

# **Securing Afghanistan's Future: Accomplishments and the Strategic Path Forward**

## **MINING SECTOR**

### **Technical Annex**

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**DISCLAIMER**

**THIS ANNEX HAS BEEN PREPARED AT THE REQUEST OF THE TRANSITIONAL ISLAMIC GOVERNMENT OF AFGHANISTAN AS A TECHNICAL INPUT TO THE ‘SECURING AFGHANISTAN’S FUTURE’ EXERCISE.**

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## MINING SECTOR<sup>1</sup>

This Note examines the potential of the mining sector to be a source of growth for the Afghanistan economy. In order to address this fundamental and strategic issue, this Note will ask and provide answers to three principal questions. First, what is the potential in Afghanistan for industrial and small scale minerals development? Second, given the potential, what are the constraints for development of the sector in terms of the enabling environment (policy, regulatory, taxation) for private investment, institutional capacities, infrastructure and other constraints? And, third, what would be a reasonable sector development scenario over the next five years and what could be the benefit streams (production value, taxes, jobs, value added, etc.) generated under such a scenario.

It is intended that the Note serve as a baseline document to help the government reflect on sector policies and strategies and to provide a “roadmap” for development of the sector. The roadmap will help the government to know where it wishes to go, how it intends to get there, what obstacles and impediments it may face along the way, and what it can reasonably expect to receive in terms of economic and social impacts. This, in turn, will serve as the basis for the development of enabling legislation and fiscal mechanisms for the sector as well as for institutional strengthening required to stimulate investment.

### BACKGROUND

Mining can, and does, contribute to economic development and human well-being. If conducted in an environmentally sustainable manner, exploitation of mineral resources can provide substantial tax revenues to central and local governments, create direct and indirect jobs, and stimulate spin-off industries in and around the mining operations. These beneficial effects and the development of a vibrant mining sector have so far eluded Afghanistan. While the country has excellent geological potential the mining sector is little developed. Three difficulties currently hinder development of the sector.

- i. *Difficult transition from a centrally planned to a market economy.* Taking inspiration from the practices in the Soviet Union, previous government policies fostered the use of State institutions to find and develop mineral resources. This burdened the central government with subsidies for inefficient production at state owned mines as well as high risk investment in new exploration. The mining legislation and taxation arrangements (to the extent that they exist at all) for the sector, do not reflect modern best practices and are not conducive to new private sector investment. Additionally, the mandates, functions, organization and staffing of government institutions responsible for the sector are not responsive to modern requirements.
- ii. *Problems of a post conflict country.* For the past 25 years the security situation in the country has limited the ability of the central government to establish national sovereignty over mineral resources and to promote exploration and development of them. This security situation remains a pre-occupation at the present time and constitutes a hindrance, though not complete blockage, for sector development.
- iii. *Isolation from international trends and practices.* Since the early 1980s, there has been little contact with the international mining industry or scientific developments. While the basic training of many government officials is good, it is nonetheless dated and they have not been able to work in the field nor benefit from international contacts.

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<sup>1</sup> This annex was put together by Craig Andrews from the World Bank.

Over the past 30 years there has been a considerable amount of research on Afghanistan's mineral resources and potential conducted by the government, sometimes with the assistance of international donors. To date, attempts to develop the iron ore and copper deposits as well as others have not proven successful, though some interest in these deposits is now being manifested by potential investors. Exploration has identified occurrences of gold, barite, talc, chromites, and other minerals. There is a considerable semi-precious stone industry undertaken mainly by artisans, which production is not declared to the central government. Finally, the country has reasonably good quality coal resources and some of this is mined for domestic and industrial purposes as well as fuel for electricity generation. The existing small industrial sized coal mines are marginal due to antiquated machinery and lack of new investment. However, there is considerable small scale production. Moreover, coal demand and prices in urban centers has risen rapidly due not only to domestic energy needs during the winter months but also to increasing industrial demand to fire construction bricks.

The government is aware that development of mineral resources will require investments in excess of government abilities and thus seeks to establish conditions and an enabling environment which is conducive to attracting and retaining investment by both private local and international groups. At the same time, the central government is conscious of the need to exert its hegemony through appropriate legislation over valuable non-renewable mineral resources which are, at present, being exploited and the revenues captured by factional groups operating in the country. The privatization and/or leasing to private groups of existing state owned mining enterprises is, at present, held up by the lack of adequate mining legislation. Enabling legislation and a proper mineral concession system is needed to establish order in the quarry and construction materials sector. The demands of reconstruction of physical infrastructure is requiring vast quantities of locally sourced quarry minerals, the exploitation of which carries the additional benefits of absorbing large quantities of labor and spawning ancillary industries. Finally, the small scale mining sector is, at present, wholly unregulated and occupies large numbers of persons in difficult security, hygienic, and environmental conditions. To achieve these objectives internationally competitive mining legislation and fiscal measures are necessary.

### **CURRENT PRODUCTION AND ESTIMATED GROSS MARKET VALUES**

Historically, Afghanistan has had some (officially declared) minerals production though this is estimated, even in the best years, to have accounted for only about 1% of GDP. At the present time, reliable statistics on officially declared production of mineral commodities is virtually non-existent. There is a disconnect between what the Ministry of Mines and Industry plans for production and the actual amounts produced, even from State owned enterprises. The situation is further complicated by supposedly large, but undeclared, production from small scale non-registered miners.

Research was conducted amongst producers and consumers of mineral products and local market prices assessed as of November, 2003 for selected mineral products (see annex). It is estimated that the total value of coal production, at the official and real market prices, is US\$ 10 million per year. Important quantities of quarried sand and gravel are used for general re-building as well as construction of 3,000 kilometers of new highways currently under construction or planned over the next few years. It is estimated that the annual value of sand and gravel production is US\$ 56 million. In addition, salt, which is mostly imported, is estimated to carry a market value of US\$22 million per year. Gemstones, which are clandestinely exported, are estimated to value US\$2.8 million per year. The total value of minerals produced and/or consumed at present in Afghanistan is just under US\$ 100 million.

**Estimated Annual Current Production (Consumption) of Selected Mineral Products**

<b>Commodity</b>	<b>Estimated Production (consumption)</b>	<b>Market Price US\$/unit</b>	<b>Estimated Current Value US\$ mln</b>	<b>Comments</b>
Coal, metric tonnes	140,000	44 – 70	10.1	Official and free market price
Salt, kilograms	(54,000,000)	0.40	21.6	Est. consumption
Gravels, M3	2,702,840	10 – 19	41.0	
Sand, M3	500,000	30	15.0	
Gemstones			2.8	
<b>Totals</b>			<b>90.5</b>	

Source: Bank staff estimates

These figures should be taken with an extreme measure of caution as they represent very rough estimates. However, they are significantly higher than those reported in official government statistics and are, in themselves, probably underestimates. The government does not collect any form of royalties or taxes on the production of these non-renewable resources, though relatively small service fees may be paid to the Ministry of Mines and Industry for certain operations. No information is available on employment, households dependent, value added, production costs, or other information for the mining sector nationally. Most mines production takes place in rural areas, some of which are not firmly in control of the central government.

**PROJECTED MINING DEVELOPMENT AND ECONOMIC CONTRIBUTION (NEXT FIVE YEARS)**

Given the resource base, the existing conditions, possible investor perceptions and international context, one may hypothesize on a short and medium term mining growth and development scenario. Over the next five years, if the government can establish its hegemony over the mineral resources, Afghanistan could increase declared mineral production and the benefits streams that it could produce. To accomplish this, the government should focus on two aspects: first, regularizing existing small scale production to bring this under government hegemony and, second, attracting and retaining new private sector investment. The key to doing so is the adoption of appropriate government policies and programs to stimulate private sector investment, rather than direct government investment in operations. It is also important that emphasis be placed on those sub-sectors which can show results quickly.

Developing scenarios to estimate the economic impacts over the next five years is necessarily conjecture, but reasonable assumptions have been employed to make certain estimates. If the government were to adopt and implement the reform measures necessary and if the security and other political considerations in the country were to permit development, the value of minerals produced in Afghanistan could more than double from existing levels, to US\$ 223 million per annum. The possible public and private sector investment necessary over the five year period would be US\$ 100 million and US\$ 360 million, respectively. The annual economic benefits streams would include nearly US\$ 100 million in value added, US\$ 17 million in taxes and royalties, and the creation of nearly 6,000 jobs. These figures per mineral commodity are summarized in the following table.

**Afghanistan Mining Sector: Growth Scenario**  
**Projected Five Year Investment Requirements and Annual Economic Contribution**

Commodity	Public Investment Total US\$ mln	Private Investment Total US\$ mln	Projected Annual Production Value US\$ mln	Annual Value Added US\$ mln	Royalties and Taxes Annual US\$ mln	Jobs persons
Coal	25.0	50.0	40.0	8.0	0.80	1,500
Quarries	0.4	10.0	60.0	24.0	1.20	2,000
Salt	0.2	1.0	18.0	6.0	0.36	300
Gemstones	1.0	5.0	5.0	2.5	0.10	500
Copper	50.0	240.0	100.0	56.0	15.0	600
Handicrafts	0.5	2.0				
Exploration	20.0	50.0				500
<b>Totals</b>	<b>97.0</b>	<b>358.0</b>	<b>223.0</b>	<b>96.5</b>	<b>17.4</b>	<b>5,900</b>

Source: Bank staff estimates

It is emphasized once again that these are very rough estimates and should in no case be considered as definitive projections. The development scenario is based first on **regularizing existing production**.

- i. **Quarry and construction materials (sand and gravel)** are tied to the reconstruction effort, principally the building of 3,000 kilometers of highways and also general construction and rehabilitation. If the quarry, sand and gravel operations are brought under government hegemony the annual value of production could increase from the present US\$ 41 million to over US\$ 60 million. It may also be possible to generate US\$ 1.2 million per year in royalties from this production (assuming a 2% royalty), though caution should be exercised with respect to existing contractual or other arrangements with the producers.
- ii. **Small scale mining of gemstones.** Through a coherent program of regularization, licensing, marketing and technical support to these activities, it should be possible to increase the production value from the existing US\$ 2.8 million to US\$ 5 million. It is acknowledged, however, it may take some time for the local interests in the principal producing areas of the Panshjer Valley accept central government authority in this area. A key element for the stimulation of the small scale gemstone sector could be the establishment of a cutting and polishing training center in Kabul. If sensible policies in respect of pricing and declaration to the government of cut and uncut stones were put into place, a portion of the currently smuggled gemstones as well as additional value added could be captured.
- iii. **Coal mines rehabilitation.** Several existing coal mines could be rehabilitated, which are important to supply coal for domestic and industrial uses. If the appropriate measures are taken to distinguish the regulatory from operator functions within the ministry departments responsible for coal, put on a commercial basis the existing operations so that they may attract private capital investment, and liberate market prices for coal, then the value of coal production could increase from the current US\$ 10 million to US\$ 40 million.

Over the five year time period, **new investments** in the sector could be envisaged. Some possible candidates for investment and development include:

- iv. **Salt mine development**, given the high consumption of salt in Afghanistan, the vast majority of which is presently imported, a good candidate for development are some of the existing salt deposits. It is estimated that US\$ 21.6 million of salt is consumed in Afghanistan yearly. A private sector investor could find that the existing salt deposits require minimal capital investment and would present a viable opportunity. Exploitation of local salt would not only displace the current imported salt but could also result in significant health benefits to the population as a whole if iodine were to be added.
- v. **New exploration investment and promotion.** Afghanistan, given its size and resource base, could conservatively attract US\$10 – 20 million per year in exploration. This would require stable security conditions in rural areas as well as a modern and attract enabling environment. Additionally, some deposits for which the government possesses adequate exploration data and information could be promoted for private sector investment, if a program to do so were put into operation.
- vi. **Aynak copper mine development.** A number of parties have expressed varying degrees of interest in developing this copper deposit. The government may wish to consider a tendering operation for the deposit in the interests of preserving transparency. The Aynak deposit is of exceptional quality and there is a growing demand in Asia for copper (especially in China). It should be noted that the geological belt beginning in Iran and moving east through Baluchistan in Pakistan and through Afghanistan is highly prospective for copper mineralization. Indeed, both Iran and Baluchistan have producing copper mines. It is possible to conceive of a regional approach to planning for the construction of a regional copper smelter, perhaps making use of Iran's ample energy resources or Afghanistan's natural gas. If Aynak were developed, on the basis of similar copper mines in other countries, the annual value of copper production could be US\$ 100 million, with a value added of US\$ 56 million, and US\$ 15 million in taxes and royalties.
- vii. development of a **handicrafts and dimension stone industry**, based on good quality deposits of lapis lazuli, onyx and marble. Demand is high for good quality dimension stone and a handicrafts industry of carvings could absorb large amounts of labor, if properly trained. Insufficient data exists at the present time to estimate production values and other economic benefits streams.

**Economic Benefits Streams:  
the Case of Sepon Copper Mine**

In Laos, an Australian company is building a medium sized copper mine, to produce around 50,000 tonnes of copper metal per year with a total market value of US\$100 million. The initial capital investment required is US\$240 million. According to estimates, the mine when in production will contribute on a yearly basis:

- US\$ 56 million in value added for the economy
- US\$ 15 million in taxes
- US\$ 62 million in export balance
- US\$ 19 million in local purchases
- 600 new and high paying jobs

While it is impossible to compare directly the Sepon operation with a possible copper mine at Aynak, the amounts cited can give some indications of the economic contribution.

- viii. **Speculative scenario.** Beyond the five year development scenario it is possible to speculate on several other mining developments. These could be:
- Development of a **small-medium sized gold mine**, to produce 4 metric tonnes of gold per year (yearly market value: US\$ 40 million) and requiring an investment of US\$ 50 million, and mine live of 10 years.
  - Development of the **Hadjack iron ore** deposits as well as other deposits in Baghlan and Bamiyan provinces could be envisaged. Given the existence of good quality coal resources around these deposits it is possible to conceive of an integrated ferrous metals industry, direct reduction of iron to produce steel products for local consumption, and/or (depending on transportation developments) export to middle east markets.

### **ROADMAP AND REQUIRED ACTIONS**

In order to achieve the improvements in production and economic benefits streams over the short term several actions are urgently required.

- i. **Mining Policy and Strategy:** the government should adopt as soon as possible a comprehensive policy and strategy for the mining sector. This policy and strategy will define the development objectives for the sector as well as the initiatives the government intends to implement to achieve them. In accordance with the national economic policy, it will put the emphasis on encouraging private sector development and operations in the sector.
- ii. **Mining Law and Regulations:** it is absolutely necessary to establish government hegemony over the national patrimony of mineral resources. An essential step is the adoption within the shortest possible time of mining legislation and regulations. This law should be of an international quality, apply to all investors local and foreign, and contain special provisions for small and artisanal miners as are currently operating in Afghanistan.
- iii. **Establishment of a cadastre office,** which will provide for effective issuance of mining titles such as exploration and exploitation licenses;
- iv. **Strengthening government oversight departments:** government institutions and departments responsible for the mining sector need to be strengthened in order to fulfill the new mandate given to them to oversee sector operations rather than intervene directly in minerals production. This will entail some re-deployment, training and re-skilling of staff. Emphasis should be given to training in negotiations with investors as well as how to monitor compliance with various regulations.
- v. **An attractive fiscal and mining taxation package** which will, on the one hand, ensure competitive and reasonable fiscal burden on the enterprises while, on the other hand, ensuring that the government receives tax benefits commensurate with the value of its non-renewable resource;
- vi. **Establish special programs for small scale mining.** Experience in other countries (Peru, for example) demonstrates that a coordinated and well thought out government policies and programs can help improve the productivity and living/working conditions of the small scale miners. Over the short term, small scale mining will continue to be the backbone of Afghanistan's mineral sector and thus specific government initiatives need to be taken for this sub-sector. This is particularly relevant for gemstones (cutting and polishing training, evaluation office), ornamental minerals (carvings and objects of art), quarry and construction materials.



- vii. **Modernizing the geo-science database**, and synthesizing it into a form which can be used to promote the mining sector as well as the basis for a GIS and exploration support system. The GIS is necessary not only to attract and retain investment but also to assist the government in land use planning, environmental protection, identification of ecologically delicate zones, and other uses. This work should begin during the short term but continue through the medium and longer terms. In this respect, the **rehabilitation of the Afghanistan Geological Survey** will be a priority.
- viii. **Adoption of environmental protection measures**, including an environment law and regulations as well as creation of special government departments to oversee and monitor compliance with them.
- ix. **Improved and stabilized security situation** in the country, including de-mining of likely areas where new investment is to take place;
- x. **Rational development of infrastructure**, principally transport, to service the mining areas.

### **ATTRACTING NEW INVESTMENT: WHAT INVESTORS WANT AND THE LESSONS OF MINING SECTOR REFORM**

**Mining Reform Works:  
The Case of Argentina**

The new government of Argentina in 1991 announced an ambitious program of macro economic and sectoral reforms. A major effort was undertaken to reduce the presence of the State in all sectors of the economy, the currency was fixed to the US dollar to stop inflation, and various impediments to new investment were remedied. In the mining sector, which had been moribund for years despite highly prospective geology, ground held by federal government and provincial government corporations was opened to new private investment, the mining law was reformed, a new mining investment act with internationally competitive fiscal incentives was passed, a modern computerized mine title and registry system was introduced, geological information systems were up-graded to international standards, and other reforms were undertaken to develop the sector. The results have been very successful: between 1993 and 2000, Argentina mineral production has increased from US\$ 341 million to US\$ 1,310 million; annual expenditures in exploration are over US\$150 million and in capital expenditures US\$ 350 million. Finally, exports of minerals has increase ten fold from US\$78 million to US\$ 700 million; by value, minerals exports are greater than beef. **Mining reform works.**

Countries have become acutely aware over the past fifteen years of the necessity of attracting domestic and international capital since the amounts of investment required to develop mineral deposits and the risks of failure are too large to be possible or justifiable from a public expenditure point of view. A survey of major international mining companies was conducted in 1991 under the auspices of the United Nations and the World Bank to determine the relative importance of certain criteria used by the companies to evaluate potential investment projects in emerging economies. It should be noted that these factors are of critical importance to domestic investors, too. In order of importance, these criteria are:

- i. Good geological prospectivity, mining tradition and potential
- ii. Clear mining rights and title (mining legislation)
- iii. Attractive and competitive fiscal conditions (tax legislation)
- iv. Ownership and control of operations (mining legislation)
- v. Political stability and transparency of governance (government institutions)

vi. Availability of infrastructure

Experience during the period 1987 to 2000 has demonstrated that if governments address these issues they can and do attract significant amounts of investment. Chile, Peru, Mexico, Argentina, Ghana, Mali, Mongolia, Tanzania, and Tanzania, to name just a few countries – have undertaken measures to strengthen their mining sectors. These measures generally have involved up-dating the mineral policy and strategy, re-writing the mining legislation (particularly in respect of mining rights), up-dating the mining taxation regime, reinforcing government supervisory institutions, building greater capacity (including good governance) within the institutions to effectively carry out their tasks, and developing a reliable and comprehensive scientific database of the earth system. Though time frames vary by country, in general once the sector has been strengthened investor interest can pick up quickly. Exploration for mineral deposits takes time, as does the development phase of a project. However, in some cases, such as Argentina (see box) minerals production increased by five times during the period 1992 and 2001. Afghanistan has favorable geology for a number of minerals which could be developed by the private sector. If the overall enabling environment for investment (criteria 2 – 5 above) could be strengthened then there is every likelihood that the country could benefit, as other countries have, from increased investment and benefits from the sector.

**Examples of How Mining Sector Reform Works in Other Countries**

<b>MINING SECTOR REFORM “BEFORE AND AFTER” RESULTS IN SELECTED COUNTRIES</b>						
Country	Exploration Value US\$ Million		Production Value US\$ Million		Exports Value US\$ Million	
	Before	After	Before	After	Before	After
Argentina	<3	150	340	1,310	70	700
Chile	15	250	2,400	7,500	2,300	6,900
Peru	10	200	2,000	3,900	1,900	3,600 <sup>2</sup>
Tanzania	<1	35	53	350	53	350
Ghana	<1	N.A.	125	700	125	650
Mali	<1	30	<1	242	<1	230

Source: World Bank staff estimates

<sup>2</sup> Peru figure includes value of Antamina which will begin production in 2001 at about US\$ 650 million value.

## IMPEDIMENTS TO INVESTMENT IN AFGHANISTAN

In spite of its excellent geological promise, Afghanistan must overcome a number of obstacles in order to develop its mineral resources. Some of these include:

- i. **Landlocked:** The landlocked nature of Afghanistan militates against large volume, bulk commodities.
- ii. **Difficult Access:** Many parts of Afghanistan are mountainous, rugged, and difficult of access.
- iii. **Security:** some mineral rich zones and areas, principally in the south along the border with Pakistan, are under threat from remnants of the Taliban and other rogue forces.
- iv. **Lack of central government control:** in several areas of the country the local strongmen or warlords effectively ignore central government directives and control access to and exploitation of the mineral resources.
- v. **Lack of Infrastructure:** the national infrastructure – roads, energy and water - is still only weakly developed. Significant efforts are currently underway to improve the road links with the benefit of various donor funding. Nevertheless, lack of infrastructure will remain a practical (and financial concern) for mining developers.
- vi. **Unexploded ordnance (UXO):** as a result of the civil war, Afghanistan is the most heavily mined country in the world. Anti-personnel and anti-vehicle mines are located in and around some producing and prospective areas. Despite considerable government efforts to clear the areas, this will remain a considerable concern.
- vii. **Shortage of trained workforce:** as in many other developing countries, development and operation of mines in Afghanistan is hindered by a shortage of skilled workforce at all levels. This applies to the technical as well as managerial level. The result is a high reliance on foreign labor and relatively long time frame for project planning and implementation.
- viii. **Lack of local capital:** the local capital market, at least in the formal institutional sense, is weakly developed and therefore not geared to mobilizing investments of the scale required for mining operations.
- ix. **Investor Perception:** the international perception of Afghanistan is of a high political and security risk country. This makes it difficult to mobilize funding for exploration and development on international markets. However, this perception can change if new private sector investment can be stimulated. Large international investors often follow in the footsteps of smaller pioneering companies, especially if these are successful with their projects.

## MINING POLICY AND STRATEGY

The government is considering a mining policy and strategy. The ten principal objectives of the mineral policy of Afghanistan are to:

- i. exert central government sovereignty and hegemony over non-renewable mineral resources located throughout the national territory;
- ii. stimulate and mobilize local and international private investment in minerals exploration, development and production;
- iii. ensure that mining operations are conducted in an environmentally and socially sustainable manner;
- iv. create job opportunities for Afghans and stimulate the development of spin-off and related industries;
- v. increase tax revenues accruing to the government from mining operations and to provide for their equitable allocation and transparent management thereof;
- vi. promote scientific and geological investigation into the nature and extent of Afghanistan mineral resources and to make such information available to the public and potential investors;
- vii. strengthen government supervisory institutions to distinguish clearly the functions of regulator from the functions of owner/operator of State mining enterprises;
- viii. regularize small scale and mining and provide for adequate institutional and technical support of these activities;
- ix. apply internationally accepted standards and “safeguard policies” to questions of environmental protection, indigenous peoples, involuntary resettlement, and other aspects;
- x. promote the transition to operate on a commercial basis of mineral producing enterprises which are currently state owned or reliant on the government.

In order to achieve these objectives, the government intends the following actions:

- i. **Creation of a Modern and Internationally Competitive Legal and Regulatory Framework**, emphasizing the primary role of the private sector, the regulatory authority of the State, and taking into account the special conditions of small scale producers in Afghanistan
- ii. **Institutional Strengthening for the Management of Mineral Resources**, including the establishment of new departments in the Ministry of Mines to administer the legislation and new mine title system;
- iii. **Establishment of an Internationally Competitive Taxation Regime**, to provide an attractive environment for private sector investment while, at the same time, providing for government revenues;
- iv. **Reinforcement of Geological and Geo-science Database**, with emphasis on regional geological mapping and provision of geo science information to the private sector;
- v. **Improvement of Small-scale Mining**, with special legislative and administrative conditions tailored to the requirements of this sector;
- vi. **Establishment of environmental and social management capacity**, with emphasis on “safeguard policies” in respect of the environment and social protection of vulnerable groups.

## LEGISLATIVE AND REGULATORY ENVIRONMENT

The government has made it clear as a policy matter that it intends to promote private investment in the mining sector as a means of achieving sustainable growth. Experience in other countries demonstrates that attracting and retaining private investment in the mining sector depends not only on the geological prospectivity of the country, but also on the laws, regulations, and taxation (enabling environment) that pertain to such investments. Afghanistan does not currently have laws and regulations that govern activity in the mining sector in a comprehensive fashion (although the Ministry of Mines and Industry is diligently preparing a new Mining Law). Furthermore, the country intends to adopt a new Constitution in the near future, which injects uncertainty into the legal environment. Adopting a new Constitution as well as Mining Law at the earliest opportunity will remove this uncertainty, regularize existing production and stimulate new investment in the sector.

While each country's mining law will have unique features, the experience of many other countries provides evidence that certain common practices and principles can stimulate new investment and help ensure that investment in the mining sector achieves the maximum development impact. This experience suggests that key elements of a successful mining legal and regulatory regime for Afghanistan include the following:

- (a) *State ownership of all minerals resources existing in their natural state.* Under current laws of Afghanistan, it is unclear who owns minerals existing in their natural state. Consequently, it is unclear who would have the power to grant mineral rights to private investors. The Mining Law should resolve this uncertainty by clearly indicating that minerals in their natural state are the property of the State, and that the Government is the custodian of these resources on behalf of current and future generations. Since the question of state ownership of mineral resources is of Constitutional significance, Afghanistan's new Constitution should also confirm the State's ownership of mineral resources.
- (b) *A clear legal basis for private access to mineral rights.* Under current laws of Afghanistan, it is unclear whether a private party may legally explore for and exploit minerals and whether a private party may sell the minerals it produces. This uncertainty, together with the overall difficulties of the central government to establish its authority, has led to an increase of "unofficial" private mineral activity. Until there are laws in place which clearly establish that private parties may undertake minerals exploration and exploitation in Afghanistan, private investors (whether domestic or foreign, large or small) are unlikely to invest significant sums in the exploration or production of minerals in Afghanistan. In almost every country, the Mining Law establishes that all private investors may obtain the right to conduct exploration and exploitation of minerals (including the right to own and sell extracted minerals). In Afghanistan, it would be desirable for the new Constitution, when adopted, to confirm: 1) the right of private parties to obtain mineral rights from the State; 2) that mineral rights obtained from the State are property rights protected under the Constitution from expropriation without fair compensation; and 3) provide the authority for the State to enter into commercial contracts with private parties with respect to mining rights. At the very least, the draft of the new Constitution should be reviewed to ensure that it does not contain any provisions that preclude these possibilities or that are otherwise inconsistent with the concept of private operation of mines and private ownership of extracted minerals.

- (c) *Clear identification and mandate of the Government institution with the power to grant private access to mineral rights.* Existing State Owned Enterprises as well as private mine operators will need to know which government agency has the power to grant mineral rights. The Mining Law should clearly designate the government agency with the power to regulate the mining sector, and the power to grant private parties with access to mineral rights. At the present time, the appropriate government agency would appear to be the Ministry of Mines and Industry. If there are any other ministries that may share regulatory authority over some aspects of mining activity (such as the Ministry of Finance (tax), Ministry of Environmental Protection (environmental protection), Ministry of Work and Social Affairs (employee health and safety) or Ministry of Commerce (foreign investment, sales and exports)), then their respective responsibilities should be clearly defined in the Mining Law.
- (d) *The State should act as regulator of private sector mining activity rather than as explorer, operator or equity-owner.* Currently, the mining sector of Afghanistan is characterized by State ownership and operation of mines. It is acknowledged, however, that efficient operation of these State mining enterprises as well as future growth in the mining sector in Afghanistan will depend primarily on the mobilization of investment from the private sector (both domestic and foreign). Internationally, over the past 20 years there has been a distinct trend for the State to divest its equity ownership of mining operations, desist from operating mines, and to clearly distinguish regulatory from operating functions. Substantial evidence suggests that private operators are, on the whole, more efficient than traditional state operators in the exploration or exploitation of mines. When the State participates in mining activities as both an owner/operator of mines and a regulator of private mining activity, conflicts of interest arise which can both discourage private investors (who may be concerned about preferential treatment for competing state enterprises), and prevent the State from properly exercising its regulatory functions. The Mining Law should reflect a general policy orientation favoring private operation of mining activities (for example, it should not contain mandatory requirements of government participation in ownership).

It must be recognized, however, that a significant portion of mining activity within Afghanistan is (and on the date of enactment of the Mining Law, will be) conducted by the State. When the Mining Law is enacted, these state mining enterprises will also need to be regulated (presumably by the Ministry of Mines and Industry). To the extent possible, the Mining Law should: (a) ensure that the State enterprises be subject to the same rules as private investors, and (b) provide means to enable the transfer of such State enterprises to private ownership and operation in the future.

- (e) *Establishment of a Mining Cadastre and other necessary institutions within (or outside) the Ministry of Mines and Industry capable of promoting, implementing and regulating private sector mining development.* The current organizational structure of the Ministry of Mines and Industry does not include certain departments or institutions needed to promote, implement and regulate private investments in the mining sector, such as a modern Mining Cadastre responsible for the recording, granting and cancellation of mineral rights and for making such records available to the public.

In addition, other institutions that may or will be needed include a Mining Inspectorate, capable of monitoring and enforcing obligations of mineral rights-holders. A legal department within the Ministry is also required to provide legal advice and to assist in negotiations, if applicable, with potential investors. Also, it may be necessary to

establish one or more State holding companies to hold the State's portfolio of shares in any mining enterprises or mining joint venture interests, if any. In many other countries, these State portfolio holding companies are domiciled in the Ministry of Finance. The Mining Law should create these institutions, clearly authorize them to perform their respective functions, and determine how they will be funded.

- (f) *Clear identification of the form and nature of mineral rights available to the private sector, their basic terms, and the procedures and criteria for granting such rights.* Prospective private investors require a clear understanding of both the substantive rights and obligations that attach to a mineral right, and the procedural requirements for obtaining a mineral right. A mining law that effectively sets out the rules, terms and conditions regarding mining rights can encourage private investment by making these issues clear. Afghanistan does not currently have a law which sets out the basic terms and procedures applicable to mineral rights, so at the present time the terms of any prospective investment would have to be determined on case-by-case basis.

Experience in other countries has shown that case-by-case negotiation of the terms and conditions of individual mining investments presents an enormous administrative burden to the State, and it also results in uncertainty and unfairness, because each deal is different. These problems can be reduced if the Mining Law and related regulations clearly set out the procedural rules, and general terms and conditions of mineral rights applicable to all mining investors, whether domestic or foreign, and whether a private entity or a state entity.

Examples of uniform terms and conditions of mining rights that are widely adopted in other countries include: (1) “first-come, first-served” priority right to exploration rights; (2) submission by the prospective investor of a work program and expenditure obligations; (3) relinquishment of surface area after a certain time or upon abandonment of the mining title; (4) time limits imposed on the Mining Cadastre to process mining title applications; and (5) clear, consistent, and transparent rules of procedure mining title issuance.

There may be an extremely small number of special mining projects (for example projects of national political significance), for which exceptions to the general rules may be justified or necessary. In such cases, the Mining Law may include a provision authorizing the Cabinet of Ministers to enact special exemptions to the general provisions of the Mining Law by decree in highly unusual circumstances.

- (g) *Transparent and uniform fiscal and taxation package.* From the investor's perspective, the fiscal and taxation terms applicable to the mineral activity are among the most important terms and conditions. In general, mining operations should be subject to overall taxation and regulations, as for any commercial activity. However, there may be special circumstances where mining activities could be eligible for different tax treatment than activities in other sectors, particularly with respect to mineral royalties, accelerated depreciation allowances, loss carry-forwards and exemptions from customs duties on imported equipment. However, for the same reasons discussed in paragraph (f) above, the tax treatment of mineral investors should be clearly stated in law (whether in the Mining Law or in the general tax law) and consistently applied, so that the tax treatment of mining investors can be readily ascertained by an investor, and that case-by-case negotiations of tax rates for individual mining investments are discouraged. To the extent that the Mining Law includes special taxes or charges (such as royalties), or exceptions to

general tax laws, for mining activities or mining investors, the Mining Law should clearly state the relationship of such provisions to the general tax laws, and authorize the Ministry of Mines and Industries and/or the Ministry of Finance to implement such taxes or charges.

- (h) *Security of Tenure.* Security of tenure, which refers to the assurance that an exploration license-holder may obtain an exploitation license if it makes a discovery, consistently ranks as one of the most important investment considerations in surveys of mining investors. Legal regimes which provide for an automatic right to develop a deposit in the event of a commercial discovery tend to attract more private investment (and particularly more exploration investment) in the mining sector than those which do not provide for security of tenure. The Mining Law should provide holders of an exploration right with a high degree of assurance that they will be entitled automatically to exploit any discoveries, subject to the implementation of appropriate environmental safeguards.
- (i) *Transferability of title.* Because of the high up-front costs involved in mining activity, mining investors in particular are concerned with whether the mining right can be easily transferred or pledged/mortgaged to a third party. This is especially important since many times a small company will begin investment or exploration and later seek to transfer the mining title to a larger company with the financial strength to develop the deposit. Also, mining investors will often seek to borrow from third parties to finance exploration and development, and it will be essential to the investor to know that the mining right can be pledged or mortgaged to third-parties as security for exploration or development financing. The legal regime can promote mining investment by allowing mining rights to be easily transferred, pledged and/or mortgaged, either without the consent of the State, or upon the satisfaction of clearly stated and objective conditions that do not require the exercise of ministerial discretion.
- (j) *Other Investor Rights.* The legal system can further promote private investment in the mineral sector by providing for other assurances typically sought by private investors generally, such as: 1) guarantees of “stability” of economic terms of the mining right (including taxes and other payments to the State); 2) guarantees of the right to compensation for expropriation of the investment (or for breach by the government of the terms of the mineral right); 3) the right to sell production abroad; 4) the right to keep and repatriate earnings and profits (after payment of taxes); 5) the right to acquire foreign exchange or to maintain hard currency bank accounts domiciled within Afghanistan or, with approval of the Ministry of Finance, outside of the country; 6) the possibility of entering into investment agreements with the State governed by the laws of a neutral jurisdiction (e.g., in another country; and, 7) the availability of international arbitration (or some other acceptable method of dispute resolution) to resolve disputes between the investor and the State. Since mining activities are excluded from the scope of the Law of Afghanistan on Private Investment (the general law regarding incentives for private investment), it could be appropriate for the Mining Law to include some or all of these rights within the terms of the Mining Law itself.
- (k) *Appropriate environmental, health and safety requirements.* Clarity in regulation of environmental protection and worker health and safety are of great importance in the mining sphere, not only for Afghanistan to maintain its ecological heritage and social tranquility, but also to provide security and guidance to potential investors. We have been unable to determine whether Afghanistan has an umbrella environmental law, but we understand that existing environmental, health and safety laws adequate for the



specific requirements of the mining sector do not currently exist in Afghanistan. Additionally, the government agencies currently responsible for implementing and monitoring compliance with environmental and worker health and safety laws lack the trained manpower and practical means to adequately implement and enforce these laws for the mining sector. The Mining Law can address these concerns both by including the relevant requirements for environmental protection and worker health and safety within the terms of the Mining Law itself, and by establishing an environmental, health and safety unit of the Ministry of Mines and Industry, which would be responsible for regulating and monitoring compliance specifically for the mining sector.

- (1) *Special regulation of ordinary construction materials (e.g. sand and gravel).* Many countries provide simple regulation for the extraction of ordinary construction materials such as sand and gravel. In Afghanistan, much of this activity occurs on a small scale or on an “unofficial” basis, and some of the general requirements of the Mining Law (such as the submission of feasibility studies and work plans) may be too burdensome. It may therefore be appropriate for the Mining Law to permit the possibility of simpler regulation for the extraction of ordinary construction materials.

*Special regulation of small-scale mining.* Small-scale mining constitutes an important portion of Afghanistan's mining sector, which presents a host of legal, fiscal, environmental and social issues that are unique to small scale mining. Small scale mining appears to occupy a significant portion of the workforce employed in the mining sector, but much of the sector operates “unofficially” or even illegally. Special treatment of small-scale activity may be appropriate in the Mining Law, in order to provide the Ministry of Mines and Industry the flexibility to address issues unique to the regulation of the small-scale mining sphere (which may, for example, require technical, financial and marketing assistance), to provide relief from general requirements of the Mining Law that may be too burdensome and to otherwise encourage the incorporation of small-scale mining into the “official” economy.

#### **Tendering: the Case of Antamina**

The Antamina copper-zinc deposit was successfully tendered by the government of Peru in 1996. The international tender required bidders to pay US\$ 20 million cash payment and an exploration program of US\$ 13.5 million. The winning bidder would have a two year option during which time the exploration program would take place and the reserves confirmed. At the end of the two year period the winning bidder could either confirm its bid, at which time the US\$ 20 million would be paid to the government, or walk away from the project. The US\$ 13.5 million commitment for new exploration was guaranteed by the company against a letter of credit. The property was awarded to the highest bid calculated according to a formula which took into account 100% of the up-front payment plus 30% of the investment commitment. A consortium of international mining companies won the bid and the mine entered production in 2002 with a total investment of US\$ 2.2 billion. Antamina is one of the largest polymetallic mines in the world, producing concentrates with an equivalent metallic content of 270,000 tonnes of copper and 220,000 tonnes of zinc per year. The principal lesson to be drawn from the Antamina experience is to provide for a phased approach which will allow the investing company sufficient time to confirm existing reserve estimates and prove up new reserves. It should also be noted that significant reforms to the Peruvian mining law and regulations had been taken shortly before the privatization program. This provided the investor companies with sufficient security of tenure to mobilize international financing for the venture. Finally, Peru has an established “track record” in the mining industry. Companies, thus, felt more at ease investing in a known mining country than might be the case with a country an unknown track record and mining tradition.

*“The art of taxation consists in plucking the maximum amount of feathers from the goose with the least possible hissing”.*  
- Jean-Baptiste Colbert, Finance Minister to Louis XIV

## **MINING TAXATION AND FISCAL CONDITIONS**

### **I. Current status of tax laws**

Afghanistan’s current tax laws are in a state of disarray. With the exception of customs duties, generally speaking the laws are not formalized or enforced. The Ministry of Finance has embarked on a methodical reform of tax legislation. The Ministry’s priority is to enact tax laws that will provide a fast and meaningful return to the government. Consequently, the Ministry is focusing on drafting legislation for a new customs law, on drafting legislation that will impose income tax on large taxpayers (namely, expatriate individuals), and on the introduction of a withholding tax on rental payments. The Ministry proposes to introduce new taxes in stages. For example, the introduction of value added tax (VAT) legislation is not a priority, and is considered to be a few years away.

It is understood that the Ministry of Finance is responsible for all taxes and customs duties, and that the Ministry of Mines and Industries is responsible for mineral royalties, mineral licence fees, and similar mineral-related charges.

Introduction of Afghanistan’s new constitution has been delayed. It is believed that the ownership of mineral rights will vest in the State under the new constitution.

### **II. Designing a mining tax regime that will attract investment**

A typical mine in most mining countries is subject to a wide range of taxes, including:

- Corporate profits (income) tax;
- Royalty;
- Customs duty;
- Turnover tax (for example, VAT or Goods and Services Tax (GST));
- Payroll taxes (for example, social insurance and pension premiums);
- Licensing and permitting fees;
- Land taxes;
- Water taxes; and
- Business taxes.

It is important that all taxes be taken into account in designing an attractive mining tax regime. In assessing the effect of the taxation regime on a potential investment, the prospective investor will consider the total tax burden and its impact on the profitability of the project. For example, in Table 1 shows four different tax regimes that allow the investor to realize the same rate of return<sup>3</sup>.

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<sup>3</sup> “Rate of return” is the most commonly used measurement of the economic feasibility of a mining project. Generally, an investor in a mining project would demand a minimum rate of return in the 15% to 20% range, depending on a number of factors including country risk. Afghanistan’s country risk is such that an investor in the mining sector would insist on a rate of return at the upper end of this range.

Changing just one of the three taxes shown in the Table can have a significant effect on the attractiveness of the project. For example, if the customs duty in Case A was increased from 5% to 15%, the project's rate of return would drop to 15.8%, and the investor may decide not to invest in the project.

**Table 1 – Comparative mining tax regimes**

	<b>Case A</b>	<b>Case B</b>	<b>Case C</b>	<b>Case D</b>
Profits tax rate	20%	25%	20%	25%
Royalty	2% gross	2% gross	3% NSR	1% gross
Customs duty	5%	0%	5%	5%
Rate of return	16.9%	16.9%	17.0%	17.0%
Government share of pre-tax cash flow	29.0%	32.3%	28.2%	29.9%

In reforming Afghanistan's tax regime as it applies to mining, it is important that the various responsible ministries cooperate with each other. A modern tax regime should seek to meet the following objectives:

- i. Provide for a fair participation by government and investors;
- ii. Be stable over time;
- iii. Be transparent, and provide a level playing field for all investors;
- iv. Be easy to understand;
- v. Be easy to administer; and be internationally competitive.

The provisions of an attractive mining tax regime should recognize the unique features of the mining sector. The following characteristics of the mining sector distinguish this sector from other industrial sectors.

**High risk –**

Relative to most other industries, the mining industry is characterised by high risk. This risk is present at all stages of the project's life cycle, including the exploration, development, and production stages.

**Capital intensive -**

The mining industry is capital intensive. Substantial amounts must be spent annually on exploration to discover sufficient ore to replace the ore that is currently consumed. Today, a world class base metal mine can typically cost in the range of US\$2 billion to bring into production.

**Price-taker –**

The prices of most mineral products are established by the interaction of supply and demand in the global marketplace. The mining enterprise does not set the price for its product – the enterprise is a “price-taker”. Because the mining enterprise is a price-taker, the enterprise's tax

burden cannot be passed onto the enterprise's customer – the mining enterprise must bear the burden of taxes imposed on its activities and products.

### **Mining profits are cyclical –**

Most metal prices show wide swings over the years, and the typical mining enterprise's profits will reflect these price cycles. It is common for even the largest mining companies to record losses for a number of consecutive years as a result of soft metal prices.

### **Remote locations -**

Invariably, ore bodies are found in remote locations. Consequently, in most instances the mining project involves substantial infrastructure costs.

### **Finite life -**

Unlike a manufacturing plant or a service business, a mining project has a finite life, because its mineral reserves are finite. This means that the enterprise has a limited number of years over which to realise a competitive rate of return on its investment.

The feasibility study, on which the project investment decision is made, takes into account the entire life of the project, and must assume that the tax regime will not change significantly during the project's life. A change to the tax rules part way through the life of the project could jeopardise the viability of the project and result in it being shut down.

### **Restoration and reclamation -**

There is a trend in the regulatory climate to charge the mining enterprise with stricter responsibilities for site restoration and reclamation, and mine closure.

### **State ownership of the mineral resource -**

In many jurisdictions, the mining enterprise is obligated to make some form of royalty payment to the government as a consequence of the government's ownership of the resource. This royalty can represent a significant component of the enterprise's total tax burden.

Afghanistan's mining tax regime should also reflect the characteristics of the country's mining sector – namely:

- i. Gem stone production and export represents a potential source of tax revenues that will require particular administrative and collection procedures;
- ii. Industrial minerals are sold largely into the domestic market; and
- iii. There is geological potential for world class base metal projects, but no such projects exist at present.

### **Royalties –**

Basically, four different kinds of royalty are found in the global mining sector:

- i. Gross production royalty;
- ii. Gross revenue royalty;
- iii. Net smelter return (NSR) royalty; and

iv. Net profits royalty.

A gross production royalty is calculated by multiplying the number of units of production (for example, tonnes, grammes, etc.) by the royalty rate. (See Table 2.) This kind of royalty is frequently used in the industrial minerals sector, and sometimes in the coal sector.

**Table 2 – Gross Production Royalty (Illustration)**

Tonnes produced	100,000
Royalty rate per tonne	\$35
Royalty payable	\$3,500,000

A gross revenue royalty is expressed as a percentage of the gross value of production.<sup>4</sup> (See Table 3.) This kind of royalty is probably the most common type of royalty, and is commonly applied to precious stone production, precious metal production, base metal production, and coal production.

**Table 3 – Gross Revenue Royalty (Illustration)**

Tonnes produced	100,000
Price per tonne	\$2,000
Gross revenue	\$200,000,000
Royalty rate	2%
Royalty payable	\$4,000,000

The term “net smelter return” is a term that is commonly used in the global mining sector to mean the gross value of production, minus realization costs (refining and smelting costs, transportation costs, and marketing costs). (See Table 4.) NSR royalties are not as less common than gross royalties.

**Table 4 – Net Smelter Return Royalty (NSR) Royalty (Illustration)**

Gross revenue	\$200,000,000
Realization costs	50,000,000
Net smelter return	\$150,000,000
Royalty rate	3%
Royalty payable	\$4,500,000

A net profit royalty is expressed as a percentage of the net profit derived from the mine. (See Table 5.) Net profit royalties are probably the least common kind of royalties, although most of Canada’s provinces impose net profit royalties.

**Table 5 – Net Profit Royalty (Illustration)**

Net smelter return	\$150,000,000
Operating costs	100,000,000

<sup>4</sup> A gross revenue royalty is sometimes called an *ad valorem* royalty.

Net profit	\$50,000,000
Royalty rate	10%
Royalty payable	\$5,000,000

It is important to note that the government's risk is different in the case of each of these four different kinds of royalties. The government had the lowest risk in the case of the gross production royalty, because the government will collect the same amount of royalty regardless of fluctuations in product prices, operating and capital costs, and profitability. The government's risk is highest in the case of a net profits royalty, because changes to all of these variables will impact the amount of royalty collected by the government. Royalty rates reflect these varying risks, with gross royalty rates being relatively low, and net profit royalty rates being relatively high.

### International standards and best practices –

To ensure that Afghanistan's mining sector realizes its potential as a source of growth for the country, the mining tax regime should incorporate international standards and best practices.

Table 6 summarizes important tax provisions in eleven countries. The first eight countries are developing countries that are actively trying to encourage investment in their respective mining sectors. The last three countries have mature, robust mining sectors.

**Table 6 – Comparative Summary of Key Tax Provisions**

Country	Income tax			Royalty	Customs
	Rate	Depreciation	Loss carry forward	Rate	Rate
China	30%	10%	5 years	0.5% - 4.0% gross	0%
Indonesia	30%	10% - 100%	8 years	Various	0%
Laos	20%	16.7%	8 years	2.5% - 5.0% gross	
Mongolia	40%	5% - 10%	5 years	2.5% gross	0% - 5.0%
Pakistan	35%	25% - 100%		See Table 7	5.0%
Peru	30%	20%	4 years	0%	0%
PNG	35%	10%	7 years	2% NSR	0%
Vietnam	25%	2% - 20%	5 years	1% - 8% gross	
Australia	30%	10%	Indefinite	Various	5%
Canada	40%	100%	7 years <sup>5</sup>	10% net profits	0.5%
U.S.A.	35%	15%	20 years <sup>6</sup>	2.25% gross	Various

<sup>5</sup> Losses can also be carried back to the three preceding years.

<sup>6</sup> Losses can also be carried back to the three preceding years.

Table 7 sets out in more detail the royalty rates in Pakistan.

**Table 7 – Selected Royalty Rates – Pakistan**

<b>Mineral</b>	<b>Royalty</b>
Precious stones	10% gross
Semi-precious stones	2% gross
Precious metals	2% gross
Base metals	2% gross
Coal	\$1/tonne
Gravel	\$.10/tonne

In the context of seeking to attract both domestic and foreign investment to its mining sector, Afghanistan's key tax rates should be at the more generous end of the range of rates in Table 6. For example, the collective set of rates shown in Case A in Table 1 would represent a good starting point for consideration.

#### **Tax administration and collection –**

The administration and collection of taxes, other than royalties, mineral license fees and similar payments, will fall under the umbrella of the Ministry of Finance. It is understood that the Ministry of Finance is being advised by internal and external consultants with respect to this matter.

The administration and collection of royalties, mineral licence fees, and similar mineral-related payments should be the responsibility of the Ministry of Mines and Industries. This Ministry's priority should be to establish a system that will focus on the collection of royalties on industrial mineral production, and base metal and precious metal production. Gem stone production is deeply entrenched in the informal sector, and needs significant institution building before the collection of royalties can be seriously considered.

#### **Stability –**

As indicated above, it is important that a mining tax regime be stable.

The investor's decision to proceed with a project is largely based on a bankable feasibility study. The feasibility study is based on some important assumptions regarding metal prices, production levels and ore grade, operating costs, taxes, and other important variables. Once the project is up and running, the continued viability of the project is a function of these variables. If the variation of taxes over project life can be minimised - that is, if the tax regime is stable – then there is one less variable or risk to threaten the enterprise. One risk factor is either reduced or eliminated.

A number of countries have adopted tax stabilization mechanisms, including Argentina, Chile, Indonesia, Kazakhstan, Laos, Mongolia, Peru, and Uzbekistan. By reducing the risk of the mining project, a tax stability agreement can help to reduce the financing cost of the project, thereby making the project more economically viable. Tax stabilization mechanisms are particularly helpful in the case of a country that does not have a track record of legislative stability, such as Afghanistan.

Stability can be delivered in a number of ways, but the most common means of providing stability is through a bi-lateral agreement between the government and the mining enterprise. This agreement should have a foundation in law, and should not violate any existing laws.

The coverage of stability agreements varies among countries. For example, a stability agreement can:

- i. Freeze tax rates only, but not the basis (rules) for taxation. For example, Mongolia's standard stability agreement fixes the corporate income tax rate at 40%, but does not hold constant the rules for determining taxable income; or
- ii. Freeze both the tax rates and the basis for taxation (as in Indonesia's Contract of Work); and/or
- iii. Protect the taxpayer from new taxes that are introduced after entering into the stability agreement; and/or
- iv. Allow the taxpayer to avail itself of beneficial tax changes that occur subsequent to the effective date of the agreement.

There is stronger support for Alternatives 2 and 3 as compared to Alternative 1, on the basis that the main purpose of a stability agreement is to prevent the taxpayer's tax burden from increasing as a result of future changes to the law. An argument in favour of Alternative 4 is that a beneficial tax change may be necessary in order to keep the country's tax regime internationally competitive, and that existing taxpayers with stability agreements may need to benefit from such changes in order to remain competitive. Arguments against Alternative 4 include:

- i. The investment decision to bring a mine into production is based on the tax regime that is fixed by the stability agreement. If a taxpayer benefited from a favourable change to a tax law, that benefit could be viewed as an unnecessary "windfall"; and
- ii. Being denied the benefits of future favourable tax changes is part of the "price" paid by the taxpayer for being able to enjoy the benefits of the stability agreement.

### **Government equity participation –**

Historically, a number of countries have mandated government participation in a mining project, either directly through a joint venture or indirectly through a shareholding in a mining company. In some cases, the government does not pay for its equity interest, while in other cases the government pays for its interest.

In the global mining arena, there is a trend away from government participation in mining enterprises. There are various reasons for this trend, including:

- i. Where the government does not pay fair value for its interest, the mining company's return on investment is adversely affected;
- ii. Where the company pays fair value for its interest, it is usually using financial scarce resources that can be better used in more traditional government functions such as education, healthcare, and so forth;
- iii. Government equity participation in a mining project is a relatively high risk way of participating in the project, as compared to the collection of royalty or profit tax;
- iv. Experience shows that, where the government subsequently decides to divest itself of its interest, the process of divestment can be complex, time consuming, and costly;
- v. Investors tend to prefer to invest in mining projects where the government is not a co-participant. Investors find that government participation slows down the decision-making process at the enterprise level, and discourages other investors from investing in the project; and



- vi. There are few, if any, good reasons for government to participate in this way in a mining project. There are better ways whereby the government can participate in, and have input to, a mining project – namely, through mining regulations and tax legislation.

For these reasons, the Government of Afghanistan should avoid the temptation to take equity interests in mining projects through joint ventures or shareholdings.

### **Tax exemptions –**

Over the years, other countries have included “exempt periods” in their tax legislation. The advantages of such exemption periods include:

- i. The exempt period can compensate for relatively high tax rates – for example, a 33.3% corporate income tax rate in the case of Scenario 1; and
- ii. Providing for an exempt period can send a strong signal to the investment community that the host country is “pro mining”.

The disadvantages of an exempt period include:

- i. The mining company may be tempted to “high grade” its operations – i.e. mine it’s high grade ore during the exempt period, so as to maximize the amount of profit realized during the exempt period instead of during taxable periods;
- ii. The existence of an exempt period in legislation complicates the administration of, and compliance with, the legislation. Taxpayers are known to take aggressive tax filing positions in order to maximize taxable profits during the exempt period.

A tax regime that provides for a relatively high tax rate, together with an exempt period, is sometimes referred to as a “take-it-away, give-it-back” regime. The current global trend in tax policy is away from such regimes, and towards a tax regime that is simpler and has lower tax rates.

In 1972, Canada replaced its three-year exempt period with accelerated depreciation. Under Canada’s accelerated depreciation rules, all capital expenditures incurred prior to the start of commercial production are 100% deductible in any year in computing taxable profits. Accelerated depreciation can serve the same purpose as an exempt period – namely, to allow the taxpayer to achieve fast payback<sup>7</sup> of capital invested.

### **III. Summary and Recommendations**

Afghanistan has an excellent opportunity to participate in the growth of the country’s mining sector through a modern and competitive mining tax regime. In designing the mining tax regime, the government should:

- i. Keep the tax legislation simple, clear, and stable;
- ii. Ensure that the legislation is competitive by incorporating international standards and best practices;
- iii. Ensure that the Ministry of Finance and the Ministry of Mines and Industries share their knowledge where tax provisions affect the mining sector;
- iv. Focus on establishing a collection and administration system for royalties on current and near-term production – namely, industrial minerals, coal, and base metals;

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<sup>7</sup> One of the important criteria considered by lenders and other investors is “payback”. A lender, for example, will want to minimize its exposure to project risk by being repaid as quickly as possible.

- v. Use accelerated depreciation in the income tax law instead of tax exemptions;
- vi. Recognize that the mining industry is a capital intensive interest, and that customs duties paid on the importation of capital goods cannot be passed by the mining enterprise to its customers. Customs duties should be kept to a minimum; and
- vii. Avoid equity participation in mining enterprises.

A mining tax regime similar to Case A in Table 1 would meet these objectives.

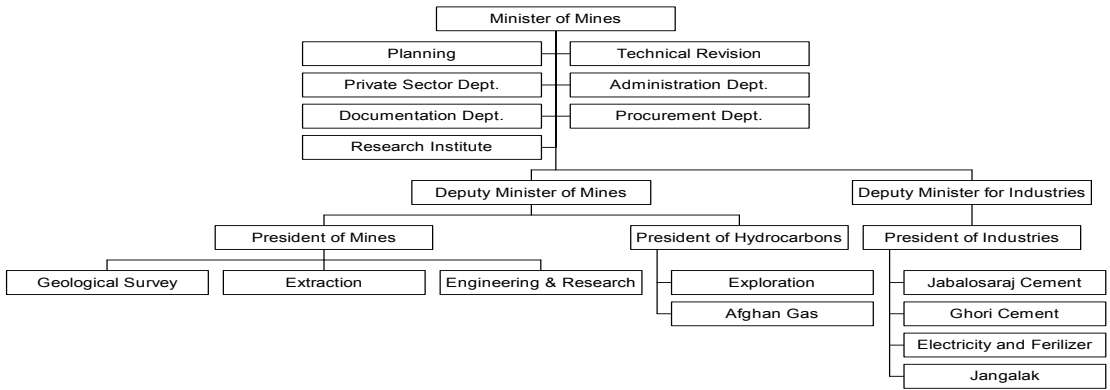
### **INSTITUTIONAL ARRANGEMENTS**

With the political events of the past 20 years and the ravages of the civil war, it is understandable that the Ministry of Mines and Industry (MMI) is facing severe difficulties to re-establish its authority over the mining sector. A number of difficulties most, hopefully, of a transitory nature, are noted in this respect. The buildings of the MMI have been thoroughly looted of most equipment and there is little left for staff to work with. Presently, a few offices are being rehabilitated to accommodate senior officials and some staff. Selected rooms have also been reconditioned for specific use such as computer and language training. But, most staff still lack the proper implements and equipment to do their jobs. The MMI also has little capability, either physical or financial, to collect data on minerals production, imports, exports, marketing conditions, and producers. There is sometimes a dis-connect between the “plan” and the “actual” figures reported. Additionally, the MMI faces even more severe difficulties at the provincial level. Finally, while MMI staff are dedicated and, for the most part, well trained, they have been isolated from scientific and other developments in the international industry for over 20 years. Two examples of this isolation: the last geological expedition took place in the mid-1980s and no new investment has been made in the coal production mines at Pul-i-Kumir since 1988. In spite of these handicaps, given time and sufficient funding, these logistical and staff problems can be overcome.

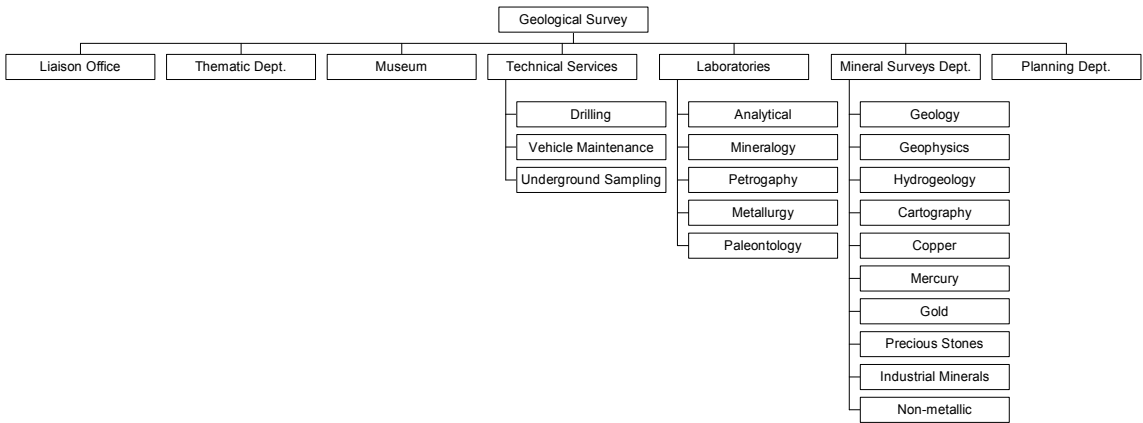
A more fundamental problem relates to the mandate and organization of the Ministry. The MMI and the Afghanistan Geological Survey (AGS) are still organized to follow the “command-and-control” model of the former Soviet Union. This model is out-of-date and fundamentally incompatible with the new emphasis on private sector investment. There are a number of difficulties observed in the present mandates and organization of the Ministry. First, it is still organized into production units and departments which are directly involved in the exploitation of natural resources. For instance, the AGS explores for deposits and, once proven, turns them over to a production unit within the MMI. In future, the central government will not have the funds available to provide these production departments with investments required to maintain production. Second, attracting private sector for solid mineral developments will be difficult if the new private companies were required to compete or enter into associations with the Ministry’s own production units. There will always be the presumption of preference given by the Ministry to its own production units, to the detriment of the private sector. Third, consistent with the overall policy objective of fostering private sector investment, there is an intention to create proper regulatory function within the Ministry. However, this will automatically pose a conflict of interest since the Ministry will, on the one hand be an owner/producer of minerals and, on the other, a regulator of private companies in the sector. The Ministry may also face an issue of credibility when called upon to adjudicate disputes between, for instance surface and subsurface land owners, local communities and private companies, or private companies and state owned enterprises.

The current organization of the MMI and the AGS are presented schematically below.

### Ministry of Mines and Industry



### Afghanistan Geological Survey



Other countries have faced similar challenges to Afghanistan to organize and mandate their central ministries responsible for mining. While each country organizes the institutions differently, most are organized for the regulatory function, not to own or operate mines, as is presently the case in Afghanistan. These countries have a central Ministry or Agency responsible for the sector. By legislation it is designated to serve as the Government’s principal contact for all mineral sector related activities. It provides policy advice to the Government, and coordinates with all other governmental institutions and political structures. In Afghanistan, the Ministry of Mines and Industry is the central Agency responsible for mines but, as outlined above, combines the regulatory functions with ownership and production of mineral commodities. The lack of distinction of these functions will be a severe hindrance to development of the mining sector.

Under the “Ministry as Regulator” model, most countries have developed some important commonalities in terms of functions. The central Ministry generally:

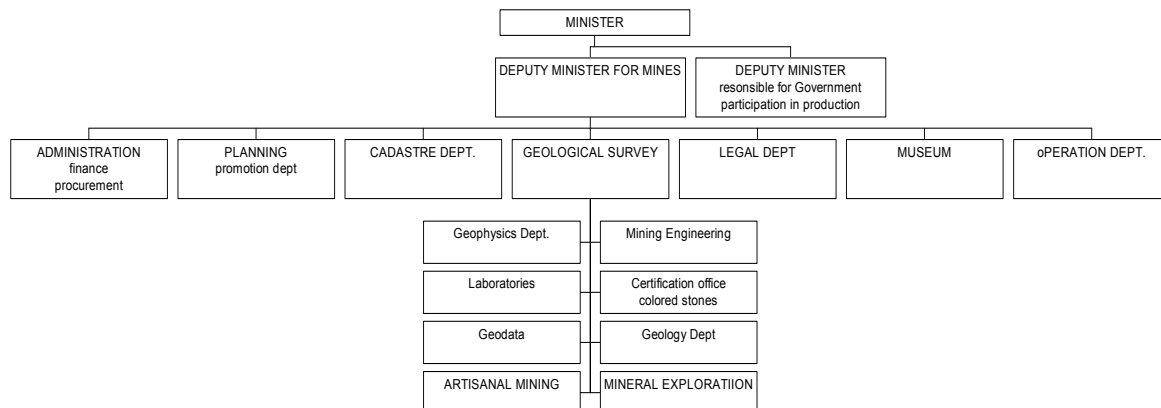
- i. Formulates policy and provides advice to political leadership;
- ii. Administers mineral rights and concessions;
- iii. Assists in environmental permitting of operations;
- iv. Develops infrastructure for geology and mining development;

- v. Controls and regulates enforcement capability.

Within the Ministry, the following departments are usually found:

- i. **Mining Cadastre Unit**, responsible for the granting, the registration and the cancellation of mining rights.
- ii. **Environmental Permitting Unit**, responsible for the evaluation of environmental impact statements, issuance of operating permits and the coordination of sector activities with other environmental protection agencies.
- iii. **Mining Inspectorate Unit** is responsible for monitoring and control of mining sector activities as well as for the transparent and uniform enforcement of laws and regulations.
- iv. **Geological Survey** is responsible for acquiring and organizing geo-science information over the country, as well as developing, maintaining, and providing access to all geological and associated mineral sector related.
- v. **One-stop shop for investor enquires**, (e.g., the planning department), would provide necessary geological and investment data to potential investors and private sector companies and, in addition, coordinate contacts with other official government departments.

A possible new structure which could be considered for MMI is presently schematically as follows.



The new mining legislation under preparation will help to clarify the mandates and the organizational structure of the MMI. In particular, with the emphasis on the regulatory functions, a proper mine cadastre office should be established to handle mine title registration and supervision. Also, the MMI needs a proper legal department in-house since it may have occasion to negotiate with private parties. A “one-stop shop” should also be established to provide direct links to private sector investors. It is also important that an environmental unit be set-up within the Ministry. There used to be such a unit at the Ministry but there has been virtually no activity in the environmental area since 1993.

The Afghanistan Geological Survey is a separate institution dependent on the Ministry. This organizational set-up is not unlike that found in other countries. AGS can, and should, be a critical link in developing the sector. However, there are two critical hindrances in this respect.

First, AGS will need to re-orient its work and fundamentally change the way it has approached its work. In the past, the AGS surveyed mineral deposits, proved up reserves, and then turned the deposit over to a State agency (generally a department or enterprise within the ministry) for development and exploitation operations. This function is not consistent with the new model of “ministry as regulator”. In most other countries, the role of the geological survey is to provide basic scientific and geo-science information to the private sector. This information includes, predominantly, regional geological maps (1:200,000 scale is frequently used) and Geographic Information Systems applications. This information is held by the government and used for a number of purposes in addition to minerals development, such as land use planning, environmental protection, seismic research, agricultural production, and others. It is important that the information be made available to the public at nominal cost. Also, private companies which conduct exploration are generally required to turn over the data and reports to the Ministry on a periodic basis. Once the permit is relinquished by the company, the data reverts to the government which then integrates it into the national database. The essential role of geo-science and the geological survey is further described in the annexes to this report.

The second problem is that the present physical and logistical conditions at AGS are very similar if not worse than that the Ministry. The existing facilities are simply not functional: no water, sanitary facilities, office equipment or supplies, electricity, dangerous and unhealthy working conditions. Very little work has been done to rehabilitate the facilities, though some improvements have been noted over the past several months. The staff of AGS, some 700 persons, continue to diligently report for work. They have shown good initiative to manage to save and salvage much of the geo-science information collected over the past 50 years, yet there remain significant missing elements. Some progress has been made with German technical assistance funding (GTZ) to organize and catalogue around 1,500 reports and books. There is also significant interest with the government of the United Kingdom and the United States to fund work at the AGS. Amounts of US\$ 5 million for the United Kingdom and around US\$ 15 million for the United States have been mentioned. The work proposed would be to re-establish the geological database and infrastructure of the country, provide assistance to the ministry for the regulatory functions, and provide some assistance in the rehabilitation of the facilities.

## ANNEX 1 CURRENT MINERALS PRODUCTION AND POTENTIAL

### Minerals Production

#### 1) Coal

##### Production and Value

Very rough estimates of production and value exist for the coal sector. At present, it is estimated that about 120,000 – 140,000 metric tonnes are produced yearly: 1) from the state owned Karkak-Dudash mines in Baghlan province (30,000 tonnes) and the Sabzac mine in Heart province (10,000 tonnes); and, 2) 80,000 – 100,000 metric tonnes from informal artisanal producers at perhaps 10 mines in the country. The current production is slightly more than half of the levels reached in the 1980s when about 200,000 tonnes were produced at state owned mines. These mines employed 2,500 persons; at present employment in the coal sector is estimated at 1,000 persons, though the true number of small scale miners is not known. During the hostilities coal production never reached the level of 1978 of 213,000 tons. The production between 1980 and 1987 increased, however, quite steadily, from about 111,000 tons to 167,000 tons (Karkar Doodkush being the only mine in activity). By 1992 the production had dropped to 70,000 tons. The Ministry of Mines and Industry estimates that the country has minimum requirements of 500,000 tonnes per year which could increase to over 1 million tonnes. Additionally, 1-2 million tonnes could be used in the cement industry and an additional 3-4 million in the thermal power sector – if these two sub-sectors are developed.

Coal is used extensively in Afghanistan for domestic energy/heating (during the winter months) and industrial uses. The price has increased dramatically in the past two years, from about the equivalent of US\$12/tonne to US\$ 60-80/tonne on the Kabul market, principally because of industrial demand to fire bricks used in reconstruction. Mine production costs are estimated at around US\$40/tonne and transportation charges of US\$20/tonne, depending on the distance.

Estimated gross value (2002) of coal production:  
140,000 tonnes x US\$ 80/tonne = US\$11,200,000

##### Reserves

Afghanistan is estimated to have over 70 million tons of reserves, most of which located in the region between Herat and Badashkan, in the northern part of the country. The most prospective areas occupy some 35000 sqkm along a discontinuous belt extending over 700 km from Darra-I-Farkar river in the East, to Kotal-I-Sabsak, in the West. The potentially economic coal deposits are found in the Lower and Middle Jurassic formations. They are generally complex in structure, have a variable thickness and discontinuous seams. The coal basins have been divided into districts, each with distinct technical characteristics.

Most of the reserves belong to the hard coals category (anthracite and bituminous coal). Mountainous terrain, long distances, infrastructure deficiencies and unfavorable logistics hinder the economic development of these reserves. However small-scale operations have been successful.

The two most important districts are: **Darrah-I-Suf and Sabjak**. Reserves (indicated) have been estimated at over 100 million tons. The coal is of high calorific value (7340 to 8250 cal/kg) and has a low ash content. At **Darwaza, Shabashak, Dahane Tor**, the deposits yield may be used for

blast furnace. The other districts have resources in the order of 14 million tons of generally sub-economic quality and are structurally too complex.

**\*SABJAK COAL DISTRICT (Herat Province)**

Majit-I-Chubi deposit (Lower to Middle Jurassic Formations)

99.51 Mt – 175 meters total thickness – high in sulphur up to 38.6 % ash content

**\*DARRAH-I-SUF COAL DISTRICT (Samangan Province)**

Shabashak deposit (Lower-Middle Jurassic Formations)

54 Mt – 40 meters total thickness – up to 32% ash content –

Darwaza deposit (Lower-Middle Jurassic Formations)

20 Mt (?) – 16 beds/3.6 m. thick each – 38.5 % ash content –

Dahane Tor deposit (Lower-Middle Jurassic Formations)

10 Mt(?) – 2 beds up to 13.5 m thick – up to 18% ash content –

Lela deposit (Lower-Middle Jurassic Formations)

15 beds up to 2.8 m. thick –

Sary-Asya deposit (Lower-Middle Jurassic Formations)

6 Mt – 14 beds up to 1.5 meters thick –

\*Aspushta deposit (**Baghlan Province**) (Lower-Middle Jurassic Formations)

2.5 Mt (?) – 5 beds up to 3.8 m thick –

**\*Kar Kar Dod Dash Coal Enterprise (Baghlan Province)**

This coal enterprise comprises four coal deposits, all underground operations, at KarKar, Dukash, Ahimdarat, and Khurdara. The mines are located in central Baghlan province. The KarKar coal deposit was first developed in 1939 and has, over the years, received assistance from Czech, Indian, and Russian experts. At its prime, in the 1970s, the KarKar mine employed some 1,600 persons and produced 600-700 tonnes of coal per day. The four mines of the enterprise currently produce around 100 tonnes a day. Virtually no new capital investment has been made in the mines since 1988 and the equipment is in very dilapidated state. Presently, Kar Kar has 318 staff, most of whom live in the town of Pul-I-Kumyr. The enterprise produces around 30,000 tonnes per year, sold to cement and textile plants, bakeries, and the market in Kabul. The selling price of coal at the mine for large industrial users is set by the ministry at Afg 1,150 per tonne; for other uses Afg 2,000 per tonne. The official price of the coal delivered in Kabul is Afg 2,850 per tonne. The unofficial price in the bazaar is Afg 3,500 – 4,000 per tonne. It is thought that there could be good potential to identify additional reserves, since the area is only partially explored. The coals, in powdered form, have a calorific value of 4,500 Kg/Cal, ash 17-36%, and moisture of 2%. Seam thickness is between 2 and 14 meters.

**Rehabilitation Plans**

Government is planning to develop or rehabilitate several coal mines and has requested budget authorization to do so. These requests are now in search of donor funds.

The **Sabzak** mine (Heart Province) where Czech experts have carried out reconnaissance and production studies in the 1980's. The mine would supply coal to the western and Southern regions, as well as to the Heart cement factory (almost completed).

The Government also recommends (with the concurrence of UNIDO in its 1993 study) the rehabilitation of three mines in a first phase: (1) **Karkar Doodkash**, (2) **Ashpushta**, (3) **Dara – I- Suf**. The main argument being that all three mines could be rehabilitated or brought into production in the shortest time and the lowest investment. That would ensure a quick impact on the regional economy.

## 2. Salt

Afghanistan presently imports salt from Pakistan and Iran. Yet, good deposits of salt exist in Heart and Balakh provinces. Historically, production of salt in Heart is reportedly 13,000 metric tonnes per year, though current production is not known. Some evidence exists that a government agency is in cooperation with an NGO to produce unspecified quantities of salt but Ministry of Mines officials have no further information. Additionally, there are unconfirmed reports of a private sector operator having opened a small salt mine.

Afghans consume, on average, two kilograms of salt per person per year. With a population base of 27 million people this would give a gross yearly consumption of 54,000,000 kilograms or 54,000 tonnes. The Kabul bazaar market price for unprocessed salt is Afg 8 - 20 per kilogram, giving a gross yearly market value of between Afg 432 – 1,080 million, or the equivalent of US\$8.6 – 21.6 million.

## 3. Gravel, Construction and Industrial Materials

Building and construction material deposits in Afghanistan consist mainly of limestone, marble, sand and gravel and clay. Quarrying of limestone and marble for construction and cement has, and is currently occurring, in several areas notably in the Province of Badakshan, and deposits exist in the north-eastern area, in the east-central area around Kabul, in the central area north of Kandahar and in the far south. Sand and gravel deposits are quarried mainly in the far north and locally around Kabul. Clay deposits are located mainly in the central and western areas.

With the active reconstruction effort currently underway the construction materials sub-sector is booming. Fired bricks and hence the production of clays and coal to fire them has increased significantly. A number of quarries for sand, gravel and other construction materials have opened up. This sector has also attracted foreign companies, mainly Turkish, Iranian and Indian entrepreneurs. Major demand for sand and gravel is being driven by the planned construction of 3,000 kilometers of highway: Kabul-Kandahar, Kandahar-Heart, Kabul-Pakistan border. Around 3,600 m<sup>3</sup> of gravel and sand is used per kilometer which, we calculate, costs around US\$40,000 per kilometer<sup>8</sup>. Thus, a total of nearly US\$120 million is being spent on these construction materials. It is unknown what, if any, royalty the government receives on the value of sand and gravel extracted. Most countries assess either a gross revenues or a units of production royalty on sand and gravel operations.

## 4. Gemstones

Afghanistan is one of the richest countries in the world for gem and semi-precious stones, including **aquamarines, emeralds, kunzite, lapis lazuli, rubies, tourmaline**, and spinels (balas

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<sup>8</sup> Of the total of 6,120 M<sup>3</sup> of sand and gravel consumed per line kilometer, about 60% is for newly purchased material (the remainder is re-cycled old material). Of the 3,672 newly purchased material, 80% costs US\$ 10 per M<sup>3</sup>, 20% an average of US\$ 17.50. This yields an average cost of US\$ 40,000 per line kilometer in purchases of new sand and gravel supplied from quarries established along the route.



rubies). Gemstones are exploited by artisanal and small scale miners, principally in the Panjsher valley to the northeast of the capital Kabul and at Jegdalek, to its Southeast.

The major exploitation areas are:

a) The Panjsher valley where emeralds have been mined since approximately 1985. The deposits are exploited by the villagers of Khenj in mining areas known as Darkhenj, Mikenj, Butak, Buzmal, Bakhi and Darun. The mines are at high altitude (sometimes 4,000+ meters), using dangerous exploitation techniques, and hampered by presence of landmines frequently scattered in the areas. The quality of the emeralds is high, comparable to the best production of the Muzo mine in Columbia. Individual mines or pits are owned and operated by teams of five to seven men. Agreements are made on sharing the proceeds and paying taxes.

b) Jegdalek ruby mines, located about 100 km east of Kabul near the Jalalabad. The ruby crystals range from a light purple-red to a deep ‘pigeon’s blood’ red; good quality stones are about five carats. The deposits could be large; ownership and political control is similar to the Panjsher emerald mines.

c) Nuristan, very inaccessible, but having pegmatite hosted deposits of tourmaline, kunzite, aquamarine, spodumene and beryl. The gem bearing areas of the pegmatite are usually encountered 10 to 20 meters below the surface. The Nuristan miners work all year round despite the harsh winter conditions. The known villages are Mawi, Suraj (the two which seem to be the most productive), Nilaw, and Korgal.

d) Sar-e-Sang lapis lazuli mines located in Badakhshan in Northeast Afghanistan. Exploitation of lapis lazuli dates back to at least 5,000 BC making these mines arguably the oldest mines in the world. Production is still good and there is inventory available. One possibility of increasing value added from the lapis lazuli trade is to establish a cutting operation in Afghanistan to cut and polish the stones into objects of art. This could not only add value to the mineral resource but also provide employment for many persons.

As with the case of other mineral resources, exploitation of gemstones has been hindered by continued political turbulence. Nonetheless, some sources estimates that before the Taliban war the annual production of emeralds in the Panjsher valley alone was worth \$10 million and that some 5,000 villagers were engaged in emerald mining. The vast majority of the gems are exported to Pakistan where they are cut, polished, and sold to foreign markets. Afghanistan thus fails to capture the value added of this activity. Estimated current value of production for each producing area is as follows:

**Value of Afghanistan Gemstone Production  
Estimate 2002**

<b>Area</b>	<b>Estimated Value in US\$</b>
Panjsher	2,000,000*
Jegdalek	100,000
Nuristan	150,000
Sar-e-Sang	500,000

\*Production has decreased in Panjsher since 1995 due lack of manpower, inappropriate mining techniques, and dangerous conditions.

**Potential Mineral Deposits**

## *Copper*

The main concentrations of copper mineralisation occur along a 600 km belt located in the Kabul-Loghar province. The copper mineralisation is associated with Vendian (Upper Proterozoic) age inshore marine carbonates and fine detrital sediments. The mineralisation is considered synsedimentary and closely related to the similar aged deposits in southern Congo and Zambia and consists primarily of bornite and chalcopyrite along with trace amounts of other base metals.

Mineral evaluation work conducted by Afghan and Soviet geologists has defined three main deposits with the belt: Aynak, Jawkhar and Darband.

The **Aynak** copper deposit, located in the Loghar Province, constitutes the largest deposit with a declared<sup>9</sup> estimated reserve of 240 million tons grading 2.3% Cu. The mineralisation is contained in arkosic sandstone horizons interbedded in dolomitic beds overlying the crystalline basement. The mineralisation occurs as disseminations, small lenses and veinlets of bornite and chalcopyrite.

With its declared reserves, the Aynak deposit constitutes a world class resource which should attract the interest of major mining companies.

The **Darland** copper deposit is located in the Kabul province. Mineralisation has been traced for 7 km in silicified micaceous marblized limestone with intercalated biotite-amphibolite schist. A estimated resource of 1 million tonnes of copper has been assigned to the deposit.

The Jawkhar copper deposit is located in the Kabul Province along the same belt as the Aynak deposit. Copper mineralisation is found in metamorphosed carbonate rich sediments.

Further concentrations of copper mineralisation have been evaluated in the Provinces of Herat (Shaïda deposit – 4.8 million tonnes @ 1.1% Cu) and Zabul (Kundalyan copper – gold deposits). A further 143 showings of copper mineralisation have been recorded in deposits types ranging from veins, skarns, massive sulfides and porphyries.

## *Iron*

The major iron ore deposits in Afghanistan are associated with Proterozoic sedimentary and volcanic formations and form a semi-continuous belt over 700 km long extending from Herat in the west to the Panjsher River in the east. They lie conformably within these formations where they occur as pods and lenticular bodies of hematite, magnetite, siderite and minor amounts of sulphide. The **Hajigak** deposit, located in Baghlan Province is the largest and best evaluated of the group. It reportedly contains an indicated reserve of 110 million tonnes at an average grade of 61.3 % Fe, making it the largest in the Middle East.

Further iron ore resources have been defined in the Bamyan (**Khaish** 117 MT @ 48.62% Fe), Badakhsham (**Furmarah** 35 MT @ +/-55% Fe )and Kapisa (**Nukra-Khana**) Provinces. These are of interest but do not have the same potential as the Hajigak deposit.

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<sup>9</sup> Economic and Social Commission for Asia and the Pacific (ESCAP), 1995, Geology and mineral resources of Afghanistan: New York, United Nations, Atlas of Mineral Resources of the ESCAP Region, v. 12, 85 p.

The composition of the iron ore and the fact it lies conformably with Proterozoic age sediments and volcanics would indicate that these deposits belong to the Banded Iron Formation group and are therefore similar to major iron ore deposits found elsewhere in the world.

### *Gold*

The majority of the gold occurrences and deposits in Afghanistan are located in the Takhar, Badakhshan and Ghasni Provinces in the north of the country. These comprise approximately 95 lode and five alluvial deposits. The lode deposits are relatively small and associated with intrusive bodies.

The **Samty** deposit located in the Takhar Province is the most important alluvial gold placer. It reportedly represents an estimated contained gold content of 20 to 25 tonnes. The presence of thick overburden (>20m) over the gold bearing horizons however represents a strong disincentive to economic development.

### *Cement and Dimension Stone*

Because of its geologic history, Afghanistan is richly endowed in limestone, which locally has been transformed into marble by the intense tectonic processes that accompanied the creation of the Himalayan mountain chain in the eastern part of the country.

Limestone is quarried in several locations for cement and building stone. The larger deposits are in Badakhshan Province, notably the Jamarchi-Bolo, Sabz and Bakunvij quarries. The estimated limestone reserves for these quarries is reportedly in the several hundred million cubic metres.

Marble is quarried as dimension stone and as cement factory feed. The largest reported quarries are the Bini-Kama marble deposit in the Province of Badakhshan where marble outcrops over an area of 2 km<sup>2</sup> and to which a speculative reserve<sup>10</sup> of 500,000,000 m<sup>3</sup> has been given, the Mayden in Mayden Province deposit which has been under exploitation for over 30 years and the Kariz-Amir deposit in Kabul Province.

### *Industrial Minerals*

The systematic geological mapping and mineral exploration programmes conducted by the Afghan and Soviet geologists defined 187 occurrences of non-metallic industrial minerals used in the chemical, fertilizer, refractory, glass, ceramic, construction and other industries. The main minerals involved are sulphur, fluorite, barite, celestite, apatite and phosphorite. Other relevant materials such as kaolin, silica sand, refractory clays, talc, magnesite and graphite are known to occur locally in significant quantities.

Building and construction material deposits in Afghanistan consist mainly of limestone, marble, sand and gravel and clay. Quarrying of limestone and marble for construction and cement has, and is currently occurring, in several areas notably in the Province of Badakhshan, and deposits

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<sup>10</sup> Economic and Social Commission for Asia and the Pacific (ESCAP), 1995, Geology and mineral resources of Afghanistan: New York, United Nations, Atlas of Mineral Resources of the ESCAP Region, v. 12, 85 p.

exist where marble outcrops over an area of 2 km<sup>2</sup>. A speculative reserve<sup>11</sup> of 500,000,000 m<sup>3</sup> has been given for this deposit.

Known deposits of limestone and marble exist in the north-eastern area, in the east-central area around Kabul, in the central area north of Kandahar and in the far south. Sand and gravel deposits are quarried mainly in the far north and locally around Kabul. Clay deposits are located mainly in the central and western areas.

Further large deposits of marble have, or are been quarried very close to Kabul and in the Maydan Province, approximately 40 to the east of the capital. Because of its geologic history, Afghanistan is richly endowed in limestone, which locally has been transformed into marble by the intense tectonic processes that accompanied the creation of the Himalayan mountain chain in the eastern part of the country.

Clay is mined for the production of bricks in several areas in Afghanistan, notably from the Karukh and Malumat deposits in the western Province of Herat, from the Surkhab and Kaukpar deposits in the Province of Baglan and from the Dahane-Tor and Shabashak deposits in the Province of Samanghan Province. Both these latter provinces are located in North-central Afghanistan.

Table of major industrial mineral deposits in Afghanistan (ESCAP 1995)

Area/deposit/province	Major mineral commodity	Reserves	Grade	Remarks
Alburz, Balk Province	Sulphur	200 Tt	40% S	Speculative reserves
Sanglich, Badakshan Province	Sulphur	250 Tt		Speculative reserves
Gugit, Bamyan Province	Sulphur	NA		Proven reserves
Badhud, Ouzgan Province	Fluorite	8.8 Mt		Speculative reserves
Sangilyan, Herat Province	Barite	1.49 Mt	85% Ba	Mined in past
Farenjal, Parwan Province	Barite	150 Tt	83.6% Ba	Speculative reserves 25 Tt Pb/Zn
Kartaw, Kunduz Province	Celestite	1 Mt	76.9% SrSO <sub>4</sub>	Speculative reserves
Tangi Murch, Banghlam Province	Celestite	85.6 Tt	54% SrSO <sub>4</sub>	Speculative reserves
Kotal-i-Sebzak, Herat Province	Phosphorite	NA	6.2-9.7% P <sub>2</sub> O <sub>5</sub>	
Loghar, Loghar Province	Asbestos	350 Tt	4.14-4.17% fiber	Measured reserves
Shodal, Paktya Province	Asbestos	1.5 Mt	0.23-39.4% fiber	Speculative reserves
Ghunday, Nangarhar Province	Talc	1.25 Tt	50-96% talc	Speculative reserves
Achin, Nangarhar Province	Talc	1.25 Tt	50-96% talc	Speculative reserves
	Magnesite	31.5 Mt	30-38% MgCO <sub>3</sub>	Speculative reserves
Songlinch, Badakhshan Province	Graphite	5 Tt	NA	
Istrombi, Badakhshan Province	Graphite	NA	50-69% C	
Dudkash, Baghlan Province	Gypsum	NA	99.57% gypsum	
Cha, Takhar Province	Gypsum	NA	NA	
Andkhai, Faryab Province	Halite	NA	87.2% NaCl	Artisanal mining
Dawlatabad, Faryab Province	Halite	NA	92.7% NaCl	Dry residue
Tashkurgan, Samanghan Province	Halite	NA	69-95.5% NaCl	
Jamarchi-Bolo, Badakshan Province	Limestone, marl	6 km <sup>2</sup>	NA	Intermittent quarrying
Sabz, Badakshan Province	Limestone	500 Mt		Speculative reserves
Badkunvij, Badakshan Province	Limestone	NA	NA	Quarrying
Maydan, Maydan Province	Marble	Zone 1-12 km		Continuous exploitation for 30 years
Kariz Amir, Kabul Province	Marble	NA		Quarrying
Benosh Darrsh, Herat Province	Cement limestone	12,000 Mt	Cement Grade	
Darra-Chatagh, Herat Province	Limestone	1,000 Mt	Cement Grade	
Dul-i-Khumry, Baghlan Province	Limestone	>1,000 Mt	Cement Grade	Exploited
Bod-i-Sanjur, Herat Province	Limestone	NA	Cement Grade	
Jabel-us-araj, Parwan Province	Marble	NA	Cement Grade	

<sup>11</sup> Economic and Social Commission for Asia and the Pacific (ESCAP), 1995, Geology and mineral resources of Afghanistan: New York, United Nations, Atlas of Mineral Resources of the ESCAP Region, v. 12, 85 p.

Topcha-khana, Topkar Province	Porcelain clay	3,000 m <sup>3</sup>	63.3% SiO <sub>2</sub> , 17.6% Al <sub>2</sub> O <sub>3</sub>	Speculative reserves up to 5m depth
Tala Barfak, Baghlan Province	Porcelain clay	100-150 Tt	NA	Speculative reserves
Kon-i-Alburtz, Balkh Province	Glass sand	110 Tt		
Rafak, Samanghan Province	Refractory clay	5m thick bed	NA	
Nalak, Baghlan Province	Refractory clay	13m thick bed	NA	
Talin, Baghlan Province	Refractory clay	385 Tt	NA	
Dudkash, Baghlan Province	Flux dolomite	3.9 thick bed	NA	
Bamyan, Bamyan Province	Dolomite	1 Mt	NA	Speculative reserves
Bamyan-1, Bamyan Province	Flux limestone	7.5 Mt	NA	Measured reserves
Hajigak, Bamyan Province	Flux limestone	3.5 Mt	49-54.7%CaCO <sub>3</sub>	
Farkhar, Takhar Province	Silica sand	NA	95.6-97.3% SiO <sub>2</sub>	
Hajigak, Bamyan Province	Silica flux	650 Tt	95.6-97.3% SiO <sub>2</sub>	
Dahane-Tor, Samanghan Province	Clay for bricks	NA		
Malmut, Herat Province	Clay for bricks	NA		
Sukhab, Baghlan Province	Clay for bricks	NA		
Kaukpar, Baghlan Province	Clay for bricks	NA		
Shabashak, Samanghan Province	Clay for bricks	NA		

Tt = Thousand tonnes, Mt = Million tonnes

## **ANNEX 2: GEOLOGICAL EXPLORATION AND ROLE OF GEOSCIENCE**

The potential to discover new mineral deposits in Afghanistan is excellent. The country sits astride the collision zone of the Indo-Pakistan and Asian crustal plates which has given rise to the Himalayas. Systematic mineral exploration in Afghanistan by Soviet and Afghan geologists began in the 1960's and intensified in the 1970's. According to reports, these efforts have led to the identification of 21 metallogenetic zones containing 1,428 mineral deposits, occurrences and showings. These comprise a wide range of substances including coal, oil, gas, salt, industrial minerals, copper, iron, lead, zinc, gold and gemstones. Of particular note are the copper and iron deposits which may be of world rank. According to the reports, the Aynak copper district in the Loghar Province of east central Afghanistan is similar in style and size to the Zambian copper belt deposits. With the Hajigak deposit, Afghanistan has the largest iron ore deposit in the Middle East.

According to the metallogenetic zoning model defined by the Soviet and Afghan geologists, mineral distribution in Afghanistan shows: i) energy (coal, oil, gas) and evaporite minerals (salt, gypsum) occurring in the northern-central area; ii) base metals, consisting mainly of copper and lead, along with gem stones occurring in the eastern area; and iii) ferrous minerals such as iron, tin and tungsten occurring in the central area. Minor amounts of other minerals such as lithium, boron, beryllium have been found associated with pegmatite zones in the gem stones zones in the eastern areas.

Geological mapping of Afghanistan occurred between 1967 and 1971 by groups of German, Italian and mainly Soviet and Afghan geologists. The mapping was conducted at various scales and compiled into a map covering the whole country at a scale of 1:500,000. This work could be greatly enhanced by the application of modern mapping techniques such as the use of satellite imagery to better define outcrop location, structure and eventually any mineral alteration features.

Mineral evaluation studies involving resource definition has been conducted by the Soviet and Afghan geologists on 110 deposits throughout Afghanistan. Work at these sites involved detailed geological mapping, geophysical and geo-chemical surveying along with direct resource evaluation by pitting, trenching and drilling where applicable. The results of this work can be found in individual reports accompanied by the necessary maps and listings at the AGS. While very detailed and complete the work requires a new evaluation using modern mineral resource evaluation technology. Once an initial prioritisation of the different sites according to various criteria has been made, the mineral evaluation studies would be greatly enhanced by applying mineral resource technology such as digital spatial analysis modelling of the geological, geophysical, geo-chemical and bore hole data.

### Why Is Geo-Science Important?

1. The question is often asked: why do governments spend scarce public funds on geological cartography and earth science mapping? Are such activities really essential to overall economic development? Is geological mapping an activity which is better undertaken at less risk by the private sector? The answer in most countries is that an understanding of the geology and mineral potential in the national territory is indeed an essential pre-requisite for the rational development of these resources and economic development. But, there is an optimum division of

responsibilities for conducting such research. The public sector concentrates on regional or thematic mapping while private mining companies concentrate on detailed exploration and evaluation of ore-bodies.

2. The main objective for geological mapping funded by the government is to achieve an understanding for the geology and resources of a region. This understanding is useful for a number of applications. Geological maps are an essential set of data which, when integrated into a GIS system (geographical information system), can be an essential tool for land use planning and for communities to decide on the rational use of valuable resources. The maps are also used to identify environmentally sensitive and bio-diversity zones, for investigation of water resources, and for detection of areas susceptible to seismic occurrences. They are useful to identify industrial and construction materials important to society, such as clay for bricks, limestone for cement, salt for domestic and industrial consumption. And, of course, the regional and thematic geological maps produced by the government help orient the detailed exploration by private companies for metallic and non-metallic minerals and thereby lessen the risk and cost of this exploration to the company.

3. Geological maps prepared with government funds present in a visual form different types of scientific data. Maps made from satellite photography and images allow not only coverage of large areas but also real-time analysis of data. Geophysical information collected by aircraft flown at low altitude with sophisticated sensing instruments show main tectonic and structural features which information is important to find deposits under the surface. Thematic maps depict regional geology and the distribution of elements which are important for prospecting for mineral deposits. Geology, like any science, is a rapidly evolving discipline. Geology maps tend to reflect the geological thinking and the theories in use at the time when they were produced. It is thus important that the government funded geological surveys make use of the appropriate technologies and methodologies.

4. The quality standards and coverage of geological maps varies from one country to the next depending on the resources and time allocated to the task. Developed countries are often mapped in great detail and quality, at a scale of 1:25,000 covering the whole country. This level of detailed coverage is neither feasible nor cost effective in most developing countries. In these countries regional geological maps are produced in 1:200,000 scale and then compiled into larger scale maps covering whole country. It has become more frequent that governments fund thematic regional surveys in order to attract the interest of international mining companies. In Australia, for instance, the government of New South Wales undertook a large scale geophysical survey which resulted in the discovery and development by private companies of at least two new mineral deposits. An important factor in the government's ability to attract private sector investment is to make the maps available to interested parties at nominal cost<sup>12</sup>. The maps should be available in digital form, on CD-ROM or available through the internet. In many countries the geological maps are mostly available in paper copies only, which greatly reduce their accessibility and utility to the companies. Also, promotion of the geological knowledge at international conferences and industry meetings (PDAC in Canada, Mining 2003 in Australia) is important. In this context it is important that the future users of the geological data can achieve them easily and for a comparatively low price.

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<sup>12</sup> A normal practice in many countries is to sell CD-ROMs with the relevant data for a nominal price. The price for the CD-ROM only covers the shipment and not the collection of data, digitization and production of the CD-ROM.





**ANNEX 3**  
**INTERNATIONAL CONTEXT AND THE ROLE OF RISK CAPITAL**

**Mining Companies and the Role of Risk Capital**

The mining industry is one of the most complex and competitive industrial sectors in the world.<sup>13</sup> Depending on the commodity, the production chain usually consists of extraction of the raw mineral commodity, beneficiation and concentration of ores, smelting and refining of product, marketing and brokerage of commodities, and fabrication into end-use products. The industry, at all stages of the production chain, but especially at the exploration, extraction and processing stage, is highly competitive and growing more so every year. Of particular interest is the division of labor between the large “major” mining companies and the smaller, so-called “junior”, mining companies. Each have essential, but distinct roles, to play in finding developing mineral resources. The companies operate in the international marketplace where many commercial, financial and political factors influence their decisions about investments in developing countries. An awareness of four of these factors is essential to better understand how Afghanistan might position itself to attract the investment required to develop its resources.

**Small companies explore, larger companies develop and operate mines.** It is generally the case that the smaller companies act as “pathfinders” for larger companies. These “juniors” explore for mineral deposits and, in the event of a discovery, transfer the mining title to a large mining company which will invest to develop a mining operation. Indeed, some large mining companies have abandoned their in-house exploration departments in favor of supporting exploration programs by a number of junior companies. This has clear implications for the mining legislation in Afghanistan (security of tenure, mining title registry, “first-come, first-served” principle, work commitments, rapid and transparent transfer of the mining title) as discussed later in this chapter. There also is the necessity for the government departments responsible for the mining sector to be able to respond rapidly to applications for exploration licenses.

**There is keen competition among companies to raise equity and risk finance.** All companies, but particularly the “juniors”, compete fiercely to raise risk capital in international equity and financial markets. These markets are located principally in Canada, the United Kingdom, Australia, South Africa, and the United States. The availability of funding for exploration is highly sensitive to international commodity prices, competition from other industries (such as telecommunications, computers), perceptions of the country where the investment will take place, and the track record of the company soliciting the funding. The funds are also “time-bound”, that is, once having received funding the companies must use it for exploration reasonably quickly otherwise new funding will be difficult to mobilize. Over the past five years there has been a significant decrease in the amount of risk finance available to mining companies because of weak commodity prices. Recently, however, the capital markets have improved and are more receptive to solicitations for risk finance by mining companies.

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<sup>13</sup> A excellent baseline document on the international mining industry is the recently completed study of the Mining and Metals and Sustainable Development project, 2002.

This, as well as the higher gold prices, could stimulate more interest from mining companies to explore in Afghanistan over the next several years.

**Increasing pressures for greater social and environmental consciousness.** Companies are under increasing pressure from governments, non-governmental organizations and civil society to be more socially conscious and aware of the impacts their operations have on the national, regional and local economies. The industry in general has been heavily criticized, rightly or wrongly, for its past neglect of these issues. Companies are attempting to do better in this respect, though there is often a wide divergence between the expectations of the local community in terms of support for social infrastructure and the economic realities of what the company can afford to spend. In Afghanistan, it is important that the government prepare umbrella laws on environmental and social protection. In addition, sector and industry specific environmental regulations will need to be developed. Also, government departments responsible for enforcing the regulations need to have sufficient trained personnel and logistical means to ensure compliance.

**Government must be vigilant to ensure that companies comply with obligations.** Junior and local mining companies provide a useful and essential link to bring in major investment in the mining sector. However, governments in other developing countries have sometimes been disappointed if these companies simply speculate with mining titles and do not honor their pledges to invest in exploration. To attempt to prevent abuse, these governments have adopted clear rules and procedures to monitor the work commitments and to provide for withdrawal of the mining title in the event that commitments are not honored. In Afghanistan it is important that appropriate legislation and government monitoring capabilities be put into place to prevent future abuse.

## ANNEX 4

### Aide Memoire of the Mining Mission, February 2003

#### **B. Priority Activities in the Mining Sub-sector**

25. This note summarizes the main findings and conclusions concerning the priority activities, approaches, and steps for the development of Afghanistan's mining sector. On specific potential mine developments under current consideration by the Government, field visits were made to a copper prospect in Loghar and to a coal mine and a limestone quarry near Jalalabad, all of which the Government would like to promote to the private sector. An opportunity was also taken to visit a private marble cutting company near Jalalabad. This note was discussed with the late Minister of Mines and Industry and relevant staff of MMI, although formal comments by the Government have not yet been received in order to finalize the phasing of the preparation of mineral policy, strategy, and development initiatives to the particular conditions of Afghanistan, which will be undertaken under USAID assistance (see paragraph. 12).

##### **a) Background:**

26. With the conflicts over, there is an opportunity and a need for realizing the potential of the mineral sector to contribute to growth and development. Quick improvement of small-scale coal mines and quarries for limestone, construction materials, and dimensional and ornamental stones, followed by new investments in large-scale mining can provide much needed Government revenues and foreign exchange earnings to support the reconstruction efforts of the Government. In this respect, mineral development can lead to higher incomes and a better quality of life for rural areas dependent on mining activities. Additionally, small-scale coal production, from identified deposits including a thin outcropping seam, already partially mined, in the vicinity of Jalalabad, could also contribute to local diversification and reduction of the ongoing progressive process of countrywide desertification resulting from the extensive use of trees and bushes for domestic cooking and heating in inherently arid terrains.

The mining sector is a key component of the country's post-conflict growth and development strategy. The Government has initiated the preparation of policies and programs aimed at achieving these broad objectives. The design and implementation of programs for mineral sector development is complex, however, and given the past history of poor governance, it will be a very challenging task in post-conflict Afghanistan. Additionally, the formulation of such programs is made more difficult by the weakness of the relevant database on both the potential and impacts. Nevertheless, existing experience of international best practice and the existing database will provide the knowledge base to guide future development of the sector.

##### **b) Mineral Potential**

The mining sector in Afghanistan is presently made up of two small-scale subsectors: a) *nonprecious minerals*—principally construction materials, limestone, coal, and dimensional materials; and b) *gemstones and semiprecious minerals*—principally emeralds and lapis-lazuli, which are produced and traded informally. The existing mines are operated as rudimentary artisanal activities on a private basis, without midsize or large operations.

Afghanistan is well endowed with very favorable geological conditions for the existence of various minerals and with numerous identified and studied mineral occurrences and deposits. These include mainly copper and other base minerals, iron, coal, gemstones, and various semiprecious minerals. The main existing promising targets areas, however, need to be inventoried and categorized into a pipeline of priority prospects to be promoted to potential private investors. Additionally, such a pipeline should be kept updated on the basis of results

from further basic geological exploration, in order to support continued investment promotion activities, including the preparation and dissemination of promotional brochures and publications through the mineral industries' magazines and events.

Afghanistan has numerous identified target areas with identified mineralization and presents good geological potential for additional discoveries of mineral deposits. The general geology suggests that: i) endowments exceed what is presently known; and ii) under the right conditions, new exploration and development would result in opening new mines. In particular, the Government is quite keen on the possible development of a copper and an iron mine through the private sector. In respect to copper, it is worth noting that extensive copper mineralization was indeed identified, explored to the drilling stage, and studied with Russian support since the early 1970s. This outlined a very large and rich deposit in the Loghar district, which was studied to the feasibility stage and found suitable for massive large-scale surface mining. A high-grade zone with about 185 million tons with an average copper content of 2.37 percent was reported, which would compare very favorably with copper ores mined in Chile, Peru, and USA. Furthermore, three other large deposits with lesser potential and 32 smaller deposits were also identified and studied at a more preliminary level. In respect to iron, a large and rich iron deposit with high quality reserves was delineated. It appears to contain about 125 million tons with average iron grade reported at 64 percent, which would compare well with ore exported from Brazil and Australia.

The mission feels that within a decade, the successful realization of the large scale mineral potential of the country—in copper and base minerals could result in the establishment of 3-4 mines, and possibly in development of the identified iron deposit with high quality reserves. Additionally, it could result in the reactivation of two existing coal mines—not visited by the Bank team due to logistical constraints and the improvement, formalization, and growth of the existing small-scale mineral sub-sector. This could easily expand to further production of dimensional stones and the supply of raw materials for the evolution of the cement industry. As a result, direct and indirect employment in these mines could be substantial. Indeed, a significant amount of population could derive their livelihood from the mines, including dependents and extended families.

Within the above context, the coal mine visited near Jalalabad constitutes only a modest potential, with relatively easy conditions for small-scale mining. The seam thickness is only 0.2-0.3 meters along the existing outcrops, which dip at about 20-30 degrees, and consequently is not suitable for large levels of mechanization, which would require a greater thickness. As a safety precaution, it is worth noting that the existing coal seam configuration may appear deceptively suitable for mining on the basis of a continuous cave-in approach similar to long-wall techniques. As well proven in other similar situations, however, the shallow depth of this coal and its well structured nearby strata are likely to result in very high cantilever stresses. Major support at the mining faces would be required, which cannot be afforded by small-scale operations. Under such conditions, a traditional mining approach based on a room-and-pillar configuration and a minimum height of entries and tunnels appears more appropriate from the perspectives of efficient production and the safety of workers.

Finally, with an improvement in the environment for small-scale and artisanal mining, the production of precious and semiprecious minerals such as emeralds, lapis-lazuli, and ornamental stones could increase significantly due to higher resource recovery and processing efficiency. Furthermore, significant value added can be achieved through capacity building for downstream cutting/carving and polishing domestic activities.

### **c) Infrastructure Constraints.**

Despite its rich natural endowment, Afghanistan faces serious costly constraints from its landlocked configuration and distant transport situation to markets. Initially, this situation will affect adversely the interest of potential investors for the development of large-scale mining, in

particular, copper and iron mining The above-mentioned, relatively large, and high-grade copper deposit at Loghar, which is suitable for massive low-cost surface mining may not be affected. This will make it necessary to focus as a prerequisite, without loss of time, on the evaluation of existing markets including regional venues and transport access options to such markets, including the possibility of using smelting facilities in nearby countries. The situation will also make it necessary to concentrate on the formulation of strategies aimed to attract private investments for copper smelting and possibly steel production in Afghanistan, which could enable major reductions in the volumes from mineral transport and which could benefit from existing domestic and regional markets as well as from likely gas developments over the midterm.

With respect to **copper** at Loghar, the preliminary estimates by the Bank team indicate that the grade of the copper deposit is high in comparison to other world deposits and that copper concentrates can be produced at internationally competitive costs despite the existence of a high waste to ore ratio of 9:1 at Loghar. However, the high transport cost that would be incurred in moving the copper concentrates to smelters would erode significantly the competitive margin . This situation compels the focus on the possibility of domestic smelting, which in turn raises the need to take stock of scale cost advantages derived from the possibilities of also developing other existing copper deposits. It also raises the importance of attracting exploration investments, which, given the existing favorable geological conditions near Loghar, could succeed in identifying and delineating other important copper deposits. These deposits could help generate a critical mass of copper concentrate production, that would justify and attract investments for the erection of a smelter.

The above rationale is even more relevant to the possibilities of the mentioned **iron** deposit. On one hand, its existing reserves would justify a mining operation of annual capacity at about 4-6 million tons. On the other hand, at such scale, cost comparisons with several other international producers show that production costs and transport to potential steel production facilities would easily exceed international price levels. Therefore, the need to focus on the possibilities of domestic steel production evolves as a crucial step, which could incorporate benefits from direct-reduction technology, available gas, and regional markets, and should thus precede current considerations based on developing solely an iron mine project.

#### **d). Sector Goals and Policy Objectives**

Large-scale Mining. The Government's goals for large-scale mining are to generate production, employment, fiscal revenues, and foreign exchange through: i) developing existing copper deposits and establishing an iron mine; ii) promoting the development of an existing pipeline of identified promising prospects; and iii) promoting basic exploration of favorable geological target areas to ensure developing and maintaining an adequate pipeline of promising prospects that can be proposed to potential investors.

Small-scale Mining. In the existing small-scale subsectors, the Government's goal is to improve the overall standard of living of the involved communities, through:

- modernizing the licensing of all mineral rights using a clear and simple basic criteria, such as a first-come-first-serve approach, with rapid and transparent processing—incorporating an integrated cadastral system, supported by satisfactory monitoring, administration, and enforcement of rights, also including evolving large-scale mines
- facilitating mechanization through the possible establishment of methods to enable the purchase, rent, or lease of equipment
- providing extension services to assist miners in selecting the best areas to mine in their mineral concession areas, planning mining activities, processing ores adequately, ensuring sound environmental and safety conditions, and replacing use of

resource wasteful blasting by more efficient cutting technologies at dimensional stone quarries

- providing a level trading playing field for license holders as well as miners/diggers through training to enhance their product evaluating capabilities

**e). Government Strategy.**

The Government envisions that successful mineral development will be led by the private sector and will require: continued peace and stability; stable macroeconomic environment; predictable and transparent legal and fiscal frameworks to attract foreign and local investment in exploration and mineral development; and strengthened Government capacity to provide adequate basic geological data and to monitor and regulate the sector. Therefore, the Government's strategy is: to define and enact clear, non-discretionary, and consistent policies for the sector; to promote private initiatives and investments; to administer mineral rights; to gather and provide basic geological information; and to ensure that mining development is environmentally and socially sustainable. Other activities of an operational and productive nature, such as exploration, development, exploitation, beneficiation, smelting, and refining, as well as mining and support services will be left to the private sector.

In line with the foregoing, the Government plans to develop a national policy framework for the mineral sector around the following sectoral goals:

- (a) stimulate investment in the sector by establishing an enabling environment which promotes private participation
- (b) ensure that mineral wealth supports sustainable economic and social development of the related communities and adequate living conditions of miners
- (c) regularize and improve artisanal mining activities through security of tenure for licenses
- (d) minimize and mitigate the adverse social and environmental impacts of existing mineral activities and further mineral development
- (e) encourage and promote technology transfer and capacity building
- (f) harmonize policy to the extent possible with those of competing and neighboring countries to discourage smuggling and encourage trading through official channels, particularly for precious and semiprecious minerals

**f). Integrated National Mineral Policy Framework—INMP**

**Main Components:** The main objective of the development of an Integrated National Mineral Policy (INMP) framework is to promote the country's mineral sector as a socially responsible and economically important growth engine. Development of such a framework takes time and involves steps including: i) formulation and approval of a National Mineral Policy, which is internationally competitive and sensitive to the social and environmental impacts of mining; b) drafting of mining legislation and regulations based on the policy directives; iii) building and/or restructuring linkages between different levels of Government to facilitate the effective administration of the legal provisions; iv) building capacity—institutional and human; and v) establishing liaison and networking systems among stakeholders to ensure transparency, effective decision-making, accountability, and facilitation of smooth sectoral activity.

**Main Factors:** Key factors that determine successful mineral development are: i) sound macroeconomic and trade policies that provide a stable environment, access to foreign exchange, and few restrictions or controls on mineral exports or needed imports of plant, machinery, services, or related supplies; ii) a fiscal package that is equitable for the concerned stakeholders;

iii) a legal framework, including environmental, safety, and related health laws and regulations, that are transparent and adequately define the investors rights and obligations; iv) security of tenure; and v) institutional capacity to respond to the needs of the private investors in an efficient and transparent manner.

**Initiatives:** The Government of Afghanistan is undertaking significant economic reform. To attract private investment in general, and in mining in particular, the Government recognizes that maintenance of macroeconomic stability and creation of a sound trade environment are critical. To achieve this, it will have to implement staunchly its economic programs and monetary policies. Important for mineral sector development will be to ensure easy access to and availability of foreign exchange, as well as tariff rates in line with those of neighboring countries.

As in the case of many successful mining countries, the private investment perspectives for mining in Afghanistan can be considerably enhanced by a stable and internationally competitive **fiscal framework** for taxation, royalties, rentals, fees, duties, and incentives. Establishing a competitive fiscal package, which will induce investments in mineral exploration and mine development, will require detailed work that can be executed in two phases. In the first phase, a comparative assessment of Afghanistan's fiscal regime with those of other mining countries such as Ghana, Tanzania, Peru, Chile, and Papua New Guinea should be undertaken to understand and raise wide awareness on what has worked well and why. This assessment, conducted by the Government with support from international experts, would determine areas where Afghanistan can be made competitive and identify options for enhancement tailored to the particular circumstances of Afghanistan. The second phase of work should involve the detailed formulation, modeling, and evaluation of alternative fiscal scenarios and adoption of the regime that best meets the Government's objectives.

**Legal and Regulatory Framework:** Such a framework needs to compare favorably with the frameworks of other mining countries which reformed their mining sectors recently, placing emphasis on administration, access, and transferability of rights, security of tenure, operating obligations, and rights and penalties. This will require executing comprehensive comparative reviews of the existing framework in Afghanistan with those of the recently reformed mining countries in order to determine specific areas of disadvantage and options for improvement. Considerable work needs to be done, however, to establish a framework that conforms to the global operating environment in the 21<sup>st</sup> century. In Afghanistan's case, particular emphasis will need to be given to the incorporation of cadastral procedures and technology into the provision, administration, transfer, and enforcement of mineral rights. This is particularly important in the short term to enable the regularization and improvement of transparency in the existing small-scale mining industry. It is also important to address legal constraints related to: a) dissemination of information, including areas available for licensing and status of mineral licenses issued; b) excessive discretionary power of authorities; c) strength of mineral rights and their possible transfer and mortgage on a commercial basis without specific approvals from ministerial authorities; and d) requirements to proceed from exploration to mining including conditions on performance of obligations, discovery of an exploitable mineral, and technical and financial capabilities vis-à-vis alternatives based on the submission of professionally credible feasibility studies. Another key area that will require continuing attention, in line with international practice and trends, concerns the introduction of measures to ensure that local communities benefit from, and are consulted in a participatory manner about mining operations, both when advanced exploration is planned and when active mining operations have been approved.

**Institutional Capacity Building:** The Ministry of Mines and Industry (MMI) is in dire need of strengthening. It needs to be restructured and reorganized to administer more effectively and efficiently a new private sector oriented mineral policy and its interministerial imperatives. The rehabilitation and reactivation of existing mines, improvement of small-scale mining, and initiation of meaningful activities for large-scale mineral sector development will require the adoption of a phased approach to restructure MMI. This is warranted by the existing scarcity of

material resources and need to avoid overextending its present weak setup. Initial emphasis should be on establishing a Mining Investment Policy and Planning Unit and a Mineral License Application and Registry Office with clearly defined mandates and roles. Subsequent emphasis should be on strengthening the structure of the Geological Survey of Afghanistan (GSA), and the unit responsible for Inspectorate, Monitoring, and Extension Services.

These efforts should proceed in parallel from the outset with comprehensive capacity building. In the short term, this phased approach will expedite the adoption of both a cadastral system for matters on mineral rights and a “one-stop-shop” for investment promotional initiatives and interagency linkages. It will also make possible the compilation of geo-databases with information presently available at GSA and the initiation of extension services with existing staff. Additionally, it will allow for the results of such services to be incorporated in the formulation of improved structures for GSA and for the Inspectorate, Monitoring, and Extension Services. Capacity building, in the short term, would largely involve participating in: a) relevant international events, seminars, conferences, and short courses; b) local seminars and short courses conducted with the assistance of expert consultants and suppliers such as those involved with surveys, GIS and cadastral systems; and c) targeted study tours to mining countries, principally through bilateral collaborations.

**g). The Way Forward and Priority Activities to be Implemented**

***Large-scale Mining.*** The immediate prospect is to attract potential investors to develop a copper mine. The Government is also keen on the possibility of attracting investors for the development of an identified iron deposit. The most immediate possibility relates to the development of copper. In both cases, however, MMI needs to put existing information on geology, reserves, infrastructure, technical aspects, and related project studies into a brochure document, as a section of the package to be offered to potential investors, which would be subsequently selected on a competitive basis. Such a package should be modeled, to the extent possible, from recent similar successful offerings conducted in other mining countries, and should be necessarily tailored to the particular conditions of Afghanistan. Additionally, the relevant available information and supporting data also needs to be compiled and translated into the English language in some cases, in order to be readily available for the process of due diligence which potential investors would need to conduct. Ultimately, the timely execution of these activities is important not only in the context of direct benefits of income, foreign exchange, and Government revenue flows, but also for sending a strong signal to potential investors that Afghanistan is in business as an appropriate and attractive site for large-scale mining operations.

Following these early activities, attention should then shift to the development of other identified minerals through attracting private sector investments to exploit these mining opportunities. To encourage mining companies to take advantage of the positive environment offered, the Government should demonstrate a willingness to negotiate new mining agreements in a speedy and businesslike fashion on realistic terms, in line with international competitive standards. In addition, to build momentum in mineral sector development over time it will be necessary to substantially enhance the institutional capacity of MMI and other agencies and departments related to mineral development.

***Small-scale and Artisanal Mining.*** These types of mining would be handled differently, with emphasis on: i) improving the administration of the precious and semiprecious mineral sub-sector to limit the possibilities of illicit products being used as a funding source for those aiming at promoting civil disorder; ii) improving enforcement of mineral rights; and iii) empowering mining communities. There has been enhanced access to all areas of the country during 2002, including the mining areas in the different regions of Afghanistan, with the consequence that many internally displaced people have or are self-reintegrating into the mining areas. With people flowing to mining areas, there is a critical need to provide adequate security for legitimate,



licensed miners and heightened supervision to minimize illegal mining. Once the immediate security issues have been resolved, the Government should initiate actions to:

- consolidate the laws and regulations governing the sub-sector
- take steps to install a GIS- and GPS-based mining cadastre that will provide the basis for effective administration and enforcement of mineral rights
- **increase the efficiency and openness of trading by addressing bottlenecks resulting from the lack of a modern banking sector to provide immediate availability of foreign currency gemstone exports and marketing operations and thus minimize the recourse to the parallel market for obtaining foreign exchange**
- initiate extension services to improve the identification of the best reserve areas in existing mining regions, enhance mine planning and processing activities, and eventually assist on activities of reclamation and rehabilitation of mined out areas
- facilitate the establishment of equipment rental/lease arrangements for small-scale and artisanal miners to fund their mining operations
- enable aggregate value through the establishment of an incubator center for downstream high quality cutting/carving and polishing, which provides training and locations for upgrading handicraft production
- conduct a phased series of regional participatory workshops in strategically selected mining areas involving miners, dealers, and relevant stakeholders to examine existing constraints, options, and potential for collective business activities, cooperation, and practical operational training
- formulate and effectively implement plans to use the proceeds from the sale of precious and semiprecious products for community projects aimed at enhancing their welfare

These initiatives would aim at benefiting from the establishment of a trading system where: i) the returns to mineworkers and to miners are maximized through a competitive, open, and transparent system of trade for the products; ii) the bargaining position of miners and the productivity of their workers is enhanced through greater access to finance on reasonable terms and from sources other than traders and exporters; and iii) a liberal regime is established in relation to direct taxes and financial controls to ensure maximum transparency in the trade and to encourage a more open and competitive market, which would benefit small-scale and artisanal miners and their workers.

Over the long term, the interventions for improving the small scale and artisanal mining subsector should focus on: a) improving the quality of life of those living and working in the mining fields; b) rehabilitating the environment and improving agricultural productivity when applicable; c) upgrading regional infrastructure; d) improving mining productivity and safety; e) prolonging life of mining in line with resource endowment; f) maximizing use of legitimate marketing channels of products; g) encouraging general economic growth via the multiplier effect of mining activity and infrastructure improvement; h) ensuring adequate institutional capacity to manage the industry; i) ensuring that relevant legislation and regulations are appropriate for the good functioning of the industry; and j) promoting the industry and its contribution to local and national economies.

The summary of the priority actions to be implemented in the mining subsector are summarized in Annex 3. In addition to these activities, MMI had contacted the British Geological Survey (BGS) to provide assistance in evaluating the overall mineral potential of the country and

also provided support for upgrading the capability of the Afghan Geological Survey. Under discussion is the possibility of obtaining the funding for the proposed BGS activities from the UK Department for Foreign Investment Development (DFID).

## ANNEX 5 TENDERING OF MINERAL PROPERTIES

### Background

The issue of whether or not to tender undeveloped mineral properties has been brought up by various government ministries. The tendering route is thought to provide greater transparency and possibly result in the government obtaining better terms and conditions from the investor. An overall government policy in this respect is all the more urgent since investors are beginning to show an interest in mineral deposits, in particular the Aynak copper deposit which has been extensively studied. The Chinese have expressed an interest in this deposit and senior Ministry officials have recently visited China. The present note summarizes some of the international experience with tendering of undeveloped mineral properties.

### Negative International Experience with Tendering

While tendering for exploration and exploitation is used successfully in the petroleum industry, it has not been used with great success for undeveloped solid mineral deposits. There are a number of technical and commercial reasons for this, such as the nature of solid mineral deposits, long gestation and development periods for mines, delayed pay-back of funds invested, and specialized commercial and marketing considerations.

During the 1990s several countries of the former Soviet Union (Russia, Kazakhstan, Uzbekistan, and Turkmenistan, for example) attempted to tender their undeveloped mineral deposits. These efforts did not produce the results desired and many deposits remain either undeveloped or were subsequently given over to investors in one-off negotiations. The tender procedure for granting exploration and development rights has not been successful because it is more expensive and time consuming for investors, especially because many of the tenders demanded heavy up-front payments and investment commitments. Other countries, with codified and transparent mining title issuance procedures, were viewed as offering more attractive and expeditious investment conditions than those on offer in FSU countries. Thus, no significant mining country outside of the FSU has relied primarily on a tender procedure for granting solid mineral exploration and/or development rights.

### Positive International Experience with Tendering

However, there are a few examples of countries which have successfully tendered undeveloped mineral properties. Very importantly, these were deposits where the government had already conducted significant exploration and mineral reserves had been identified and/or proven. In Finland, for instance, the Government promotes exploration and development of a small number of carefully selected mineral properties by having the Geological Survey of Finland conduct extensive exploration and then putting them up for tender. However, investors can obtain licenses to explore for minerals in most parts of the country through an application process, without going through a tender. Peru is another country where undeveloped mineral properties have been successfully tendered. The key to the success of the tenders in both Finland and Peru is that they have been done on a highly selective basis as part of either a privatization program or a promotional program. Neither country has attempted to rely on tenders as the main procedure for granting mineral rights.

### Tendering: the Case of Antamina in Peru

The Peruvian government in the early 1970s nationalized the operating mines and mineral reserve holdings of the private companies then operating in Peru. These holdings were given to specific state owned mining enterprises or holding companies such as MineroPeru and Centromin. The Alberto Fujimori government reversed the previous policies of nationalism in the early 1990s. Under the new government an ambitious program of privatization of state owned enterprises was undertaken. MineroPeru and Centromin, with the advice of international advisors, sold off many mining assets, including a few highly prospective undeveloped or partially developed mineral properties. An example of a successful tender of an undeveloped mineral property is the case of Antamina.

The Antamina copper-zinc deposit was first identified by the Cerro de Pasco Corporation in the 1960s. The assets of the company were nationalized in 1974. In 1995/96 the Peruvian government, in accordance with the national program of privatization, decided to put out for international tender the Antamina deposit. At that time, a total of about 150 million tonnes of ore reserves had been identified; but, the government technicians believed that the deposit had considerable potential for greater reserves. Accordingly, an international tender procedure was devised which required a US\$ 20 million cash payment and an exploration program of US\$ 13.5 million. The winning bidder would have a two year option during which time the exploration program would take place and the reserves confirmed. At the end of the two year period the winning bidder could either confirm its bid, at which time the US\$ 20 million would be paid to the government, or walk away from the project. The US\$ 13.5 million commitment for new exploration was guaranteed by the company against a letter of credit. In the event that this amount was not spent in new exploration the remainder would be payable to the government. The property was awarded to the highest bid calculated according to a formula which took into account 100% of the up-front payment plus 30% of the investment commitment. The winning company was Rio Algom of Canada, later acquired by Billiton, which subsequently formed a joint venture with Noranda, Teck Corporation, and Mitsubishi. The mine has entered production in 2002 with a total investment of US\$ 2.2 billion. Antamina is one of the largest polymetallic mines in the world, producing concentrates with an equivalent metallic content of 270,000 tonnes of copper and 220,000 tonnes of zinc per year. The principal lesson to be drawn from the Antamina experience is to provide for a phased approach which will allow the investing company sufficient time to confirm existing reserve estimates and prove up new reserves. It should also be noted that significant reforms to the Peruvian mining law and regulations had been taken shortly before the privatization program. This provided the investor companies with sufficient security of tenure to mobilize international financing for the venture. Finally, Peru has an established "track record" in the mining industry. Companies, thus, felt more at ease investing in a known mining country than might be the case with a country an unknown track record and mining tradition.

#### Possibilities of Tendering Mineral Properties in Afghanistan

We must have realistic expectations. Tendering of mineral properties has not been remarkably successful in countries new to the international mining scene, as has been the case of the former Soviet Union. However, in these instances, part of the problem may have been the heavy up-front commitment and payments demanded by the government, which the investors found excessive. Also, the fundamental legislation and legal environment of the countries were incomplete and/or inconsistent with international practice. Therefore, assuming that the Afghanistan government can make significant progress to put into place internationally acceptable mining legislation and an attractive overall fiscal package for mining, an attempt could be made to promote and/or tender the Aynak copper deposit.

There could be two alternative approaches to such a tender. Both have pluses and minuses. First, the government could attempt to tender Aynak itself, as the Peruvian government did with Antamina. However, there would be some concerns about the lack of capacity within the Afghanistan government to conduct such a tender, even if significant technical assistance were made available. A second alternative would be to engage the services of a reputable investment banking house. This would have some advantages of adding credibility to the tender effort, a significant consideration since Afghanistan is, in effect, unknown on the international mining capital markets. However, this route would be more expensive. Such a firms typically require a significant up-front fee to prepare the tender documents and conduct due diligence and a success fee in the event that the tender is successful. An initial first step for either alternative would be to prepare terms of reference to examine the possibilities of tendering Aynak and to come up with a concrete game plan. The consultancy assistance required for this could perhaps be funded through the ARTF and/or the design and feasibility studies unit.

**ANNEX 6**  
**DRAFT LETTER OF SECTOR POLICY AND STRATEGY**

**ISLAMIC TRANSITIONAL STATE OF AFGHANISTAN**  
**LETTER OF MINING SECTOR POLICY AND STRATEGY**

**Introduction and Background**

Mining can, and does, contribute to economic development and human well-being. If conducted in an environmentally sustainable manner, exploitation of mineral resources can provide substantial tax revenues to central and local governments, create direct and indirect jobs, and stimulate spin-off industries in and around the mining operations. These beneficial effects and the development of a vibrant mining sector have so far eluded Afghanistan. While the country has excellent geological potential the mining sector is little developed. This is because of the lack appropriate policies and legislation in respect of the sector, the security situation in some parts of the country, and the destitution of the public institutions responsible for the sector.

Over the past 30 years there has been a considerable amount of research on Afghanistan's mineral resources and potential conducted by the government, sometimes with the assistance of international donors. To date, attempts to develop the iron ore and copper deposits as well as others have not proven successful, though some interest in these deposits is now being manifested by potential investors. Exploration has identified occurrences of gold, barite, talc, chromites, and other minerals. A large and high grade deposit of copper (Aynak) has been thoroughly studied and a large iron ore deposit exists in Bamiyan province. There is a considerable semi-precious stone industry undertaken mainly by artisans, which production is not declared to the central government. Finally, the country has reasonably good quality coal resources and some of this is mined for domestic and industrial purposes. The existing small industrial sized coal mines are marginal due to antiquated machinery and lack of new investment. However, there is considerable small scale production. Moreover, coal demand and prices in urban centers has risen rapidly due not only to domestic household energy needs during the winter months but also to increasing industrial demand to fire construction bricks.

The government is aware that development of mineral resources will require investments in excess of government abilities and thus seeks to establish conditions and an enabling environment which is conducive to attracting and retaining investment by both private local and international groups. At the same time, the central government is conscious of the need to exert its hegemony through appropriate legislation over valuable non-renewable mineral resources which are, at present, being exploited and the revenues captured by factional groups operating in the country. The privatization and/or leasing to private groups of existing state owned mining enterprises is, at present, held up by the lack of adequate mining legislation. Enabling legislation and a proper mineral concession system is needed to establish order in the quarry and construction materials sector. The demands of reconstruction of physical infrastructure is requiring vast quantities of locally sourced quarry minerals, the exploitation of which carries the additional benefits of absorbing large quantities of labor and spawning ancillary industries. Finally, the small scale mining sector is, at present, wholly unregulated and occupy large numbers of persons in difficult security, hygienic, and environmental conditions. To achieve these objectives the government is establishing the present Letter of Mining Sector Policy and Strategy. The Letter outlines the main policy orientations of the government in respect of the sector and proposes a strategy and action plan to implement these policies.

## Policy Objectives

The ten principal objectives of the mineral and mining policy of Afghanistan are to:

- xi. exert central government sovereignty and hegemony over non-renewable mineral resources located throughout the national territory;
- xii. stimulate and mobilize local and international private investment in minerals exploration, development and production;
- xiii. ensure that mining operations are conducted in an environmentally and socially sustainable manner;
- xiv. create job opportunities for Afghans and stimulate the development of spin-off and related industries;
- xv. increase tax revenues accruing to the government from mining operations and to provide for their equitable allocation and transparent management thereof;
- xvi. promote scientific and geological investigation into the nature and extent of Afghanistan mineral resources and to make such information available to the public and potential investors;
- xvii. strengthen government supervisory institutions to distinguish clearly the functions of regulator from the functions of owner/operator of State mining enterprises;
- xviii. regularize small scale and mining and provide for adequate institutional and technical support of these activities;
- xix. apply internationally accepted standards and “safeguard policies” to questions of environmental protection, indigenous peoples, involuntary resettlement, and other aspects;
- xx. promote the transition to operate on a commercial basis of mineral producing enterprises which are currently state owned or reliant on the government.

## Policies and Actions to Achieve the Objectives

In furtherance of the objectives, the government declares the following policies and actions.

### **1. Creation of a Modern and Internationally Competitive Legal and Regulatory Framework**

The government will create a modern and internationally competitive legal and regulatory framework. This framework will include a basic mining law, regulations, and model investment agreement. The main principles of the legislation will include, but not be limited to:

- All mineral resources are the property of the State and that the Government is the custodian of these resources on behalf of current and future generations;
- The role of the State is to regulate the sector, enforce the legislative instruments which pertain to it, promote private sector investment in exploration, development and operation of mines;
- The transition of State mining enterprises to operate on a commercial basis and according to the provisions of the mining law, regulations and tax regime;
- Government institutions will be given clear mandates and guidelines to apply the legislation and to regulate the sector in a transparent and efficient manner;
- The ministry responsible for mines will contain separate units for the regulatory function and the transition period for the minerals production function;

- State enterprises operating mines will make the transition to operate on a commercial basis;
- Simple, clear and non-discriminatory procedures will be adopted to provide for equal opportunity of access to mineral resources and liberalized free market trade thereof;
- Mineral rights and mining titles (exploration, development and exploitation) shall be registered in a central registry or cadastre system; the obligations of the mine title holder and of the State will be clear, explicit and fully disclosed to the public;
- Special provisions will be established for small scale mining operations as well as exploitation of quarry and construction materials;
- Procedures will be put into place for environmental protection, studies of environmental impact of mining operations, the preparation and application of environmental protection plans and monitoring systems, and the issuance of adequate guarantees for closure, de-commissioning and rehabilitation of mines;
- Private companies which have been duly authorized to explore for minerals shall have exclusivity for their permit area and the automatic right to exploit any minerals found, subject to satisfactory arrangements in respect of environmental protection;
- Distinction shall be made between surface owners and sub-surface rights, the latter having precedence but with the obligation for consultation and compensation of the surface holder;
- The mining taxation regime will be internationally competitive, consistent with the overall taxation policies and regulations and take into account specific sector considerations, practices and protocols;
- The mining law will include provisions relative to consultation with communities, protection of indigenous peoples, and procedures for involuntary resettlement;
- Dispute resolution mechanisms will be established, either through the judicial system of Afghanistan or, in the case of foreign investors, through international arbitration.

## **2. Institutional Strengthening for the Management of Mineral Resources**

For the efficient management of mineral resources and to provide adequate support for the private sector, the public institutions responsible for the mining sector will be modernized and strengthened. The institutions will include principally the Ministry of Mines and Industry (or successor institution) and the Afghanistan Geological Survey. In addition, other government institutions such as the Ministry of Finance, the Ministry of Interior, the ministry in charge of the environment, and other ministries may be mandated with certain specific aspects of administration of the sector. Finally, supporting institutions such as universities, polytechnics and other educational institutions, community associations and groupings, and non-governmental institutions will be involved with the sector on an as needed basis. The following elements will pertain to these institutions:

- The national budget will provide for adequate logistical, infrastructure, equipment and financial support for the public institutions;
- Emphasis will be placed on professional development of personnel through training and exposure to new and best international practices in the mining industry;
- Public sector institutions will be given clear and consistent mandates and procedures will be established to enhance communication and coordination between them;
- Regional offices of the central departments and ministries will be strengthened in order to reinforce links between the center and the outlying areas;
- Public institutions will place the emphasis on transparency and good governance and specific procedures will be established in this respect;



- The central ministry responsible for mines will establish and, if necessary re-organize, departments to handle policy and administration, cadastre services, mines inspection, health and safety issues, environmental matters, commodity certification and quality control, and geological survey and laboratory services;
- The government departments will develop programs for promotion of the mining sector to potential local and foreign investors;
- A tendering program will be developed for mineral deposits for which the government has detailed and complete geological information of a nature compatible with “pre-feasibility” stage;
- Plans will be developed and implemented for the rehabilitation and eventual privatization of state owned enterprises;
- Public institutions will strive to integrate mining activity into community level development plans, including resolution of conflicts and examination of alternative economic options;
- Special departments will be established to support small scale mining.

### **3. Establishment of an Internationally Competitive Taxation Regime**

One of the principle benefits of mining of mineral resources is to provide tax revenues to the government. The government policy is to put into place a taxation system which is on the one hand internationally competitive in terms of rates and methods of taxation and, on the other, provides the maximum amount of revenues to the State commensurate with exploitation of non-renewable mineral resources. The taxation system also requires adequate procedures of the government for distribution of the revenues to central and local jurisdictions as well as the management of the revenues once distributed. In general, the taxation regime for the mining sector should follow closely the overall system of taxation in Afghanistan, but also make specific provision for mining related taxes and conventions. Accordingly, government policy is to:

- Assess royalties on production of mineral commodities;
- Apply without exception or exoneration existing taxation on profits of enterprises;
- Assess land use and surface rental fees;
- Collect property and other taxes due to local municipalities, provided that these are not in contradiction to national taxes;
- Desist from taking an equity participation in mining ventures in the place of assessing and collecting taxes;
- Provide certain exemptions from customs and value added taxes, to the extent that these could impede or otherwise hinder minerals exploration and exploitation;
- Apply internationally recognized accounting principles to mining operations;
- Publicly disclose taxes and other payments made by mineral producers and investors.

### **4. Reinforcement of Geological and Geo-science Database**

The aim of the Government's policy is to update and strengthen the basic geological and mining information. This information is necessary for the promotion of private investment for exploration and mine development as well as for the sustainable social and economic development of Afghanistan. It involves the development of baseline geological infrastructure, which is an important public service performed by the state in all countries, and which benefits different activities such as mining, infrastructure construction, water resources management, land-use and planning, and environmental planning.

In particular, with the assistance of the national budget and possibly foreign donors, the following elements will apply:

- Personnel of the survey will be trained in modern geo-science methods and re-skilled in terms of regional mapping and GIS requirements;
- The laboratories at the AGS will support the new emphasis on providing geological information to the private sector and to provide support to government institutions to carry out their mandates;
- Resource assessments will be conducted and priorities for development established;
- Project promotion datasets and materials will be created for promoting investment in known or prospective areas; a special unit within AGS will be created for this purpose;
- A new reserve classification system will be put into place which will be consistent with international standards;
- The AGS will conduct geologic mapping and resource assessment on a regional scale for the account of the government and, possibly, as sub-contractor to private firms, provided there are no conflicts of interest;
- Documents, maps, reports and other materials prepared by the AGS will be made available to the public at nominal charge.

### **5. Improvement of Small-scale Mining**

Small-scale mining activities represent an important source of income for a growing number of rural population in Afghanistan. At present, small scale mining contributes fairly large amounts of quarry, construction and coal materials to the market. There is also substantial production of gems and semi-precious stones. However, this activity takes place without formal authorization and State institutions have difficulty in regulating the activities. Additionally, small scale mining often has significant environmental, health, and safety problems as well as potentially conflicts with surface land owners. Therefore, the Government's policy is to regularize and improve small-scale mining in order to realize its benefits and avoid its adverse impacts. To implement this policy, the following measures will be taken:

- adoption and enforcement of regulations and guidelines for small-scale mining;
- provision of extension services to the miners, provided by government centers and also possibly local and national mining associations, to provide training and guidance to improve technical and environmental aspects;
- provision of information on available production and marketing options to facilitate the commercialization of mineral products;
- establishment of a training center for cutting and polishing gem and semi precious stones as well as objects of art, handicrafts and jewelry from minerals;
- promotion of awareness of mining related social, health and environmental issues;
- raising awareness of small scale miners on regulatory matters and mineral rights, and promotion of organizations of such miners in small groups or cooperatives;
- provision of guidance through government departments on technical aspects (mining methodology, mineral reserves, appropriate processing technology), development of pilot training centers for small-scale mining, and marketing mechanisms.

### **6. Establishment of environmental and social management capacity**

The aim of Government's policy is to minimize and mitigate the social and environmental impacts of mineral exploitation and to promote sustainable development. This will require

development of satisfactory environmental and social capacity for the mineral sector at the Ministry of Mines and Industry as well as at other government agencies dealing with environment and social matters. This requires:

- Establishment of modern environmental legislation, guidelines and procedures;
- Development of capacity for environmental and social management at respective government institutions both at the central and regional offices;
- Preparation of environmental and socio-economic baseline studies and audits of selected mining areas;
- Strengthening the capacity of communities affected by mining, on principles of environmental and social management, on development of procedures for participatory consultation;
- Development of regulatory and enforcement mechanisms to ensure protected zones against illegal mining.



**ANNEX 7**  
**MINERALS PRODUCTION AND PRICES**

**Selected Minerals Commodity Production and Price Estimates**

<b>Commodity</b>	<b>2002 Declared Production</b>	<b>2003 Planned Production</b>	<b>Current Estimated Production</b>	<b>Market Price US\$/unit</b>	<b>Est Current Value US\$ '000</b>	<b>Comments</b>
Coal, metric tonnes	22,000	40,000	30,000	44	1,320	Reserved for government workers
Coal, metric tonnes			110,000	70 – 80	8,800	Free commercial price
Salt, kilograms <sup>14</sup>	15,000	17,000	54,000,000	0.40	21,600	Annual consumption
Gypsum, tonnes		4,000				
Marble, tonnes		2,500				
Bricks, clay, 1000				70 –80		
Bricks, cement, unit				0.50		
Sand, 1 M3				28		Wholesale price
Sand, 1 M3 <sup>15</sup>			500,000	30 – 36	15,000	Retail price, general const.
Gravel, quartz, 1 M3 <sup>16</sup>			440,640	19	8,372	New highway construction
Gravel, limestone, 1 M3		5,000	1,762,200	10	17,622	New highway construction
Gravel, other, 1 M3 <sup>17</sup>			500,000	12	6,000	General construction
Cement, 50 kg bag		30,000		130	3,900	
Cement, 50 kg bag				150		
Gemstones <sup>18</sup>					2,750	
Total Estimated Value					85,364	

Source: Bank staff estimates based on market research, government statistics, and informed estimates

<sup>14</sup> Estimated national salt consumption, 90% of which is currently imported.

<sup>15</sup> Estimated annual production for general construction purposes.

<sup>16</sup> Estimates of quartz and limestone gravel purchases for 3,000 kilometers of new highways planned or under construction. The estimate of current production assumes that 600 kilometers of roads are to be built each year over the next five years, though it is not known how much of this construction takes place in one year.

<sup>17</sup> Estimated annual production for general construction purposes.

<sup>18</sup> Estimated market value; most of the gemstones are clandestinely exported to Pakistan and other countries. Source of this information is unpublished reports of Mr. Gary Bowersox.

**ANNEX 8**  
**ESTIMATES OF ECONOMIC CONTRIBUTION NEXT FIVE YEARS**

**Estimates of Economic Contribution: Mining Growth Scenarios Next Five Years**  
**Value Amounts in US\$ million**

<b>Commodity</b>	<b>Investment Public (Total)</b>	<b>Investment Private (Total)</b>	<b>Production Volume (Year)</b>	<b>Production Value (Year)</b>	<b>Value Added (Year)</b>	<b>Royalties (Year)</b>	<b>Jobs persons (Year)</b>	<b>Export Balance (Year)</b>
Coal	25.0	50.0	800,000 tons	40.0	8.0	0.800	1,500	NA
Quarries, road const.	0.4	10.0	2,160,000 M3	24.0	10.0	0.480	1,000	NA
Quarries, genrl. const.			3,000,000 M3	36.0	14.0	0.720	1,000	NA
Salt	0.2	1.0	54,000 tons	18.0	6.0	0.360	300	Import sub.
Gemstones	1.0	5.0	NA	5.0	2.5	0.100	500	4.0
Copper metal	50.0	240.0	50,000 tons	100.0	56.0	15.000	600	62.0
Handicrafts	0.5	2.0	NA	NA	NA	NA	NA	NA
Exploration	20.0	50.0	NA	NA	NA	NA	500	NA
<b>Totals</b>	<b>97.0</b>	<b>358.0</b>		<b>223.0</b>	<b>96.5</b>	<b>17.5</b>	<b>5,900</b>	<b>66.0</b>

### Notes to Table on Economic Contribution

**Coal estimates:** government investment are the budget requests by MMI for rehabilitation of the Sabzak and four other coal mines; private investment assumes that the coal mines, once rehabilitated, will attract additional private sector investment over the five year planning horizon of US\$ 50million; production volumes are those estimated by MMI to satisfy current and growing demand, a higher figure of 1 million metric tones per year could also be used; production value is calculated using a unit value of US\$ 50/per tonne, which around the current bazaar price in Kabul but taking into account some backsliding of price due to increased volumes on the market; value added is assumed to be 20% of total value; royalties are calculated on the basis of 2% of selling price, which is in line with international practice (if perhaps a bit low); employment is an estimate based on more efficient operations of the mines which would not require as much manpower as in previous years.

**Quarry materials, road construction:** sand and gravel are by far the most commonly exploited minerals produced at present in Afghanistan. Government investment is estimated at US\$ 0.400 to reflect set-up of a unit in the MMI to supervise these activities; private investment is estimated at US\$ 10million, reflecting the relatively inexpensive start-up costs of these types of operations; yearly production volumes are calculated on the basis of an average of 600 kilometers of new road construction per year (3,000 kilometers are currently planned for the next five years), with each line kilometer requiring 3,600 M3 of new quarry material; value of production is based on the current selling prices of gravels and sand as reported by the Ministry of Public Works; value added is assumed to be 40% of total production value; royalties are calculated on the basis of 2% of selling price; persons employed is an estimate.

**Quarry materials, general construction:** as the reconstruction effort gains speed, it is estimated that sand and gravel for general construction purposes will increase to about 3,000,000 M3 per annum; the selling cost of these materials is estimated at US\$ 12 M3, giving a annual production value of US\$ 36 million; value added is 40%, or US\$ 14 million; royalties assessed at the rate of 2% would yield US\$ 0.72 million; jobs on the order of 1,000 persons.

**Salt:** the MMI has requested budget support of US\$ 200,000 for development of salt deposits; an additional US\$ 1 million of private investment is probably required to bring one or more mines into production; production volumes (54,000 tonnes) are estimated on the basis of per capita consumption of salt; production values is based on volume multiplied by the current market price per kilogram (Afg 15/kilo = US\$ 0.34); value added is based on 30% of production value; royalties are 2% of production value; employment is estimated.

**Gemstones:** are currently produced in their raw state and the majority exported clandestinely to Pakistan where they are cut and polished. The objective is to regularize this production and offer incentives for cutting and polishing to take place in the local market. Government investment is basically to set up a special small scale mining unit with MMI and perhaps a pilot cutting and polishing school; private investment of US\$ 5 million is estimated to improve production techniques and put cutting and polishing onto a commercial footing; the production value is currently (2002) estimated at US\$ 2.75 million, however with up- grading of production methods and increased value added from cutting and polishing, it should be possible to increase the gross value of gemstones declared to the government to US\$ 5 million; the value added of the gemstones sector is estimated at 50% of total production value; royalties are based on 2% of production value; employment is estimated; export balance assumes that the vast majority of the production would be exported, thus the export balance figure is derived by subtracting the value of imported equipment from the value of production.

**Copper (Aynak):** the values here are from an actual mine under construction in Lao PDR, of similar size to that proposed at Aynak in Afghanistan. Obviously, the exact figures for production, taxes, and other will depend on the terms and conditions attached to the investment. It is also assumed that the government will have to invest in infrastructure for the mine.

**Handicrafts:** some scope exists to establish a stone cutting handicrafts industry, based on some of Afghanistan's unique mineral specimens, such as lapis lazuli. It is difficult to estimate production values and other statistics of this production. Exploration: government investment includes US\$ 20 million in grant funding from the UK and USA governments for the geological survey; private investment assumes that the security and other conditions will allow private companies to begin exploring in Afghanistan, which is here estimated to produce US\$ 15 million in year expenditures.

**Exploration:** The public investment figure combines the proposed interventions of grant funding from the UK and USA governments to assist with geological survey work in Afghanistan; assuming security and other conditions can be made attractive, the private exploration expenditure is based on US\$ 10 million average yearly, or a total of US\$ 50 million during five years, though this may be somewhat optimistic in the early years.