

# Sustainable Initiatives In Indian Mining: A Corporate Social Responsibility Perspective

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## Abstract

The notion of corporate social responsibility (CSR) is frequently described as the incorporation of social, economic, and environmental considerations into a company's operations and its interactions with stakeholders on a voluntary basis. It is widely acknowledged that industries involved in resource extraction are leading the way in practicing CSR, with a particular emphasis on its significance in the mining sector. To make a meaningful impact, CSR should permeate every level of an organization. In this regard, scholars advocate for research that delves into the practical aspects of CSR rather than its policy aspects, with an emphasis on examining it from an internal perspective rather than an external one. Established management systems are considered valuable for implementing CSR practices, with various standards serving as the basis for frameworks. The advantages of consolidating all facets of CSR into a single sustainability management system (SMS) are often emphasized. Nevertheless, some critical researchers argue that the SMS approach could benefit from an externally oriented, stakeholder-driven, and value-based perspective. Instead of just "doing things right," the focus should shift to "doing the right things," given that companies frequently contend with a range of stakeholders. Aligning with the call for practical research, this thesis centers on stakeholder management within the context of management system thinking. The objective of this paper is to investigate how the extractive industry as a whole, and specifically companies in the metal and mining sector, enact CSR and how this management can be enhanced. The research strategy chosen is the case study method, involving two separate case studies within the mining industry. The forestry sector primarily appears to engage in CSR related to environmental concerns, whereas mining companies primarily concentrate on community engagement and development along with environmental matters. Both of the case companies have comprehensive policy frameworks in place for CSR and well-established operational systems for labor practices and environmental considerations. This suggests that certified management systems are effective tools for implementing CSR. However, certain other crucial CSR aspects, such as fair business practices and community engagement and development, are not fully addressed within the adopted management system. Consequently, there is a need to supplement management systems to achieve a more comprehensive integration of sustainable development principles.

**Keywords:** Corporate Social Responsibility (CSR), mining, industry, India, Company

## 1. Introduction

Corporate Social Responsibility (CSR) within the Indian mining industry represents a vital component of sustainable development and ethical business practices. Mining operations have the potential to exert substantial influences on local communities and ecosystems, encompassing environmental, social, and economic dimensions. Consequently, the Indian government has established a range of regulations and guidelines aimed at ensuring that mining firms undertake CSR initiatives to mitigate these impacts and make constructive contributions to society. The term Corporate Social Responsibility (CSR) encompasses the environmental, social, and human rights effects and initiatives of corporations, as defined by Ward and Fox in 2002. Numerous countries, both in the developed and developing world, take this concept and its practices seriously, as emphasized by Hopkins in 2003. CSR is assuming an increasingly prominent role in corporate narratives and actions, especially within the mining sector, as noted by Hamann and Kapelus in 2004. The global significance of CSR in mining can be attributed to the industry's potential for significant adverse social and environmental consequences and the criticism directed at mining companies by governments, non-governmental organizations (NGOs), and local community groups, as highlighted by Banerjee in 2001. CSR also holds a distinct position in mining due to the finite nature of mineral resources and the associated environmental and social impacts associated with mine closure, as pointed out by Warhurst and Noronha in 2000. The rationale behind corporate environmental and social reporting finds its origins in Agenda 21, a document adopted during the United Nations Conference on Environment and Development held in Rio in 1992. This agenda outlines a series of measures for industries to pursue sustainable development. One example is principle 10, which advocates for the disclosure of environmental performance data by businesses, as articulated by Warhurst in 1998. Since 1998, there has been a

growing and concerted international push, starting with the establishment of the Global Mining Initiative (GMI) and the subsequent development of the Mines, Minerals, and Sustainable Development Project, which received support from nine major mining companies. The formation of the International Council for Mining and Metals (ICMM) has positioned it as the industry's primary representative body, and the findings of the Extractive Industries Review (EIR) have led to the creation of the Extractive Industries Transparency Initiative, as discussed by Lahiri-Dutt in 2007. These global initiatives have compelled certain global mining corporations to acknowledge the necessity of obtaining a 'social license to operate' in developing nations, as underscored by Lahiri-Dutt in 2007. Mining companies ought to strive for a balanced focus on environmental, economic, and community-related issues. It is essential for representatives from these companies, government officials, and community members to collaborate in addressing the challenges that arise from mining operations. Frequently, there exists a lack of clarity among local communities, governments, and mining companies regarding their individual roles and responsibilities in the realm of mining development. This uncertainty often hinders their ability to take effective action or participate meaningfully in decisions pertaining to mining activities, as noted by Conway in 2003.

- ❖ Fair treatment of Rehabilitation and Compensation matters is essential. The company should ensure that the rehabilitation colony receives all necessary infrastructure facilities. Special consideration should be given to the challenges faced by landless households.
- ❖ Ensuring the preservation of environmental quality is essential, with a focus on addressing concerns such as air and water pollution, as well as the degradation of lands and forests.
- ❖ The company should allocate resources to enhance the human and physical infrastructure within the region. This includes providing education, basic services, healthcare, and training opportunities not only for employees and their families but also for the broader community.
- ❖ Preplanning for post-mine closure issues, including unemployment, income potential, migration, and environmental remediation, should be a proactive part of the discussion.
- ❖ Emphasizing effective governance, enforcing rules, and ensuring accountability should be central principles in both the rehabilitation process and the overall operation of the mines.

As indicated by Business for Social Responsibility (2007), Corporate Social Responsibility (CSR) not only poses risks to the mining industry but also presents a range of opportunities. It serves as a means for companies to secure their social license to operate, make meaningful contributions to sustainable development, and ultimately create value not only for shareholders but also for all stakeholders, including the communities and other entities affected by the company's operations. Cernea (2007) provides examples from various countries illustrating how project benefits are shared with those affected by the project. For instance, Colombia designates a specific percentage of benefits from hydroelectric plants for the development of rehabilitated areas. In Brazil, there is a principle of reinvesting a portion of royalties from hydropower projects into resettlement areas. Canada has adopted a strategy of forming partnerships with local communities to share equity. In China, key agencies are tasked with managing reservoir development funds and initiating development projects to benefit those who have been resettled.

In India, numerous companies engage in a wide array of initiatives encompassing healthcare, education, rural development, sanitation, micro-credit, women's empowerment, arts, heritage preservation, culture, and wildlife and nature conservation, among others, as noted by Arora and Puranik in 2004. Despite the increase in corporate profits on one hand, India still grapples with human poverty and development challenges on the other. This suggests that CSR in India is still in its early stages. Critics have also contended that CSR is often primarily a form of "green washing," involving the projection of a caring image without substantive changes to socially and environmentally detrimental business practices. Therefore, there is a pressing need to enhance business understanding and active involvement in promoting equitable social development, emphasizing it as an integral component of sound business practices.

In their 2008 research, Viviers and Boudler examined the Corporate Social Responsibility (CSR) performance of specific mining companies that were publicly listed on the Johannesburg Securities Exchange. They conducted their analysis by scrutinizing the 2006 Annual Financial Statements of these companies using content analysis techniques. According to their findings, mining companies tended to prioritize CSR issues that had a direct economic impact, such as HIV/AIDS, while giving less attention to CSR matters related to empowerment. Their study suggested that it would be advisable for mining companies to shift their focus towards issues concerning health and safety, as well as environmental concerns, which fall within the ethical and philanthropic dimensions of CSR. Jenkins and Yakovleva's study in 2006 aimed to investigate current patterns in the reporting of social and environmental impacts and concerns within the global mining sector. Their research provides an extensive examination of how methods for disclosing social and environmental information in the mining industry have evolved and the factors influencing this evolution. They conducted a chronological analysis of recent disclosure trends, utilizing a case study focusing on the world's ten largest mining firms. The findings revealed that while there were signs of growing sophistication in the development of social and environmental reporting, there existed significant disparities in the maturity levels of content and reporting styles among these companies. Research conducted on the Iron Ore mining industry in Goa reveals that numerous large

mining corporations have undertaken individual initiatives aimed at promoting environmental and social development. However, there appears to be a lack of structured Corporate Social Responsibility (CSR) policies and planning, particularly among the small and medium-sized players in the industry. As of now, CSR has not gained substantial prominence within the mining community in Goa. According to Banerjee (2004), it is imperative that future mining activities pay adequate attention to the social aspects of mining. He highlights the commendable community development efforts undertaken by several mining companies and underscores the importance of sharing the knowledge generated from these initiatives. For example, he mentions the progressive Resettlement and Rehabilitation (R&R) policy implemented by Coal India and the transfer of lessons learned from the World Bank's Coal Sector Environmental and Social Mitigation Project to other mining ventures. Such endeavors hold the potential to bring about significant improvements in the social dimensions of the mining sector in the country.

Hamann and Kapelus (2004) contended that it is valuable to evaluate Corporate Social Responsibility (CSR) narratives and practices by considering accountability and fairness as pivotal criteria. Brief instances from the mining industry in South Africa and Zambia imply that significant disparities still exist between the CSR endeavors of mining companies, on one hand, and the principles of accountability and fairness, on the other. They conclude that it's essential to approach companies' claims regarding CSR-related actions, especially those referencing a business rationale for voluntary initiatives, with a degree of skepticism. Insufficient attention to community development and engagement with landowners led to the closure of a sizable copper mine in Papua New Guinea. Similarly, community protests for alternative livelihoods led to the abandonment of the Phulbari coal mine project in Bangladesh in 2006, as highlighted by Lahiri-Dutt in 2007.

## **2. Regulatory Framework**

The Companies Act of 2013 introduced a requirement for companies meeting specific thresholds in terms of net worth, turnover, or net profit to allocate a portion of their profits toward Corporate Social Responsibility (CSR) initiatives. Mining companies frequently fall within these criteria, obliging them to earmark funds for CSR activities. Mineral resources play a pivotal role in the industrial and, consequently, socio-economic progress of the nation. They serve as primary raw materials for key heavy and essential industries such as thermal power generation, iron and steel production, aluminum processing, copper smelting, lead and zinc refining, among others.

What distinguishes mineral resources from other natural resources is their non-renewable nature, necessitating meticulous mining, processing, and utilization with a "zero waste" approach. It's noteworthy that, until now, numerous mines in various mineral-rich states of India have been leased out, with leaseholders typically extracting the most valuable minerals and leaving behind lower-grade ones, which are considerably more abundant in quantity compared to high-grade minerals. Over time, these neglected lower-grade minerals become lost amid the mine sites' overburden. Furthermore, many mining companies employ outdated technology, resulting in substantial resource losses and contributing to significant noise and dust pollution in the vicinity.

Crucial practices like backfilling mined areas and maintaining their productivity are seldom carried out. Auctioning mines with a well-defined plan for resource development and rigorous implementation would bring benefits to all stakeholders, including governments. This approach would promote industry prosperity, conserve minerals, and ensure that mined areas remain productive and habitable even after the completion of mining activities.

## **3. Focus Areas**

CSR endeavors within the Indian mining sector typically concentrate on various areas, including education, healthcare, environmental preservation, livelihood enhancement, infrastructure development, and community well-being. These initiatives are designed to enhance the quality of life for individuals residing in and around mining regions. Corporate Social Responsibility (CSR) represents a constructive step toward advancing sustainability in the industry, manifesting the practical realization of sustainability objectives. CSR serves as a mechanism for companies to shape their attitudes and strategies concerning their relationships with stakeholders, encompassing investors, employees, and local communities, all within a widely accepted and appreciated framework. Within the mining sector, progress along the three dimensions of sustainable development—economic, environmental, and social—can be accomplished through various means. This includes fostering economic development, investing to generate revenues that secure future development and the long-term well-being of communities. Environmental protection measures should be emphasized, focusing on minimizing the environmental impacts associated with natural resource extraction and ensuring that mined lands are rehabilitated for future uses. Additionally, promoting social cohesion and reducing the social and cultural disruptions experienced by communities, as well as maintaining open dialogue with stakeholders and transparent operational practices, should be given significant priority.

#### **4. Education and Skill Development**

Numerous mining companies invest in educational and skill development initiatives aimed at enhancing the employability of local residents. These efforts can encompass the establishment of schools, provision of scholarships, and the offering of vocational training programs. To ensure the sustainability of mineral mining activities, the implementation of Corporate Social Responsibility (CSR) programs holds immense significance for mine operators, the surrounding community, and governmental bodies. In the planning and execution of CSR programs, it is crucial to engage all stakeholders right from the outset, fostering transparency at every stage. Mine owners should formulate compelling CSR initiatives that effectively utilize available resources while safeguarding both the environment and the interests of all stakeholders involved. This approach will significantly contribute to the smooth operation of mining activities and facilitate rapid socio-economic development within the country. The issue at hand revolves around the skill development of India's youth and how Corporate Social Responsibility (CSR) programs initiated by businesses can play a pivotal role in addressing this concern. India faces a significant challenge in its efforts to bolster employment opportunities, particularly as it contends with the annual influx of more than 12 million individuals into the labor market. Notably, the urban poor have been particularly hard-hit in their attempts to recover from the adversities wrought by the pandemic.

Skill development emerges as a crucial tool for empowering today's youth and securing their future prospects. Regrettably, a substantial proportion of young Indians lack access to vocational education, a vital asset for attaining quality employment. While India's educational system is endeavoring to adapt itself to the evolving needs of the labor market, it remains imperative that the youth do not encounter undue difficulties in seeking employment opportunities. Presently, a considerable portion of students, whether formally educated or not, lack the requisite job-related skills. Bridging this skills gap is of paramount importance, and in this regard, skill development initiatives can prove immensely valuable.

##### **4.1 The Importance of CSR Activities in the Development of Skills for Socioeconomic Growth**

The Sustainable Development Goals (SDGs) place a strong emphasis on the involvement and active participation of the younger generation. These goals, introduced by the United Nations in 2016, are designed to advance the global development agenda through 2030 and beyond. When we consider India's demographic landscape, where over 62% of the population is of working age and more than 54% is under the age of 25, it can be seen as either a challenge, an opportunity, or a demographic advantage. Having a capable workforce is paramount for the overall socio-economic progress of the nation. Therefore, it becomes imperative to provide vocational education to the workforce, transforming this demographic challenge into a valuable asset. Government schools and institutions that cater to students from lower-income backgrounds often require additional resources to adequately prepare graduates for life beyond their academic years. This is due to outdated infrastructure, a shortage of teaching and learning materials, and a deficiency in teaching staff. This is precisely where businesses, through their Corporate Social Responsibility (CSR) initiatives, can collaborate with the government to create an environment conducive to learning. They can achieve this by introducing educational materials, offering scholarships, providing mentorship opportunities, and extending vocational support. These interventions have the potential to significantly fortify the educational foundation necessary for students to thrive in the workforce.

##### **4.2 Initiatives Launched by the Indian Government**

The Indian government has implemented several measures to promote skill development, including initiatives like Skill India, which is also recognized as the National Skills Development Mission of India. This program, launched by Prime Minister Narendra Modi in July 2015, has a goal of providing skill training to more than 300 million individuals in India across various skill sets by the year 2022. Through its flagship program, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), the government has already imparted training to nearly 10 million young people.

##### **4.3 Corporate Social Responsibility (CSR) and the Development of Skills**

In the quest to achieve the ambitious livelihood objectives while ensuring the mission's sustainability and quality, both private and public sector enterprises find ample opportunities to actively participate and make a meaningful impact through their Corporate Social Responsibility (CSR) programs. Investment by these industries in enhancing worker skills presents a compelling business case, as it is evident that skilled workers play a pivotal role in driving the nation's long-term economic growth. This investment not only fosters a competitive and proficient labor market but also aligns with the social responsibility objectives of these industries, benefiting all parties involved. Furthermore, from an ethical perspective, businesses are obligated to cultivate the capacity of human resources in a sustainable manner. Additionally, the business sector possesses a wide array of tools and significant influence within the skill development ecosystem. Their contributions must extend beyond financial support to include resources, infrastructure, equipment, and knowledge. These enterprises boast experienced personnel whose expertise and insights are invaluable for achieving this goal.

#### **4.4 Corporations oversee Indian youths' vocational education**

Industries are exceptionally well-suited to impart knowledge and expertise to the next generation of workers. Moreover, there are few entities better equipped to identify and address the skills gap and the specific skill sets required within the industrial sector than companies themselves. Companies possess an acute awareness of the shifting dynamics in market demands and are often among the first to identify emerging or rapidly growing industries that have the potential to generate employment opportunities. Their penchant for innovation contributes significantly to the expansion of skill development initiatives. Participating in programs that promote skill development affords the corporate sector numerous strategic advantages. When companies engage in efforts aimed at enhancing the skills of at-risk youth, they not only fulfill their Corporate Social Responsibility (CSR) agendas but also create a positive and enduring impact on the communities they serve.

#### **4.5 The Indian Market**

Having a proficient workforce at their disposal allows businesses to enhance production, efficiency, and simultaneously reduce operational costs. There is ample room for young individuals to undergo retraining and upskilling, which can help companies better prepare for the future. The corporate sector has a remarkable opportunity to actively engage in and contribute to the achievement of the Sustainable Development Goals (SDGs). As a result, leading organizations and sustainability experts advocate for businesses to play a role in realizing these global objectives. In this sustainable strategy, skill development is accorded the appropriate emphasis. Skill development is explicitly mentioned in Schedule VII, which outlines the components of a company's CSR program that must adhere to the statutory CSR requirements of Section 135 of the Companies Act 2013. Additionally, several other mandated activities included in this schedule have direct or indirect connections to skill development. It is worth noting that a significant number of companies have recently prioritized skill development as a central component of their CSR strategy.

#### **4.6 How Corporate Social Responsibility (CSR) can Benefit the Business Sector**

Allocating CSR resources to skill development is essential to elevate its strategic significance and impact. Corporate organizations that prioritize CSR should be willing to collaborate with government entities, educational institutions, non-governmental organizations (NGOs), and training providers to actively support skill development initiatives. Some points as follow:

- ❖ Corporate entities engaged in CSR initiatives should conduct a comprehensive study of the socioeconomic conditions in the regions where they operate. This study should encompass an assessment of the skill profiles in those areas, both in terms of supply and demand. This approach allows for the identification of any skill gaps and the development of programs to address them.
- ❖ Large corporations can empower startup personnel to reach their full potential by offering training tailored to their specific needs. An increasing number of startups in India are driving both social and economic progress.
- ❖ Companies should regularly update the skills of their supply chain workers, which undoubtedly yields significant business benefits in terms of improved productivity and service quality.
- ❖ Employers should leverage their ability to identify forward-looking skill sets. These new sectors can be identified by evaluating technological advancements and addressing challenges like climate change, water scarcity, and the energy crisis.
- ❖ To bridge the "skill divide," the corporate sector can play a pivotal role in promoting more inclusive skill development initiatives. In addition to enhancing accessibility for women and other underrepresented groups, there should be a strong emphasis on creating opportunities for individuals with disabilities (PwDs).
- ❖ Skill development is widely recognized as a crucial element of nation-building when considered as a CSR activity. Indian corporations should harness their resources to address the gap between current and desired skill levels.
- ❖ Given India's substantial pool of youthful talent, the country has the potential to become a global hub for skills. This talent should be harnessed to drive economic prosperity. Long-term results stemming from sustained CSR efforts in skill development have the potential to transform society and the nation.

### **5. Healthcare**

Enhancements in healthcare access are facilitated by the establishment and support of medical facilities such as hospitals, clinics, and mobile medical units. Additionally, CSR initiatives commonly encompass preventive healthcare campaigns and awareness programs. Corporate Social Responsibility (CSR) pertains to the responsibility of businesses to contribute to the improvement of their local communities and society as a whole. Since the introduction of CSR legislation in 2014, the Indian business landscape has made significant strides towards increased responsibility, with CSR serving as a primary indicator of stakeholder expectations for organizational conduct. Effective corporate outreach initiatives should be closely aligned with a company's business model, deliberate, and sustainable. To be impactful, these efforts must demonstrate value not only to employees, stakeholders, and consumers but also to the communities where the company operates. For corporate philanthropy to yield long-term success, CSR must be regarded as a fundamental strategic priority for businesses. The healthcare sector in India can significantly benefit from CSR support. Recent data indicates that Indian corporations allocated as much as Rs 6,947 crore for healthcare activities in FY2020-

21, including contributions toward COVID-19 relief efforts. While companies have swiftly adapted to address current health, economic, and social needs, the greatest impact can be achieved through investments in medium- or long-term commitments, such as healthcare infrastructure development. Although private hospitals offer top-notch care, their services are often beyond the financial means of most citizens. On the other hand, public hospitals may be more affordable but frequently grapple with overcrowding and resource constraints. Despite substantial progress in increasing the country's average life expectancy and reducing infant mortality rates, the COVID-19 pandemic has underscored the heightened urgency in addressing "foundational" challenges, including healthcare, education, climate change, and inequality. Efforts aimed at achieving universal access to high-quality healthcare and promoting preventive awareness have often been short-term and insufficient. CSR initiatives hold the potential to lead healthcare innovation by bolstering infrastructure capabilities and enabling innovation through private-sector funding.

**Collaborative Approach:** Achieving comprehensive and effective social change extends beyond the capacity of any single organization. Given the immense challenges within India's healthcare system, it is imperative to collaborate with the government and like-minded organizations to drive meaningful transformation. Corporate partnerships yield increased innovation, the development of replicable models, and the opportunity to harness the unique strengths and expertise of each company. Collaboration enables companies to transcend their individual capabilities, ultimately benefiting society through combined intelligence.

**5.1 Focus Areas:** As we transition into a post-pandemic phase of recovery, Corporate Social Responsibility (CSR) has assumed heightened importance. To effectively direct philanthropic efforts, there is a strategic need to shift focus toward collaborative CSR. Several key elements can stimulate this transformation:

**5.1.1. Primary Healthcare:** Primary healthcare encompasses a wide array of healthcare services and serves as the first line of defense against diseases, exerting a significant influence on overall healthcare costs. This domain offers fertile ground for the integration of innovative technology and delivery models to address health issues with reduced clinical intervention and fewer physical hospital visits. Devoting CSR funds to strengthening the primary healthcare response system is critical for ensuring healthcare accessibility for all. With an emphasis on wellness, nutrition, and mental health, interventions and early detection models can enhance basic health and promote citizen focus on hygiene and sanitation.

**5.1.2. Secondary Care Infrastructure:** Investment in technology-enabled clinical interventions and workflow enhancements can facilitate access to affordable, high-quality secondary care infrastructure. Leveraging modern technology and digital tools allows healthcare facilities to extend their reach even to the remotest corners of the country. Companies with manufacturing plants and distribution networks in Tier II and Tier III locations can contribute significantly to the development of such infrastructure, fostering healthier and more vibrant communities.

**5.1.3. Healthcare Financing:** Establishing a pool of CSR funds that can be used to co-finance or partially fund insurance programs for middle- and low-income segments of the population can substantially alleviate the healthcare cost burden on society.

**5.1.4. Skilling:** There is a pressing need to recruit and upskill India's healthcare workforce. CSR can lend support to various skilling programs that employ technology as a means to serve this purpose. Additionally, this approach can help enhance the skills of the existing healthcare workforce to deliver services through technology-assisted models. Innovative technology-driven models can play a pivotal role in realizing the goal of inclusivity. CSR initiatives, championed by purpose-driven organizations, hold immense potential in addressing the critical challenges plaguing India's healthcare system.

When formulating a CSR strategy and selecting projects, companies should advocate for and actively contribute to sustainable development across our nation. There is ample opportunity for companies to enhance the overall well-being of our citizens; they simply need to identify the appropriate avenues and allocate their funding more effectively. It is high time for CSR to play a transformative role in shaping the future of healthcare in the country. The healthcare sector in India stands to gain significantly from the support of CSR initiatives. Recent reports indicate that Indian corporations collectively allocated as much as Rs 6,947 crore for healthcare activities in FY2020-21, including contributions toward COVID-19 relief efforts. While companies have swiftly adapted to address the immediate health, economic, and social needs, the most profound impact emerges from investments in medium- to long-term commitments, particularly in the healthcare infrastructure. While private hospitals offer top-notch care, they often remain out of reach for a majority of our citizens. On the other hand, public hospitals may be more affordable but often grapple with issues of overcrowding and resource constraints. Despite considerable strides made in increasing the country's average life expectancy and reducing infant mortality rates, the COVID-19 pandemic has underscored the urgent need to address fundamental challenges, including healthcare, education, climate change, and inequality. Efforts aimed at achieving universal access

to high-quality healthcare and promoting preventive awareness have often been short-lived and lacked depth. CSR initiatives can lead the way in healthcare innovation by bolstering infrastructural capabilities and facilitating innovation through private-sector funding.

## 6. Environmental Initiatives

Considering the environmental impact associated with mining operations, companies often make investments in activities such as reforestation, watershed management, and measures to control pollution. Sustainable mining practices may also be adopted to minimize harm to the environment. CSR, often defined as the integration of social and environmental considerations into a company's business operations and interactions with stakeholders on a voluntary basis (Dahlsrud, 2008), has a rich and extensive history. The origins of CSR can be traced back to the Industrial Revolution, with emerging businesses demonstrating a concern for the well-being of their employees and striving to enhance their productivity. The 1950s marked the "philanthropic" era, characterized by companies donating to charitable causes. Subsequently, the period from 1953 to 1967 was designated the "awareness" era, during which businesses became increasingly cognizant of their broader responsibilities and engagement in community matters. The years spanning 1968 to 1973 were termed the "issue" era, as companies started to focus on specific environmental concerns such as urban decay, racial discrimination, and pollution. In the "responsiveness" era that followed, companies began addressing CSR issues with greater seriousness (Carroll, 2008). Notably, tree planting and forest restoration have now emerged as crucial pathways toward achieving India's commitment to net-zero emissions by 2070, a pledge made at the COP26 climate conference held in Glasgow last year. It is undeniable that businesses, regardless of their size, contribute significantly to carbon emissions as they pursue profit maximization. India made history by becoming the first country to mandate corporate social responsibility (CSR) through the Companies Act (2013), requiring companies meeting specified financial criteria to allocate 2 percent of their average net profit to CSR activities.

The recent transition from Business Responsibility Reporting (BRR) to Business Responsibility and Sustainability Reporting (BRSR), mandated by the Securities and Exchange Board of India (SEBI), is a positive development. It offers companies the opportunity and platform to engage in broader social and environmental initiatives. This shift aligns with international standards, particularly Principle 6 of the Responsible Business Conduct guidelines (RBC), which calls for corporations to take action in safeguarding and restoring the environment. In the current landscape, shareholders and consumers are playing a pivotal role in pushing corporations to prioritize sustainability, with a strong focus on environmental concerns. This emphasis holds significant relevance for a country like India, which grapples with issues such as poverty and environmental degradation, both of which are intricately interconnected. However, the contribution of businesses towards environmental restoration efforts in India, as indicated by the Bonn Challenge report, has been somewhat disappointing. Out of a total area of 9,810,944.2 hectares targeted for restoration over six years, private companies have reported involvement in only 193,290.3 hectares (2%). It's worth noting that this data may not entirely reflect the true picture due to limitations in data collection methods.

Recent reports from CDP, an international non-profit organization, suggest that Indian corporations may not be fully transparent in disclosing their impacts on climate change, water scarcity, and deforestation. This underscores the need for improved corporate accountability and transparency regarding their environmental commitments and actions. When compared to other complex societal issues such as education, poverty, health, and sanitation, which have historically been focal points for corporate attention, environmental concerns have not received the same level of emphasis. A quick examination of Corporate Social Responsibility (CSR) spending data from the last seven years on the Ministry of Corporate Affairs' Data Portal in India reveals a notable concentration of CSR spending in the education sector, accounting for an average of 38% of total spending. Health and sanitation follow closely at 22%, with rural development at 10%, while the environment sector lags behind at 8%. Even within the environmental sector, the preferred areas for CSR spending tend to focus on initiatives like renewable energy projects and environmental awareness campaigns, with minimal allocation towards tree planting, the restoration of natural resources such as water bodies, forests, and grasslands. Notably, the agroforestry sector has received limited ongoing funding, aligning with both livelihood improvement and carbon sequestration objectives. This persistent bias towards education, poverty alleviation, health, and sanitation has remained consistent since 2014, prompting a need for proactive reevaluation and corrective measures. Forests, given their remarkable capacity for carbon sequestration, present a significant opportunity to contribute to achieving net-zero targets. However, realizing this potential necessitates collaboration among all stakeholders. The United Nations Decade on Ecosystem Restoration seeks to halt and reverse ecosystem degradation worldwide, aiming to restore 350 million hectares of degraded land globally by 2030, including 26 million hectares in India. Prioritizing restoration within various environmental initiatives is crucial, involving government, non-governmental organizations, and private entities, including corporations.

The declining budgets of forest departments in several states raise concerns that can potentially be mitigated, at least partially, by corporate contributions from their CSR funds. One of the key challenges faced by corporations when implementing restoration programs, including tree planting, is the extended time required for these initiatives to reach

fruition compared to other social activities. Coupled with this, there is a scarcity of qualified implementing agencies, including NGOs, and a lack of supportive policy measures that would streamline the selection of areas, especially degraded forests, for restoration efforts. Additionally, since forest restoration activities are technical in nature, they demand appropriate training and capacity-building interventions. State forest departments also play a critical role in ensuring the availability of high-quality planting materials and offering necessary technical guidance for various forest restoration activities. Regardless of whether the targeted areas are within forests or on private or institutional lands, it is imperative to consider the interests of local communities and provide them with the means to actively participate, ensuring a participatory approach for effective and successful outcomes. In addition to these hurdles, there have been instances of geographical biases, convenient interpretations of activities, camouflage tactics, and a lack of commitment among companies, which undermine the primary objective of achieving sustainability goals.

A 2020 study by WWF titled "Tree Planting by Businesses" in European countries found little to no evidence that businesses pay adequate attention to tree planting or recognize the broader role of trees in a holistic context. The emphasis appears to be solely on the quantity of trees planted. This underscores the need for a shift in corporate attitudes, encouraging a gradual transition from a focus solely on tree planting to a more comprehensive approach that encompasses multipurpose forest restoration. Indian corporations, being major drivers of the development process, carry the responsibility of maintaining a delicate balance between development and environmental conservation. They should view mandated provisions as opportunities to become catalysts for sustainable development by extending their commitment beyond CSR requirements. This entails refraining from geographical biases, camouflage tactics, and greenwashing. There is a compelling need for a prioritized shift from the social sector to the environmental sector, with a strong emphasis on carbon-sequestering avenues like afforestation and restorative approaches within the CSR spending patterns of Indian corporations. Effective coordination among implementing agencies, especially NGOs, their capacity building, and training, should be ensured through an integrated approach that engages all stakeholders. States should also reassess existing mechanisms and policy frameworks, aligning them with restoration objectives and devising strategies to facilitate active corporate involvement. This reimagined and revitalized corporate approach has the potential to strike a genuine balance between business interests and environmental preservation, helping India achieve its net-zero targets.

## **7. Livelihood Development**

Corporate Social Responsibility (CSR) initiatives can be directed towards creating alternative livelihood opportunities for communities impacted by mining activities, particularly those who have lost their traditional means of income due to these operations. In many mineral-rich states across India, illegal mining activities have become widespread, leading to severe consequences. These consequences include substantial revenue losses for both state and central governments, environmental pollution in local communities, various forms of harassment endured by residents, extensive damage to forests and water bodies, and the loss of valuable minerals along with the overburden. As a result, mining companies engaged in illegal practices benefit at the expense of these detrimental outcomes, ultimately leaving the affected areas in a state of devastation.

Therefore, the recent decision by the Indian government to auction mining rights presents an opportunity to entrust mines to technically advanced and experienced mining companies. During this process, it is crucial to ensure that all acceptable grades of minerals are extracted, with low-grade minerals being upgraded and preferably sold to domestic industries. Furthermore, the terms and conditions outlined in the auction should compel successful bidders to prioritize environmental sustainability. This includes protecting valuable resources such as forests, water bodies, and soil, as well as implementing measures like backfilling mined areas and rainwater harvesting in the remaining pits to restore productivity and habitability to the mining area.

Prior to commencing mining activities, a thorough assessment of mineral reserves of varying grades at different locations, along with an evaluation of forest and water resources, is essential. The mining plan should be meticulously formulated before the auction process. This comprehensive plan should encompass estimated quantities of minerals to be extracted, the location and methodology for upgrading low-grade minerals, steps for safeguarding forests and water resources, the backfilling of mined areas using overburden and topsoil, rainwater harvesting in the mine pits, rehabilitation of local residents, including provisions for employment, and the overall protection of the environment.

To explore corporate social responsibility (CSR) practices within the extractive industry and examine the existing research on CSR management within this sector, I conducted a literature review encompassing approximately one hundred studies that specifically delved into mining, forestry, and oil. I chose the literature review as the initial step in my research journey because it allowed me to delve into the field of interest and identify gaps in the existing body of literature.



The review revealed that research within these industries tends to emphasize various CSR sub-domains. In the case of the mining industry, research predominantly centers on community engagement and development, as well as environmental concerns. This focus is logical given the substantial societal and environmental impacts associated with mining operations. Conversely, forestry research primarily concentrates on environmental issues, with a notable emphasis on sustainable forest management. Notably, the most comprehensive and practically applied research pertains to the oil industry, where a wide array of core subjects have been examined. An exception is the aspect of sustainable resources, which has received limited attention, aligning with the understanding that oil is a non-renewable resource. Partnerships with governments, business associations, and various organizations dedicated to sustainable development are a common practice in the mining and oil industries. Similarly, the adoption of Corporate Social Responsibility (CSR) principles, standards, and tools is prevalent. However, there has been limited research on the extent to which these initiatives are fully integrated into and effectively executed within the core business operations. In contrast, the extractive industries have embraced a wide array of standards, guidelines, methods, and tools for CSR practices, covering a comprehensive range of core subjects. Conversely, the forestry industry appears to be guided by only a few initiatives, primarily centered around sustainable forest management. This focus places significant emphasis on aspects like forest certification and eco-labelling. In essence, while the extractive sectors have incorporated numerous CSR measures across various facets of their operations, the forestry industry is primarily oriented towards sustainable forest management, with forest certification and eco-labelling playing pivotal roles (Dauvergne and Lister, 2010; Lazar, 2003; Panwar and Hansen, 2008; Wang, 2005; Vidal and Kozak, 2008).

### **8. Infrastructure Development**

Companies have the option to construct and uphold infrastructure such as roads, bridges, and other essential facilities in regions affected by mining activities, thereby enhancing accessibility and connectivity. Worth noting is the author's personal experience, having visited numerous mining areas in Odisha and various other parts of India during the early 1980s. In light of these observations, the author conceived an integrated development framework for mining areas, termed "MAHA" (Mines – Minerals And Habitat). This initiative aimed to facilitate diverse advancements within mining sites, simultaneously safeguarding the environment and ensuring their productivity even after the conclusion of mining operations. In this project, it was envisaged to adopt best available technology for implementing the followings;

- ❖ Developing an improved mining plan that minimizes forest disruption, avoids harm to existing water bodies, and conducts high and low-grade mineral extraction in a scientifically responsible manner.
- ❖ Effectively managing overburden materials while preserving topsoil for future reforestation initiatives on both overburden areas and nearby barren lands.
- ❖ Enhancing the quality of lower-grade ores and forming agglomerates from ore fines, all within the mining site.
- ❖ Repurposing mining waste materials for constructing mine roads, cost-effective housing, and township development for mine employees in the local area.
- ❖ Safeguarding existing water bodies and implementing rainwater harvesting in both groundwater and mine pits for various purposes, including mineral processing, agriculture, animal husbandry, fishing, and domestic use.
- ❖ Promoting afforestation through the cultivation of rapidly growing, oil-producing, and commercially valuable trees such as bamboo, teak, and sal, on overburden areas and in nearby deforested lands.
- ❖ Initiating comprehensive health, education, and socio-economic programs, particularly targeting individuals affected by mining activities. These programs include skill development and encouragement for active participation in mining and related endeavors to improve their socio-economic well-being.

### **9. Community Engagement**

Establishing robust relationships with local communities is of paramount importance. Companies actively engage in constructive dialogues with community leaders and residents to gain a comprehensive understanding of their needs and apprehensions. Within the mining sector, Social Impact Assessment (SIA) is a frequently employed tool, alongside mechanisms designed to facilitate social investments (Esteves, 2008a,b) and foster interactions between the company and the community (Kemp, 2010). The oil industry also widely adopts SIA (McPhail and Davy, 1998), often complemented by other evaluation tools such as Health Impact Assessment (HIA), Environmental Impact Assessment (EIA) (Utzinger et al., 2005), and various integrated assessments (Anderson and Bieniaszewska, 2005; Lilien and Anwar, 2008). In all three sectors—mining, forestry, and oil—there is a noticeable practice of disclosure, and the trend towards incorporating sustainability concerns is increasingly prevalent (Jenkins and Yakovleva, 2006; Panwar et al., 2006; Vidal and Kozak, 2008), with the Global Reporting Initiative (GRI) playing a substantial role in this evolution. The mining and oil sectors have both aligned their operations with various initiatives, emphasizing the importance of human rights and labor practices. However, it's worth noting that there is limited research on the practical implementation and real-world practices of these initiatives. Environmental concerns are a critical aspect for all three industries, given the significant adverse impacts they can have on the local environment. However, this literature review has not been able to uncover substantial research regarding how these industries implement Corporate Social Responsibility (CSR) within the environmental domain. In the mining industry, some attention is given to the implementation of Environmental Management Systems (EMS), environmental information systems, and measures for

environmental protection. Meanwhile, the oil industry focuses on Environmental Impact Assessments (EIA), the reduction of discharges, addressing the risks associated with oil spills and gas flaring, as well as efforts related to climate change mitigation and adaptation.

The forestry industry places substantial emphasis on forest certification and eco-labelling, complemented by comprehensive tracking systems and corporate purchasing policies designed to combat illegal logging. The extractive industry, by its nature, exerts a profound impact on both the natural and social environments. Increased public awareness of the industry's activities, spurred by environmental disasters and human rights violations, has generated a growing demand for greater social and environmental responsibility. In response, both the mining and oil industries have shifted their focus toward enhanced community involvement and development. Literature frequently mentions tri-sector partnerships, which often lead to development programs addressing various issues such as education, healthcare, and infrastructure.

### **10. Monitoring and Reporting**

Mining companies are mandated to disclose their Corporate Social Responsibility (CSR) endeavors in their annual reports, ensuring transparency regarding the utilization of allocated funds and the resulting impact achieved. In the recent era of globalization, mining firms have played a role in enhancing social development by generating employment opportunities, fostering industrial growth, contributing taxes, earning foreign exchange, and more. However, they have also faced public scrutiny and criticism for perceived involvement in sovereign affairs, exacerbating wealth disparities, maintaining poor labor conditions, engaging in corruption, manipulating transfer pricing, causing pollution incidents, neglecting health and safety standards, and violating human rights (Warhurst 1998). Many corporate policies within the global mining industry now explicitly address broader social justice objectives. These encompass considerations such as local and indigenous employment, security and human rights, sustainable livelihoods, preservation of culture and heritage, the necessity of conducting social impact assessments, ethical procurement practices, and engaging in stakeholder and community consultations (Kemp et al 2006). Furthermore, numerous international mining companies have begun to regularly enlist the expertise of social scientists, anthropologists, and even gender specialists to advise on best practices for the integrated management of social and environmental issues within their mining operations (Lahiri-Dutt 2007).

### **11. Challenges**

Despite the established regulatory framework, there are notable challenges when it comes to effectively implementing Corporate Social Responsibility (CSR) within the mining industry. Ensuring genuine participation from local communities, addressing environmental concerns, and achieving long-term sustainability can present intricate and multifaceted issues. The conceptual framework comprises several components, each of which contributes to the advancement of CSR practices. The first segment of this framework outlines existing CSR theories and clarifies their position in the thesis. Subsequently, the framework delves into stakeholder theory, which can be deliberately applied in the context of CSR practices, particularly within the framework of the management system approach. This approach encompasses how stakeholder theory aids in the planning phase of the Plan-Do-Check-Act (PDCA) methodology, specifically in the identification of stakeholders and their interests, determining 'who and what really matters,' and crafting effective strategies for superior stakeholder management. Freeman (1984), Freeman et al. (2007), and Mitchell et al. (1997) have provided not only theoretical insights but also practical guidance on how to apply these theories in real-world contexts. Management systems, as strategic organizational instruments, play a pivotal role in facilitating efficient work processes and assisting companies in attaining their primary objectives. These systems are frequently tailored to address specific domains, including environmental management, energy efficiency, quality assurance, safety protocols, security measures, human resource management, and social responsibility initiatives, among others.

### **12. Collaboration**

Some mining enterprises engage in partnerships with non-governmental organizations (NGOs), governmental entities, and academic institutions to enhance the effectiveness of their Corporate Social Responsibility (CSR) initiatives. The establishment of CSR programs is of paramount importance for ensuring the sustainability of mineral mining operations. These programs benefit not only the mine owners but also the local communities and government. In the planning and execution of CSR initiatives, it is imperative to involve all stakeholders from the very outset and maintain transparency at every stage of the process. Mine owners should craft compelling CSR programs that optimize resource utilization while safeguarding the environment and the interests of all stakeholders. This approach will significantly contribute to the country's rapid socio-economic development. To optimize mineral mining operations, it is essential to establish a high-powered committee that represents all stakeholders in the region. This committee should be tasked with regularly inspecting the functioning of the mines, with a focus on adherence to mining practices, environmental management plans, and other government-recommended programs. Stringent measures should be enforced if there is any failure to diligently follow the mine plan. Given the inherent hazards associated with mining activities, each individual mine or a cluster of small mines should establish a Disaster Management Cell. This cell's primary

responsibility is to ensure the safety and well-being of both mine workers and the local residents in the vicinity. By combining environmentally friendly mining practices with robust CSR initiatives, the goal of achieving sustainable development can be realized.

When conducting research on the practical implementation of Corporate Social Responsibility (CSR), with a focus on how companies integrate social and environmental concerns into their core business operations, it is advisable to prioritize industries that have made substantial progress in this regard. Notably, the extractive industries stand out as pioneers in practicing CSR (Jenkins and Yakovleva, 2006; Kapelus, 2002; Reichert et al., 2000).

Industries reliant on natural resources as integral components of their production processes are more inclined to have formalized codes of ethics, well-defined environmental policies, a pronounced sense of social responsibility, and associated practices (Reichert et al., 2000). Additionally, these industries tend to provide comprehensive disclosures related to their social and environmental commitments (Jenkins and Yakovleva, 2006). The extractive sector, in particular, has emerged as a vanguard in this context, largely driven by mounting pressure from stakeholders over the past two decades. Non-governmental organizations (NGOs), social movements, and indigenous communities have exerted substantial influence, primarily due to the pronounced impact of extractive industries on the environment and society (Kapelus, 2002).

Prominent international organizations such as the United Nations (UN), the International Labour Organization (ILO), the World Bank, and the Organization for Economic Co-operation and Development (OECD) actively advocate for and oversee Corporate Social Responsibility (CSR) endeavors (Benn and Bolton, 2011). Within this context, the adoption of reporting guidelines and standards has become commonplace (Hamann, 2003; Jenkins and Yakovleva, 2006; Perez and Sanchez, 2009; Vintró and Comajuncosa, 2010). Swedish industry, including the mining sector, is often regarded as a proactive adopter of CSR-related initiatives, particularly in the realms of environmental protection and occupational health and safety (Ammenberg, 2012; OECD, 2014). This is frequently exemplified by the widespread embrace of international standards by Swedish companies (Zobel and Burman, 2004).

### **13. Measuring Impact**

Mining companies are increasingly prioritizing the measurement of the social and environmental impact of their Corporate Social Responsibility (CSR) initiatives. This involves the establishment of Key Performance Indicators (KPIs) and the regular assessment of their CSR efforts. Many experts highlight the advantages of consolidating various aspects of CSR within a sustainability management system (SMS) (Asif et al., 2013; Rocha et al., 2007). An integrated system offers easier management and control, facilitating improved effectiveness, communication, and resource management for organizations (Castka et al., 2004). Consequently, an SMS serves as a valuable tool for enhancing a company's sustainability performance (Esquer-Peralta et al., 2008). The new international standard ISO 26000 aims to assist organizations in implementing social responsibility, although its potential benefits for the mining industry have yet to be thoroughly explored. Some critical researchers caution against an exclusive reliance on management systems and advocate for a more balanced approach to sustainability management. They propose the development of ambidextrous approaches that encourage both incremental and radical improvements in performance and promote broader collaboration with stakeholders (Könnölä and Unruh, 2007). This perspective aligns with the viewpoint of Kemp et al. (2006), who contend that SMS should adopt a more externally focused, stakeholder-driven, and value-based approach. In their view, the focus should be on 'doing the right things,' emphasizing value-based decision-making and active communication with the company's diverse stakeholders (Zwetsloot, 2003). Stakeholder theory can be considered a CSR theory, as it offers a normative framework that guides responsible business conduct in relation to society (Melé, 2008). Stakeholder theory can be deliberately applied in the practice of Corporate Social Responsibility (CSR) (Hörisch et al., 2014). An area ripe for future research involves further exploring how traditional theories like stakeholder theory can be effectively utilized to advance CSR practice (Starik et al., 2000). Stakeholder management encompasses the establishment of relationships and interactions with stakeholders to create value (Freeman et al., 2007). Efforts have been made to integrate stakeholder management into Sustainability Management Systems (SMS). For instance, Singh et al. (2007) discuss stakeholder mapping and consultation, Asif et al. (2011) emphasize the identification of key stakeholders, Rocha et al. (2007) view stakeholders as the "battery" powering the SMS, and Asif et al. (2013) recommend both 'top-down' and 'bottom-up' approaches to CSR that take into account stakeholders' needs. However, these frameworks are often conceptual in nature and rarely offer practical guidance on how to implement stakeholder management. Therefore, there is a pressing need for more empirical research to understand how these frameworks manifest in real-world practices (Asif et al., 2013), particularly regarding how a stakeholder assessment process can be translated into concrete CSR objectives and policies (Castka et al., 2004).

### **14. Sustainable development**

Sustainable development has gained widespread recognition, with its objectives encompassing the eradication of poverty, universal access to healthcare, the promotion of social equity, and the fulfillment of societal needs while

staying within the planet's ecological boundaries and preserving resources for future generations. When translating the concept of sustainable development to the corporate realm, corporate sustainability can be defined as the ability to meet the demands of a company's direct and indirect stakeholders while safeguarding its capacity to meet the requirements of future stakeholders (Dyllick and Hockerts, 2002). Both corporate sustainability and corporate social responsibility (CSR) represent voluntary initiatives that signify the integration of social and environmental considerations into business operations and interactions with stakeholders (Van Marrewijk, 2003). Historically, corporate sustainability was primarily associated with the environmental responsibility aspect of business, while CSR focused on social responsibility. However, contemporary research indicates that these two concepts are now converging due to their mutual concerns for the environment and society (Montiel, 2008). Sustainable development necessitates achieving net and equitable benefits, along with building social capacity within affected communities, both during and beyond the mine's closure. Corporate CSR programs should address these aspects. Mining companies may implement community involvement initiatives, including:

- ❖ Enhancing infrastructure – such as constructing access roads, community facilities, and educational institutions.
- ❖ Initiating community health programs – providing healthcare services to employees and their families, as well as establishing and furnishing hospitals and healthcare centers for the local communities.
- ❖ Establishing community foundations – creating a fund generated by the company for social investment purposes, which may also attract external donors' contributions.
- ❖ Supporting local small businesses – implementing procurement policies that prioritize local suppliers.
- ❖ Promoting sustainable livelihood projects – aiming to reduce the communities' economic reliance on the mine and fostering alternative and sustainable employment opportunities for community stakeholders.

Implementing micro-credit finance schemes – offering loans that can be utilized to launch new businesses, generate employment, and stimulate economic growth. Access to credit empowers families to invest based on their own priorities, including education, healthcare, nutrition, or housing. These schemes can provide opportunities for the most disadvantaged groups within communities.

## **15. Conclusion**

In the Indian mining industry, Corporate Social Responsibility (CSR) serves as a pivotal mechanism through which mining companies fulfill their social and environmental obligations. Its primary objectives include generating a positive impact within local communities, mitigating the adverse consequences of mining activities, and advancing the cause of sustainable development. However, attaining meaningful and enduring results necessitates persistent commitment, transparency, and collaboration with various stakeholders. The potential for CSR in this context is substantial, yet there has been limited attention given to CSR practices and their potential benefits for a company's core business operations. Furthermore, there has been scant research conducted on the intersection between visionary CSR statements and the actual reporting of CSR performance. To explore CSR practice from an internal perspective, it is imperative to examine industries that actively engage in CSR, such as the extractive industry. While numerous CSR initiatives, guidelines, standards, and conceptual frameworks are readily available, the critical question pertains to whether and how these initiatives are put into practice and whether there is room for improvement to foster more sustainable business practices.

## **16. Recommendation**

Mining companies should strive to give equal attention to environmental, economic, and community concerns. It is essential for representatives from these companies, government officials, and members of the local community to collaborate in addressing issues that arise due to mining operations. Often, there is confusion among local communities, governments, and mining companies regarding their roles and responsibilities in mining development. This uncertainty hinders their ability to effectively engage and participate in decisions related to mining activities. Some of the core issues, which the company should deal with, are:

- ❖ Ensuring fairness in addressing Rehabilitation and Compensation matters is imperative. The company should supply all necessary infrastructure amenities to the rehabilitation settlement, taking into account the circumstances of landless households.
- ❖ Giving due consideration to environmental well-being is crucial. Concerns related to air and water pollution, as well as the degradation of land and forests, should be prioritized.
- ❖ The company should invest in enhancing both the human and physical assets of the region. This includes providing education, basic services, healthcare, and training opportunities not only to the families of employees but also to the broader community in the area.
- ❖ Planning for post-mine closure issues, such as unemployment, income prospects, migration, and environmental remediation, should be addressed well in advance, and appropriate actions should be taken.
- ❖ Effective administration, rule enforcement, and accountability should be fundamental principles in both the rehabilitation process and the operation of the mines.

For the sustainable mining of minerals, the adoption of a Corporate Social Responsibility (CSR) program is crucial for mine owners, the community, and the government. In the planning and execution of CSR initiatives, it is imperative to engage all stakeholders right from the outset while maintaining transparency at every stage. Mine owners should design appealing CSR programs that efficiently utilize resources and concurrently safeguard the environment and the interests of stakeholders. This approach will significantly contribute to the successful operation of the mine and facilitate rapid socio-economic development for the country.

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