

## MINING POLICIES IN PAKISTAN AND DEVELOPING COUNTRIES: A REGULATORY PERSPECTIVE

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### ABSTRACT

For many developing countries, mining is a dominant player in the economy. It serves as the key source of income, employment, and foreign exchange. India, Indonesia, Ghana and Peru are countries whose economic growth is highly depend on mining activities. The regulations of the mining industry are important to guarantee that the sector operates in a safe, responsible environmental and socially equitable manner. For many developing nations, strong mining laws don't exist or existing laws aren't enforced, which results in unsafe working conditions and unsustainable mining practices. This review study sets out to analyze a comparative mining regulation in Pakistan and other developing countries like India, Ghana, Peru and Indonesia by finding its strengths and weaknesses in the legal framework. This paper aims at comparing the prevailing mining laws in Pakistan with that of other countries to highlight the gaps in the regulatory framework of Pakistan especially with regards to safety, environmental sustainability and the miner's welfare. This study has also compared best practices from other countries to the Pakistani context, and propose possible reforms to improve Pakistan's mining laws. Economic potential of Pakistan's mining sector is significant, but it suffers from lack of adequate regulatory frameworks, absence of enforcement, and environmental and health and safety concerns. Pakistan has to resolve weak enforcement mechanisms, underfunded regulatory bodies and lack of adherence to appropriate safety standards, to effectively improve its mining laws.

**Keywords:** Mining Policies, Regulatory Framework, Resource Governance, Developing Countries, Pakistan Mining Sector

### INTRODUCTION

For many developing countries, mining is a dominant player in the economy. It serves as the key source of income, employment, and foreign exchange. India, Indonesia, Ghana and Peru are countries whose economic growth is highly depend on mining activities. For several of these countries, mining is more than an economic

activity, but a foundational element of their development strategies. Yet, in many rural areas, small – scale and artisanal mining persists, which involves unsafe and unregulated conditions by mining without formal regulatory oversight. The situation therefore presents daunting challenges such as exploitation of workers, environmental

degradation, and lack of good social protection of the local people. Growing concerns over how sustainable mining practices are in developing nations has arisen as demand for natural resources increases globally. As such, it is imperative to investigate the regulatory frameworks applying to mining practices, so that the sector can contribute to economic development without resulting into irreversible damage to people and the environment (Bebbington et al. 2008)(Armah et al. 2011).

The regulations of the mining industry are important to guarantee that the sector operates in a safe, responsible environmental and socially equitable manner. If there are no effective laws, accidents and health risks for humans occur and environment is wrecked. Safeguarding the health and safety of miners is key, key to ensuring that miners work under conditions that reduce risk to a minimum for fatal accidents and diseases, which are unfortunately an integral part of the industry (Eftimie, Heller, and Strongman 2009). Moreover, regulations aids to reduce the environmental effect of mining activities like soil erosion, water pollution and deforestation that is caused by bad mining practices (Hilson 2002). Promoting social equity with effective regulations that will ensure that local communities gain from mining activities via jobs, social services and infrastructure, is equally important. For many developing nations, strong mining laws don't exist or existing laws aren't enforced, which results in unsafe working conditions and unsustainable mining practices (Pirrone and Mason 2009)(Nowak-kielbikowa 1976).

This review study sets out to analyze a comparative mining regulation in Pakistan and other developing countries like India, Ghana, Peru and Indonesia by finding its strengths and weaknesses in the legal framework. This paper aims at comparing the prevailing mining laws in Pakistan with that of other countries to highlight the gaps in the regulatory framework of Pakistan especially with regards to safety, environmental sustainability and the miner's welfare. It seeks to discuss the enforcement of these regulations and how they influence mining's growth, sustainability and socio economy of the sector. The paper has also compared best practices from other countries

to the Pakistani context, and propose possible reforms to improve Pakistan's mining laws. Ultimately, this analysis seeks to provide a comprehensive review of the mining laws governing Pakistan and selected developing countries, and ways in which they can be strengthened to meet the objective of sustainable development and mitigate the undesirable repercussions of mining activities(Shah, Rahman, and Khan 2019)(Omotehinse and De Tomi 2023).

## **2. Mining Regulations in Pakistan**

### **2.1 History and Evolution of Mining Laws in Pakistan**

In Pakistan the Mining Regulations, in the case of federal government areas, fall within the purviews of federal functions. The mining laws in Pakistan have been inherited from the British and first evolved in the same manner. The history of mining laws in Pakistan can be traced back to the British colonial era, but legislation started coming up stream from the colonies in 1923 with the Mines Act. Originally introduced when the colony was still under British rule, this act came into being to govern the mine industry which encompassed safety standards, miners working condition, their welfare, etc. (Paper 9.pdf n.d.)(Shuhong -malik Zia-ud-din and Shuhong 2017). The Act attended to some basic issues of the workers' safety, however, was not enough to meet the requirements of the mining sector in post independent Pakistan. Since Pakistan's mining sector continued to expand, it was clear that more advanced and up to date legislation was needed to regulate the rising variety of mining activities, especially in terms of safety, environmental protection and sustainable practices (Jiskani et al. 2019a).

The way forward has been attempted with the help of legislature on various occasions during the decades since Pakistan's independence but have not been satisfactory. This is most parently indicated by the Mines and Mineral Development(Pakistan) Act of 1948 (Janjuhah et al. 2021). that formed the basis for mineral extraction policies and management in the country. Through the years, however, the mining sector had to deal with fragmented and outdated laws. Many amendments and amendments to the 1923

Mines Act, and the development of new regulations, there are still gaps to enforce effectively and to respond to contemporary mining challenges such as illegal mining, environmental degradation, and social issue (Adu-Baffour, Daum, and Birner 2021).

### 1. Key Regulations and Acts Governing the Mining Sector

Pakistan's mining industry is closely controlled by the following laws and regulations aimed at regulating the mineral extraction, improving the safety standards and the environment protection. The main piece of legislation that controls mining operations which emphasize workers safety, accidents prevention and compensation to miners who sustain accidents remains the Mines Act of 1923 (Ur Rehman et al. 2021). Yet, this Act has been criticized widely for being too out done in its application to current mining practices, especially in the small scale and artisanal mining sectors that are increasingly becoming large (Lahiri-Dutt and Brown 2017).

Another important piece of legislation dealing with environmental issues associated with mining, is Pakistan Environmental Protection Act (PEPA) of 1997. Monitoring and enforcement of these standards in PEPA is done by establishing environmental standards, mandating the undertaking of Environmental Impact Assessments (EIAs) for large scale projects (Javed, 2016). There is, however, weak implementation of PEPA, illegal mining operations tend to avoid environmental regulations (Asghar, Umer, and Afzal 2024).

In November 2002, some form of artisanal mining was regulated by the Small Scale Mining Act, meant to bring artisanal mining under supervision, particularly in Khyber Pakhtunkhwa and Balochistan, where small-scale mining operations are widespread. The purpose of this Act is to accommodate meta social and Kmet economic requirements of small scale miners, control their operations and harmonies them into formal economy (Husain 2005). Nonetheless, the sector remains largely unconstrained informally, therefore the Balochistan Mining and Minerals Development Policy of 2019 (Goverenment of Balochistan n.d.) was enforced with the aim of putting some order into local mining practices, in

a province where there exists an abundance of mineral deposits. It's a forward policy for transparency, sustainability and improved livelihoods in local communities. Although much effort has been directed at improving the situation, Pakistan's mining sector is hampered by enforcement, transparency and sustainability issues.

### 2.2 Role of Regulatory Bodies and Enforcement

The mining sector in Pakistan is overseen by several regulatory bodies, the key being the Ministry of Petroleum and Natural Resources, which formulates policies and regulates the mineral extraction (Akhtar and Shah 2018). Moreover, Pakistan Mining and Mineral Development Corporation (PMDC) act as a vehicle for exploration, development and exploitation of minerals. Both provincial and federal agencies closely work with the PMDC to regulate mining practices (index @ www.pmdc.gov.pk n.d.).

Nonetheless, the body of these bodies did not help in the enforcement of mining regulations in Pakistan. However, widespread illegal mining practices and environmental degradation have been brought on by weak enforcement mechanisms, lack of coordination between federal and provincial authorities. Local authorities are ill equipped to monitor the activities of mining, and little is accountable when regulations are broken (S. M. Ali n.d.). illegal mining operations are able to operate in the absence of regulation and on circumstances of remote areas, leading to serious environmental damage and exploitation of workers. The informal nature of Pakistan's mining sector, especially in small scale and artisanal mining, is one of the most important issues – these operations regularly function without having the required permits or oversight. The informal sector of this mining activity is not covered by any existing laws and regulations which generates challenges for enforcement bodies to enforce labor rights, ensure safety and protection of the environment. Moreover, Pakistan's mining regulatory bodies have practical problems like shortfall of resources, political interference, and shortage of technical expertise that have

obstructed their efficiency to enforce laws (Jiskani et al. n.d.).

Finally, while Pakistan has created its set of rules and agencies to monitor the mining industry, the mining rules in Pakistan are fragmented and poorly enforced. All these needs a comprehensive legal framework reform in order to tackle the contemporary relevant issues such as illegal mining, worker safety, environment and the incorporation of small scale mining into the formal economy (Jiskani et al. 2019a)(Jiskani et al. n.d.). To ensure mining activities' contribution towards a sustainable development, administrative strengthening of regulatory bodies and enhancing the enforcement system is the next essential step (Jiskani, Cai, et al. 2020a).

### 3. Mining Regulations in Selected Developing Nations

The mining regulations are of paramount importance to the sustainable development of mineral resources in the developing countries. For instance India, Indonesia, Ghana and Peru have diverse mining industries each with its own regulatory frameworks to balance economic growth, environmental protection and social welfare (O'Callaghan and Vivoda 2015). Over the years, these countries have put in place legal reforms in response to challenges in their mining sector, including illegal mining, environmental degradation or need for better safety measures (Bui et al. 2017).

**India:** The history of India's mining is rich and India's mining laws have consequently gone through changes to meet the rising demand for natural resources (Barve and Muduli 2011). In the country the main law which governs mining activities is The Mines and Minerals (Development and Regulation) Act of 1957 or MMDR. The Act provides a framework within which minerals are explored, developed and regulated. Mining is further governed by the environmental aspects of the Environmental Protection Act of 1986. India has recently moved at a fast pace with the National Mineral Policy of 2008, which focuses (Ms Mary Abraham 2022).

**Indonesia:** The Mineral and Coal Mining Law No.4 of 2009 was issued to regulate the mining operations in Indonesia's mining sector. This law

was amended in 2009 to foster investment, to address environmental concerns and to guarantee that communities near mining benefit from that activity. The law also prescribes that companies must undertake Environmental Impact Assessments (EIAs) and for such companies to commence reclamation and rehabilitation of mining sites (Tegnan et al. 2021). The Indonesian government's Mining Law No. 4/2009 prioritizes transparency and anti-corruption measures and local community protection (Topstad and Karlsen 2015).

**Ghana:** Ghana is noted for its gold production and it produces many natural resources including gold, diamonds, and manganese; and in 2006 it was the third largest gold producer in Africa after South Africa and Sudan. The mining regulations covering Ghana's minerals are contained in the Minerals and Mining Act of 2006 (Act 703). Under the Act, exploration, production and marketing of minerals are regulated and local participation in the mining industry is provided for (Opoku, Kosi, and Degraft-Arthur 2020a). In Ghana, regulations in relation to environmental management and social responsibility have been developed, among others the provisions of the Environmental Protection Agency Act of 1994 that requires that mining companies undertake EIAs. Reforms have been carried out to encourage responsible mining practices especially in the small scale mining sector (Famiyeh et al. 2021) (Hilson 2002).

**Peru:** Its mining sector is heavily regulated by the General Mining Law of 1992 and Peru has one of the world's largest mineral reserves. The law outlines how the rights and obligations of mining companies should be determined in the protection of the environment particularly as it relates the reclamation of their mine sites (Ashraf and Cawood 2017). Although Peru's Environmental Law of 2005 does mandate that all mining projects undergo EIAs, the government has also taken steps to formalize the small-scale mining, including making it possible for small scale miners to acquire a concession over a mining area that they control, under certain conditions (Kleinhenz 2017). Nevertheless, illegal mining and environmental degradation are major

problems of the Peruvian mining sector despite these regulations (Rodríguez 2021).

#### **4. Impact of Legal Frameworks on the Mining Industry**

Both countries have seen great impact on their mining industry from their legal frameworks. The mining sector in India has flourished owing to the enactment of the MMDR Act in ensuring that mineral resources are explored and exploited in a structured manner. Yet the enforcement of these laws is bedeviled by corruption, illegal mining and inadequate enforcement (Barve and Muduli 2011)(Tripathy and Ala 2018). Likewise, Indonesia's 2009 mining law has lured foreign investment and has modernized mining, but still faces problems of protecting local communities and the environment (Tegnan et al. 2021). The Minerals and Mining Act in Ghana has the benefit of attracting international investment in the area of gold mining in particular. It hasn't completely wrestled with the challenges in artisanal mining, where most often the informal miners work in hazardous conditions (Adu-Baffour, Daum, and Birner 2021) (Hilson 2002). The mining industry in Peru is one of the biggest contributors of the economy in Peru which has the grip of stringent regulations, but illegal mining and environmental degradation continue to be primary issues (Kleinhenz 2017). These countries have put in place legal frameworks that seek to facilitate mining while at the same protecting the public domain. Nevertheless, these laws are seldom well enforced, are not very transparent, and are often subject to political pressures.

#### **5. Challenges Faced by These Countries in Enforcing Mining Laws**

Among the main problems of these countries, there is an issue of encompassing the phenomenon of mining, both legal and especially, illegal. (Shen, Muduli, and Barve 2015). This is due to lack of stringent implementation of mining laws in India especially in the coal and sand mining sectors,

where the violation of law is rife (Marimuthu et al. 2021)(Nicholaus Chusi et al. 2024)(Campbell 2004). Illegal and unregulated mining activities in Indonesia have resulted in an environmentally damaged resource base and social conflict as well. While the Indonesian government has faced difficulties regulating informal mines, a common problem in the gold sector that has become associated with human rights violations and much environmental degradation (Tegnan et al. 2021) (Topstad and Karlsen 2015). Despite the introduction of the Small-scale Mining Law in Ghana; illegal mining is a problem of serious concern. Formal mining cooperatives, efforts to regularize small-scale miners through, have largely been ineffective as a result of corruption, weak enforcement, and lack of resources to monitor operations (Hilson 2002)(Adu-Baffour, Daum, and Birner 2021)(Opoku, Kosi, and Degraft-Arthur 2020b). Attaining gold through informal mining is unlawful in some countries such as Peru where these miners discharge risky chemicals including mercury in the Amazon. Moreover, it is pertinent to mention over mining of gold, especially in the Amazon region without legal permit is common in Peru. This type of mining is environmentally sensitive and can result into disastrous effects on the area and individuals undertaking the mining. (Bebbington et al. 2008)(Kleinhenz 2017).

Poor enforcement of environmental regulations was another major challenge in all these countries. Mining operations frequently do not meet their environmental standards, and the absence of strict monitoring systems makes it possible to widely pollute and damage ecosystems. For example, in Indonesia, although EIA is required by companies, projects do not comply with environmental regulations leading to huge environmental harm. (O'Callaghan and Vivoda 2015). In Peru, mining activities in Amazon region often result in deforestation, mercury contamination and destruction of ecosystems in the region. (Rodríguez 2021)(Ashraf and Cawood 2017).

**Table 1 Mining Laws in Selected Developing Countries**

Country	Key Legislation	Key Issues	Challenges in Enforcement	References
India	Mines and Minerals (Development and Regulation) Act, 1957	Illegal mining, worker safety, environmental degradation	Corruption, lack of transparency, weak monitoring	(Ms Mary Abraham 2022)(O’Callaghan and Vivoda 2015)(Barve and Muduli 2011)(Khana 2020)(Verma and Chaudhari 2017)
Indonesia	Mineral and Coal Mining Law, 2009	Environmental damage, local community rights, illegal mining	Poor enforcement of environmental laws, illegal mining in remote areas	(Tegnan et al. 2021)(Topstad and Karlsen 2015)(Krustiyati and Gea 2023)
Ghana	Minerals and Mining Act, 2006	Small-scale mining, environmental degradation, local participation	Informal mining, weak enforcement, lack of resources	(Hilson 2002) (Tuokuu et al. 2018)(Adu-Baffour, Daum, and Birner 2021)(Paper 2017)
Peru	General Mining Law, 1992	Illegal mining, deforestation, mercury contamination	Illegal mining in the Amazon, lack of enforcement, political corruption	(Kleinhenz 2017)(Rodríguez 2021)(Helwege 2015)

### 6. Identifying Gaps in Pakistan’s Mining Regulations

Although there are a number of laws and regulations to govern the country’s mining industry, there remain many gaps in the mining regulations which has impeded the sector’s sustainable development. The absence of complete, comprehensive environmental regulations is one of the most significant issues (Jiskani, Cai, et al. 2020b)(Ashraf and Cawood 2017)(Asghar, Umer, and Afzal 2024). The Environmental Protection Act (PEPA) of 1997 requires mining projects to undertake Environmental Impact Assessments (EIAs) but there is little enforcement and many mining operations, especially in remote places, avoid environmental scrutiny. The small-scale mining laws are equally under developed and hence there is rampant informal and illegal mining activities. Small-scale mining is neither protected by nor administered effectively under the Small-Scale Mining Act of 2002, and therefore many miners work without permits or oversight, performing unsafe practices and contributing to

environmental degradation. (Husain 2005)(D. Ali and Ur Rehman 2020).

The second gap is in the number of inadequate safety regulations for workers. The working conditions in lot of small-scale mines do not come under the purview of the Mines Act of 1923 which does not apply modern technology or set the safety standards for small scale mining. This often leads to multiple accidents, injuries and death of miners. (Jiskani et al. n.d.)(Jiskani et al. 2019b). In addition, adequate laws on community welfare and social obligations of mining companies are not clearly pronounced. Guidelines for local participation exist though they are poorly implemented and communities enjoy little of their fair share of mining benefits (Narula, Magray, and Desore 2017). Lastly, these gaps are in large part a result of weak enforcement mechanisms. Pakistan Mineral Development Corporation (PMDC) and the provincial mining bodies are typically under resourced with limited capacity to monitor and enforce controls on mining activities (Ur Rehman et al. 2021). In mineral industries

corruption and political interferences are resisting the implementation of mining laws and policies.

## 7. Global Best Practices and Their Applicability to Pakistan

### 7.1 Case Studies of Successful Mining Regulations in Other Developing Nations

Several developing countries have instituted mining regulations that may be used for Pakistan as model. As an example, Ghana (Minerals and Mining Act, 2006) has taken some steps in regulating small large mining by requiring formalization and participation of the community. In Pakistan, we can adopt the Ghanaian approach which included training for small miners and improving monitoring, for formalizing its small scale mining sector and to ensure there are better safety and environmental standards (Hilson 2002)(Aryee 2001). In Peru that has developed a wide legal mining framework through the General Mining Law of 1992 and subsequent amendments dealing with environmental treatment and bringing artisanal mining into the official sphere. Peru's successful inclusion of environmental standards, including mandatory Environmental Impact Assessments (EIAs) and restored mined areas, are useful lessons for Pakistan, especially with regards to its large small scale mining sector (Charles 2015). Indonesia offers another good example, which brought Mineral and Coal Mining Law of 2009 has brought more transparency to mining operations, and made changes in the laws that mining companies share a portion of the profits with local communities. (Ummah n.d.). This regulation promotes local development and urges to integrate corporate social responsibility (CSR) in mining agreements, is a key feature to adopt in Pakistan (Famiyeh et al. 2021).

## 8. Recommendations for Adopting Best Practices from Other Countries

To improve Pakistan's mining regulations, several best practices can be implemented:

1. **Formalization of Small-Scale Mining:** Learning from Ghana's experience, Pakistan should set out specific principles for the formalization of artisanal and small-scale miners. This embraces permits, training and supply of equipment to promote safety and

reduce environmental degradation. (Ashraf and Cawood 2017)(Famiyeh et al. 2021)(Hilson 2002).

2. **Environmental Protection and Rehabilitation:** In the same way, Pakistan should make EIA as well as rehabilitation of the site; a necessary requirement for the mining company. It can hopefully curb environmental impact of mining activities especially in the Khyber Pakhtunkhwa and Balochistan where illegal mining is rampant (Jiskani, Cai, et al. 2020b)(Lahiri-Dutt and Brown 2017).
3. **Transparency and Accountability:** Accordingly, Pakistan also should require transparency in mining contracts, following Indonesia's regulations and mining companies to disclose their revenue sharing with the local municipal authorities or the local communities should be introduced. This could help the indigenous community overall development (Narula, Magray, and Desore 2017)(Veiga, Scoble, and McAllister 2001).
4. **Strengthening Regulatory Bodies:** For example, Pakistan needs to provide more manpower, resources and more authority to regulatory bodies such as the Pakistan Mineral Development Corporation (PMDC) to monitor mines seriously, patterned as per international best practices. This would include building capacity of the officials in the latest regulatory and enforcement techniques.(Ur Rehman et al. 2021)(D. Ali and Ur Rehman 2020)(Jiskani, Shah, et al. 2020).

### 8.1 How International Standards Can Be Integrated into Pakistan's Legal Framework

Aligning mining rules regulations framework with international standards can be achieved in Pakistan by incorporating international frameworks, like the Extractive Industries Transparency Initiative (EITI) and the International Labour Organization (ILO) for labor rights. These standards require transparency, accountability, and the protection of workers' rights. (Ummah n.d.). Pakistan needs to harmonize internationally accepted standards (i.e. extractive industries initiatives, ILO conventions on labor rights with its policy framework related

to mining. Getting these standards to stick to

requires transparency, accountability and protecting workers' rights.

**Table 2 Comparative Summary of Mining Regulation Best Practices**

Country	Key Regulatory Features	Potential Impact for Pakistan
Ghana	Promoting and formulization of small-scale mining, environmental management	Safety Enhancement, Illegal mining legalization, Enhance the community development
Peru	Mandatory site rehabilitation and EIA inspection of mining areas	Sustainability initiation and improvements, illegal mining reduction
Indonesia	Contract transparency , community profit-sharing, CSR integration	local development foster, distribution of revenue fairly

### 9. Conclusion

Economic potential of Pakistan's mining sector is significant, but it suffers from lack of adequate regulatory frameworks, absence of enforcement, and environmental and health and safety concerns. The country has been created with different laws like the Mines and Minerals (Development and Regulation) Act and the Environmental Protection Act, but the implementation gaps still exist in small scale mining and environmental management. As a result of this regulatory shortfall, problems such as illegal mining, unsafe work environment and environmental degradation have occurred. Though, international best practices from Ghana, Indonesia and Peru provide us with insights on efforts of creating stronger mining regulations. However, these countries had used successful strategies like formalizing small scale mining; mandatory environmental impact assessments; and transparency in revenue sharing with local communities. Likewise, Pakistan can increase the safety, sustainability and economic benefits to its mining sector by adopting similar measures.

Pakistan has to resolve weak enforcement mechanisms, underfunded regulatory bodies and lack of adherence to appropriate safety standards, to effectively improve its mining laws. The inclusion of such international standards as Extractive Industries Transparency Initiative (EITI) and International Labour Organization (ILO) conventions within the national legal framework would not only make the regulatory environment better, but also bring the country within the global mining standards, those which will provide long run benefits to the industry as well as local communities. Though Pakistan's mining sector has plenty of room for reform,

embracing the best practices in mining across the globe. But to strengthening the enforcement mechanisms, and promoting greater transparency and sustainability can create a more effective, safer and more equitable mining industry in the country.

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