoods affected by the mining activity*

- Comprehensively assess the livelihood dependence on land (private, government or community), natural resources, and all other sources of income that gets impacted by the mining activities, irrespective of the legality of ownership and use.
- Design rehabilitation measures that either replace the sources of livelihood, or compensate them on the basis of a term livelihood loss. Identify and focus on the vulnerable groups in this process.
- Encourage asset building among the affected families through a basket of measures and incentives so that compensation money is used productively and people have a living standard better than before.
- Focus on programmes that enable the affected communities to participate in the economic benefits of the mine, through employment, business, services and contracts.

4.3 *COVERAGE*

This principle addressing land and social impacts covers all mining activity - major and minor minerals, but is tailored to suit the size of the mine and their specific locations. All new mining projects will need to develop socio-economic baselines and impacts assessment. In case of displacement, resettlement procedure or resettlement plan will need to be prepared, depending upon the scale of displacement.

All existing mining operations may not have conducted an SIA or resettlement planning (depending on the number of years they have been operational). This principle will require all such projects to conduct a rapid independent assessment of status today against this framework. If there are significant gaps, the company will prepare an action plan with a specified time frame to address the issues and show progress towards meeting the SDF requirements.

4.4 *POLICY AND REGULATORY ANCHOR*

The principle has implications for the land acquisition process as well as policy guidelines and acts that cover resettlement aspects. While currently the land acquisition act and the national and state resettlement policies are not linked, this principle seeks to integrate the two on the premise that physical and economic displacement gets triggered by the land acquisition process, and any mitigation strategy has to holistically address both. The principle is already embedded in the revised land acquisition and resettlement bill. Till such time that the bill gets approved and enacted, mining projects (in

collaboration with the state government) are encouraged to address land acquisition and resettlement issues in an integrated manner.

The principle calls for strengthening of the EIA notification to give a stronger focus and review of the social baseline and impact assessment during the ESIA process. It seeks a much more robust and comprehensive assessment of social issues, reviewed by a group of subject experts. It seeks to deny project environmental clearance if the social impacts are not addressed adequately. Alternatively, it calls for a separate clearance process based on social considerations.

For Scheduled Areas, under the PESA provisions, prior recommendation of the Gram Sabhas is a prerequisite for minor minerals. Under special provisions for Scheduled Areas, the principle requires consent for all kind of mining activities in such area, and adds the requirement of “free, prior and informed” consent. Specific guidelines will need to be developed under PESA to give a step by step guidance on what these terms mean in practice. The MoM needs to engage with the Ministry fo Rural Development and the Ministry of Tribal Affairs to widen the Gram Sabha consent process to all mining activities.

And finally the principle seeks to bring about a greater cohesion between a company’s commitment to manage the social impacts it creates, and philanthropic and social investment activities it covers under its CSR umbrella. It has been often seen that companies may have a good CSR strategy and a social investment programme on the one hand, but on the other performs poorly on addressing social impacts. This is because the current regulatory regime does not put any accountability on the mining company. This principle seeks to put performance on management of social impact, including land acquisition and resettlement as a critical indicator of sustainability performance.

4.5

INSTITUTIONAL ASPECTS

Land is a state subject, with the District Administration playing the pivotal role in undertaking land acquisition and resettlement. The recommendation for setting up a land pricing committee at the mining region level has its implication for the current institutional structure. Currently land prices are determined by the Land Acquisition Officer or the District Collector, and are based on the average value of land sale in the past 3 years. The mechanism suggested in this principle is already being used in some states.

The current arrangement for evaluating social impacts of projects lay within the EC process, where the social impacts are assessed by the expert environmental committees set up by the MoEF to review and grant environmental clearances to projects. This principle requires the strengthening of such committees with relevant social experts who will review the SIA and SMP during the permitting process and pin the mining company to specific commitments on social performance. Alternately, separate and parallel

clearance process based on social impact assessment should be set up preferably within the MoEF organisational structure.

The District Administration will need to play a stronger monitoring role to ensure that the objectives set out in the resettlement plan and the SMP are met, and provide support and oversight when necessary. A key aspect of that role would be to facilitate maximum synergy between rehabilitation, livelihood restoration and key government programmes on employment, skill development and poverty alleviation.

Independent third party monitoring of the RAP implementation would be mandatory wherever displacement of more than 100 people occurs. The independent monitoring report should be disclosed.

Linking with Principle II on strategic regional impact assessment, the agency will store, review and update baseline socio-economic baseline information, sensitive areas and no-go areas.

4.6

OUTCOMES

Key outcomes envisaged include:

- Minimization of impacts and displacement due to the mining activity.
- Broad consensus for the project among the local community
- Land owners and other PAFs reasonably satisfied with the compensation package and other rehabilitation measures.
- The livelihoods of the Project Affected People restored, and preferably better off than before.
- Majority of the land brought.
- Less court cases and conflicts.

4.7

CHALLENGES

Key challenges for this principle include:

- Capacity of the MoEF, SPCB, IBM or the current regulators to review and examine the social baseline and impact assessment in detail.
- Resistance among developers arising from apprehensions that the process of consultation, impact assessment etc will have a negative effect on the community, raise their expectations, escalate land prices and make it unfeasible for the project to start.
- Availability of skilled people/organisations like NGOs to undertake the baseline, impacts, resettlement studies to provide practical and time tested solutions, primarily as mines are in relatively remote areas.
- In going beyond what may be currently required by law, mining companies will have to face the challenge of getting government support and help at their project level.

**PRINCIPLE V:
COMMUNITY ENGAGEMENT, BENEFIT SHARING AND CONTRIBUTION
TO SOCIO-ECONOMIC DEVELOPMENT**

5.1 CONTEXT

The status, gaps and issues to do with community engagement, benefit sharing, and contribution of mining companies to local socio-economic development are discussed below.

5.1.1 Status- Community Engagement

- Community engagement and regular consultation and disclosure are not mandatory under law.
- The key legal requirement for public consultation is at the pre-project stage, during the EIA, which is lead by the concerned state government through the district administration, where the mining project is located. The EIA document is disclosed in the MoEF web site and is a powerful document that provides information on the project.
- Others requirements are in the form of no-objection certificates to be obtained from the concerned Gram Sabhas (in the case of Scheduled Areas as per PESA) or from the Gram Panchayats in non scheduled areas). For mining projects < 5 ha, only consent from the land owner is required.
- Policies on resettlement ask for stakeholder consultations during surveys and developing the Resettlement Action Plan. Some of them call for a development of a communication plan. These plans are not currently disclosed. Policies are not mandatory and can only provide guidance.
- The national R & R policy now calls for a separate clearance of the SIA, wherein a public consultation will be required to hear the concerns of the project impacted persons on social issues. The specific mechanisms and guidelines on how this will be implemented is awaited.
- Grievance redressal mechanisms for projects currently primarily led by the state through the district administration, courts or mechanism like the Grievance Redressal Cells created wherever the National and state R & R policies are triggered. These generally entertain litigations/complaints on pre-project aspects like land acquisition, compensation, resettlement or eligibility issues. Complaints or grievances on ongoing project operation are not specifically directed or addressed.
- There is a big evolution in the field of development planning and programme implementation on participatory approaches and community engagement- this has not yet been formally and institutionally in project development.

Issues/gaps

- Most projects talk to the stakeholders during the start of the mine project, primarily to get consents and a go-ahead. Beyond this, levels of engagement with the community depends upon the pressure the community or external stakeholders (NGOs, Lenders etc) can exercise.
- Consultation and disclosure processes mandated by law are limited in their effectiveness as they do not adequate safeguards to ensure free, prior and informed consultations and consent processes. Legally mandated consultation processes like Public Hearings/Consultations during project clearances can be circumvented by vested interests, disallowing the community to participate meaningfully. More tighter guidelines required;
- Companies seem to be primarily communicating with the local population on CSR activities during operations. These are focussed around development and welfare programmes, and very often not linked with project activities or impacts. Structured and regular information sharing on the project through all its phases, its development, impacts, mitigation measures – these are left to the company as their voluntary initiative. Hence approaches are inconsistent and the process very limited.
- The impacted community does not have adequate information to make informed opinions and negotiation positions. There are few companies that actually have established forums for community consultation and grievance redressal on an ongoing basis.

5.1.2

Status – Benefit Sharing and Contribution to Socio-economic Development

- There is yet no national and legal arrangements that make benefit sharing mandatory. There have been some recent inclusion in some state R & R policies.
- Royalty sharing arrangements between the state and the centre for both minor and major minerals do not define how much, if any, part of the royalty is channelized back to the project area or district.
- Some state government have started formal process of the company contributing from its profits into a local/peripheral area development funds.
- Some state government have R & R policies that call for sharing benefits with the project affected persons.
- The Ministry for Company Affairs has recently brought out a guidance for earmarking 3% of profits of public sector agencies for CSR activities.

Issues

- Benefit sharing is mostly policy and not binding on the company
- Minerals areas do not get a specific share in the royalty received from mining activities. There is no tracking mechanism that can be used to assess how much of the royalty collected is used for local area development in mineral areas. Mining companies point out that they

pay their due to the state in form of royalty, and it is the state's prerogative and responsibility to ensure that the local area get development benefits from that royalty.

- Most benefit sharing arrangements are CSR activities focussed on community development rather than bringing direct benefits to people who have lost land or access to resources (project affected persons) to the mining activity. Do not address the core issue of conflict.
- Limited national and international experiences in how these arrangements work and to what extent they are binding. The limited experience is also heavily biased towards indigenous people.

5.2

ELABORATION OF THE PRINCIPLE

The principle seeks commitment to regular engagement with the local community as well as benefit sharing.

5.2.1

Proactively engage with local community (men and women) through the life cycle of the project to disclose relevant information as well as time resolution of issues and conflicts.

- Start process of engagement with the local community in areas affected by operations as early as possible – before explorations
- As early as possible, prepare a profile of the local area, and the community, understand the social, cultural and political dynamics and identify and profile key stakeholders. Develop a plan for consultation and disclosure based on this understanding, for the entire project lifecycle. Annex this plan in the application for prospecting license, mining plan as well as the EMP.
- Complement the government mandated public consultation process with project level consultations programmes. Engaging with the community, especially the project impacted families, is a responsibility of the mining company.
- Provide relevant information to the project affected families about the mining activities, impact management measures, the potential employment and other social and cultural benefits and CSR programmes planned on a regular basis, in a format agreed with the community. Allow the community to seek clarifications and ask questions, without intimidation and fear of reprisal. Always formally inform the community before any major activity
- Disclose the Mining Plan, the EIA and EMP, SIA and SMP, the RAP and well as the socio-economic development plan in the local community before the start of the mining activity in a format they understand as well as the regulatory agency, the company and Ministry of Mines website;
- Ensure free prior informed consultation, especially when the community is required to give its consent for a project under PESA for example. Where the project is spread over a large area, undertake smaller, community level meetings and Focus Group Discussions (especially with women and other vulnerable groups) to explain the

project details and other relevant information before the community participates in the formal, government led Public Consultation.

- Provide the community with independent technical and legal advice if the community so requests before their participation in public consultations. Records of these support measures should be attached to the minutes of the Public Consultation.
- Provide for independent observers for the Public Consultation process in contentious mining projects with significant impacts on land, as well as projects in Scheduled Areas. The report of the observer should be available for the MoEF and any other permitting agency to consider.

5.2.2 *Establish mechanism and systems for dialogue with the affected communities that are inclusive, culturally appropriate and include grievance redressal*

- For projects in the High Risk category, establish suitable Community Consultative/Dialogue mechanisms with the community through concerned Gram Sabha Sabhas/Panchayats, and community leaders, with the purpose of holding regular consultations and to resolve issues of conflicts amicably. Ideally provide for a three- way dialogue process between the company and the community with the District Administration in the role of a Facilitator.
- Partner with the District Administration to build the capacities of the Gram Sabha/Panchayats in the local area to understand the legal framework that guides mining activities, and safeguards their rights and to participate in consultations and negotiations in an informed manner
- Identify the more vulnerable groups in the community and empower them participate in the dialogue process. Be responsive to their concerns, suggestions and priorities.
- Ensure that the participation of women and marginalised groups in this process are facilitated through targeted engagement and mobilisation
- Recognise and respect the unique profile, land connectedness and concerns of the tribal communities, and ensure that the dialogue/consultation process is culturally appropriate and through mechanisms and institutions trusted and recognized by the tribal communities.
- Establish formal processes for grievance redressal at the project level that proactively seeks to identify grievances of the community, address them appropriately and in a time bound manner, to the satisfaction of the aggrieved people.

5.2.3 *Assess local needs and contribute to the socio-economic development of the local communities through the project lifecycle*

- As a part of the social impact assessment process, develop a robust assessment of the community needs, capacities and skills, and understand their vision for a sustainable future. Develop CSR programmes that address these needs

- Contribute from the company's annual profits to local area/peripheral area development mechanisms/funds or any other mechanism for this purpose to partner in the local and regional development process.
- Focus on capacity building and skill development of the youth to foster their growth and facilitate their gainful employment in the mining sector in the area.
- Create opportunities for diversifying the local and regional economy by supporting local enterprise and businesses as well as products and opening avenues for employment.
- Engage with the community in decisions about mine closure and post closure land use.
- Explore mechanism of social audits of the CSR and other development programmes undertaken with participation of the community. Report audit findings in company's SD report.
- Develop partnerships with government, non-governmental organisations and other mining companies to leverage development programmes and funds, complement skills, ensure effective design and implementation resulting in favourable outcomes in the local communities.

5.2.4 *Identify and establish benefit sharing arrangements with the affected communities*

- Make provisions to share benefits with the affected community and land losers through broad based agreements/MoUs with them. These could cover aspects like employment and training, economic development and business opportunities; social cultural and community support; financial provisions and equity participation and environmental and health protection etc.
- Develop policy and financial mechanisms to share a significant part of the royalties generated from both major and minor minerals with the mining district, block and panchayats.
- Explore basket of options to share benefits that are not only focussed on cash, but adopt innovative approaches to target social welfare, including long term livelihood safeguards, insurance against various risks, incentives to protect and nurture girl child's education and well being, old age pensions etc
- In large scale projects, engage with the affected community to develop formal benefit sharing arrangements, agreements or MoUs that will allow both sides to get surety on commitments as well as of mutual expectations and responsibilities.
- Where required, include the Government as an assurer for both parties in the agreements to comply with commitments made.
- Monitor these agreements and commitments through internal processes and third party monitoring, Report on performance in financial as well as CSR and Sustainability reports

5.3

COVERAGE

The process of community engagement should be included in all scales of projects, major as well as minor minerals.

Benefit sharing should be a “must-do” in large projects in high risk zones and encouraged in all mining of major minerals.

5.4

POLICY AND REGULATORY ANCHOR

Public Consultation: The EIA notification 2006 needs to have clearer guidelines on Free Prior Informed public participation in Public Consultation for Environmental Clearance. Currently they are more focussed on the disclosure process, and do not have adequate provisions to “enable” more informed participation of the affected communities. The NPRR and state R & R Policies have not yet rolled out the provision, guidelines and procedures for a Public Consultation for clearance on the SIA.

Contribution to Socio-economic development: Various state R & R policies now talk about direct financial contribution to a local area / peripheral area development fund – e.g. Orissa and Himachal Pradesh. The Samatha Judgement and subsequent judgement of the Courts (refer to the SC judgement on the Mining in Lanjigarh) call for sharing profits to the extent of 10-20% annually into a fund or an SPV that will be used for local area development. They do not adequately define the institutional mechanism, capacities and legal provisions for these funds adequately. They also do not allow the contributing mining company to focus on their local areas. These funds have become more district level funds with a wider mandate, and accrue limited direct benefits to the project area and its affected communities. Hence this contribution does not directly result in increased support for the project.

Benefit sharing: The Orissa R& R policy and the Haryana R & R policy seek equity participation or sharing of annuities respectively with the land losers. They have been recent phenomenon (2006-2007) and hence have not yet demonstrated impacts or increased community acceptance and support of mining as an activity that benefits the community.

The Samatha Judgement has also outlined a method of contributing a portion of the project profits into series of local benefit activities.

5.5

INSTITUTIONAL ASPECTS

- The role of local government bodies, like the panchayat and zila parishad in enabling participation and agreements should be enhanced.
- Setting up consultative dialogue mechanisms early so that this forum can begin to talk about issues of common interest much before the project.

- Arrangements to oversee benefit sharing arrangements/agreements need to address the boundaries of such agreements, responsibilities, stakeholders to be involved and legal provisions of the arrangement if the arrangement is formal..

5.6

OUTCOMES

Key outcomes:

- An informed community that is aware of the mining activity, and is enabled to participate in project decisions.
- A disclosure process that provides stakeholders with relevant and timely information, and allows issues to be raised in engagement forums.
- Increased incomes, social and livelihood security and other direct benefits from the project to the affected families;
- Improved social and economic development indicators in the immediate project area and the region showing improved education and health access, improved infrastructure, better and diverse employment and livelihood avenues and
- Broad community support for mining.
- Resolution of grievances and possible conflicts in an amicable manner through institutions and mechanism that are transparent and fair and are trusted by all parties.

5.7

CHALLENGES

The biggest challenge is that the local community in India is not clearly defined hence companies hesitant to enter into formal agreements.

Mining companies would like to be assured of the sanctity of the agreement and of business continuity that at the time of signing or renewal of this arrangements .

The community will be vary and would like to be assured that this does not take away their rights to resent of a particular issue to such agreements as it will be perceive that)

Capacities and abilities of the community to define its sustainable development goals and move away form immediate benefits (preferably cash).

The role of the regulatory agencies to provide increased weightage to these sensitive elements of community consent for permitting process- more robust data, proof of consultation, and response to issues to be sought.

**PRINCIPLE VI:
MINE CLOSURE AND POST-CLOSURE**

6.1 CONTEXT

Mine closure is regarded to be a recent subject of attention in the mining industry and its significance is yet to be fully appreciated in its larger circles. Several respondents from the industry expressed their reservations on the new regulatory provisions (since 2003) that require mine closure planning to be included in the mining plans that are to be submitted periodically, for clearance by IBM. The reservation is based on the commonly held belief in the industry that since most mines (required to submit mining plans) still have a long time to go before they will become exhausted of the reserves, mine closure planning today may not be accurate or appropriate to the requirements of when the mine will actually close. The regulatory provision for 'progressive closure' too, is regarded within the industry (specially in the case of iron-ore) as impractical, as optimum-value operations require several pits to be mined concurrently to facilitate ore-blending.

On the other hand, there has been increased regulatory focus on closure, given the substantial financial requirements to do it in a manner that is scientific and in compliance with requisite environmental standards. The existing financial arrangements required by the regulator are largely inadequate to cover closure costs. Given that several mines will need to be closed in the coming decade, financial planning by mining companies while the mines are still remunerative, is the most prudent approach to ensure proper closure and to prevent the threat of abandoned hazardous sites in the future.

Early financial planning for eventual mine closure, by the miners as well as ensuring its adequacy, on the part of the regulator, cannot be emphasised enough.

Planning for post closure land use is an even rarer situation given how few mines are even actively planning for closure. Even so, a few experiments have been tried with closure and potential post-closure use of reclaimed land. To illustrate, Goa, Ballarpur, Neyveli, Noamundi (the last 2 are examples of closed coal mines) are some areas that have experimented with scientific closure and options of post closure use. The rehabilitated sites, however, are not slated to be returned to the community and continue to be in the possession of the holder of the mining lease. Rehabilitation measures are still being tested as experiments and not shared with the community as benefits.

6.1.1 Issues

Emerging issues with regard to mine closure in the country today are:

- Enormous financial ramifications of closure resulting in inability of mining companies to address this adequately at the time of closure unless planned for in advance.
- Issue of abandoned mine or mines not closed as per requirement (will lead to the creation of legacy issues): scientific closure in accordance with environmental and other requirements is a high-cost exercise which prompts several lease-holders to abandon exhausted/unviable mines without proper closure.
- Need to affix liability for the above transgressions, ecological, environmental impacts: given the current 'boom' in the iron ore sector, most mines previously thought to be abandoned have re-opened, but the threat still looms, upon resource exhaustion or a dip in the market demand for the ore.
- Land is a precious resource and there is a need for proper closure to enable beneficial post-closure use to the proximate communities; also, for miners to appreciate that mining is a temporary use of a limited recourse: land, and that it must revert to the community, for their use.
- As mine closure is not within vision of most miners, post closure issues are even lower in priority.

6.1.2 *Existing arrangements*

India did not have mandatory closure regulations till 2003 (rule incorporated as per MCDR 1988). Even the current law is not watertight.- the financial surety asked for closure is too low to be a deterrent for non-compliance. This is not in line with the 'true value' principle.

A conceptual mine closure plan must be submitted at the time of new lease or renewal of licence; progressive closure plan has to be submitted every 5 yrs and a final mine closure plan a year before actual closure. (recent inclusion)

A financial assurance has to be furnished at the rate of Rs 25,000/ha for Category A and Rs 15,000 per Ha for Category B mines, with a minimum pegged at Rs 2 lakh for Category A and Rs 1 lakh for Category B. This can be submitted as :

- Letter of credit
- Performance or surety bonds
- Trust funds
- Or any other guarantee acceptable to the state.

The closure plan should address:

- Environmental issues and proposed remedial measures
- Social issues mainly to do with employees being let-off and socio-economic repercussions and proposed remedial measures

Mining operations must prepare, manage and progressively work on a process for eventual mine closure. This process must cover all relevant aspects and impacts of closure in an integrated and multi-disciplinary way. This must be an auditable document and include a fully scoped and accurate estimate of planned cost of closure to the company. The cost estimates must be adequately provisioned to cover national, regional and local legal and regulatory requirements for closure; and must also include the cost of servicing all agreements/commitments made with stakeholders towards post-closure use.

Potential threats, pitfalls and complexity of environmental-social aspects must be flagged as necessary.

The scope of measures to be undertaken at closure must be thoroughly and comprehensively defined to reach a realistic estimation of the costs, and to provide the necessary assurance to the regulators and stakeholders that adequate financial provision for closure has been made.

6.2.1

Elaboration of the principle

- Assess report and disclose real costs of closure on agreed principles, standards and outcomes.

Types of costs to be included in closure planning

The table alongside is an illustration of the types of cost heads to be considered for closure planning.

Direct closure costs	Calculated using conditions which represent the maximum closure cost.
Indirect closure costs	Contract preparation and administration costs for staff time. Calculated by project staff and site specific.
Mobilization	1 to 5 percent of direct closure cost
Contingencies	Project uncertainties and unexpected natural events, 2 to 5 percent of direct closure costs.
Engineering and Design	Redesign to reflect current conditions, 2 to 10 percent of direct costs.
Profit and Overhead	Contract profit and overhead not included in direct cost calculations, 3 to 14 percent of direct closure costs.
Closure management	Project inspection and supervision, 2 to 7 percent of direct closure costs.

Source:

Rem: Revista Escola de Minas- Print version ISSN 0370-4467

Rem: Rev. Esc. Minas vol.56 no.3 Ouro Preto July 2003

- Minimal compliance to be measured in terms of (and as a composite of):
environmental impacts including ecology, regenerate bio mass, legacy issues
(principle **socio-economic aspects**)
- Underlying assumptions and standards used for calculations to be discussed with the competent authority (CA) and disclosed (See principle on reporting)
- Use of financial guarantees/ sureties to be agreed upon at the time of approval of closure plan and this should become legally binding. A financial guarantee is a critical component of the reclamation and post-closure process because it can be used to cover the costs of closure should the mine operator be unable to do so especially since the sector is vulnerable to significant fluctuations in metals prices, and many companies have gone bankrupt, sometimes before mine closure or

reclamation is complete. “Due to its high costs, regulators need a dependable source of funds to pay for the physical reclamation of the mine site as well as the necessary implementation management. Since mine closure is the responsibility of the mine developer, these costs are not included in the budgets of regulatory agencies, nor should they be. Government agencies need financial sureties that are readily available to ensure that mine reclamation occurs. Should a mining company default on its closure commitments, funds will be required immediately to operate and maintain mine facilities, such as water treatment plants. “¹Given the large size of most financial bonds, a surety agent stands to gain financially by collecting interest on the bond amount while potentially unsuccessful legal challenges are debated in the courts. Finally, the reclamation cost estimate upon which the surety is based must be accurate and up to date. Errors in this regard may also cost the state exchequer.

A variety of financial guarantee instruments are available and used internationally, in this sector. Each that may be considered with its attendant issues (see reference table alongside).

- Financial guarantee, as an economic instrument, must be complemented by permitting, inspection, enforcement and the necessary knowledge base to be effectively implemented. A structured permitting process is necessary for defining clear criteria for mine closure, robust planning for closure from the outset of mine planning and successfully ensuring enforcement of closure criteria. The enforcement capacity of the regulator should be clearly defined since it allows all parties involved to be aware of the implications for the financial guarantee in case of permit violations or bankruptcy.

Closure costs	Financial guarantees must cover the mine company's costs, both rehabilitation and the post-closure monitoring period.
Liquidity	All forms of financial guarantee should be reasonably liquid.
Accessibility	Financial assurance should be readily accessible, dedicated and only released with the specific assent of the regulatory authority, so that regulators can promptly obtain funding to initiate proper closure in case of operator default.
Healthy guarantors	Regulators must carefully screen guarantors' financial health before accepting any form of assurance.
Public involvement	Regulators must give the public notice and an opportunity to comment both before the setting of a bond amount and before any decision on whether to release a bond.
No substitute	Any financial guarantee should not be regarded as a surrogate for a company's legal liability for mine closure.

Source:
Financial Guarantee Principles, after Da Rosa (1999). (ibid)

- Determination of the amount of the closure guarantee must reflect the cost of mine closure and be adjustable, up or down, to reflect changes in the proposed closure plan. This cost may be higher than the cost borne by the lease holder to close²

(4) ¹ Source: Financial Guarantee Principles, after Da Rosa (1999). (ibid)

(5) ² Costs to the lease holder could be lower as they would use the existing equipment, labour, facilities to close whereas the cost of undertaking closure by the government would be higher, in comparative terms. The guarantee must take this into account, as also to discourage defaulting on the part of the lease-holder

- Financial estimates for the 'worst-case scenario' and the 'optimal scenario' to be included and guarantees to be determined accordingly
- Cost estimates must take into account the envisaged post-closure use and agree on the lease-holder's participation, based on community consultations and approval of the post-closure use. Include post-closure issues in mine closure planning, especially at the pre-mine planning stage. These may include monitoring and maintenance -for the period deemed technically necessary from the point of view of impacts, water treatment, and catastrophic events.
- An important aspect of post-closure, monitoring and maintenance issues include long-term water quality sampling, geotechnical inspections of tailings dams and waste rock facilities, and minor repair work such as re-grading the slopes of dams and waste dumps and re-vegetation where primary seeding or planting have failed. If water treatment is required, significant financing will be necessary after the mine has closed as long-term water-treatment can even double the cost of mine closure.

6.3

COVERAGE

It is understood that full coverage of all mining sites will take a longer period of time., This principle, however, must be immediately applicable to higher risk closures (risk levels to be judged by the Competent Authority), but eventually apply across the board.

In the shorter term, a classification may be evolved to prioritise mining leases according to risk (in terms of closure and post closure issues, proximity to densely populated areas, presence of hazardous chemicals, physical instabilities, ground-water issues etc.) , and the period of remaining mine life, to facilitate early action on closure planning.

6.4

POLICY AND REGULATORY ANCHOR

The principle is anchored in the National Mineral Policy which states the following on Mine Closure:

“Once the process of economical extraction of a mine is complete there is need for scientific mine closure which will not only **restore ecology** and **regenerate bio mass** but also take into account the **socio-economic aspects** of such closure. Where mining activities have been spread over a few decades, mining communities get established and closure of the mine means not only **loss of jobs** but also **disruption of community life**. Whenever mine closure becomes necessary, it should be **orderly** and **systematic** and so **planned** as to **help the workers** and the **dependent community rehabilitate themselves** without undue hardship.”

- **Zero waste** mining will be the national goal and mining technology will be upgraded to ensure extraction and utilisation of the **entire run-of-mines**

- Mineral prices should reflect their value and the royalty structures will be designed to ensure that the producer earns and the consumer pays the **true value** of the minerals produced and consumed [true value includes cost of scientific and socio-economically appropriate closure]
- “Perpetual liability” and “polluter pays” principles

6.5 *INSTITUTIONAL ASPECTS*

Mine closure is a multidisciplinary activity, and the institutional structure required to regulate the process will include a number of agencies. The table below identifies some of these:

Thematic Aspect of closure and post closure	Relevant Regulatory authority
Environmental aspects	MoEF, IBM
Mining aspects (technical and, scientific)	IBM, State Departments for Geology and Mines
Financial aspects	Competent Authority supported by relevant technical advisors
Socio-economic aspects	District Administration and other relevant agencies like the Commissioner for Tribal Affairs.
Land (tenure/ownership/transfer)	IBM and State Dept of mining, Forest dept, Panchayat, and district administration.

6.6 *OUTCOMES*

- Recognition and realization of positive legacies for local communities;
- Lower exposure to future potential negative legacies
- Enhanced value of land post closure;

6.7 *CHALLENGES*

- Clearer definition of ‘scientific closure’ and applicable standards (social and environmental) against which the performance of the companies may be measured
- Given the important role financial planning plays in guaranteeing effective closure, the proposed use of financial guarantee instruments, must be supported by permitting, inspection, enforcement and the necessary knowledge base on the part of the regulatory and financial institutions in the country, willing to be involved with the sector.
- The enforcement capacity of the regulator is also necessary on technical, financial, economic fronts.
- Should the guarantee be forfeited, the state must have a back-up plan for implementing scientific closure and delivering on post closure use, in line with the spirit of this principle.

**PRINCIPLE VII:
ASSURANCE AND REPORTING**

7.1

CONTEXT

Shareholders across the world are moving from a position of a passive receiver of information to an active participant in a company's growth and development.



Similarly, stakeholders are now expecting companies to demonstrate and prove

what they have committed to. In this scenario, a critical component for any sustainable development framework is the process of reporting to the outside world the various ways the company is becoming more sustainable, or a responsible corporate.

The regulatory framework in the country has stepped up on financial and non-financial disclosures, but they do not specifically require reporting on environmental and social performance. While the Environmental Impact Assessment is a publicly available document, level of compliance to the EMP and other conditions is not. Companies are not required to demonstrate that they are meeting their legal and other obligations to all stakeholders, other than to the regulators. There are no regular process of disclosure that enable the local stakeholders to get information about mining activities and put across their concerns and suggestions.

There is strong inhibition among mining companies in both the private and the public sector to disclose information as it is perceived to be misused by stakeholders (in this case: community and NGOs) to compromise the company's operations. In the absence of factual information, rumours and misinformation are spread and become the basis of hostility and agitations. The companies are then not in control of the message going out and often this message is not to the advantage of the company.

Even where information is shared, information is often restricted to "benign" issues rather than dealing with sensitive matters upfront. Most sustainability reports do not touch upon impact mitigation measures or performance on commitments made to their community.

Sustainable Development Frameworks are therefore encouraging companies to provide structured information on their social, environmental and economic performance and demonstrate a commitment to be transparent. Reporting is seen to be a powerful tool to "involve" shareholder and stakeholders in the company's activities, and assure them of its commitment to improve its triple bottom line.

7.1.1 *Status*

Currently the EIA reports the only one of the few documents made public. These are too technical and do not cover the entire bandwidth of sustainable development. The Ministry of Mines is now seeking more disclosure of other technical information like the mining plan to bring about more accountability in mines management. The Right to Information Act, 2005 is already enabling citizens to demand more information.

7.2 *ELABORATION OF THE PRINCIPLE*

7.2.1 *Report on a regular basis performance against the Sustainable Development Framework.*

Prepare and disclose lease level (mining company), state level (state government) and national level (Ministry of Mines/IBM) SDF reports describing actions taken, or proposed to be taken at these three levels to meet the SDF requirements. The parameters to be covered by the state and national SD report will be more on how the sector is performing as a whole on the SDF rather than reporting on every lease in the state.

At the lease level provide a report, at least annually describing how the mining project through its life-cycle is meeting or will meet the requirements of this SDF. Wherever there are gaps or opportunities to improve, the mining company to report on progress till the closure of the mine.

Provide the report in a format, language and manner that is easily comprehended, accessible, useful and relevant, responding to the key stakeholders.

Report with data and information on concrete environmental, social, economic, health and safety and financial indicators disaggregated at the lease level that can be verified.

Include financial reporting in accordance with relevant and accepted accounting standards.

7.2.2 *Provide third party assurance to the SDF performance report*

To enhance public confidence, utilise third party/independent verification and assurance processes on aspects being reported in the SDF report

Validate data, information and processes in the performance reports

Involve the project affected families and local community in the reporting and assurance process for activities of concern to them.

7.2.3 *Involvement of stakeholders in the reporting and assurance and respond to their concerns*

As a part of the community dialogue process, set up a community monitoring mechanism for key aspects of mining activity that is of serious community concern. Agree upon the framework and boundaries of monitoring. Respond to the community monitoring data in the SDF report.

On performance on benefit sharing and social development commitments, consider regular social audits at the lease as well as mining region level to assess impacts, performance and opportunities for improvement. Involve professional/approved social auditors for the purpose.

Keep updating the stakeholder analysis and their interests (refer to Principle on community engagement) and make changes in the SDF format and coverage accordingly.

Utilise stakeholder feedback on the report format, structure, timeframes and verification to continually improve the reporting process.

7.2.4 *Disclose the SDF Report*

Disclose the SDF report in the company website and as a part of the disclosures during permitting process – e.g. Mining plan, EIA and RAP disclosure.

7.2.5 *Consider the SDF performance for approvals*

At each stage of the mining permitting process (PL, ML and Mine Closure), seek the SDF report as a part of the applications, and in addition to impact assessment and other technical studies required for those stages. Make the SDF performance a key consideration (though not mandatory in the initial stages of adoption) for approvals to the extent relevant for that stage.

Provide incentives (fast tracking approvals, preferential treatment in awarding leases etc.) to encourage compliance to the SDF. Equally, poor performance against the SDF should become a deterrent in getting extensions of leases, expansion approvals and new leases.

7.3 *COVERAGE*

This principle applies to mining companies as well as the government institutions regulating the sector. All mining activities, small, medium or large, should have a SD reporting, albeit to different levels. The Prospecting Lease and Mining Lease applications should include a report on performance against the SDF and this should give it an additional weightage in terms of profile, reputation and capacity to deal with complicated issues. At the PL stage, the SD report will be limited, while at the ML stage, a detailed report needs to be provided.

7.4

POLICY AND REGULATORY ANCHOR

This principle already has an anchor in the Right to Information Act, 2005. This act has changed the dynamics of information management and access in India, and empowers ordinary citizens to seek a range of information from the government and public sector organisations. Information means any material in any form including records, documents, memos, e-mails, opinions, advices, press releases, circulars, orders, logbooks, contracts, reports, papers, samples, models, data material held in any electronic form and information relating to any private body which can be accessed by a public authority under any other law for the time being in force. It sets out obligations that public authorities have under this act including transparency and disclosure of its activities. The Act thus makes the activities of private and public organisations subject to scrutiny by the citizens and empowers request for information for the same. This implies that all future projects, plans and organisational objectives can be subject to public scrutiny.

Taking a lead, the Ministry of Mines plans to put more information on EIAs and the mining plans within the ambit of the RTI so that information on these are public and can be sought by anyone who wants to. The Sustainable Development reporting principle however encourages mining companies to be proactive in disclosure and not reactive to RTI related queries.

The Sustainable Development report is expected to become a powerful document to assure investors and other stakeholders.

7.5

OUTCOMES

The desired outcomes would be:

- More transparency among the mining companies
- Improved performance on Sustainable Development indicators.
- More informed engagement and negotiations with the local community, based on better understanding of facts.
- Structured documentation on EHS and social performance that provides trends and institutional memory.
- Demonstration of continual improvement and a plan of action to reach the next set of goals.

7.6

CHALLENGES

The challenge would be to provide enough incentives or disincentives for the mining companies to move towards reporting and assurance and be open to disclosing more and more relevant information. The Sustainable Development report cannot be a standardised one.

This section focuses on the implementation of the SDF. Existing constraints and issues to be addressed before SDF implementation are flagged. It may not be possible to resolve them all before the SDF is rolled out but working at them alongside the SDF implementation is the proposed strategy and is discussed with the suggested implementation guidance. Some of these constraints are standalone and need to be resolved anyway, irrespective of the SDF implementation, some others are cross cutting issues where the SDF will help, but will need to be supported by bringing in new regulation or other actions, and finally those that the SDF hopes to resolve over a period of time.

Provisions of the SDF, as they have been conceived, will require several intersecting information systems to be adequately structured and designed around its processes. An outline of considerations is included that will help define the MIS requirements for the SDF. This is also included in the overall implementation framework.

The SDF needs to be driven through an institutional framework that encourages voluntary adoption but ensures there is monitoring of this adoption, and tracking of the SDF impacts. An institutional framework has been included in this section.

Financial aspects of the SDF need special attention; whether it is the challenge of funding implementation aspects or structuring fund-flow to reflect the SDF objectives and use it, over time to incentivise SDF adoption.

The aspects discussed in this section jointly outline where attention needs to be focussed in order to take the larger objective of sustainable development, in the mining sector, forward. This will require much more detailing and consultation before it is finalised for implementation.

8.1

CHALLENGES

The SDF takes a positive and forward-looking view of improvements in the Indian mining sector. While this is the outlook, the challenges to its implementation cannot be emphasised enough.

The introductory note underscores the challenges within the Indian mining sector with all its attendant issues in the current context. Challenges are also flagged within the field of each proposed principle, through the document. Even as the SDF and the revision of the MMDR Act aim to address some of these effectively, there are several challenges in the path of implementing the SDF itself that need to be addressed prior to or concurrent with, its roll-out.

The key areas discussed here are included based on the urgency with which they need addressing and their potential to prevent the SDF from being implemented.

8.1.1 *Enforcement*

Enforcement has emerged as the strongest key challenge, be it the existing regulatory regime or the new one still under preparation. This is the single most powerful message received from all stakeholder groups. The overall credibility of any regulatory regime and administrative set-up hinges upon adequate, demonstrated enforcement and in the case of mining, this may be the key first step on the road to building confidence and restoring the reputation of the sector.

The implementation of the provisions of the revised MMDR Act and the SDF will require new layers of information and reporting, monitoring, capacity improvement and most of all, the willingness to enforce, with strong political backing to prosecute and punish the powerful and other violators.

Concerns have been expressed by stakeholders that inclusion of the SDF will further add to the enforcement burden. This is partly true, but by emphasising voluntary adoption, exploring incentives opportunities and enabling the mining companies to use the framework to take decisions on sustainable development, the SDF will in the long run enable mining companies to adopt good practices and comply with the law because it makes business sense and reduces risks.

Demonstrated action on this challenge will be key to overall success with legislative and process changes currently underway.

8.1.2 *Strengthening Exploration Phase*

Successful implementation of SDF and improving the sector performance on sustainability heavily relies on strengthening the exploration phase practices and administrative processes. One of the key aspects of sustainability management in the mining sector is to have detailed baseline assessment of environmental and social aspects in the earliest phase of mining life cycle so that appropriate management strategies can be formulated and enforced.

As has been highlighted earlier, out of 1.82 million sq. km of hard rock area (excluding the Deccan Trap), geophysical mapping of only 56,000 sq. km and geochemical mapping of only 73,000 sq. km has been completed. Even in the case of Scheduled minerals, proper reconnaissance or regional exploration of only 8-13 per cent has been done. Even this is of low quality in the modern day context as it is based on outdated technology¹. In this background, ensuring sustainable development in Indian mining sector is going to be a major challenge and hence Ministry of Mines will have to thoroughly review

(1) ¹ Report on National Mineral Policy, High Level Committee, Planning Commission, 2006

the practices and administrative procedures followed in both major and minor mineral sector during the exploration phase. Based on the review, reforms will have to be introduced urgently to include and integrate sustainability concerns at the earliest possible phase of mining life cycle.

8.1.3

Ensuring SDF Implementation in Minor Mineral Sector

Administration and regulatory enforcement of minor mineral and artisanal mine sector at the State level is the weakest link in Indian mining sector management. Nearly Rs 16,700 crore of mineral value is generated from minor mineral sector (in 2008-09) which is 13.7% of total mineral value (that includes fuel minerals). But still the administrative procedures and regulatory enforcement in minor mineral and artisanal mine sector is ineffective and archaic.

The quarry/mining lease award and other administrative procedures are non-standard across various States. Most of the states auction the minor mineral leases to highest bidder while some have decentralised the decision-making process up to taluk/tehsil level that have weak capacity to integrate environmental and social sustainability issues into lease agreements or at the least enforce them. Major section of this sector operates outside the purview of major regulatory agencies such as IBM, SPCBs, SEIAA/Department of Environment etc. illegality is widespread in the minor mineral sector as administrative capacity vis-à-vis the scale of sector operations is meagre.

In this background, rolling out SDF and sustaining it across the minor and artisanal mine sector will be a major challenge unless until the State governments agree to upgrade the administration and enforcement procedures to at least at par with major mineral sector if not above.

Suggestions emerging from the MoEF are that very small scale mining with lease areas less than 5 ha should be discouraged as this does not allow any supervision under the legal-environmental regime. Alternatively, they suggest that a cluster approach be adopted, wherein a group of such small mines prepare and implement a common, cluster based ESMPs. The draft MMDR bill takes forward this recommendation and does not permit new mine leases to be less than 5 ha.

From a recent issues of Mckinsey Quarterly: How companies manage sustainability

“One potential reason so many companies don’t actively address sustainability despite the attention paid to it by the media and some consumers and investors is that many have no clear definition of it. Overall, 20 percent of executives say their companies don’t. Among those that do, the definition varies: 55 percent define sustainability as the management of issues related to the environment (for example, greenhouse gas emissions, energy efficiency, waste management, green-product development, and water conservation). In addition, 48 percent say it includes the management of governance issues (such as complying with regulations, maintaining ethical practices, and meeting accepted industry standards), and 41 percent say it includes the management of social issues (for instance, working conditions and labour standards). Fifty-six percent of all the respondents define sustainability in two or more ways. Even with this range of definitions, most respondents see sustainability as creating real value: 76 percent of executives say sustainability contributes positively to shareholder value in the long term, and 50 percent see short-term value creation.”

8.1.4 *Capacity constraints*

The challenge of inadequate capacity within existing institutions and regulatory bodies is only going to intensify and become a bigger road-block with the additional burden of tasks and responsibilities, if concrete efforts are not put in place quite soon to address this. This issue is also the other face of the enforcement challenge, which cannot only be blamed on insufficient political will and administrative commitment. A separate exercise to evaluate the cumulative load of the proposed changes- the revised MMDR Act, the SDF, new provisions for mining in tribal areas being considered, will need to be undertaken, on the existing institutions and agencies, to assess the capacity gap and strategies for institutional strengthening, which could include greater private sector participation.

8.1.5 *Awareness and interpretation*

This challenge is spread across all levels and stakeholder categories and can only be addressed through coordinated efforts over a period of time. It must include attitudinal change and a change in world-view to shape how companies do business.

Understanding the 'long-view' on development and value creation that are the hallmarks of sustainable development, as against the easier, short term solutions that are more popular. Currently interpreted in its narrowest terms or those most expedient for business, (see box) it will take several years and very effective communication to ensure that the message and full import of 'sustainable development' drills down from policy to action.

Big diversity in operations and issues

That said, 'sustainable development' may translate into different decisions and choices in different contexts and at different scales of operation. The challenge of interpreting the SDF for different mining contexts across the country will only be compounded by the challenge of lack of awareness and capacity.

Legacy issues (Reputation and trust issues):

Legacy issues pose a particularly delicate challenge to present and future mining operations in areas that have historically felt wronged as a result of past transgressions of older mining operations. This has translated into bitter opposition and a lack of trust in any mining operations, even if they attempt to function ethically. Several stakeholder groups have clearly stated that the only way to break the impasse is by setting old records straight, which in itself makes for several contradictory dilemmas.

Geographically, these will be some of the toughest areas to work in as they are also areas of rich yet untapped mineral wealth.

8.1.6

The Future Challenge

Technology gap

New mining projects are likely to be more remote, deeper lying, lower grade or metallurgically more complex (or a combination of these) and will therefore present additional technical challenges. Most mining operations in the country are yet to reach levels of the necessary advancement technically, geographically and geopolitically. Even regulators (technical and financial) will need to prepare to deal with this in order to not obstruct the change that will be influenced by global markets and trends.

Skill gap

Insufficient industry skill has been and will continue to be a problem if not addressed through human resource development and skill development interventions in the education and training sector. Not enough qualified people enter the resources sector each year to fill demand. Large operations in prominent locations generally secure the best skills. The next level of available skills finds positions that have been seen to far exceed their abilities. The unfortunate result is that under cyclical downturns, these operations and their operators are left most vulnerable, even as they pose larger risks to the impacted areas.

8.2

ADDRESSING THE CHALLENGES

The challenges discussed above are well understood as impediments to the improvement of the sector as a whole and attempts to remedy this consist of a range of initiatives currently underway. The revisions to the MMDR Act, drafting the Sustainable Development Framework, proposed revisions to the Land Acquisition Act, proposed changes in the MoEF structure for clearance, approval and enforcement, and the rolling out of the Forest Rights Act: all these are aimed at addressing some or several challenges discussed above. The SDF too, is located in the context of these challenges and the principles and guidance notes have been drafted to take these into account but since they are far wider than the scope of the SDF, an overall and coordinated set of efforts is required to overcome them.

Taking a practical view, it is possible to forge ahead decisively, if one begins to seriously address a few key challenges, namely: enforcement, capacity gaps, skill and technology gaps, through systems-upgradation, use of MIS in a transparent manner, skill development and technology support, and, broad-based awareness-generation strategies, tied up with specific outcomes.

Demonstrating that there is sincere effort in the direction will itself help in creating new dialogues and spaces for negotiating the tougher challenges.

Institutional arrangements for rolling out the SDF will not be simple as it envisages the involvement of a range of disciplines, departments and ministries. The framework will essentially need to tackle three aspects:

- Creation of new institutions within the existing structure to specifically deal with SDF related issues;
- Strengthening existing structures to build capacities to understand, develop processes and monitor the SDF at each of their levels; and finally, and not the least;
- Inter-agency coordination to ensure that the policy and legal frameworks as well implementation of key strategies relevant for SDF are undertaken in tandem with each other, and with a consistent objective, approach and outcomes.

The SDF as an institutional entity is understood to be fully integrated, though functioning at different levels through an arrangement of representative cells. Specific functions are linked to different levels, and connect with existing entities, as described below. The four levels are:

- *National level* within the Ministry of Mines; with the secretariat at the Indian Bureau of Mines, where majority of the centralised functions are undertaken and housed;
- *State level* within the state Departments of Mines;
- At the *mining region level* where the SDF has proposed that strategic decisions be taken for mining, environmental and social safeguards and infrastructure development; and
- At the *lease level*, where each mine has to have an organisational structure in place to manage sustainable development performance.

8.3.1 SDF Cell: Role and mandate at various levels

It is proposed that the Ministry of Mines sets up a discrete *National-level SDF cell* responsible for driving policy, seeking strategic collaboration with MoEF in particular, ensuring convergence with related ministries/ departments, and engaging with state governments to carry forward its mandate.

Recognising that a significant volume of work of this entity, at this level will involve the creation and management of complex databases, to inform policy, and service its coordination and convergence functions, the secretarial functions of the SDF will be housed within the IBM. An MIS unit envisaged to become a resource and repository of information on the subject will be set up specifically to undertake SDF related data processing and information flow.

At the MoM, the SDF cell will comprise a team of experts from the mining sector as well as environmental and social sectors (some deputed from relevant ministries) with experience in preparing sustainable development strategies. External experts may be brought in, based on specific requirements, as they evolve

This cell will be responsible for developing further guidelines, rules and help steer the regulatory changes that will inevitably be required to fully operationalise the SDF. The cell would be instrumental in leading the national mining area categorisation programme and defining no-go areas (Principle 1) and hold stakeholder consultations for consensus on the categorisation. The cell would monitor the performance of states on the SDF, and consider incentivising states for better performances. This mandate fits well with the current mandate of the IBM as a regulator for mining activities, allows it to broaden its capacities to look at sustainable development issues within the mining sector. Consultation with the IBM and the MoM also identified the IBM to be best suited to drive the SDF process. This would mean significant enhancement of the capacities of the IBM to include social development, natural resources and monitoring skills.

A state-level SDF cell is also proposed to be established in each mineral rich state/state with mining activities. This cell will prepare the state level mining area categorisation plan, make recommendations on the basis of this plan to the Directorate of Mines and Geology or appropriate state agency, define conditions and standards expected in high and low category areas for mining, review SDF performance report as a part of the capability of the mining companies for new leases, expansion or renewal etc. It can also be part of the enforcement team that is typically led by IBM on mining and the SPCBs for environmental compliances to provide advice on sustainable development performance.

At a regional level, as has already been discussed in Principle 2, there is currently no agency playing the envisaged role. This is a strategic assessment / planning role, and needs to be mandated through appropriate regulation; a definition of its operational space viz. its function is also required. The IBM may have a broad mandate to ensure sustainable and scientific mining, but does not have the breadth of expertise to handle environmental and social challenges. On the other hand the State Pollution Control Boards have the legal mandate to monitor environmental performance, and are already undertaking some carrying capacity studies for critically polluted areas in Orissa, for ecologically sensitive areas like the Konkan region and for some states like Goa. However they will need significant capacity enhancement to take on a regulatory and compliance role at a regional level.

For the pilot phase, it is recommended that once the Special Mining Regions are identified, regional SDF units be set up within the District Mineral Foundation (proposed to be set up under the draft MMDR bill, headed by the District Collector). The composition and mandate are discussed in the diagram, in this section.

Different options may be explored by individual states, including creation of an SPV instead of SDF units within the Foundation or as an implementation entity. These options may differ structurally, from state to state, based on specific regional considerations and capacities, but their overall goal must align with the SDF principles.

This has already been discussed in the section on challenges. Capacity building of the existing regulators, planners, as well as the mining companies will be a key intervention to assist them in adopting this framework, implementing it and taking it further. Key agencies that will require skill upgradation on diverse aspects and significant capacity- enhancement include:

- Indian School of Mines and other educational institutions teaching/training mining professional- the curriculum will need to be significantly modified and the portfolio of faculty diversified, to include courses in social impact assessment, resettlement, stakeholder engagement, ecology and planning and regional economics to be able to bring out professional who will understand the value of the SDF and will know how to use it for their mining and management activities and decisions.
- Regulatory agencies like the state PCBs to review compliance against conditions that go beyond purely environmental considerations.
- Administration at the District level to be able to guide and support the SDF, enable the operationalisation at the field , especially on aspects related to land, natural resources and communities and lead coordination with other agencies that have a role to play. They will also need to develop capacities to moderate negotiations with appropriate safeguards, between mining companies and affected communities, oversee benefit sharing agreements and ensure compliance to them etc.
- Mining companies, large or small, to be able to understand the SDF and its implications for their mining exploration or operations and to bring in professionals that will help them meet their responsibilities and commitments in this regard;
- Local NGOs, CBOs and other concerned organisations in the mining areas that have a key role to play, both as implementing agencies working with the companies, as well as watch dogs who need to ensure that all key stakeholders are meeting their agreed responsibilities;
- Panchayati raj institutions- Gram Panchayats and Gram Sabhas, as they will be key partners in the process envisaged under the SDF. Three principles (4 , 5 and 6) place great emphasis on developing capacities of the community and their representatives to be able to negotiate, to chart out their SD vision and requirements, and to be able to hold mining companies and the government accountable for the promises and commitments made.

While key agencies have been flagged above, it is understood that the sector as a whole, and its institutions have to make a paradigm shift in the way mining will be done, and for that, capacity building and awareness raising will be applicable ubiquitously.

8.3.3 *Outsourcing as an option*

Not all the required capacities need be built internally. Outsourcing aspects to independent professional agencies, selected based on a screening and accreditation process may be considered, especially as the scale of capacity enhancement needed may not be possible in the required (short) time-frame. The MoEF is in the process of empanelling EIA experts. A similar process may be followed. The MoM is also working towards empanelling mining professionals for reviewing and enforcing mining plans. It may consider empanelling agencies that can assist the ministry in reviewing SD reports, monitoring performance in the field, independent auditing as well as to undertake due-diligence before award of leases. Such agencies can also be called to play a third-party observer role where required.

8.3.4 *Regulatory changes*

Each principle has been anchored on either existing acts/policies/ regulations, or on proposed ones, and indications have been added regarding the kind of changes needed to be brought into existing ones to be able to facilitate the implementation of the SDF. It is expected that the MoM will engage with the different ministries, primarily the Ministry of Rural Development, Ministry of Environment and Forests and the Ministry of Tribal Affairs to influence these changes, as they apply to aspects falling in their mandate.

8.4 *PROPOSED INSTITUTIONAL STRUCTURE*

Existing Institution
Funding arrangements?

SDF related Institution

Requirements

FOR DISCUSSION

<p>MoM Review/ take strategic decisions based on SDF indicators/ trends, performance Monitor State capacity on SDF</p>	<p>SDF Cell-IBM Headed by Jt Secy MoM Env specialist Social Sciences specialist Communications specialist MIS Unit</p>	<p>Country-level MIS:</p> <ul style="list-style-type: none"> • Collating data and disseminating information on SDF performance • Good practises in SDF- documentation and communication • International good practises 	<p>National Mineral Fund: Dovetailing SDF aspects as per MMDR Act 2010 Sec 48</p>
<p>State Mines Dept: Institute SDF Cell, declare 'mining regions' P2, institute and monitor regional agency/ies Approve spl project at region level, provide linkages to depts</p>	<p>SDF Cell- DMG (State) Head- Dir level Env Spl (10 yrs line) Social scientist (10 yrs indst exp) Tribal Dev Spl (as app) -10 yrs Biodiversity and ecology- 7-10 yr Coastal marine- 7-10 yrs MIS team</p>	<p>State-level MIS:</p> <ul style="list-style-type: none"> • Risk- based categorisation, review • Inputs in bid evaluation, input MIS • Seek and compile SDF indicator data • Periodic reporting on SDF criteria- state, centre, website, FIMI • Gather and disseminate best practises 	<p>State Mineral Fund: Funding assistance to Dist Min Foundation and as defined in MMDR</p>
<p>Dist Admin: Provide coordination support to regional agency with line departments reg regional projects Facilitate SDF related issues at Dist level</p>	<p>Spl Mining Regions Unit Under the Dist Mineral Foundation Core team Regional/infrastructure Planners- 7-10 yrs exp Mining specialist- 7-10 years line exp Env & Soc spl 7-10 yrs MIS Unit</p>	<p>Spl Mining Regions Unit Regional Baseline, review Strategic Impact assessment (every 5 years) through an independent agency Develop strategic regional management plan Coordinate with relevant line agencies for implementation of the regional plan Monitor and provide strategic advice to the state: Report to IBM * Prepare spl projects for region- funded through foundation/association/cluster-based</p>	<p>Dist Mineral Foundation Benefit sharing Funding support for regional infrastructure, spl projects, leveraging CSR efforts to regional scale Consultation and disclosure</p>

Notes:

*IBM- Regulator for MMDR and SDF (regulatory elements), based on SDF cell reports based on aspects monitored by them
IBM will need to augment their capacities to address the additional regulatory responsibilities, wrt SDF provisions. Link with State SDF Cells and Regional Agencies

The SDF takes a scientific approach towards mining incorporating improved efficiencies in the sector, based on a systems view and proposes the development of clear outcomes that are comparable and measurable. Given this approach, the use of Management Information Systems at each stage becomes as much a reporting system as a decision making tool and an internal structuring system for operational processes.

It is therefore necessary that the proposed MIS incorporate the following features:

- It must be well integrated and developed based on consultations and a broad consensus of all parties that will use it.
- On the regulatory side, to illustrate, it will involve the Ministry of Mines, MoEF, MoRD, State agencies, transport authorities, concerned inland waterways and port authorities, to name a few.
- Given the approach incorporating more disclosure, more and more aspects must be made available for the public at large to see, compare and monitor.
- For the above requirements, a web-based system is most suitable with agreed segments to be available in the public domain.
- Mining companies too, must be able to access the system and periodically update individual information, in the manner agreed- of course, physical verification by regulatory bodies will be in addition to this form of reporting and disclosure
- Internationally, there have been some similar exercises undertaken by governments in the operationalisation of Sustainable Development Frameworks, in various contexts and to various degrees. These must be used as guidance and inform this MIS as well.
- A dynamic system that develops progressively to incorporate greater sensitivity and response will also be one that is more representative of the ground realities while pointing in the direction of improvement.

The outline of a strategy for MIS development to address the requirements of the proposed SDF will be included in Phase II of this assignment.

Specific guidance to the state government as well as mining companies on implementation of the SDF follows in the next section.

The implementation of the SDF requires a number of tasks to be undertaken by state governments, as well as mining companies. This section comprises an outline of what will later become a more detailed guidance to state governments and the mining companies, regarding their role in the roll-out process.

These targeted guidance-notes provide an overall picture of the SDF implementation and its implications for mining companies. A more detailed operational guidance will be developed as a pilot in Phase II of the SDF in partnership with a selected/volunteering state and some representative mining companies.

9.1 GUIDANCE TO STATE GOVERNMENTS

Each state government from amongst the mineral states will be tasked with the roll out of the SDF in their own state. While on a number of aspects, the state governments are encouraged to customise and design the SDF programme and implementation, there are some common minimum steps each has to take to align to the national SDF. Here is a detailed guidance to the state governments.

9.1.1 Set up an SDF Cell within the Department of Mines and Geology

- a) Recruit staff for the Cell (refer to the institutional structure in earlier section). Select additional staff in accordance with the state requirements covering specific environmental and social issues (coastal, wildlife, tribal communities/Schedule V areas etc)
- b) Organise training for the staff on the SDF and in line with state criteria and priorities viz. mining.
- c) Develop a state level Sustainable Development Framework reflecting sustainable development priorities outlined in the MoM's SDF and state level mining/development priorities
- d) Develop detailed work plan of activities to be done under the SDF mandate with timelines- to be approved by the Secretary, Department of Mines and Geology (State Govt)
- e) Set up MIS cell within SDF Cell to take up a range of systems-based functions on a periodic and on-going basis [since this is a crucial element quality of the data and the system will be key]. The expected range of activities will fall under:
 - i) Baseline and system design;
 - ii) Tracking;
 - iii) Monitoring, or organising data from other agencies' monitoring (eg. IBM, SPCB etc);
 - iv) Reporting; and
 - v) Linking and setting up information flow channels.

9.1.2 *Prepare a state level risk matrix of leases*

The state SDF Cell needs to prepare a risk matrix at state level based on suggested and assessed criteria (state considerations); this could take into account mineralised areas (regions), extant mining clusters, watersheds, river basins, or districts, and will take into account environmental and social risks as defined by Principle 1. Further, all lease areas (existing as well as prospective) will be categorised into High-risk and Low-risk. The following tasks will then need to be undertaken:

- a) Based on the risk categorisation map, the SDF Cell will prepare, issue and disclose additional conditions for bidders (proposed under the draft MMDR bill) and operators of leases (PL to ML);
- b) Interpret monitored data to review and update risk criteria and management strategies (once every 5 years, or more frequently, if required)
- c) Identify key mining regions in the state that will need a regional approach to planning and strategic impact assessment (Principle 2). Define the boundaries of this Special Mining Regional Unit (sub-district or sub-block, as relevant).
- d) Identify high risk mining leases that need environmental conservation, and include such areas under the mineral conservation provision of the draft MMDR bill. Review this at periodic intervals (10 yrs)

9.1.3 *Establish District Mineral Foundations*

State to establish District Mineral Foundation for all districts with mining activities according to the guidelines in the revised draft MMDR bill (after it gets formally enacted).

- a) SDF Cell, in coordination with the District Collector to define representation, roles, criteria for selection of special projects, consultation and approval process, monitoring and evaluation process etc. in connection with sustainable development framework requirements
- b) Outline and disseminate guidance to identified agencies (Panchayati raj institutions), to undertake prior planning for utilisation of money from contributions from the mining companies operating in the district, as per the new conditions and processes identified under the revised MMDR bill), as applicable to SDF principles.
- c) Coordinate with the district administration to prepare a list of project affected families eligible for benefit sharing under the MMDR bill in the district. Disclose the list in the public domain when completed, taking 1997 as the cut-off date, or as advised under the bill).
- d) Define the mechanism and procedures through which the families can avail of the benefits. Communicate the mechanism and procedure to the eligible families through the district administration.
- e) Seek proposals on projects (from the regional mining agencies, gram panchayats, NGOs etc for sustainable development of the region.
 - i) Evaluate
 - ii) Approve
 - iii) Monitor

9.1.4 *Establish Special Regional Mining Unit within the District Mineral Foundation*

In districts/regions identified w.r.t Principle 2, institute a Special Regional Mining Unit within the District Mineral Foundation (ensuring fund flow linkages) and a broad mandate for sustainable development, led by the District Collector.

- a) Establish the unit and appoint the relevant staff (as guided in the institutional structure).
- b) Coordinate with the MoEF to undertake a strategic impact assessment through an independent and qualified agency. Link with ongoing programmes that seek to categorise leases or mining regions on the basis of comprehensive pollution indices.
- c) Based on the findings and recommendations, prepare an action plan for the implementation of the key recommendations. Get the action plan approved by the District Mineral Foundation and the state government. Delegate to various line departments the responsibility of implementing specific recommendations for the mining regions. Identify and develop special project proposals from this action plan for funding from the Foundation or the state Mineral Development Fund.
- d) MIS- ongoing monitoring or the implementation.
- e) Conduct a periodic review of the strategic impact assessment (at least once in 2-3 years) to check if additional measures need to be taken and if things are on track. Take strategic decisions on mining activities based on these reviews. Conduct a strategic impact assessment every 5-7 years depending upon the intensity of mining activities.

9.1.5 *Roll out a programme of SDF reporting in the state.*

- a) Circulate a format for SDF reporting to all lease holders in any stage of mining (prospecting or mining) and all scale of mining, seeking a self review against the SDF principles. Based on this first time review, encourage lease owners to develop a road map of continual improvement and demonstrate increasing compliance to following the SDF processes as well as meeting its requirements.
- b) Link state level SDF webpage with SDF website located in IBM on the one hand and MoM website on the other. Upload regular updates on SDF activities in this page.
- c) Require each leaseholder to prepare and submit an SDF report, to be displayed in the state SDF site. The lease holder will be free to decide on what aspects of SDF they want to report on and to what details, as long as there is a commitment stated in the report to be fully aligned to the SDF in a defined time frame.
- d) Identify and document good practices from these reports.
- e) Establish a good performance recognition award for performance on sustainable development parameters, based on the indicators developed in this SDF report. This is a suggestive list and every state SDF cell will develop these into state specific SDF indicators with ranking of these indicators to rate performance.
- f) Define incentives (in addition to recognition reward) to improve sustainable development performance. Roll out the incentive programme through clearly defined institutional structure.

Each Mining company is expected to adopt SDF principles in their mining activities over a period of time. This is of course based on the assumption that the mining companies can only begin adoption of the SDF after the state sets up the basic institutional mechanism for it. While Principle 1 and 2 are the direct responsibility of the Ministry of Mines and IBM as well as the State Governments, Principles 3 to 7 are directly applicable to mining companies. While the SDF is broadly based on the principle of voluntary adoption, some of the elements are already embedded in existing laws or in the draft MMDR bill (in the process of being enacted into law), which mining companies have to adhere to. The other elements of the framework relate to good practice, reduction of risks and addressing key impacts not completely regulated yet, or going beyond the regulations. Mining companies will increasingly be expected to demonstrate adoption of the SDF and disclose performance against the same. It is expected that regulations will also gradually reflect the same requirements over time.

The SDF roll out in the country is planned to be in phases with the initial phase focussing on voluntary adoption. The process can become mandatory if the adoption levels remain low, and the issues facing the mining sector, which was the reason for this SDF to be developed, getting aggravated over time. The SDF adoption will be actively monitored by the SDF cell proposed has to be set up in the IBM, with the MoM seeking regular updates from the IBM. Over time, it is expected that incentives and disincentives will be brought in to encourage responsible performance, and some of the elements will become mandatory.

This is guidance to the Mining companies to understand what they need to do to adopt the SDF.

9.2.1 *Understanding the risk category of the lease (Bidding for a New Lease)*

- a) Check the risk category allotted to the lease the company is bidding for. Check the status / current information on the specific issues identified as risks or significant impacts for the lease.
- b) Take into consideration additional capacity and resources (including budget) required to address the risks and impacts of mining in that lease area. Include expertise on tribes, biodiversity, water etc as the profile of the lease demands.
- c) Evaluate the total business risks involved in bidding for that area – time required for forest (if any) and environmental clearance, uncertainty of getting clearance, local community support and consent, past and ongoing conflicts, level of difficulty in getting physical possession of the land in the lease area, decision to purchase or go through the land acquisition act etc. Factor these business risks in decision to bid or in the bid offer.

9.2.2 *Actions for Reconnaissance and PL stages*

The SDF promotes an early assessment of social and environmental risks and a careful development of strategies and plans to identify, assess and manage the risks through the PL stage, into the ML, closure and post closure stages.

At the PL stage ensure at least the following:

- a) A consultation and prior consent process before entering villages and communities for exploration and drilling;
- b) Develop an appropriate Environmental and Social Management Plan that mitigates the impacts due to prospecting activities. This would include aspects like waste management, water management, movement in forest areas, potential impacts on wildlife, lease arrangements for land for drilling/explorations, compensation for damages, any small scale community engagement/CSR activities, local benefits etc;
- c) The ESMP along with regular updates on progress to be submitted to the IBM, in addition to reporting required under law to the Forest department, state pollution control boards, and the regional MoEFs.
- d) These ESMPs would later inform and influence the ESIA and ESMP etc that will get undertaken at the mining stage. By that time, there should be a deep knowledge of the local and regional issues and strategies in place that have been tested and are practical and good standards.

9.2.3 *Understanding the risk category of the lease (Existing operating Lease or for expansion)*

- a) Check the risk category allotted to the operational lease with the company. Check the status / current information on the specific issues identified as risks or significant impacts for the lease. Some of these should have already been managed at the time of the procurement of the lease (like forest clearance, addressing environmental impacts etc).
- b) Check if the risks identified for categorisation have been or are being actively tracked and addressed during operations, including the social aspects.

9.2.4 *Align environmental and social impact assessment and management systems to the SDF*

The SDF takes into account that mining companies will be at different levels in management of sustainable development aspects in their mines. It however encourages the companies to assess where they are and where they would want to be in a defined time period. There might be some who may be already doing most of what is required by the SDF, and those that have a big gap.

- a) Undertake a comprehensive gap analysis of the impact assessment existing management systems for an operating mine, or a proposed system for a new mine against the requirement of the SDF within six months of the roll out of the SDF. Develop an action oriented plan to

close those gaps in a manner that is compliant with the legal framework, but in a phased manner, also adopts and puts into action the SDF principles.

- b) Establish policies on environmental, health and safety and social management, as well as ethical functioning aligned to the SDF.
- c) In case there are gaps in the impact assessment studies (for example, the Social Impact Assessment or an appropriately scaled Biodiversity Impact Assessment was not undertaken, conduct an “as on date” assessment of the current issues, impacts and gaps in management systems, and develop a time bound action plan to mitigate current impacts, as well as strengthen the management practices accordingly. Prioritise actions based on the level of risks.
- d) For new leases, ensure that EIAs, SIAs, RAPs and Mining Plans cover the SDF to the extent relevant and appropriate. Provide specific reasons why any of the principles have not been specifically covered. The MoM and the MoEF can ask for more details on the SDF during award of the ML as well as environmental clearances respectively .
- e) Ensure that there is adequate expertise available to deal with certain SDF aspects. For example, if the lease is in a Scheduled V area, or an area with significant Scheduled Tribe population, the company should include in its resource team (internal or external) an anthropologist with local knowledge who can guide the community engagement and benefit sharing strategies. If the lease is in an area where there is significant water quality and availability issue, there should an expert on water management enabling the company to tackle the issue effectively, and help develop alternatives and/or water conservation strategies if required. It is expected that once the company has committed to following the SDF, it will start feeling the need to strengthen its resources accordingly.

9.2.5 *Response to specific requirements under Principle 2*

Principle 2 looks at how the special mining regions will manage regional impacts. While the primary responsibility of this lies with the District Mineral Foundation, mining companies will be asked to take additional actions as required to mitigate cumulative/regional impacts. The nature of such actions will be developed in a consultative manner by the District Mineral Foundation.

9.2.6 *Prepare a SD Report for Disclosure*

To demonstrate the level of adoption and performance against SD principles and monitoring indicators, mining companies will need to prepare and disclose an annual Sustainable Development report. The companies can choose to report in any internationally recognised reporting framework or choose to prepare their own framework. A suggested structure of the report will be developed in the pilot phase. The companies should set up their own targets and performance indicators, but broadly following the SD indicators and framework that has been provided in **Annex A**. The company can choose

to prepare mine level SD reports or corporate level reports, with specific reporting sections on each lease.

The SD reports will need to be submitted to the IBM (specific mechanisms for submitting such reports will be developed subsequently, after an initial pilot). The SDF cell in the IBM will disclose these reports on an annual basis. On receiving any feedback and queries from stakeholders on the SD reports, the SDF cell will direct those to the concerned companies with a guidance on actions to be taken, It is expected that the SD reporting process will have a stakeholder feedback and response commitment embedded anyways, and this will align to that process.

FOR DISCUSSION

This section of the SDF report comprises two parts. The first is an elaboration of the seven principles for incorporating sustainable development in the mining sector and the second part outlines key aspects of the implementation of the SDF. The proposed institutional structure (covering all levels of function), the existing challenges, guidance notes for state governments and mining companies on the general road-map to start implementation – this is supported by a table of proposed measurable indicators (covering process and outcome) and an outline of the MIS to be set-up.

Based on our understanding and discussions with MoM representatives, we suggest the following to be considered, in order to proceed to the next stage of operationalising the SDF.

- Joint workshop with MoM, MoEF, MoRD, MoTA based on this draft document, to achieve:
 - Broad consensus on principles, and implementation mandates, roles
 - Strategic agreement on the contours of cooperation on overlapping issues, in preparation (and prior to) a national level workshop
- National-level multi-stakeholder workshop to disclose the SDF. At this, a joint presentation led by MoM, in partnership with MoEF, MoRD, MoTA also presenting the agreed strategies to operationalise the SDF with joint cooperation.
 - At the workshop, outline and presentation on proposed pilot of State level SDF preparation (Proposed to be undertaken as Stage II of this assignment, with ERM India Private Limited)
- The pilot exercise may be undertaken with the volunteering state government and the scope of the exercise may be mutually evolved – this will require the state to commit time and resources, and extend cooperation.
 - The pilot exercise will contribute a model for a State-level and state specific SDF along with a clarity on its operational and practicable aspects
 - The exercise will also inform and help arrive at a more robust set of measurable/monitor- able/reportable indicators for the SDF

- **ANNEX A:
PROPOSED MONITORING INDICATORS**

The SDF will be considerably strengthened by monitoring the progress and impacts. The indicators serve two purpose:

- For the mining companies to benchmark and demonstrate continual improvement in the process of adopting SD principle. The indicators also provide the coverage of the SD reports expected to be prepared and disclosed by all mining companies as relevant to their scale of operations.
- For the IBM and MoM to track the level of adoption and overall progress of the SDF. In doing so, the nodal agencies will be able to use the information to drive more regulatory changes, as well as develop incentives and disincentives to improve adoption of the framework.

- **MINE LEASE LEVEL INDICATORS**

The SDF expects and encourages that mining companies start assessing and thereafter reporting their environmental and social performance on a regular basis to a wide range of stakeholders, thus underlining their efforts to minimize impacts from their mining activities, and enhance benefits.

The first column contains aspect-wise indicators at mining lease level. The second column lists the knowledge environment required to be in place for the indicators mentioned to be used, this includes relevant baselines, form type and periodicity of information/ data to be collected/ reported. Linkages between departments/agencies tasked with data collection, existing and additional, have been included in a subsequent table and note on suggested institutional arrangements. Some data currently being reported for regulatory compliance (eg. to MoEF) will be dovetailed into this system and additional requirements will need to be included.

The SDF is a new initiative and thus the old and new reporting requirements will need to be integrated into a single system for tracking, measuring and reporting.

Restating underlying assumptions that mining companies will be anyway ensuring:

- Regulatory compliance
- Scientific mining
- Ethical functioning

The following indicators are suggested for reporting:

Indicators: Measurable/assessable aspects	Requirement : Knowledge environment
Relating to Environmental aspects (P1, 2, 3, 6)	
<p>Biodiversity</p> <ul style="list-style-type: none"> • Number of national conservation list species under Wildlife Protection Act 1972 and the Biological Diversity Act 2002; and IUCN Red List species, with habitats in areas affected by operations; • The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place; • Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff. <p>Water</p> <ul style="list-style-type: none"> • Percentage and total volume of water recycled and reused; • Total Water Withdrawal by source; • Total water discharge by quality and destination <p>Environment</p> <ul style="list-style-type: none"> • Total amounts of overburden, rock, tailings, and sludges and their associated risks; • Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations; • Direct energy consumption by primary energy source; • Total direct and indirect greenhouse gas emissions by weight; • Weight of transported, imported, exported, or treated waste deemed hazardous as per applicable laws and rules (and under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally, if applicable) 	<p>Biodiversity: A robust biodiversity assessment and management plan.</p> <p>Water: A full process water balance calculation is essential for a mine site</p> <p>Environment:</p> <ul style="list-style-type: none"> • Incorporation of clean and renewable energy technologies into processes; • Total environmental protection expenditures and investments by type; • Greenhouse gas assessment and monitoring • Identification and quantification of hazardous waste use and /or generated by the mining activities and their management as a part of the EIA. • Risk assessment and Disaster Management Plan for emergencies related to Hazardous Waste.
Relating to Social and economic aspects (P1, 2, 4, 5)	
<p>Scheduled Tribe</p> <ul style="list-style-type: none"> • Total number of reported grievances involving rights of Scheduled Tribes and actions taken at the lease level; • Total number of operations taking place in or adjacent to Schedule V areas, and number and percentage of operations or sites where there are formal agreements and/or Tribal Development 	<p>Scheduled Tribes</p> <ul style="list-style-type: none"> • Enumeration and profiling of ST families in the area, and impacts on them. <p>Land and resettlement</p>

Indicators: Measurable/assessable aspects	Requirement : Knowledge environment
<p>and Consultation Plans with local communities (Scheduled Tribes)</p> <p>Land and resettlement</p> <ul style="list-style-type: none"> • Total number of operations where a comprehensive social impact assessment undertaken • Number and description of significant disputes relating to land use and rights of local communities. • Sites where resettlements took place, the number of households resettled in each, and what percentage were reported to have restored their quality of lives and incomes (preferably through an independent third-party assessment) <p>Other social impacts and Human Rights aspects</p> <ul style="list-style-type: none"> • Percentage of significant suppliers and contractors that have undergone screening on working conditions, labour and human rights and actions taken; • Number of grievances related to working conditions, labour and human rights filed, addressed and resolved through formal grievance mechanisms; • Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations pertaining to working conditions, labour and human rights <p>Community engagement, benefit sharing and contribution to socio-economic development</p> <ul style="list-style-type: none"> • Number of operations with formal consultation mechanisms with the local community (reported in their SDF reports) • Number of operations with functional grievance redressal mechanism in place, with the process formally disclosed to the local community. • Number of grievances being addressed at the project level. • The range (list) of documents being disclosed in the company website. • Number and value of community-managed assets created through benefit sharing investments in all operations. • Number of land losers/other project affected persons/local community employed in each operation. 	<ul style="list-style-type: none"> • Land acquisition plans and options • Land purchase Records • Grievance redressal tracking • Social Impact Assessment • Resettlement Action Plan based on household survey and consultations • Process documentation of the resettlement process • Minutes of meetings and consultation • Resettlement monitoring of each resettled / impacted household • Resettlement completion audits <p>Other social impact and HR</p> <ul style="list-style-type: none"> • Detailed list of contractors and workers • Contractor profiles and screening reports • Grievance documentation • Compliance register <p>Community engagement and benefit sharing</p> <ul style="list-style-type: none"> • Minutes of meetings/consultation • Grievance tracking and documentation • CSR plans • Agreements and sign off from the community on community assets • Skill assessment • Training strategy • Hiring/employment strategy

Indicators: Measurable/assessable aspects	Requirement : Knowledge environment
<ul style="list-style-type: none"> • Number of youth trained in useful skills. • Proportion of all petty contracts and total contract value awarded to local community • Contribution to any legally mandated fund/benefit sharing arrangements in each operation • CSR programme allocation and number of families/villages benefited. <p>Human Resources</p> <ul style="list-style-type: none"> • Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity. • Proportion of local workforce to total workforce; • Number of strikes and lock-outs exceeding one week's duration; • Education, training, counselling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases; • Rates of injury, occupational diseases, lost days, and absenteeism, and number of work related fatalities by operation and by gender; • Reporting on how freedom of association policy is implemented <p>Contribution to the local economy</p> <ul style="list-style-type: none"> • Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments. 	<p>Human Resources</p> <ul style="list-style-type: none"> • HR policy • Hiring strategy • Grievance /compliant management strategy • HSE policy • HSE plan and systems
<p>Relating to Mine closure and post-closure (P6)</p>	

Indicators: Measurable/assessable aspects	Requirement : Knowledge environment
<ul style="list-style-type: none"> • Amount of land (owned or leased, and managed for production activities or extractive use) disturbed and rehabilitated; • Number and percentage of operations with closure plans; • Number and percentage of operations with a formal consultation with the local community on closure plans and final land use; • Report on efforts on afforestation and biodiversity management in progressive mine closure plan implementation • Number of mines closed, rehabilitated and handed back (government or community) 	<ul style="list-style-type: none"> • Mine closure plan • Clarity on post-closure use and land ownership, system of transfer. • Research and documentation of effective post-closure use in various contexts for demonstration. • Availability of a variety of regulator-approved financial arrangements for miners to use for financial planning for closure. • MIS to track through mining plans to IBM and reported closures, post-closure transfers, reported and tracked abandonments at state level • Quality monitoring and environmental monitoring - benchmarking MIS for long term regulatory and SDF compliance
Relating to Assurance and reporting (P7)	
<ul style="list-style-type: none"> • Proportion of mining leases reporting along the SDF framework. • Increasing number of parameters on which reporting is being done. • Improved sustainable development performance as reported. 	<ul style="list-style-type: none"> • MIS based SDF reporting format with Indicators to report against • SDF website linked to states and MoM's website. • 3rd party audit framework

While mining companies are expected to start reporting more widely, the SDF places responsibilities on the Ministry of Mines and the state government (department of mines) to facilitate the process, provide enabling regulations, and take strategic decisions on the basis of SDF reports, as well as measures provided in SDF Principles 1 and 2.

The following set of indicators are not performance indicators but progress tracking indicators, to enable the Ministry to assess if the primary objectives of the SDF (of more sustainable and responsible mining) are being met and take course corrections where necessary. These are suggestive and are expected to evolve as SDF starts getting adopted across a wider group of stakeholders. This set of indicators needs to be read with the guidance to the state governments.

The first column contains the possible indicators to track for each principle of the SDF (1-7). The second column lists the knowledge environment required to be in place for the indicators mentioned to be used. Linkages between departments/agencies tasked with data collection, existing and additional, have been included in column 3 and note on suggested institutional arrangements. Some data currently being reported for regulatory compliance (eg. to MoEF) will be dovetailed into this system and additional requirements will need to be included. The institutional arrangements need to be seen with the flow chart on the institutional arrangement to implement the SDF.

Indicators: Measurable/assessable aspects	Requirement : Knowledge environment	Req. : Institutional aspects/support
Principle1: Risk based categorisation		
<ul style="list-style-type: none"> Track State-level parameters used to categorise risk levels of lease areas and management measures of state governments Over the medium term improved demonstrated capacity of bidders and operators to manage sustainable mining, in their bids and proposals.- increased representation of expertise in bidding party on environment, social/community, EHS, aspects Over the longer term: More investment in reconnaissance and PL stages on environmental and social risk identification and management as well as community engagement strategies. capacities) Long term: More scientific mining in High Risk Areas (underground, better technology to reduce footprint/ impacts) 	<ul style="list-style-type: none"> States to assign risk based category to all previously awarded leases Categorising new and potential mineralised areas according to this system Tracking the quality of bids and nature of proposals through a ranking system (monitoring)- State SDF Cell reports to Central SDF Cell to compile information 	<ul style="list-style-type: none"> Coordination and support from MoEF/ the Forest Department, ground water dept/ water resources, or data may be sourced from technical agency to undertake a 5-yearly mapping of canopy cover – institute ongoing process IBM and SDF cell in MoM- 1st stage SDF State level cell in Depot of Mines and Geology to undertake the exercise at state level, wrt (additional) state parameters MIS at SDF cell in MoM to track
Principle2: Strategic Regional Assessment to manage impacts		
<ul style="list-style-type: none"> Tracking regional impact management- (against baseline)- reduction and control of negative impacts like: <ul style="list-style-type: none"> Air quality: Emissions, dust etc Water quality and availability Other technical parameters w.r.t specific minerals/ regions QoL/HDI Indicators [performance against socio-economic baseline] Development interventions – infrastructure improvements financed by mining groups/associations/agency 	<ul style="list-style-type: none"> Baseline assessment of key regions of current and potential concentration of mining impacts. Planning/ development baseline for regions- MIS QoL and HDI indicators- District and sub-dist level (in line with spl mining region, where possible) MIS to record improvements, additions, changes in regional infrastructure, investments 	<ul style="list-style-type: none"> Baseline assessment by SDF Cell at State- reporting to SDF Cell at MoM for consolidation and yearly monitoring- additional fund flow requirements, etc. Link monitoring of QOL/HDI at Spl mining region level with DRDA.
Principle3: Mine-level impact management		
<ul style="list-style-type: none"> Improved regulatory compliance record at mine level Functioning grievance redressal mechanism Demonstrated and reported continual improvement- every 5yrs 	<ul style="list-style-type: none"> MIS at SDF cell (state) to link with IBM updates and assessments- continually updated dynamic baseline 	<ul style="list-style-type: none"> Formal channel of exchange and communication (link for information flow) between IBM and

Indicators: Measurable/assessable aspects	Requirement : Knowledge environment	Req. : Institutional aspects/support
<ul style="list-style-type: none"> • Reduction in recorded and reported conflicts, violations, issues- medium term • Improved record of ethical functioning- long term 	<ul style="list-style-type: none"> • MIS at SDF cell (state) to record and periodically disclose reported conflicts, violations, grievances, unethical practices within lease area and linked with it 	<ul style="list-style-type: none"> • SDF Cell at State level • Disclosure of exemplary good performance, severe violation (poor performance) on MoM website
Principle4: Addressing land, resettlement and other social impacts		
<ul style="list-style-type: none"> • A detailed Social Impact assessment being undertaken as a part of the EIA for the ML for all minerals and mines. • In the medium term- increasing number of mines acquiring land for the ML through purchase (willing buyer-willing seller) through consultative mechanisms; • More efficient use of land (less agricultural land, more waste land, less land per million tonnes of mineral etc.)* measured against state level and national benchmarks • In the long term – increasing trend of formal handing back land to the village/community • Increasing % of project affected families confirmed to have restored their incomes and livelihoods through an independent resettlement closure audit (in 3-5 years timeframe). 	<ul style="list-style-type: none"> • A mine-specific scope for a Social Impact Assessment (SIA)- to be prepared • Tracking of the various Social Management Plans emerging from the SIAs. Asking for a report on implementation of the SMP. • Keeping a record of the land acquisition process for every mine – details of land area, method of acquisition, time taken, number of land losers dealt with, numbers resettled, resettlement package provided.- MIS • National and state-level benchmarks for types of land coming under mining- MIS • Scope for a resettlement audit. 	<ul style="list-style-type: none"> • Lead role of the Mining company to undertake SIAs and resettlement • Reporting to the state SDF cell as a part of SDF reporting • Third party social consultants/NGOs/ Academic institutions to undertake Social Impact assessment according to the defined scope. • Coordination with the District Mineral Foundation for linkages/synergies on special projects.
Principle5: Community engagement, benefit sharing, and contribution to socio-economic development.		
<ul style="list-style-type: none"> • Increasing number of companies developing consultation mechanisms with the local community (reported in their SDF reports) PI • In the medium term, functional grievance redressal mechanism in place at every mine, with the process formally disclosed to the local community. PI • Increasing number of grievances being addressed at the project level. • A wider range of documents being disclosed at much more 	<ul style="list-style-type: none"> • Sub-block/village level QoL baseline as ref for SIA • ToR for the QoL surveys • <u>SDF reporting to include:</u> • Record of all community-level investments by mining entities • Tracking of stakeholder feedback on disclosure of project information • Record of consultation mechanisms adopted by mining companies in the district 	<ul style="list-style-type: none"> • Lead role of the mining companies to develop consultation, disclosure and grievance redressal processes. • Mining companies to conduct QoL surveys to assess impacts of project benefits • State SDF cell to keep records of such functional systems (gathered through SDF reports)

Indicators: Measurable/assessable aspects	Requirement : Knowledge environment	Req. : Institutional aspects/support
frequent intervals in the SDF website. PI <ul style="list-style-type: none"> • Improved performance at sub-block levels/ village level on composite QOL index indicators- continual improvement • Number and value of community-managed assets created through benefit sharing investments 	<ul style="list-style-type: none"> • Record of grievance mechanisms at the mine level and the district level 	<ul style="list-style-type: none"> • Independent qualified agencies to conduct QoL surveys.
Principle6: Mine closure and post-closure		
<ul style="list-style-type: none"> • -Medium term assessment of full closure achieved according to plan and within estimated costs • - Low or no incidence of non-compliant mine closure/ missed deadlines, recorded health related fallouts of improper mine closure. • - Long terms assessment of post-closure rehabilitation and use • -Reduced numbers of orphan/ abandoned mined out areas • -Long-term: Increased evidence of post-closure use of closed mine-sites. 	<ul style="list-style-type: none"> • Clarity on post-closure use and land ownership, system of transfer. • Research and documentation of effective post-closure use in various contexts for demonstration. • Availability of a variety of regulator-approved financial arrangements for miners to use for financial planning for closure. • MIS to track through mining plans to IBM and reported closures, post-closure transfers, reported and tracked abandonments at state level • Quality monitoring and environmental monitoring - benchmarking MIS for long term regulatory and SDF compliance 	<ul style="list-style-type: none"> • Information flow between IBM and state level SDF Cell's MIS •
Principle7: Assurance and reporting		
<ul style="list-style-type: none"> • Proportion of mining leases reporting along the SDF • Increasing number of parameters on which reporting is being done. • Improved sustainable development performance as reported. 	<ul style="list-style-type: none"> • MIS based SDF reporting format with Indicators to report against • SDF website linked to states and MoM's website. • 3rd party audit framework 	<ul style="list-style-type: none"> • Lead role of mining companies • SDF cell coordinates. • Independent auditors for 3rd party assurance

Note: There are some indicators that are relevant for more than 1 principle, especially those that are targeted at the lease level. This is because principles 4, 5, 6 and 7 are detailing of Principle 3 (mine level environmental and social management) and hence there are common indicators