

Lapidary Level-II

Based on January 2014, Version 1 OS and April. 2021, V1 Curriculum



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| Module Title: | Obtaining Gem Materials |
| LG Code: | MIN LAP2 M01 LO (1-3) LG (5-7) |
| TTLM Code: | MIN LAP1 TTLM 0421 v1 |

Adama, Ethiopia
April, 2021

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| LG #5 | LO #1- Investigating Market for gem product |
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| Instruction sheet |
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Reviewing market for cut and polished gem stone
- Identifying the market segment

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Review market for cut and polished gem stone
- Identify the market segment

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| Learning Instructions: |
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1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

Information Sheet 1- Reviewing market for cut and polished gem stone

1.1. Introduction

1.1.1. Market

A market is a place where buyers and sellers can meet to facilitate the exchange or transaction of goods and services.

Markets can be physical like a retail outlet, or virtual like an e-retailer. Other examples include the black market.

1.1.2. Cut and polished gemstone

All gems are cut and polished by progressive abrasion using finer and finer grits of harder substances. Diamond, the hardest naturally occurring substance, has a Mohs hardness of 10 and is used as an abrasive to cut and polish a wide variety of materials, including diamond itself.

1.2. Investigate market for gemstone product

In order to search or investigate market for gem products, the following key questions must be answered:-

- What will the market size?

Answer the above question- made up of the total number of potential buyers of a product within a given market, and the total revenue that these sales may generate. It's important to calculate and understand market size for several reasons.

- What are the key market trends?

A market trend is a perceived tendency of financial markets to move in a particular direction over time. These trends are classified as secular for long time frames, primary for medium time frames, and secondary for short time frames.

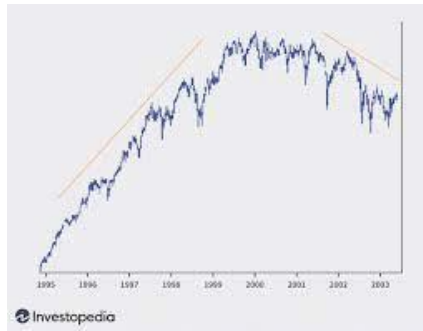


Fig 1. Market trend

- What is driving this market?

Market driven refers to a business orientation that is based on understanding and reacting to the preferences and behaviors of players within a given market structure.

- What are the challenges to Gems & Jewellery market growth?

The main challenges in the sector is

- ✓ Lack of knowledge in sorting and grading gemstone
- ✓ Failure to support legally established lapidary shops/factories

[..\The business of Ethiopian opals and emeralds - from on Ethiopian business woman's perspective.mp4](#)

- Who are the key vendors in this market space?

- ✓ Company
- ✓ Individuals
- ✓ Miners

- What are the Gems & Jewellery market opportunities and threats faced by the key?

- ✓ Lack of government recognition of the sector's potential
- ✓ Export of rough gemstone in large quantity
- ✓ Lack of knowledge in sorting and grading
- ✓ Lack of certification
- ✓ Access to capital and land
- ✓ Lack of sustainable supply of rough material
- ✓ Failure to support legally established lapidary shops/factories

[..\Ethiopia Yeabzer Isayas Gemstone exhibition in Addis Ababa, 2016_.mp4](#)

[..\Ethiopia First Buy, Uncut_.mp4](#)

Reasons to buy and sell

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In-depth analysis of the market on the global and regional level.

- Major changes in market dynamics and competitive landscape.
- Segmentation on the basis of type, application, geography, and others.
- Historical and future market research in terms of size, share, growth, volume & sales.
- Major changes and assessment in market dynamics & developments.
- Industry size & share analysis with industry growth and trends.
- Emerging key segments and regions.
- Key business strategies by major market players and their key methods.
- The research report covers size, share, trends and growth analysis of the Gems & Jewelry Market on the global and regional level.

..\World's most exclusive gems on sale in Dubai.mp4

..\September Hong Kong Jewellery & Gem Fair Highlights 2017.mp4

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| Self-check 1 | Written test |
|---------------------|---------------------|

Directions 1:- short answer Items

Instruction 1: Define the following terms(1 Poin each)

- I. Market
 - II. Market size
 - III. Market trend
 - IV. Driven market
2. What are the major challenges in gemstone market?

Note: Satisfactory rating - 4 points

Unsatisfactory - below 4 points

Score = _____

Rating: _____

Information Sheet 2- Identifying the market segment

2.1. Market segment

A market segment is a group of people who share one or more common characteristics, lumped together for marketing purposes. Each market segment is unique, and marketers use various criteria to create a target market for their product or service.

The following points are the most important for gem stone market

- How big is the Gems and Jewelry opportunity in world in value and volume terms?
- Understand which end consumer segments should be targeted to maximize market/profit
- Gain insights into changing consumer preferences by type of Gems and Jewelry products
- Fine tune sales and distribution strategy by focusing on right set of channels
- Get detailed view on import and export dynamics
- Understand Gems and Jewelry's share in overall market
- Benefit from Gems and Jewelry breakdown across top countries

In general market segments of gem stone are trade auction (local, national and international), exporters, lapidaries, miners, jewelers and legal brokers.

[..\Looking into Bangkok's Massive Gems & Jewelry Fair 2019.mp4](#)

Self-Check – 2

Written test

Directions 2:- short answer Items

Instruction 2:- write the correct answers in the space provided?

1. List the market segments of gemstones?(4points)
2. What is market segment?

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

Score = _____

Rating: _____

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|--------------|---|
| LG #2 | LO #2- Investigating Source of rough gem |
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Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying sources of rough gem stone
- Following various sources of gemstone and procedures and protocol
- Buying parcels of classed gem stone

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identify sources of rough gem stone
- Follow various sources of gemstone and procedures and protocol
- Buy parcels of classed gem stone

Learning Instructions:

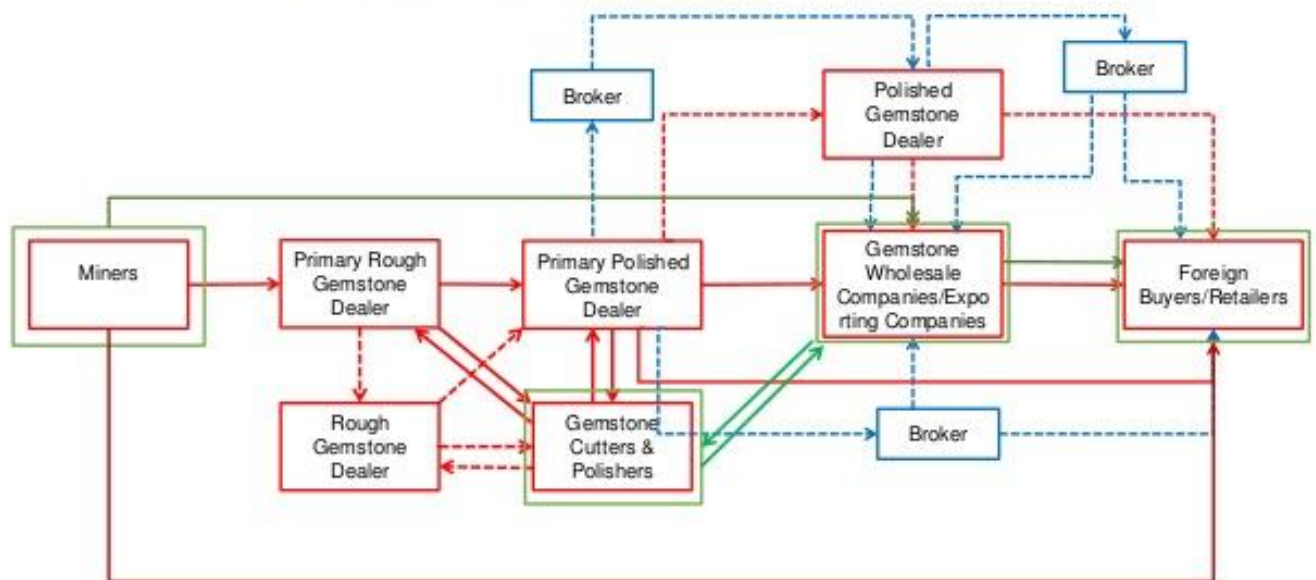
1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

Information Sheet 1. Identifying sources of rough gem stone

1.1. Introduction

The first thing that is important to know is that the supply of almost all gemstone rough is a long process that involves a lot of people all along the way. There is not really any one direct “source” or supplier of colored gemstones or rough. With the very rare exception of a few types of stones. Even in most of these very rare instances (where someone has the majority of the supply), there is more than one source or person with the same types and quality of stones usually.

Identified Gemstone Supply Chain Structures



Figur 2. Rough gemstone supply chain

..\Ethiopia First Buy, Uncut_.mp4

There is a lot of different ways the gemstone rough (cut too) supply gets to the market. About the only gemstone that is really controlled is Diamonds, and frankly that may not last with all of the new diamonds finds being developed all over the world. But here is how it generally goes with almost all colored gemstones in my experience. In Africa especially. But over all. Somebody obviously mines the stones. These miners can be working for someone who owns a mine, working as independents or working on shares at a claim. In Africa most of the

miners are either independents or working on a percentage at the claim or area. There are a few mines being run by owners, but this is not all that common, however there are some In general because of all of the difficulties and government problems in most African countries (some others too) large mining interests with big capital investment is not common at all. There has been a history of any large investment, well being lost. So there is not a lot of big investments or operations, at least in most colored gemstones. For example, at the Tanzanite locations (there are several pits), the majority of the mining is by hand and there are all types of interests (miners). Big concerns and small independent miners looking to strike it rich. it is a mix. Because of the way the country's governments work, most of the mining is, well almost like the California gold rush in the 1800's. Also because most of the mining is small independent miners there is very little mechanized equipment involved, even the big mines are almost all hand mining. Most of the mining is pick and shovel and relatively near the surface. At least in comparison to the deep mining that we think of in the USA and other modernized countries.

An interesting effect of the lack of heavy mining (gemstone, there is some very heavy gold and metal mining with heavy equipment) is that when they find a nice deposit of rough the area tends to turn into a boom town. Because there is no heavy mining equipment, when the digging begins to get deep where the equipment is needed. Miners move on because in most cases they do not have access to the heavy equipment.

Another reason miners move on is that once the miners/mining area looks like they are really getting into something the local governments tend to move in and mining and business in general gets very difficult. Interestingly that is one reason there is some times a glut of a particular type of rough on the market (the Nigerian Rubellite Tourmaline comes to mind). They mine it and sell it as fast as they can to get as much out as possible before all the, well lets say problems move in.

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| Self-Check – 2 | Written test |
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Name..... ID..... Date.....

Directions 1: Multiple Choice Items

Instruction 1: choose the correct answer and write the letter on the space provided?

1. In the supply chain of gemstone market who is comes first?
A. Rough gemstone Dealer B. Miner C.Primary gemstone dealer D. All
2. We can get Persistent market in rough gemstone industry. (1 points)
A. True B. False
3. In Ethiopia there is a market segment in spply of gemstone.
A. True B. False
4. Rough opal is source largely in wollo area
A. True B. False

Note: Satisfactory rating 3 points and above Unsatisfactory - below 3 points

Answer sheet

| |
|---------------|
| Score = _____ |
| Rating: _____ |

Information Sheet 2- Determining various sources of gemstone and procedures and protocol

2.1. To get source of gemstone follow the following procedure and protocol

- Where do rough gemstone?

To identify a rough gemstone, review its mineral qualities, inspect its streak and examine its luster. Each gemstone has its own particular set of qualities you can catalog to help you with identification. Check with your state's department of mines and minerals to locate regions suitable for rockhounding in your area.

- How do you check a gemstone?

The first step is to check for any inclusion on the stone with the naked eye. If you're unable to see any inclusions with your naked eyes, then use a magnifying glass of at least 10X magnification to find out if the gemstone contains any inclusions.

- What is the first step in identifying a gemstone?

Step 1 - Basic Observation: Color, Transparency, and Specific Gravity

- ✓ Color: Hue, Tone, Saturation. The easiest clue for separating and identifying gemstones is color. ...
- ✓ Hue. First, note your gemstone's basic overall body color (or "hue") by viewing it as a whole.
- ✓ Tone.
- ✓ Saturation.
- ✓ Transparency and Specific Gravity.
- What can you do with rough gemstones?

Most uncut gems are oddly shaped so you may need to grind it down. Roughly grinding the outsides of the gem will make it closer to the size and shape you want. Hold the gem between your fingertips and carefully polish it on a 1200 grit lap. If you have a lot of rough to remove, use a 260 grit lap.

..\BUYING GEMSTONES How to source gemstones, tips from lapidary artist and gem cutter, Mineral Rare.mp4

..\BUYING GEMSTONES tips for sourcing gemstones online; fake crystals, scams, sustainability_.mp4

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| Self-Check – 2 | Written test |
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Name..... ID..... Date.....

Directions 1: True / false Items

Instruction 2 write true if the statement is correct and write false if the statement is incorrect

1. We can easily differentiate natural gemstone from man made made (1 point)
2. The first step to buy your gemstone is identify the microscopic property of gemstone.(1pt)
3. We can use physical property test to buy gemstone.(1pt)
4. Refractive index of gemstone is the optical property of gemstone.(1pt)

Note: Satisfactory rating 3 points and above Unsatisfactory - below 3 points

Answer sheet

Test I

1. _____
2. _____
3. _____

Score = _____

Rating: _____

Information Sheet 3- Buying parcels of classed gemstone

3.1. Parcels

A parcel is something wrapped in paper, usually so that it can be sent to someone by post.

3.2. To buying parcels of classed gemstone we will ask the following question

- Is buying gemstone a good investment?

Precious gemstones are a very attractive investment option if one is a connoisseur or are an aesthete with a taste for finer things. It appears to be the best option especially when tremors in any of the areas - fluctuating value of dollar, Real estate, Precious metals, Bonds and mutual funds - gives you the fears.

- Do gemstones have resale value?

Resale value: The demand for gemstones is low, though some jewellers may buy natural ones, especially if they come with an authenticity certificate. You will not get more than 85% of the stone's value. Also the stone will be valued separately from the metal (gold/ silver) in which it has been set.

- Where is the best place to sell gemstones?

eBay

Today you have many options for selling gemstones online. Probably the most well-known website marketplaces for selling used items are eBay and eBid. With these websites, you are responsible for listing the item, accepting bids, and shipping the item after sale. Your gemstones will be next to a wide variety of items.

- How much does it cost to certify a gemstone?

So most stores will probably charge a customer \$150-\$300 to get their stone certified. Do also note that the size (carat weight) of the diamond will also affect price. A . 50 carat full diamond report is \$64, a 3/4 carat diamond report is \$78, while a 1.00 carat diamond report is \$105.

- Do jewelers buy gemstones?

You could try selling it back to the person or jeweler who sold it to you. Most jewelers will offer you less than the wholesale value for the piece because when they buy from a private

party, they must pay up front for an item that might remain in their inventory for some time before they find a buyer.

- What gemstone holds its value?

There are some rare finds among the so-called semi-precious gems that can be priced higher than the big three, but in general, a fine ruby, sapphire or emerald will hold its value and command more respect and a higher price than other gemstone.

Where can I sell gemstones online?

- Some of the most popular ways to sell gemstones include:

Selling in-person – Jewelers and pawnshops are two of the most common ways to sell your gemstone in-person.

Selling online directly to consumers – Websites like eBay and Craigslist are user-friendly ways to sell your stone online.

- Which certification is best for gemstone?

Gemstone Laboratories and Certifications

- ✓ GIA Gem Lab. The seal of the Gemological Institute of America. ...
- ✓ Gubelin Gem Lab. The seal of the Gubelin Gem Lab. ...
- ✓ SSEF Lab. The seal of the Swiss Gemological Institute. ...
- ✓ DSEF Lab. The seal of the German Foundation for Gemological Research. ...
- ✓ CGL Lab. The seal for the Central Gem Laboratory. ...
- ✓ GIT Lab.

- How do you know if a gemstone is real?

While you might think it would be the other way around, real gemstones are going to have flaws, while synthetic gems will look more perfect. Also, fake gemstones tend to sparkle and shine better than real gemstones, because real natural stones have been worn down through the environment.

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| Self-Check – 3 | Written test |
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Directions 1: Short Answer

Instruction 1 write brief description on the following question

1. What does parcel mean?(1pt)
2. Generate Wh question and discuss briefly about parcel classed gem material.(4pt)

Note: Satisfactory rating 3 points and above Unsatisfactory - below 3 points

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| Score = _____ |
| Rating: _____ |

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| LG #3 | LO #3- Source of gemstone |
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Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Accepting protocols and ethics
- Solving problem and interaction with negotiation

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Accepting protocols and ethics
- Solve problem and interaction with negotiation

Learning Instructions:

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| Information Sheet 1 | Accepting protocols and ethics in source of gemstone |
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1.1. Introduction

The mining and processing of colored stones, a multibillion-dollar industry, spans 47 countries on six continents. Despite the industry's high profile, an ethical, sustainable mine-to-market supply chain for these materials has still not been achieved, impacting the physical environment and quality of life for laborers. The history, issues, challenges, and efforts to rectify this lack of transparency and traceability are explored.

The mining and production of colored gemstones takes place in 47 countries. Industry observers have noted that this sprawling and largely unregulated industry presents issues that are similar to other small-scale extractive industries:

1.2. Some illegal acts in gemstone mining

- ✓ Forced and child labor
- ✓ Other types of criminal activity
- ✓ environmental damage
- ✓ health and safety concerns

They assert that these problems have been endemic in the colored stone industry, especially in artisanal small-scale mining (ASM) performed by individuals or small groups of people using rudimentary tools (figure 3). The concerns related to small-scale mining are pervasive with colored stones, 75%–80% of which are retrieved in this fashion

Artisanal and Small-Scale Mining. Usually grouped together, artisanal and small-scale mining of precious metals, gem materials, and industrial minerals is conducted in more than 80 countries, on every continent. Traditionally, there has been no official definition of “artisanal mining”; the term was understood to mean the removal of material by individuals or groups using little to no mechanization.

This type of mining often occurs where large-scale mining is illegal, physically inaccessible, or financially impractical.

Definition of ASM pertaining to gold extraction that can easily be applied to other precious metals, minerals, and gemstones:

Formal or informal mining operations with predominantly simplified forms of exploration, extraction, processing, and transportation.



Figure 3. Artisanal mining

ASM is normally low capital intensive and uses high labour intensive technology.

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ASM is a form of subsistence mining that can quickly generate income. This is especially true for alluvial mining, where stones and gravels from riverbeds are sifted for gems (figure 2). The material is generally close to the surface, allowing for easy retrieval.



Figure 4 Alluvial Mining

Colored stone extraction is often a family affair, with school-aged children of both genders participating in sifting and sorting.

The Rising Popularity of Colored Gemstones. Colored gemstones were especially popular prior to the mid-20th century;

Corporate Social Responsibility vs. Fair Trade

CSR(corporate Social responsibility) encompasses “the formal and informal ways in which business makes a contribution to improving the governance,

- ✓ Social
- ✓ Ethical
- ✓ Labour
- ✓ Environmental conditions of the developing countries in which they operate, while

remaining sensitive to prevailing religious, historical and cultural contexts.” Simply put, it is a company-led commitment, worked into its business plan or mission, to safeguard social values, community relations, and the environment. The CSR movement has gained traction

among many industries since its inception in the 1960s. Sustainable development, the preservation of natural resources for future generations, is usually a central tenet of CSR. Fair trade, a post–World War II social movement that has its origins in missionary programs and political and humanitarian groups. seeks to alleviate the poverty and marginalization of producers who have traditionally been excluded from the benefits of mainstream business. Secondly, it creates a relationship between disadvantaged producers (in the case of ASM activity, mine workers) and consumers by following set guidelines for production, sourcing, and manufacturing, creating expectations among end-customers. The fair trade movement also focuses on raising awareness about trade imbalances and abuses of power, while creating policies that promote equitable trade. Several different organizations exist to certify a product and designate it a “fair trade” item; issuing organizations have guidelines and audits that lead to certification and permission to use the fair trade designation. For instance, Fairtrade International has a list of standards pertaining to pricing, trade, hired labor, and prohibited materials (among others) that must be met before they will issue their logo to a producer. While a company may include CSR goals as part of their mission, this does not mean their products will be issued fair trade certification.

- **Forced and Child Labor.**

Forced labor, though universally condemned and illegal, is an unfortunate reality of gem mining.

- **Other Forms of Criminal Activity.**

Over the past 15 years, diamonds have come under a great deal of scrutiny for financing guerrilla and terrorist groups. Colored stones also have a troubling background as a method of funding criminal activity.

Self-Check – 1

Written test

Directions 1: Multiple Choice Items

Instruction 1: choose the correct answer and write the letter on the space provided.

-----1. -----Is illegal activity while gemstone mining (2 points)

A. Child labor B. Supporting terrorist C. Lack of fair trade D. All

-----2. Social corporate responsibility refer to (2 points)

A. Social B. Ethical C. Labour D. Environmental Condition

Directions 2: True False

Instruction 2: choose the correct answer and write the letter on the space provided.

1. Fair trade and Corporate social responsibility is the same mining
2. Avoiding child labor and criminal activity is acceptance protocol of mining gemstone.

Note: Satisfactory rating 3 points and above

Unsatisfactory - below 3 points

Answer Sheet

Score = _____

Rating: _____

Information sheet 2:- Solving problem and interaction with negotiation

2.1. Solve problems and interaction with negotiation

To solve the problems and interaction with negotiation in sourcing gemstone ask frequently the following question and prepare mitigation plan to solve the problem.

- **What is the nature and importance of the mining industry in your country?**

The Gemstone mining industry is one of the most important economic activities in Ethiopia. Mining activity has had an important role in the Ethiopian economy because it generates added value, higher foreign exchange and tax revenues, the creation of direct and indirect jobs, and the improvement in potential growth of economic activity, enabling necessary and real social inclusion and promoting general welfare.

- ✓ What are the target minerals?
- ✓ Which regions are most active?
- **Legal and regulatory structure**
 - ✓ Is the legal system civil or common law-based?
 - ✓ How is the mining industry regulated?
 - ✓ What are the principal laws that regulate the mining industry? What are the principal regulatory bodies that administer those laws? Were there any major amendments in the past year?
 - ✓ What classification system does the mining industry use for reporting mineral resources and mineral reserves?
- **Mining rights and title**
 - ✓ To what extent does the state control mining rights in your jurisdiction? Can those rights be granted to private parties and to what extent will they have title to minerals in the ground? Are there large areas where the mining rights are held privately or which belong to the owner of the surface rights? Is there a separate legal regime or process for third parties to obtain mining rights in those areas?
 - ✓ What information and data are publicly available to private parties that wish to engage in exploration and other mining activities? Is there an agency which collects mineral assessment reports from private parties? Must private parties file mineral assessment

reports? Does the agency or the government conduct geoscience surveys, which become part of the database? Is the database available online?

- ✓ What mining rights may private parties acquire? How are these acquired? What obligations does the rights holder have? If exploration or reconnaissance licences are granted, does such tenure give the holder an automatic or preferential right to acquire a mining licence? What are the requirements to convert to a mining licence?
- ✓ What is the regime for the renewal and transfer of mineral licences?
- ✓ What is the typical duration of mining rights?
- ✓ Is there any distinction in law or practice between the mining rights that may be acquired by domestic parties and those that may be acquired by foreign parties?
- ✓ How are mining rights protected? Are foreign arbitration awards in respect of domestic mining disputes freely enforceable in your jurisdiction?
- ✓ Are any areas designated as protected areas within your jurisdiction and which are off-limits or specially regulated?
- **Duties, royalties and taxes**
 - ✓ What duties, royalties and taxes are payable by private parties carrying on mining activities? Are these revenue-based or profit-based?
 - ✓ What tax advantages and incentives are available to private parties carrying on mining activities?
 - ✓ Does any legislation provide for tax stabilisation or are there tax stabilisation agreements in force?
 - ✓ Is the government entitled to a carried interest, or a free carried interest in mining projects?
 - ✓ Are there any transfer taxes or capital gains imposed regarding the transfer of licences?

Self-Check -2

Written Test

Directions 1: Short answer

Instruction 1: Explain briefly the following question on the space provided?

1. What is conflict arise from in mining gemstone ?(2 points)
2. What will follow the mechanism to solve the problem arising from gemstone source sector?
3. Write atleast two negoatiabale mechanism to solve the problem and interaction of gem sourcing.

Note: Satisfactory rating - 3 points

Unsatisfactory - below 3 points

Answer sheet:-

1. _____
2. _____
3. _____

Score = _____

Rating: _____

Reference Book:

1. Gem& Gemology :THE QUARTERLY JOURNAL OF THE GEMOLOGICAL INSTITUTE OF AMERICA
2. JOEL E AREM, PHD, FG.A.Color encyclopidiya of gemstone. Second edition

WEB ADDRESSES

1. <https://www.gemsociety.org/article/cleavage-gemology/>
2. <https://www.lexology.com/library/detail.aspx?g=1f774464-ebcc-4949-97f4-80d4271ec26e>

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