A new mineral policy development framework for Pakistan

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Abstract

Purpose – The purpose of this paper is to develop a mineral policy development framework for Pakistan based on seven key elements derived from the gap analysis of Pakistan's current framework with leading developing minerals-based economies. Pakistan is gifted with significant mineral resources that have the potential to lift its economy and bring prosperity to its citizens. For this to happen, Pakistan must formulate a mineral policy based on leading practices to attract mining investment for economic growth.

Design/methodology/approach – This paper develops a new mineral policy framework from the lessons derived from the gap analysis conducted in the first paper of this research. These lessons are called the "elements of development" which, after evaluation with the existing framework, will provide the suggested strategic fit measures for the formulation of the new mineral policy framework for Pakistan.

Findings – A new mineral policy framework is proposed based on seven key enablers, namely, institutional framework, stable political economy, legal framework, regulatory framework, fiscal framework, stakeholder participation and sustainable development. A new organisational structure of the Ministry is also proposed based on the generally accepted organisational structure of tiers, implementation and regulatory bodies.

Practical implications – The key constraints for Pakistan's mineral sector are as follows: the sector is lacking an enabling institutional framework for efficient access to mineral resources and lacks an enabling fiscal and regulatory framework including secure mineral rights system for mining to enhance the economic attractiveness of the sector.

Originality/value – This paper presents original work on the development of a new mineral policy framework for Pakistan to extract maximum benefit from its mineral resources.

Keywords Pakistan, Mineral development, Policy framework

Paper type Research paper

1. Introduction

Pakistan is home to vast mineral resources such as copper, gold, silver, platinum, chromites, iron, lead and zinc. A total of 52 minerals are mined in Pakistan, but on a relatively small scale. Considerable resources of coal (186 billion tonnes), copper (6,000 million tonnes), gold (1,656 million tonnes), silver (618 million tonnes), lead-zinc (23.72 million tonnes), manganese (0.597 million tonnes), chromites (2.527 million tonnes), iron ore (1,400 million tonnes) and precious and semi-precious stones have been identified in different parts of the country (Ministry of Petroleum and natural resources Government of Pakistan, 2013). The importance of minerals such as coal, copper, gold and silver is globally recognised. Pakistan is rich in coal with 186 billion tonnes out of the globally estimated 861 billion tonnes (Kaiser, 2013). The coal resource alone makes Pakistan attractive to global mining corporations as these are untouched to-date.

These minerals hold considerable potential to trigger growth. Development of these minerals can ensure that revenue is generated to fund economic growth for social uplift of her citizens. A case for a new mineral policy framework was built in the first paper of this series (Ashraf and Cawood, 2017). The key concerns that were highlighted during the gap

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analysis of Pakistan's mineral policy framework with other developing mineral-based economies of the world are inadequate continuity in the political system of Pakistan; complex and out-dated mining institutional framework; fragile political economy that will remain stressed because of fast population growth and slow GDP growth; a legal framework with inadequate (in fact non-existent) guarantees and sureties for investment; a mining regulatory framework which is not in line with international best practices for mining; non incentive-based fiscal framework and taxation system; non-existence of stakeholder's participation mechanism and regulatory body; and non-adherence to the concept of sustainable development (Ashraf and Cawood, 2017).

The legal and regulatory framework guiding mineral development in Pakistan generally relies on out-dated legislative guidance that does not incorporate modern approaches to mineral development. Modern concession rules have been significant in shaping how minerals are being developed today. As Pakistan seek to expand the sector, either comprehensive legislative reform or well-drafted, clear mineral contracting is needed to bring sector operations in line with leading practices.

2. The structure of this research

The fundamental purpose of this research was to figure out reasons underling the underperforming mineral sector of Pakistan, despite having considerable (comparable in global perspective) mineral resources. For this, a framework has been presented to make clear how government should develop the new mineral policy. The whole policy development process is explained through the phases of policy development (Figure 1), which are:

- *The first phase* explains how to get started and a brief explanation of the key steps to justify and plan for work on a policy development (the need for a new mineral policy – Paper 1 of this series of papers).
- *The second phase* explains the development process, the evidence-based analysis of the current environment and the method on how to develop the policy. Gap analysis was performed with developing countries which are comparable to Pakistan. A

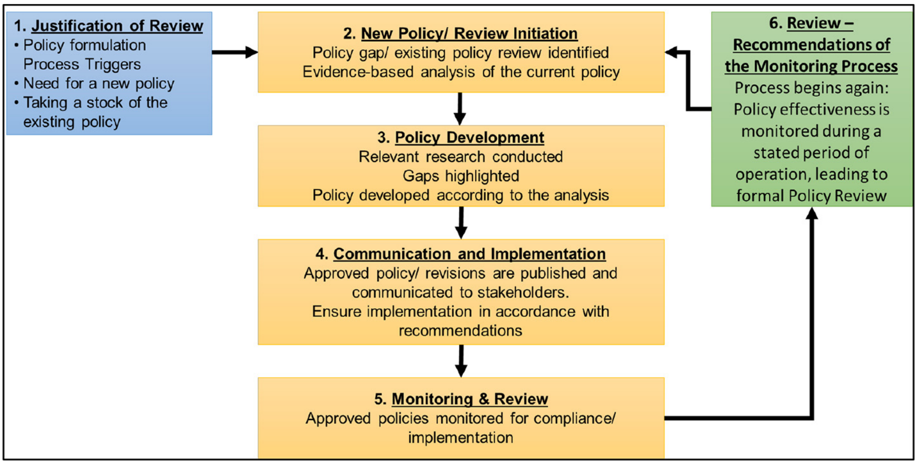


Figure 1.
Policy development process that should be followed for maximum benefit from the process

criteria was developed through scientific method for selecting countries comparable to Pakistan (Ashraf and Cawood, 2017).

- *The third phase* (this paper, which is Paper 2 in the series of papers) explains the process for developing the policy itself, including the governance arrangements. This is done through selecting mineral policy development principles, which were derived from the scientific evidence-based evaluation and gap analysis of eight selected country's best practices (Ashraf and Cawood, 2017).
- *The fourth phase* explains what needs to be done to facilitate implementation of a policy (Implementation Plan for a New Mineral Policy Development Framework and Mining Cadastre System for Pakistan – Paper 3 of this series of papers).

An essential first step in creating this new framework was to investigate the various gaps in Pakistan's mineral policy with other mineral-based economies of the world. A comprehensive gap analysis with eight developing countries was done by Ashraf and Cawood, (2017) in the first paper of this series (Figure 2). Six developing countries, namely Chile, Mexico, Brazil, Peru, India and South Africa and two Islamic developing countries, namely, Kazakhstan and Turkey were selected for gap analysis with Pakistan (Figure 3). Figure 2 shows a flow diagram on how this new mineral policy development framework will be developed. The lessons from the first paper of this research will now feed in as "elements of development" which, after evaluation with the existing framework, will provide the suggested strategic fit measures for the formulation of the new mineral policy framework for Pakistan.

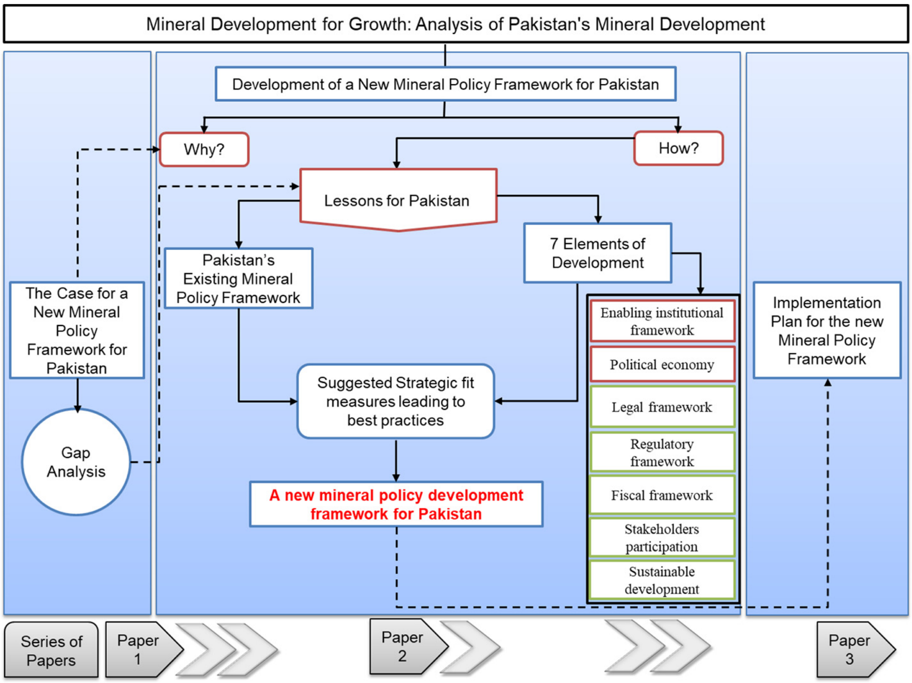


Figure 2.
Process followed in taking stock of Pakistan's mineral development (a series of three papers)

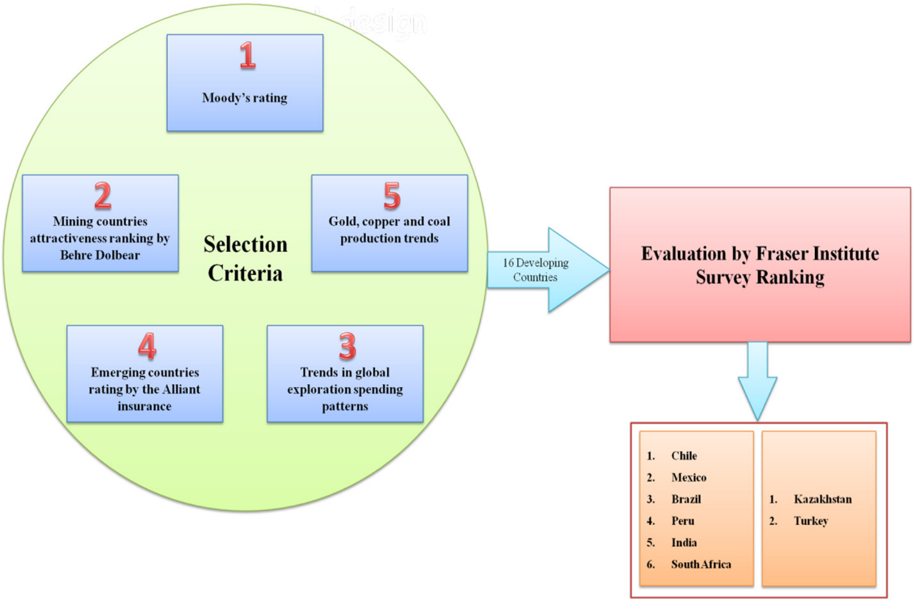


Figure 3.
Criteria for selection of developing countries and the countries selected (first paper of the series)

3. Literature review

The role of *Policy Development Framework* is to take certain actions for the effective and benefit oriented decisions in the field where we intend to progress. Effective decision-making requires good advice, and that depends on informed use of evidence both in developing policy and in evaluating its effect once implemented (Gluckman, 2013). So it is clear that mere making of a policy cannot guarantee the achievement of the desire results and there has to be a systematic framework for its implementation and subsequent evaluation (Galvani, 2017). For understanding the complete Policy Development Paradigm it is important to first take stock of its individual elements.

3.1 Policy science

Policy is an explicit or implicit plan of action developed for knowledge, usually based on certain principles (scientific evidence) and decided on by a body or individual, designed to administer, manage and control access to resources (Hoppe, 2018).

3.2 Development framework

The *Policy Development Framework* consists of three foundational elements: Governance, Principles, and Consistent and Predictable Process Steps (Ostrom, 2011). Policy development framework is the science of putting together *knowledge-based-scientific information* (commonly known as policy) into *an organised way of thinking* (development) for *implementation* by the concerned actors and then its *systematic evaluation-based monitoring* (framework) (Figure 4).

It is important to understand that the complete process of policy development framework is interlinked and related to each other. Giving less importance to one element of the chain may result in failure of the complete process itself, hence it is important that the managers responsible for policy implementation must take measures to ensure that each and every

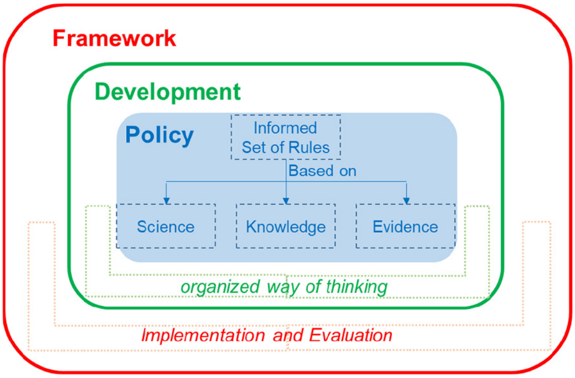


Figure 4.
Scheme of policy development framework process

step in the policy development framework process be followed and monitored (Johnstone, 2003) (Figure 5).

3.3 Knowledge-based-scientific information

It is crucial to draw on multiple knowledge sources to inform policy, as traditional research is often ill equipped to deal with the complex problems that characterise international development, so it is necessary to undertake the process of policy development through a systematic framework. With this the question arises of, why a policy framework? Policy framework not often necessitates a single decision on an issue in hand. Effective policy formulation is a process that starts with researching the real issue and continues through adjusting policy to new thresholds or knowledge (Schlager and Weible, 2013). Policy Framework describes an overall strategic approach, describing the desired future and setting out what needs to be achieved to bring about change (Moulton and Sandfort, 2016). A Policy will identify how to achieve a particular strategic outcome, clarifying what needs to be done by whom.

4. Pakistan's exiting mineral policy framework

Before proposing changes, it is necessary to evaluate the existing mineral policy framework of Pakistan *vis-à-vis* the lessons from the gap analysis. The mining industry in Pakistan is

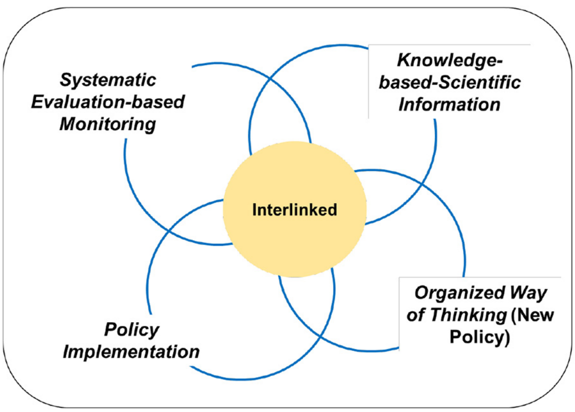


Figure 5.
Policy development process

governed by the Ministry of Petroleum and Natural Resources (MPNR) at Federal level and the corresponding Directorates or Departments[1] at the Provincial level. Pakistan's case of decentralised control over mineral resources is confusing. The combination of regulatory control by both Federal and Provinces is making the system complex and difficult to work with. The power structure of the Federal Ministry is linear and authoritative, where corporations and companies[2] are directly controlled by the Federal Minister for Petroleum and Natural Resources (Figure 6). The Ministry has four Wings[3] (Administration Wing, Mineral Wing, Development Wing and Policy Wing), one Attached Department[4] (Geological Survey of Pakistan), one Autonomous Body[5] (Hydrocarbon Development Institute of Pakistan) and eleven Private Companies Limited[6] (Figure 6) (Ministry of Petroleum and Natural Resources of Pakistan, 2013).

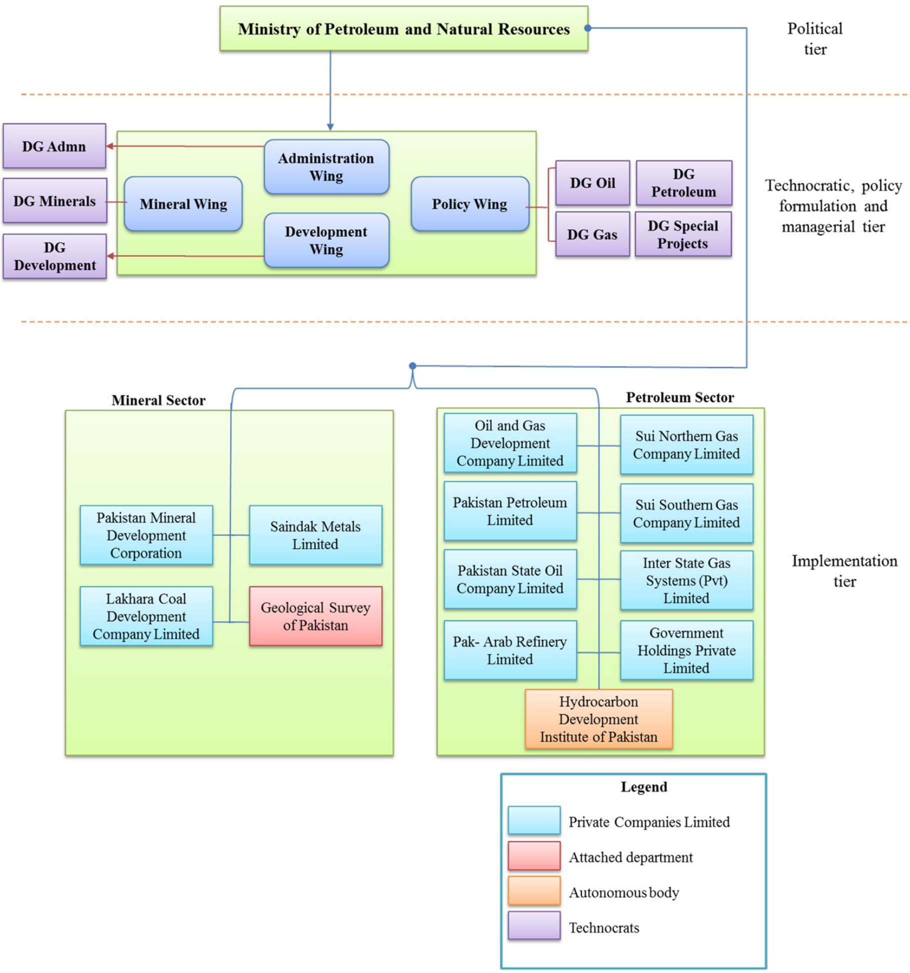


Figure 6.
Organisational structures of Ministry of Petroleum and Natural Resources of Pakistan

Source: Updated Ministry of Petroleum and Natural Resources of Pakistan, 2013

The Administration, Development and Mineral Wings are each headed by a technocrat (DG [7] admin, DG Development, DG Minerals), whereas the Policy Wing is sub-divided into four departments also headed by technocrats (DG Oil, DG Gas, DG Petroleum, DG Special Projects, Figure 6) (Ministry of Petroleum and Natural Resources of Pakistan, 2013). The Policy Wing is responsible for developing policies for the Oil and Gas sectors, whereas the Mineral Wing formulate policy for the mineral sector[8] (Ministry of Petroleum and Natural Resources of Pakistan, 2013). The Geological Survey of Pakistan (GSP), is responsible for exploration of mineral potential through geological, geophysical, geochemical mappings and resource evaluation through drilling (Geological Survey of Pakistan, 2012). The Autonomous Body, the Hydrocarbon Development Institute of Pakistan (HDIP), is responsible for promoting and guiding scientific research and development in the field of hydrocarbons (Hydrocarbon Development Institute of Pakistan, 2014). The Ministry has eleven Private Companies Limited under its administrative and authoritative control (Figure 6) (Ministry of Petroleum and Natural Resources of Pakistan, 2013).

The organisational structure of the MPNR of Pakistan is complicated and not in line with the generally recognised structural scheme encountered internationally. If we compare the Ministry's structure in Figure 6 with the widely accepted model in Figure 7, it exposes shortcoming in the policy formulation tier:

- There is policy formulation at the technocratic level instead of the political level.
- Separate Wings are responsible for policy formulation of the petroleum and mineral sectors.
- Investors are caught in an organisational dilemma between the different Wings at the Federal level and between the Federal and Provincial authoritative control.

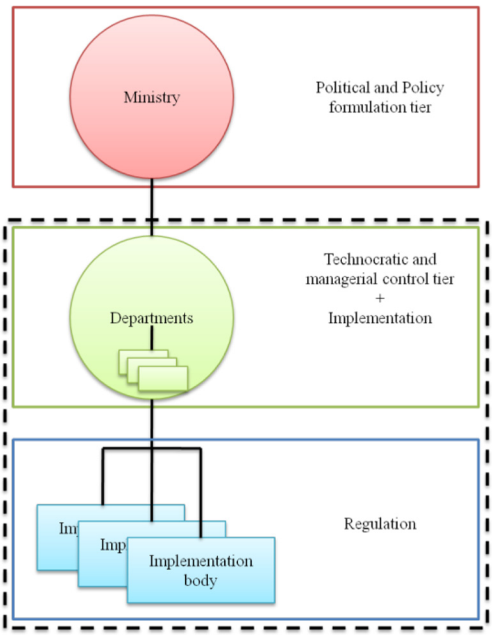


Figure 7. Generally accepted scheme of organisational structure

The organisational structure of the Ministry needs some change so that it can be aligned with the leading international practices to provide an enabling environment for investments. This issue along with others made a case for developing a new mineral policy framework for Pakistan (first paper of this series by Ashraf and Cawood (2017). The development of a new mineral policy framework is primarily structured and based on the seven elements which are derived from the lessons as part of the gap analysis done previously.

5. Elements for mineral policy development of Pakistan

A successful minerals policy should ideally create the political, legal and administrative environment that is necessary to ensure a steady domestic and international supply of minerals to the society within the framework of sustainable development (Endl *et al.*, 2018). All three components (i.e. political, legal and administrative environment) are considered to be equally important.

The framework for a new mineral policy development for Pakistan is based on seven key elements. International leading practices were derived through a process of selection on the basis of a specific criterion in the first paper of this series, which is explained in Figure 8.

These elements are (Figure 8):

- Element 1: Enabling institutional framework (Critical element – also an enabler for elements 3-7);
- Element 2: Political economy (critical element – also an enabler for elements 3-7);
- Element 3: Legal framework;
- Element 4: Regulatory framework;
- Element 5: Fiscal framework;
- Element 6: Stakeholders participation; and
- Element 7: Sustainable development.

The first two elements were considered more important as others are related and dependant on them for effectiveness and consistency. In a progressive and investor friendly mineral

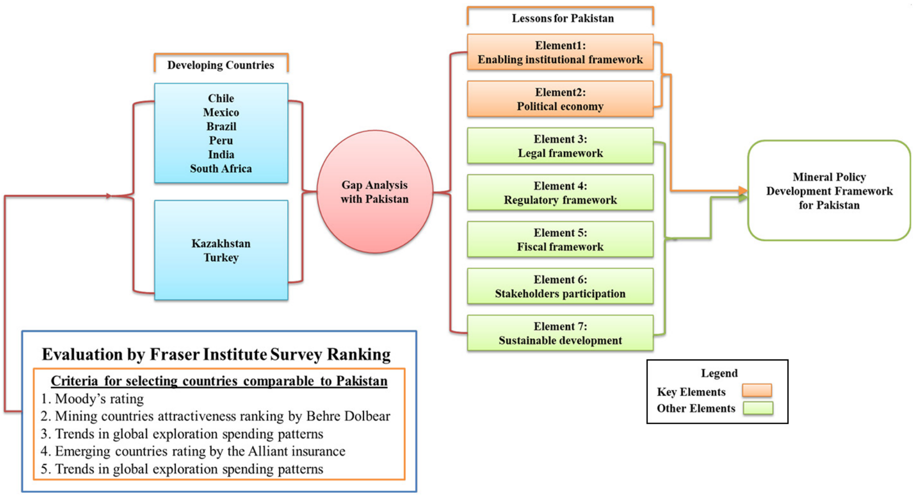


Figure 8.
Selection process for selecting eight developing countries

sector these seven elements should be inter-related and providing strength to each other. The strength of the institutional framework defines the effectiveness of mining laws and regulations and ultimately reflects the confidence of foreign investor in a country's mineral sector (Hilson, 2016).

Figure 9 highlights seven key areas where structural and policy reforms are required to work towards the development of a sustainable and progressive mineral policy. This will guide the way the industry is run by bringing the much needed stability and consistency required for attracting foreign direct investment. An enabling institutional framework of the mining Ministry is the most important element, as other characteristic elements requires

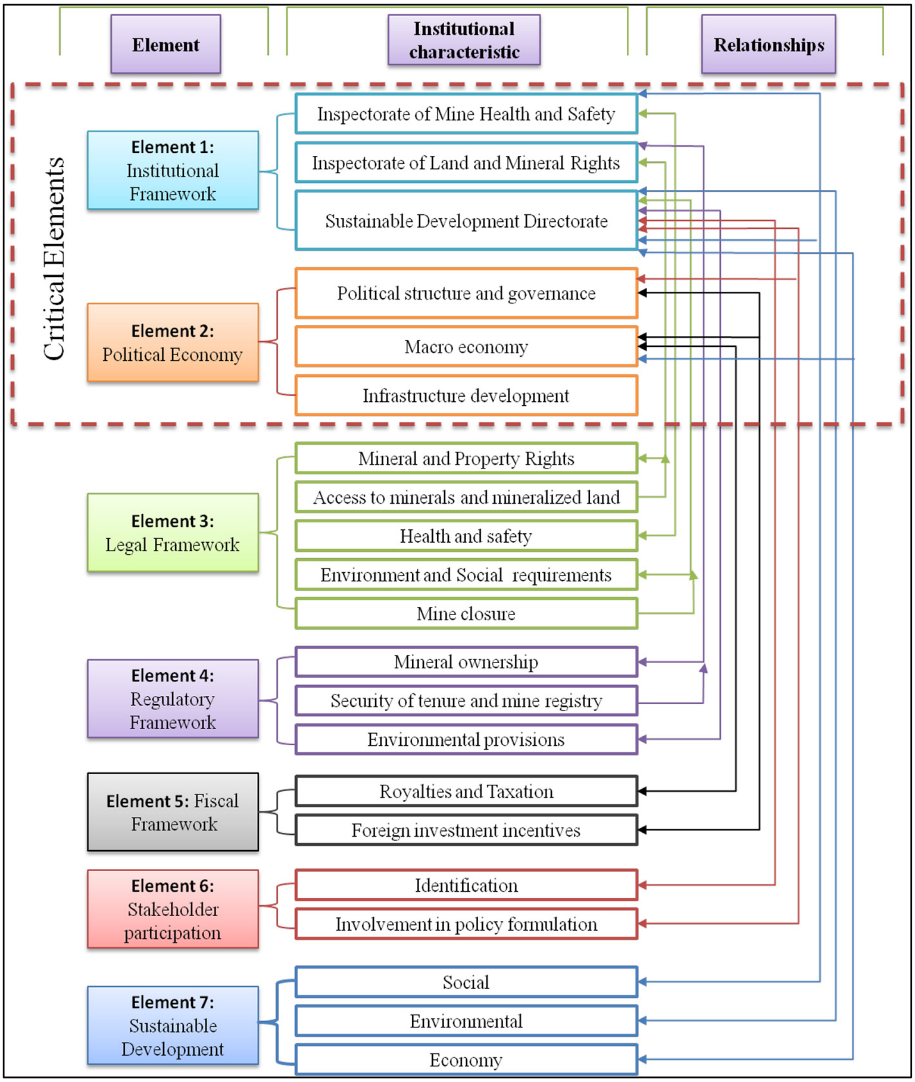


Figure 9.
Key mineral policy elements and their inter relationship

strong institutional backup for attainment of international standards and investor friendly environment. The interdependencies and relationship of elements among each other are also highlighted in Figure 9. For example, in the Regulatory framework element, the mineral ownership derives its institutional strength from Inspectorate of Land and Mineral Rights. Similarly the environmental provisions require enabling institutional backup in the form of Sustainable Development Directorate. These seven elements, their inter-relationship and dependencies on each other are acting as corner stones for the new mineral policy framework of Pakistan (and as such for other developing counties) explained in the subsequent sections.

5.1 Element 1: enabling institutional framework

The quality of a country's institutions is critical for governing growth and development. Strengthening institutions and organisations provides an opportunity to optimise the performance of national development (International Fund for Agricultural Development, 2013). Due to the parallel Federal and Provincial organisations responsible for the affairs of the mining industry in Pakistan, the current institutional framework is not providing a clear and transparent environment to investors. It is thus important to identify and develop enabling institutions for a growing mineral sector in Pakistan. In case of Pakistan, the organisational structure of the MPNR does not provide institutional backup. All the key mineral policy elements will require institutional backing to ensure continuity and accountability. The institutional reforms should ideally include the development of a new Ministry with three sub directorates/inspectorates:

(1) Inspectorate of mine health and safety;
(2) Inspectorate of land and mineral rights; and
(3) Sustainable development directorate, providing guidance on:
   - economics and infrastructure;
   - social benefit (local contact); and
   - environmental protection.

The important role of institutional quality as an underlying factor which contributes to the successful policy implementation can never be underestimated. For example, amongst the selected developing countries for this research, both Brazil and Chile have reliable private-sector institutions such as an independent judiciary, a civil service reputed for its integrity and competence, and independent institutions functioning as checks and balances (Nogueira da Costa, 2010). Both these countries have strong Ministries of Finance and Mining for controlling mining operation in their respective countries (Davidson, 2014). However, while analysing Pakistan's situation, its institutional stability and quality have slipped in the past 25 years and need improvement (Hussain and Kokab, 2013). This applies to most institutions, from political to judiciary and civil services. In the existing institutional structure of the MPNR, Pakistan Mineral Development Corporation, a Private Limited Company responsible for the mining sector, is organised into project teams and mineral specific sections. This situation leaves regulatory and other mining related issues to be unaddressed because of the absence of Inspectorate/directorate responsible for mine health and safety, land and mineral rights and sustainable development. There is a need to develop a more relevant and investor-friendly mining environment by strengthening institutions for good governance. To address such institutional issues, Pakistan can split the Mining Industry from the MPNR to create a separate Ministry for Mineral Development. The new

Ministry can be named as Ministry of Mineral Development (MMD) whose suggested organisation is presented in Figure 10.

The new Ministry should be organised into three basic inspectorate/directorates. First, an Inspectorate of Mine Health and Safety should be responsible for implementing and regulating policies regarding safety and security of the mines, health issues and labour issues. Second, an Inspectorate of Land and Minerals Rights should be responsible for translating policy into formulation and regulation of mining laws for exploitation of mineral resources. Third, the Sustainable Development Directorate should be responsible for beneficiation economics, social development and environmental protection.

A Mining Cadastre is the cornerstone of a secure mineral rights system which records the geographical location, ownership and time validity of mining rights. A good mining policy must be supported by a Mining Cadastre System. The non-availability of a Mining Cadastre System in Pakistan is hindering to generate data as per international standards for the facilitation of local and international investment. Pakistan needs to develop a Mining Cadastre System for facilitation and benefit of the stakeholders in the mineral sector. Successful implementation of a modern Mining Cadastre requires the development of a database of mining licenses with their status, location, ownership, fees and dues paid, and other relevant information. A new Mining Cadastre System should be developed at the Geological Survey[9] of Pakistan by creating a new Directorate of Mining Cadastre and GIS Database. This new directorate should be in direct coordination with the Inspectorate of Land and Minerals Rights (Figure 10). The new suggested organisation of the Geological Survey of Pakistan is shown in Figure 11.

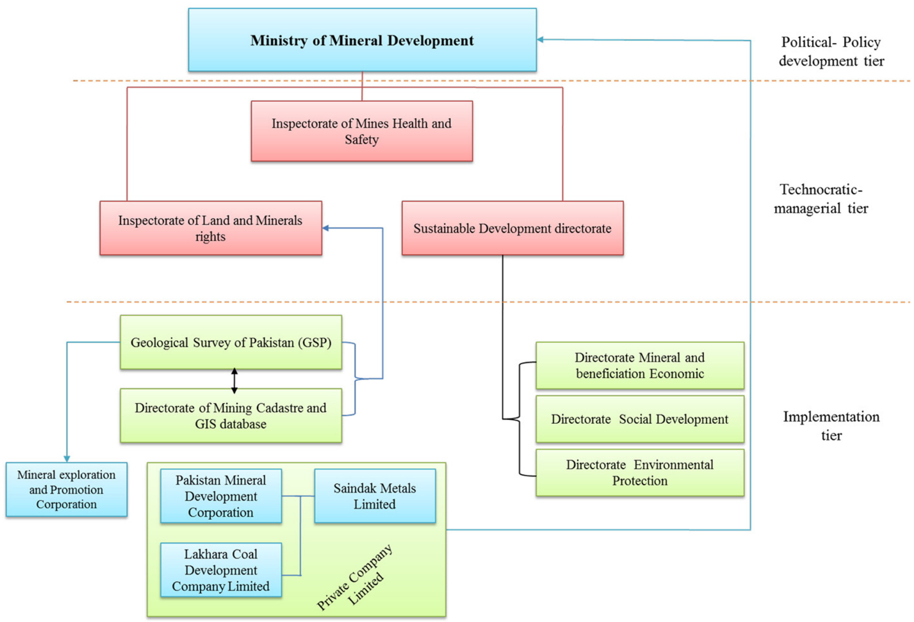


Figure 10.
Suggested Organisation of the Ministry of Mineral Development for Pakistan

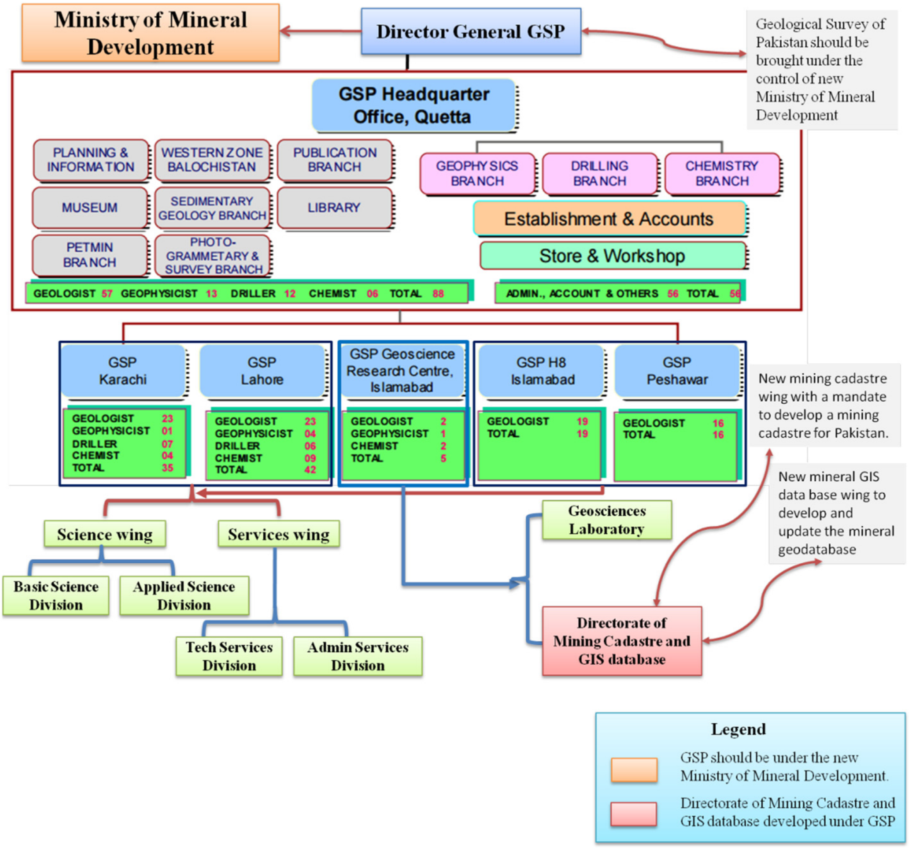


Figure 11.
New suggested organisational structure of GSP

Source: Updated Geological Survey of Pakistan, 2013

5.2 Element 2: political economy

A politically stable country with a growing economy will attract more mineral-led foreign investment as compared to a politically unstable government with a weak economy (Owuor, 2014). Pakistan has a fragile political and security environment, not suited for the confidence required to attract foreign investments. This is mostly because of non-continuity of policies. Continuity in policy through any form of government is necessary to build the confidence of the foreign and local investors. Mining is an international business and Pakistan has to compete against developed and developing countries to attract foreign direct investment. It is important for Pakistan to provide a stable and growing political and economic environment to attract the already depleting investment in the mineral sector. In this regard, Pakistan needs to foster a political economy which is friendly towards foreign investors and multinational mining corporations by taking following steps (Table I):

- political dispensation and form of governance;
- economics for national benefits; and
- infrastructure development.

Table I. Suggested measures leading to best practice for political economy and infrastructure development of Pakistan

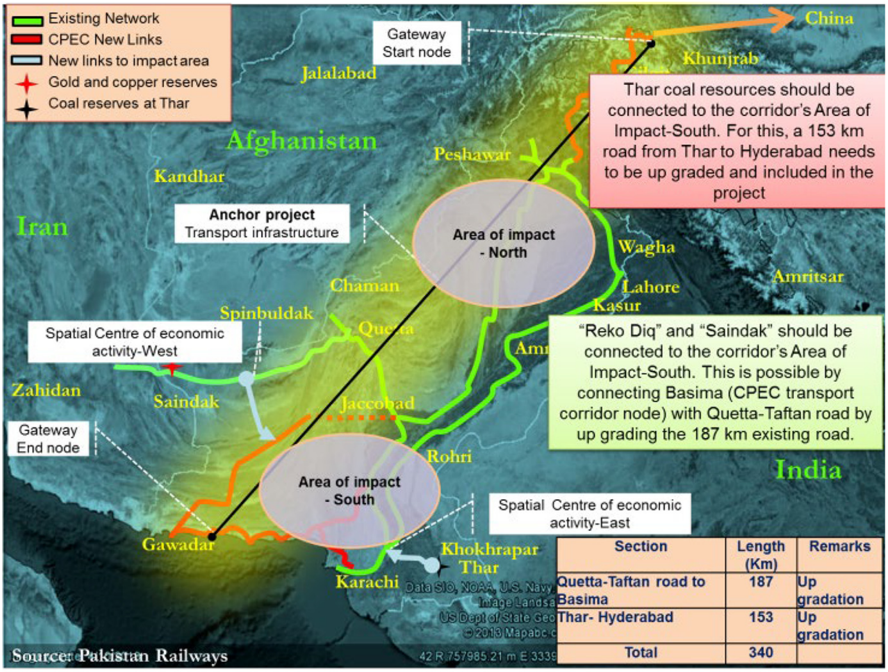
Category	Description	International best practice			Pakistan	Implementation – measure leading to best practice
Political dispensation and form of governance	Democracy	Democratic with Presidential form of government			Democratic with Parliamentary form of government[a]	Pakistan should evolve a system of governance that strengthens the political institutions by incorporating checks and balances in the system and a constitutional role for the Army Pakistan should look at the possibility to restructure its constitution on the basis of the presidential form of government which will combine the power centres into one institution to bring the much needed stability in the political system
Economics for national benefits	Type of economy	Free market economy			Free market economy with a blend of Islamic laws	Pakistan should become a free market economy with clear rules and regulations defined for Islamic banking system Pakistan should develop Gwadar into a communication and economic hub of the World by speedy completion of China Pakistan Economic Corridor (Figure 12)
		Range	Average	Standard deviation		
	GDP	US$202-2,246bn	US$908bn	US$752bn	US$245bn	Pakistan should take steps for a steady growth in the GDP, which will attract foreign investment
	Annual GDP growth	1-6%	3.8	1.7	3.6	Pakistan should enhance its tax network by strong institutional strengthening measures in CBR (Central Beau rue of Revenue)
	Tax revenue/ GDP	10-34%	23.3%	7.3%	11.9%	The four main areas of cooperation from the CPEC are transport, infrastructure, energy and industrial cooperation.
	Unemployment	5-25%	9.5%	6.1%	6.2%	
	Poverty[b]	8-51%	28%	14.9%	22.3%	This opportunity should be properly used to create job opportunities lower the poverty level of the country
Others	Infrastructure	15-66	45.6	13.8	118	The transport infrastructure (roads, rail and port infrastructure) should be improved to create favourable environment for foreign investments The CPEC's 2000 km road network will pass close to the mineral rich areas of Pakistan thus making it more attractive for the foreign investors (Figure 12) Approximately 80% of Pakistan's mineral reserves are located on the western border and linking it with CPEC can attract foreign investment as the communication infrastructure will be uplifted (Figure 12)

Notes: [a]A constitutional democracy, operating in a parliamentary system. [b]Population below international poverty line

One of the main barriers in the development of mineral resources in Pakistan is the lack of FDI. This is primarily due to the weak infrastructure apart from many other reasons. Pakistan has to take advantage of its strategic location to boost its economy. The newly started China Pakistan Economic Corridor (CPEC) should be used to benefit the mineral and mining industry. To advantage of the opportunity that presents itself in the form of CPEC, a linkage strategy is suggested:-

5.2.1 China Pakistan Economic Corridor – an opportunity for mineral development and growth. Pakistan is strategically important for China as it links China to the Southern Asian region, Middle East and Eastern Europe. In July 2013, China and Pakistan signed an MoU in Beijing to enhance economic regional integration in investment, energy, trade, and communication (Haider, 2016). The CPEC is an on-going development mega project, which aims to connect Gwadar Port of Pakistan to China's north-western region of Xinjiang, via a network of highways, railways and pipelines (Vandewalle, 2015). The western CPEC route will pass through the province of KPK and Baluchistan which are rich in mineral resources (Figure 12). This will help with an improved infrastructure and a better security environment which are the basic ingredients to attract foreign investments.

5.2.2 Linkage strategy between China Pakistan Economic Corridor and mineral development. There are challenges, which need to be address to capitalise on the mineral development opportunity that presents itself in case of CPEC. An integrating strategy of "Area of Impact" and "Mineral Development" is presented here to achieve the goals of an integrated *CPEC–Mineral Development* strategy. Jourdan, who identified the following steps, presented this strategy (Jourdan, 1998):



Sources: Google maps (Updated); Geological Survey of Pakistan (2014)

Figure 12.
Suggested connections between intermediate nodes "East" and "West" with area of impact – South

- Restriction on investment reduced. These constraints to investment are often infrastructural in nature (such as a lack of well-maintained road and rail network and efficient ports). The linkage of *CPEC* with *Centres of Economic Activity* will ensure that the infrastructure necessary for the development of these areas is identified and prioritised; and
- Opportunities for investment identified. These investments are critical to the strengthening of the economy at a sectorial or industrial level.

5.2.3 Creating areas of impact, intermediate nodes and transport linkages with China Pakistan Economic Corridor to boost mineral development. One of the routes of CPEC transport corridor will pass through the mineral rich provinces of KPK and Baluchistan. This will help with an improved infrastructure and better security environment, which are the basic ingredients to attract foreign investments. Identifying economically feasible impact areas along the CPEC corridor is of utmost importance. Figure 12 identifies such two *Impact Areas* in the project along its transport corridor.

The impact area north is identified in central Punjab and KPK province, which can link the mineral resources of KPK and Punjab provinces (Figure 12). CPEC can also connect gold and copper resources at Reko Diq and Saindak in Baluchistan with outside World. "Reko Diq" and "Saindak" should be developed as an *Intermediate Node* connected with the corridor's *Area of Impact-South* (Figure 12). This is possible by either connecting Panjgur or Basima with Quetta-Taftan road by up grading either the 382-km road from Panjgur to Nok Kundi or 187-km road from Basima to Quetta-Taftan road (Figure 13). The second *Intermediate Node* connected to the corridor's *Area of Impact-South* is the Thar coal resources. For this, a 153-km road from Thar to Hyderabad should be up graded and included in the project (Figure 14). The connection of these two *intermediate nodes* with the corridor's *Area of Impact-South* will improve the infrastructure, a basic ingredient for mineral led investment. This will help in attracting Chinese mining investment, which intern will subsequently encourage other global mining corporations to invest in a growing mineral sector of Pakistan as the investor will see it as a profit opportunity with certain inherit guarantees.

5.3 Element 3: legal framework – existence of clear legislation

Legal clarity will encourage investors to invest in the mining sector (Hunter, 2017). Legal context in which mining is being conducted in Pakistan implies that the National Mineral Policy NMP-2 is playing the role of a "Minerals Law". Granting and managing of mining concessions are regulated by the Regulation of Mines and Oilfields and Mineral Development (Government Control) Act, 1948 and the related rules made under the Act (Ministry of Petroleum and Natural Resources, 2013). Currently Federal, four Provincial and the Federally Administered Governments administer their minerals through separate rules.

Pakistan should have a mining legislation which is in line with the international best practices that can encourage investors to invest in the mining sector. These legislation initiatives should be backed by strong institutional setup as discussed in section 5.1. Such new legislation should cover the following legal aspects and are presented in Table II:

- mineral and property (land) rights;
- access to minerals and mineralised land;
- health and safety;
- environment and social requirements; and
- mine closure.

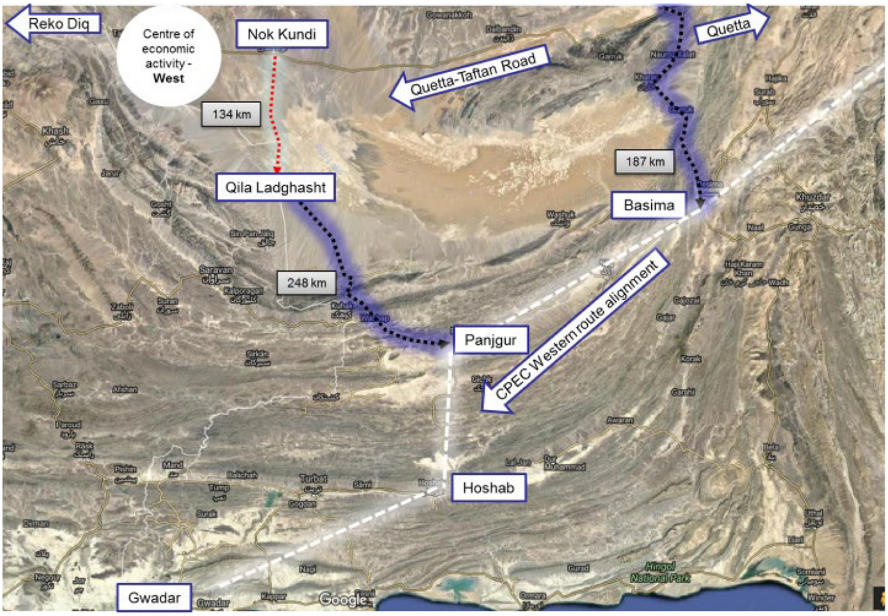


Figure 13. Suggested linkage between Centre of Economic Activity – West and CPEC western route

Sources: Google maps (Updated); Geological Survey of Pakistan (2014)

Figure 14. Suggested linkage between Centre of Economic Activity – East and CPEC eastern route

5.4 Element 4: regulatory framework

Regulatory approaches that ensure land access as part of mineral rights and clear mechanisms to resolve disputes are needed, notably at the early stages of mine development. Investors typically expect a range of license possibilities and how they

Description	Pakistan – current practice	International best practice	Suggested measures leading to best practice
Mineral policy	National Mineral Policy – two and four different Provincial mining concessions for each province	Mineral policy and mining concession rules at federal level	There should be one mineral policy for all. For example, Mexico, that has 31 States and a Federal district. Each State is considered a sovereign entity and is free to make its own constitution, but they are governed by only one mining law (*Mexican Mining Law of 1992*). All the minerals should be the property of the State. For example, in pre-1994 South Africa, minerals were the property of the owner of the land. In an effort to bring about equitable reform and to compete in the international market, the *Mineral and Petroleum Resources Development Act, 28 of 2002 [MPRDA]* was promulgated in 2004, which gave the State the exclusive rights over all the minerals in South Africa
Legislation	Articles 141, 142 and 172 of the constitution of Islamic Republic of Pakistan, 1973 Minerals and mining is covered under article of constitution but this provision is superseded by the 18th amendment in the constitution where all powers were relegated to the provinces	Protected under the article of constitution	Pakistan should revisit its mineral legislation by organising a national debate in the media and the parliament to bring the legislation in line with international best practice. Pakistan should declare the promotion of investment in the mining sector as national top priority. All these amendments should be consolidated into a single document and given a constitutional cover
Legal framework	Provincial governments are responsible for regulation, detailed exploration, mineral development and safety concerns, whereas geological survey and international coordination are federal responsibilities	The mining laws are based on the overall constitution and set out from other laws which augment the mining law, such as economic laws State-owned	Pakistan needs to introduce a mining law that is federal in nature, providing special guarantees to foreign investors, ensuring repatriation of profits and capital, tax stability and non-discrimination against foreign investors. For example, the Chilean *Foreign Investment Statute* (Decree-Law 600) for guarantees between the foreign investors and the Chilean State

(continued)

Table II.
Suggested measures leading to best practice for legal framework of mining sector in Pakistan

Description	Pakistan – current practice	International best practice	Suggested measures leading to best practice
Mineral ownership	Nuclear minerals and those found in the territory under control of the federal government are the ownership of the federal government, while all other mineral resources are under control of provincial governments		Pakistan should deliberate on this in Parliament with all parliamentary parties to allow amendment to the Constitution. However, this should not be at the cost of inter-Provincial harmony, in which case a method should be devised where the investor have security of tenure
Environmental provision	Protected in the National Mineral Policy 2012 but no mention of specific actions such as filing of Environmental Impact Statement	Protected in legal framework through an Act	The establishment of the Directorate of Environmental Protection under the Inspectorate of Mine Health and Safety is suggested (Figure 10). This Directorate should monitor environmental compliance in all mining operations with an authority to carry out unexpected audits and levy fines on mining companies
Foreign Investment incentive law	No law exits	Clear foreign investment laws and incentives are promulgated	A separate committee should be formulated under Ministry of Finance and Revenue and MMD to promulgate changes in the existing foreign investment procedures in the country

Table II.

may be awarded (i.e. by application, by tender, by auction). Pakistan's Concession rules rely on auctioning of mineral rights allowing for few types of licenses/leases. A review of how mineral rights may best be awarded and the types of licenses to ensure the comprehensive and sound development of mineral resources should be done. Preparation of international standard tender documents and a model mineral development agreement should be done in line with the international best practice[10]. Enforcement mechanisms should be clarified and meaningful penalties should be included. Pakistan should consider establishing a working group to review the legal context of mining operations in Pakistan. The suggested measures for the regulatory framework are presented in Table III.

5.5 Element 5: strong treasury with an appropriate fiscal regime

A typical mining operation is generally subject to a wide range of taxes. The economics of a mining project are normally impacted primarily by three major government imposts: corporate income tax; mineral royalty; and customs duty. Pakistan's fiscal regime applicable to mining is defined in the NMP-2, which sets out a framework for Federal and Provincial taxes for the mining sector.

Mineral royalties in Pakistan are on the high side and they need to be reduced to the level where international investors will be comfortable. Pakistan can work on the example of Chile that has a flat tax (not considered a 'royalty' itself) on people that carry out mining exploitation and achieve mineral sales over a certain volume in Chile. This tax is progressive and is charged on the operating income (taxable net income less operating expenses) of a mining producer at rates ranging from 0 (annual sales of less than 12,000 tons of fine copper or equivalent) to 4.5 per cent (annual sales of up to 50,000 tons of fine copper or equivalent) (International Development Research Centre, 2010). Pakistan should offer royalty-based incentives, like Mexico, where all the mining specific royalties and taxes were revoked in the 1990s to attract international investment in the mining industry (Tetreault, 2014). However, revoking the royalties all together may not be productive, because of hierarchy of claims, which can leave long term negative implications. A progressive formulated approach, which has incentives for both the government and investors, should be adopted and implemented. The suggested measures for the fiscal framework are presented in Table IV.

5.6 Element 6: stakeholder participation

The involvement of stakeholders positively affects the policy formulation, adjustment, development and implementation (Schalk, 2011). By interacting with stakeholders during the policy formulation process, the impact and results can be aligned with national and stakeholder objectives. Local government players should increasingly be involved in interactive policy making to enable the non-government actors in decision-making (Denters, 2003). In the absence of local government, it would be extremely difficult for non-government stakeholders to play their part effectively in the policy formulation process.

For the identification of stakeholders, an impact analysis table was drawn (Table V). In the impact analysis, all potential stakeholders were listed with their impact on different spheres. For example, the local community, an internal stakeholder that has a high influence on the policy making process, is critical as it has economic, social, environmental and law and order implications on the area. Therefore, local community is a critical stakeholder in the policy formulation process and must be engaged as early as possible to give credibility

Table III. Suggested measures leading to best practice – regulatory framework

Description	Pakistan	Best Practice	Suggested measure leading to best practice
Mineral ownership	Nuclear minerals and those found in the territory under control of the federal government are the ownership of the federal government, while all other mineral resources are under control of provincial governments	State owned	Pakistan should deliberate on this in parliament with all parliamentary parties to come with amendment in the constitution whereby the minerals should be brought into the control of the State
Security of tenure	No specific provision for security of tenure in National Mineral Policy 2012 and Provincial Mineral Policies	Protected in legal framework through an act	The Mining Law should provide the provision that the owner of the mining property has the right to protect these rights whether against another individual or against the State itself The mining concessions grant should be made through an administrative act (mining lease) published in the Official Gazette of Pakistan The role of the judiciary should be included in the mining concession contracts which will provide security of tenure to the investor
Rights registry	At federal level provided by REGISTERED No. L7532. None of the four provinces provides for the establishment and rigorous maintenance of a registry of applications filed for mineral titles	Title registration office	The establishment of a Directorate of Mining Cadastre and GIS database under the geological survey of Pakistan (Figure 10 and 11). This GIS information should be made available on the internet for easy access for everyone so that the investor have a fair idea of the mining operations being run in the country
Award of concession	Ministry of Petroleum and Natural Resources at Federal level and Ministry of Mines and Minerals at provincial level	Legal proceedings On merit decision Through a unilateral administrative act First come first serve basis	The award of concession procedure is confusing as there are separate entities at Federal and Provincial level To make it consistent and corruption free Pakistan should ideally adopt the Chilean model where mining concessions are awarded in a non-contentious legal proceeding

(*continued*)

Table III.

Description	Pakistan	Best practice Statistical analysis Range	Average	SD	Suggested measure leading to best practice
Exploration fee	Exploration fee in Pakistan is US$2.4 per km^2 higher than the limit of standard deviation of the selected countries 10% area of Reconnaissance license and not exceeding 1,000 km^2	US$0.076 per km^2	US$0.032 per km^2	US$0.042 per km^2	Pakistan should lower its exploration fee below the international best practice to attract foreign investors It should be ideally brought down to US$0.01 per km^2[a] which provides an incentive to the local and foreign investors. The exploration fee should be adjusted to an increasing scale[b,c]
Licence fee	US$50; one-off payment at the start of operations. Rs 3/ (Rupees three only[d]) per acre per annum (US $0.00012 per km^2). The fee shall be enhanced by 50% over the last fee paid each time the license renewed. The fee shall be paid in advance for each year of renewal of prospecting license	US$1.11 per km^2	US$0.64 per km^2	US$0.75 per km^2	The licence fee in Pakistan is within the standard deviation limit of all selected countries and should be kept as they are However to get the attention of the international mining companies and foreign investors, it should be based on a yearly decreasing scale[e]

Notes: [a]Average exploration fee for the eight selected countries; [b]Mexico, where the exploration fee is US$0.0039 per km^2 for the first year and then a periodic increase every year; [c]In Brazil, the rate is US$0.0119 per km^2 for first term and US$0.018 per km^2 during the period of renewal of the licence [d]Equals to US$0.03 per acre per annum (exchange rate @ 1 Pak Rupee = US$0.01 on 09 September 2015) [e]In Brazil, US$1.19 per hectare for first term and US$1.80 per hectare during the period of renewal of the licence are applied

Sources: Updated Ministry of Petroleum and Mineral Resources of Pakistan (2013); The constitution of Islamic Republic of Pakistan, 1973; The World Bank (2014, 2015); International Monetary Fund, 2015; Geological Survey of Pakistan (2013); Ministry of Finance, Government of Pakistan, 2014; The World Economic Forum (2014); SNL Metals Economic Group, 2014; United States Geological Survey, 2014

Table IV.
Fiscal framework – international best practice and measures leading to best practice for Pakistan

Description	Range[a]	Average[b]		Standard deviation		Pakistan Current	Pakistan Suggested	Measure leading to best practice
		Minimum	Maximum	Minimum	Maximum			
Royalty (On revenue)	0-20 %	0.9 %	5.3%	1.3	6.4	1-10 %	↓ 6.5 %	Royalty is within the range of selected eight countries, but it is suggested to bring it down to 6.5 % for five years to attract investment. After five years it should be progressive and should be charged on the operating income (taxable net income less operating expenses) of a mining producer at rates ranging from 0% to 5 %
		Min	Max	Min	Max			
Specific mining tax[c]	0.2 – 20 %	9.1 %	15.6 %	9.5	5.6	6-15 %	✓ 6-15 %	Specific mining tax rate is also within the range of selected eight countries and can be left unchanged in the interest of stability Special mining incentives law should be made where Specific mining tax may not apply to foreign investors that had signed foreign investment contracts with the Pakistani Government
Special incentives						Protection from Expropriation Repatriation of Capital and Profits allowed Mining operators will be allowed to insure their assets and risks with international insurance companies		Following strategic measures should be taken to enhance the confidence of foreign investor:- A new constitutional Act to sign a foreign investment contract with the firms that bring capital, physical goods and other forms of investment into the country including a specific clause which grants investors a fixed corporate income tax rate for 10 years Budgetary incentives in the form of international standards tax regulations and access to capital sources through lines of credit Efficient processing of exploration and development claims Constitutional cover through act of Parliament for following incentives:- Eliminate the distinction between foreign and

(*continued*)

Description	Range[a]	Average[b]	Standard deviation	Pakistan Current	Pakistan Suggested	Measure leading to best practice
						national capital in the mining industry to encourage foreign investors. Free access, possession, and disposal of foreign currency No enhancing of royalty on minerals during the period of contract with a mining company Guarantees of the legal protection of investor's' activities in all parts of the territory of Pakistan. Guarantees for the protection of the investor's' rights during nationalisation and requisitions. A choice to conclude a tax law stability agreement with the government Provision of mining act to develop SEZ, which is eligible for a tax holiday[d]
Corporate income tax	4−42.33[e]%	25.8 %	11.4	25-35%	✓ 25-35%	Corporate income tax rate is within the range of selected eight countries and can be left unchanged in the interest of stability. However, it can be reduced to 15 % (4% lower range + 11% SD) as an incentive to foreign investors. This rate should be flat and same for all types of investments not linked to the amount of investments

Notes: [a]Range is calculated between the minimum and maximum limit of the royalties for eight countries; [b]average is calculated separately for both minimum and maximum values of royalties; [c]SMT is calculated from values of three countries, i.e. Chile, Mexico and India; [d]SEZs are planned in the CPEC, these should include the mineral rich areas such as Reko Diq, San Dek and North Western parts of KPK; [e]42.33% is the CIT for foreign companies in India;
Source: Updated The World Bank (2014), The World Economic Forum (2014); SNL Metals Economic Group, 2014; United States Geological Survey, 2014. International Development Research Centre (2010), Metals Economics Group (2013); Ministry of Mines and Energy (2015)

Table IV.

Table V.
Stakeholder impact analysis in Pakistan's mining industry

Impact area	Stakeholder	High influence on the policy				Low influence on the policy								
		Government Internal	Mining industry Internal	Local community Internal	Local representatives Internal	Law enforcing agencies External	Religious parties External	Financial institutions External	Media External	Judiciary External	Academia External	Trade Unions External	International bodies External	NGO's External
Economic	Highly important	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Social		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environment		✓	✓	✓	✓				✓		✓		✓	✓
Law &Order		✓		✓	✓	✓	✓	✓						
Legislation	Low	✓	✓		✓	✓	✓	✓		✓	✓	✓		✓
Business	Low	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓
Academia	Low	✓	✓		✓			✓			✓	✓	✓	✓
Confidence building	Low	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓

to the process. It is important to note here that this stakeholder identification is done specifically for Pakistan while keeping the country's current economic, social and security environment in mind. The suggested process followed for identification of the stakeholders is presented in Figure 15.

These critical stakeholders are government, its subsidiaries and implementation bodies; mining industry; local communities and their representatives; law enforcing agencies; religious Monarchs; and financial institutions. Local communities and their representatives were taken as one stakeholder as they share common impact and concerns. Some of the measures that Pakistan needs to take *vis-à-vis* six identified stakeholders are presented in Table VI.

5.7 Element 7: sustainable mineral development

Countries with mineral resources are faced with both opportunity and challenge. Opportunity because, if used wisely it will bring economic growth and prosperity, and challenge because, if used unwisely it will instil economic instability, social conflict and environmental degradation. Pakistan should not overlook sustainability aspects of the natural assets and should be careful in designing policies that obtain short-term gains while ignoring long-term implications.

Mining has adverse effects on the environment and community wellbeing if environmental issues are not properly addressed. The environmental effects of mining include disrupted biodiversity, contamination of surface, ground and downstream water resources, whereas cultural change is one of the effects to the local communities. Most negative effects of mining are manageable with policies aimed at responsible mineral

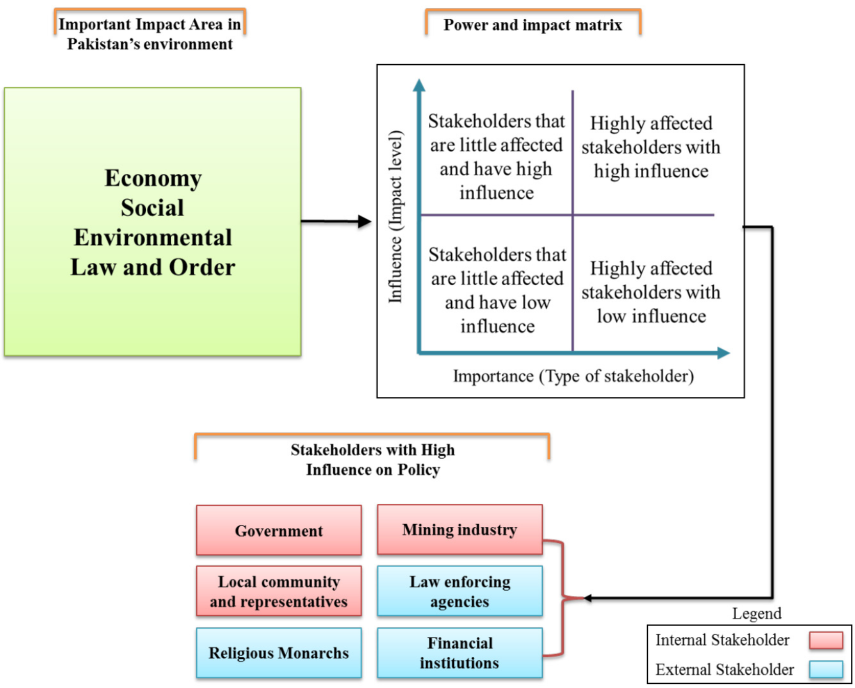


Figure 15.
Critical stakeholder identification process for mineral policy development for Pakistan

Description	Type of stakeholder	Most important impact area	Measure leading to best practice
Government, its subsidiaries, and implementation bodies	Internal	Economic	Government of Pakistan, its Ministries and Provincial governments are all key stakeholders and they should be involved in the policy formulation process All the mineral resources should be the property of the Federal Government
Mining industry	Internal	Economic	Mining corporations should form part of the stakeholder consultation process to ensure that they do not harm the environment, people, and social values
Local communities and their representatives	Internal	Social	Approximately, 98% of the total mineral wealth of Pakistan is in the provinces of Baluchistan, Sindh, and KPK, so it is critically important to include them in the stakeholder consultation process
Law enforcing agencies	External	Law and Order	Foreign investors are reluctant to invest in Pakistan due to the precarious security situation and the fact that 90% of the minerals are present in the areas where the security situation is worst (Figure 16) Figure 16 highlights the active cantonments of Pakistan Army adjoining the areas where it is fighting against terrorism and insurgency. These cantonments are covering all western mineral-rich parts of Pakistan and the CPEC western route. Army should be tasked to secure these areas, which will greatly improve the security situation in these areas The consultation of the army as a stakeholder is important in the policy formulation process for three reasons:- The military has the intelligence and understanding of the activist and terrorist groups operating in those particular areas Without their consultation, the intensity of the threat is difficult to measure, resulting in critical gaps between the policies on the security situation A detailed input from the military is necessary for the implementation plan of the policy in the mineral-rich areas
Religious Monarchs	External	Law and Order	Religious monarchs controlling almost 70% of the country's population living in the rural areas should be included in the stakeholder consultation process True enlightened religious scholars should be asked to contribute to harmony in the society thus enhancing an enlightened and progressive image of the country necessary for foreign investors to invest in Pakistan
Financial institutions	External	Economic	State Bank of Pakistan is an autonomous body but practically work under the Ministry of Finance. It should be made a fully autonomous body so that it can exert its positive role in strengthening of the economy and banking system There is a need to consult and involve financial institutions in policy-making process

Table VI. Stakeholder's consultation – measures leading to best practice for Pakistan

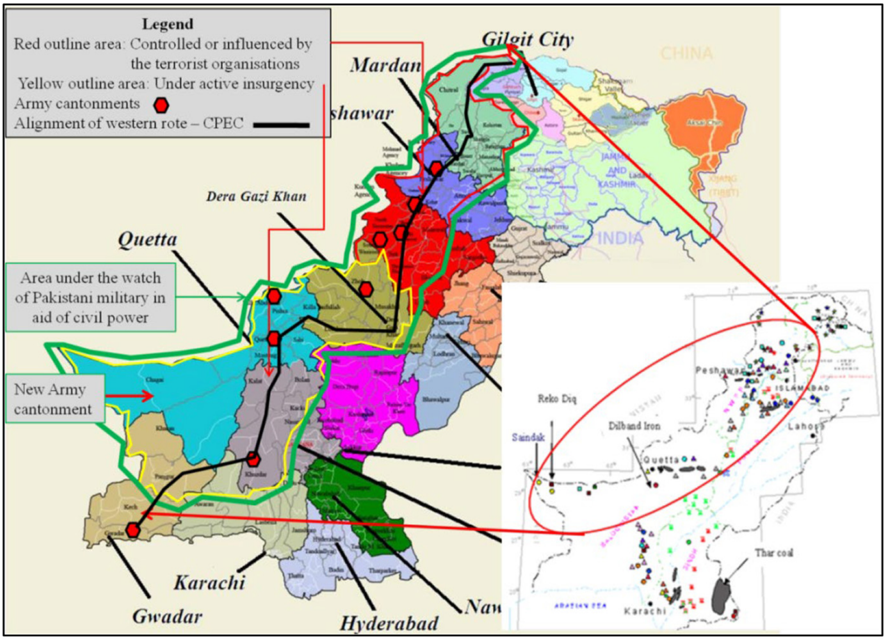


Figure 16.
Location of mineral resources and role of army in providing security to mineral rich areas of Pakistan

Source: Updated Kansas free press (2016), Ministry of Defence, Government of Pakistan (2014)

development principles. The policy development framework for Pakistan should speak to the three core issues, namely environmental, social and economic issues within a framework of good governance, made possible by appropriate mineral law and policy instrument (Figure 17). The measures leading to sustainable development are presented in Table VII.

6. Summary of strategic fit measures for Pakistan

6.1 Enabling institutional framework to provide an investor-friendly environment

- Pakistan should separate mining and minerals from petroleum and gas resources by establishing a new Ministry through a constitutional amendment.
- *Inspectorate of Mine, Health and Safety, Inspectorate of Land and Mineral Rights and Sustainable Development directorate* at *MMD* should be established.
- Under a *Sustainable Development Directorate*, the establishment of an *Environmental Protection Body* is required to monitor environmental compliance of different mining projects. This agency should also be in coordination with the *Pakistan Environmental Protection Agency*.

6.2 Political economy is imperative for mineral development

- Pakistan should remodel its political system to provide the much-needed stability and strengthening of the political institutions. The much-needed checks and

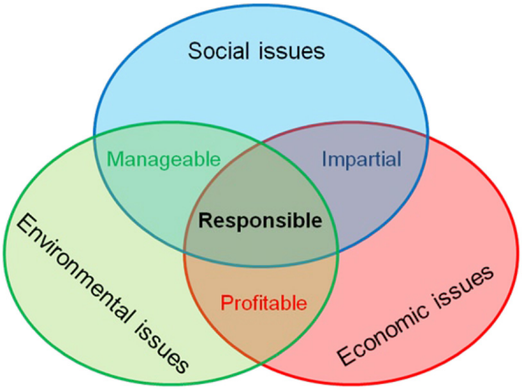


Figure 17.
Three core mining issues and their intersecting ground for sustainable mineral development

Sources: Updated from World Economic Forum (2014), Natural Resource Governance Institute (2014)

balances in the system, and a constitutional role of the army, should be constituted to avoid frequent disruption of democracy due to perceived poor governance.

- The Chinese investments in CPEC can lift FY16-18 annual GDP growth substantially through direct impact (The Nation, 2016). Steps should be taken to avoid unnecessary political controversy over the sequence of development of the different routes so that the project can be completed within stipulated time frames.
- Reko Diq resources (6,000 million tonnes of copper and 1,656 million tonnes of gold) and Saindak resources (618 million tonnes of silver and 1,400 million tonnes of iron) should be joined with the CPEC at Basima or Panjgur by up grading either the 382-km road from Panjgur to Nok Kundi or 187-km road from Basima to Quetta-Taftan road. Thar coal resources (186 billion tonnes) should be joined with existing national highway at Hyderabad by improving the existing 153-km road from Thar to Hyderabad.
- Both these new highways should be made part of the CPEC officially to catch the eye of the world. This will make the foreign investors interested in investing in mineral resources these roads are linking.

6.3 Regulatory and legal mining reforms

- The promotion of investment in the mining sector should be declared as national interest and top priority. The Ministry of Mineral Development should formulate a new mineral policy which should cover all aspects of mining.
- Mineral ownership should be revised in favour of the State by vesting it in the State, allowing for Parliamentary oversight.
- A new law should be introduced on foreign investment, which should provide special arrangements with guarantees to the foreign investors. This law should ensure fair repatriation of profits and capital, tax stability and non-discrimination against foreign investors.

Table VII. Sustainable development – measures leading to best practice for Pakistan

Sustainable development issues	Measure leading to best practice
Integration of community, regional and national issues	Integrating mining into the local, regional and national fabrics; Making socio-economic planning a formal part of the permitting process; Addressing mining operation effects, interactions or local, regional and national dependencies, in initial documentation and in regular reporting; Making planning subject to review and approval for the original permit; and Making the original permit subject to regular review and periodic revision to reflect new goals and changing conditions
Community health	Including health considerations in the baseline socioeconomic assessment that should be mandatory during the permitting process; Working with mining entities and with communities in the planning and priority setting for health services that the entities may have undertaken to provide; and Leading with other stakeholders to gradually assume responsibility for this activity from mining entities so that when closure of the mine approaches the physical and human public health infrastructure can make the post-closure transition with a minimum of disruption
Employment opportunities	Socio-economic plans should be made part of the permitting process to optimise the employment of local community
Respect of human rights and cultural heritage	Domestic policies and laws should be made consistent with international laws on human rights Ensuring high standards of conduct by mining corporations with respect to human rights and cultural heritage
Occupational health and safety	Ensuring corporate responsibility for occupational health and safety through an appropriate set of legal requirements, as well as through governmental monitoring, inspection and enforcement activities; Ensuring that failures in occupational health and safety performance are effectively dealt with to prevent reoccurrence supported by a system of penalties up to and including the revocation of operating permits; Requiring entities to provide the education, training, equipment, and adequate system that will reduce hazards and minimise the risk of accidents, injury, and disease and create a safety conscious environment; and Avoiding and minimising potential adverse effects to biodiversity
Security issues	Working with corporations to address issues that may give rise to security concerns before issuing permits or commencing operations. Not issuing permits when a deposit to be mined is in an area of active armed conflict. Army should be involved in the licensing process to guarantee security of the local community and the mine operator
Integrating informal ASM activities into the legal and economic system	Clear legal frameworks and regulatory mechanisms to facilitate the organisation of ASM, access to property rights and ensuing obligations for ASM; Improving savings in the artisanal mining community, establishing more acceptable forms of financing and encouraging responsible investment; Strengthening the appropriateness, viability and transparency of policies and systems for collection, management and reinvestment of ASM revenue; and Encouraging initiatives for standards and certification of ASM

- The establishment of Mining Rights Registry, Mining Cadastre System and GIS-based mineral database under the Ministry of Mineral Development. This GIS information should be made available on the internet free to access for everyone so that the investor has a fair idea of the mining operations being run in the country.

- An amendment to the *Pakistan Environmental Protection Act 1997*, whereby the new legislation should protect the environment and the property owner (operator) to meet certain requirements and to accept certain responsibilities.
- Transparent award of concessions by awarding it in a non-contentious legal proceeding based on the first come-first served principle.

6.4 Fiscal regime reforms

- A new Constitutional Act should be introduced on foreign-investment contracts with firms that bring capital, physical goods and other forms of investment into the country by eliminating the distinction between foreign and national capital.
- A Mining Act should be introduced to develop Special Economic Zones (SEZs), which are eligible for a tax concessions.
- Legal protection must be guaranteed for investor's' activities in all parts of the territory of Pakistan and for the protection of the investor's' rights during nationalisation and requisitions; and
- Mining royalties should be set at a fixed minimum for five years to attract international investment in the mining industry[11]. After the five-year period, a progressive royalty should be charged taking account of economic cycles, ability to pay and subject to a maximum rate of 5 per cent of turnover revenue.

6.5 Stakeholder's involvement for effective mineral law and policy

- Involvement of all relevant Ministries and stakeholders in the policy formulation process;
- Involvement mechanism of the local community and local governments in the policy formulation process; and
- Improvement of the security situation in mineral rich areas. Although unusual, the military (in Pakistan's case) should constitutionally be made part of the policy formulation process. In addition, the Army should establish a new cantonment at Dalbandin (close to Reko Diq) so that it can improve the security situation in areas close to the copper and gold reserves.

6.6 Addressing core mining issues for sustainable mineral development

- establishment of sustainable mineral directorate under the new ministry; and
- ensuring environmental and community health through laws and regulations in the nee mineral policy framework.

7. Conclusion and recommendation

The aim of this article is to customise a mineral policy framework for Pakistan that suits its unique conditions but is also in line with the international best practices. A framework, when implemented, can significantly raise the contribution of the mineral sector in the country's economy. The policy framework is based on seven elements derived from the gap analysis when Pakistan is compared with eight developing countries that were similar in political, social and economic conditions. Each policy development element was discussed and measures were suggested for a new mineral policy framework for Pakistan.

To have a policy is one thing, but implementing it is another – and implementation is often the most challenging part. Before the adoption of a new Minerals Policy Framework, it will be necessary to develop a plan for its implementation. It is common, especially in developing countries, that a well-designed policy fails to achieve the desired results because implementation plans either do not exist or are poorly designed and executed (Ashraf and Cawood, 2018). There are several challenges which need to be addressed to capitalise on the mining opportunity that presents itself in case of Pakistan's mineral sector. Following are some of the recommendations which can address these challenges:

- creating an enabling environment for conducting business through simplified and transparent access to mineral concessions and catering to the needs of a large range of mining stakeholders;
- developing a comprehensive plan for implementation and incorporating the essential building blocks necessary for implementation for this new mineral policy framework, allowing for a comprehensive GIS (with Mining Cadastre) for mining (third paper of the series).

Notes

1. Directorate General Mines and Minerals of four provinces.
2. Semi-governmental organisations; government appoints their managing directors.
3. The Wings of the Ministry are subordinate bodies of the Ministry, which have different rules.
4. Attached departments, responsible for the implementation of the policies laid down by the Ministry to which they are attached.
5. Not controlled by outside forces; independent in mind or judgment; and self-directed.
6. Pakistan Government has 51 per cent shares in these Private Companies Limited. The heads of the Private Companies Limited are appointed by the executive, which leaves little room for self-governance in these companies.
7. Director General Administration, Development, Minerals, Oil, Gas, Petroleum, Administration and special projects, all Senior Joint Secretaries.
8. Ideally the Policy Wing should have been responsible for the policy development of Mineral and Mining sector also. This system of separate policy formulation departments for different sectors is creating confusion.
9. The geological survey of Pakistan should also be brought under control of Inspectorate of Land and Minerals Rights.
10. The example of Chile and Peru, where tender documents and model mineral development agreements are standard practice.
11. Should be done carefully to avoid provincial disharmony as provinces' share of budget is going to be reduced by revoking the royalty.

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