Myanmar Gems Forum 2019

Gem Mining and Sustainability in Myanmar

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Sustainability is the process of maintaining change in a balance environment, in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations. (Wikipedia)
Outlines

- Introduction
- History of gem mining in Myanmar
- Gem mining legislations
- Environmental legislations
- Sustainable gem mining in Myanmar
- Conclusion

Introduction

Estimated global rough gemstones sales, 2015

- Diamond: USD 12-14 BILLION
- Other Coloured Gemstones: USD 250-750 MILLION
- Emerald, Ruby, Sapphire: USD 1.5-2.5 BILLION
- Jade: USD 3-6 BILLION
Introduction

- Myanmar’s main gem-producing areas are geographically located along the North-eastern mountainous regions, with jadeite deposits almost exclusively in Kachin state as well as Sagaing, and other gemstones in Shan, Mandalay, Kachin, Kayin and Tanintharyi.
- Many of the known gemstone tracts are in, or bordering, conflict zones.
- The major gemstone deposits in Myanmar include:
  - the large jadeite areas in Hpakant (Kachin State) and Hkamti (Sagaing).
  - the Mogok Stone Tract (Mandalay Division) famous for its ruby and sapphire deposits.

History of Gem Mining in Myanmar

- Pre-colonial days
- Colonial days (1885-1947)
- Post Independence Era (1948 – 1962)
- NLD Government (2016 – present day)
History of Gem Mining in Myanmar

13th – 14th Centuries
(Chinese Emperors, Burmese Kings, Shan Warlords)

18th Century
Well established - until World War II

1885-1947
(Under controlled by British colonial traders)

1948-1962
(Post Independence Era)
Native mining & trading under license

1962-1988
Military Socialist Gov. (1969) banned private exploration & mining of gem

1988-2010
Military Gov. Gemstone law 1995 JV mines/private gem mines

2010-2015
New Gov. 2016 amendments to 1995 Gemstone law JV mines/private gem mines

2016 - at present
Gem Mining Legislations

1. The Burma Ruby Regulations 1887
2. The Burma metalliferous Mines Manual 1937
3. The Burma Mineral Concession Directions 1947
5. The Myanmar Mines Law 1994
7. The Myanmar Gemstone Law 1995
8. The Myanmar Gemstone Rules 1995
11. The Myanmar Gemstone Law (first amended 2013)
12. The Myanmar Gemstone Law (second amended 2016)
13. The Myanmar Mines Rules 2018
14. The Myanmar Gemstone Law 2018 (Passed by Pyidaungsu Hluttaw)
Gem Mining Legislations
The 2nd amendments to the Myanmar Gemstone Law (23/2016) were passed by the Pyidaungsu Hluttaw on 29 January 2016. The 1st amendments were made in 2003 and were minimal. The 2nd amendments (2016) changed and update approximately 75% of the 1995 Law. The Myanmar Gemstone Law (2018) were passed by the Pyidaungsu Hluttaw on December 2018.

<table>
<thead>
<tr>
<th>Gemstone Production Permit</th>
<th>Pre 2016 Gemstone Law amendments</th>
<th>Post 2016 Gemstone Law amendments</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGE (under Ministry of Mines)</td>
<td>Exploration, production, trading, processing, jewellery manufacture, retail, export and foreign sales</td>
<td>Designated blocks: 1 acre blocks designated by MONREC; Up to 50 blocks per company; Competitive tender – awarded to highest bidder; 3 years tenure; Re-tender required for renewal</td>
</tr>
<tr>
<td>21,392 permits</td>
<td>98% private companies; 2% JV’s with MGE; 1,475 companies in total</td>
<td>Large Scale: JV 25% govt/75% company; Competitive tender – awarded to highest bidder; Up to 50 acres per permit; Commercial scale production – technology and machinery may be used; 5 years tenure</td>
</tr>
<tr>
<td>Gemstone Trading License</td>
<td>Pre 2016 law amendments: Allowed trading and retail in MMK and foreign currency; 1 year duration</td>
<td>Post 2016 law amendments: Additionally allows processing, jewellery manufacture, retail and export of both rough and finished stones and jewellery products in MMK and foreign currency; 3 years duration</td>
</tr>
<tr>
<td>MGE (under Ministry of Mines)</td>
<td>2,000</td>
<td>Not allow foreign investment in gem exploration and mining sector.</td>
</tr>
</tbody>
</table>

Not allow foreign investment in gem exploration and mining sector.
• According to permit data provided by MGE, there were 21,392 active gem production permits as at March 2016.
• Of these, 98% were privately held and 2% were JVs with MGE. This means that 2% of all gemstone production permits are being ‘monitored’ by government.
• No new concessions will be granted in 2016 until the by-laws, rules and regulations to the Gemstone Law (2018) have been passed and approved.
### Gem Mining Legislations

#### Number of Companies with Gemstone Permits: April 2016

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Jade</td>
<td>935</td>
<td>63%</td>
</tr>
<tr>
<td>Private Coloured Stones</td>
<td>288</td>
<td>20%</td>
</tr>
<tr>
<td>JV Jade</td>
<td>232</td>
<td>16%</td>
</tr>
<tr>
<td>JV Coloured Stones</td>
<td>20</td>
<td>1%</td>
</tr>
</tbody>
</table>

#### Number of Companies by Types of Permit: April 2016

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>1223</td>
<td>83%</td>
</tr>
<tr>
<td>JV</td>
<td>252</td>
<td>17%</td>
</tr>
<tr>
<td>Total</td>
<td>1475</td>
<td></td>
</tr>
</tbody>
</table>

#### Change in Number of Permits Over Time

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Permits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early 2016</td>
<td>&gt;21,000</td>
</tr>
<tr>
<td>Mid-2017</td>
<td>&lt;17,000</td>
</tr>
<tr>
<td>Late 2018</td>
<td>&lt;6,000</td>
</tr>
</tbody>
</table>

- **11,808 permits** will be expiring or up for renewal during 2016.
- This presents an opportunity for government to review and revise the terms of any new contracts issued.
- **New issue**: illegal mining come out in Mogok and Jade mines areas.
Ye ma say

Many ye ma say are from other parts of Myanmar and have moved to jade mining areas in search of economic opportunities. They often work in extremely dangerous conditions.

photo: NRGI

Kha ne say

Illegal mines
# Gem Mining Legislations

Production Gems and Jade in 2015-2016

<table>
<thead>
<tr>
<th>Region</th>
<th>Sharing / Private</th>
<th>Production</th>
<th>Unit</th>
<th>Value (in million MMK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mogyoke</td>
<td>Joint Venture</td>
<td>765,259</td>
<td>Carat</td>
<td>144.95</td>
</tr>
<tr>
<td></td>
<td>Assorted Color Gem</td>
<td>71</td>
<td>Kg</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>Ruby &amp; Sapphire</td>
<td>10,810,781</td>
<td>Carat</td>
<td>870.86</td>
</tr>
<tr>
<td></td>
<td>Assorted Color Gem</td>
<td>23,501</td>
<td>Kg</td>
<td>213.79</td>
</tr>
<tr>
<td>Mong Hsu</td>
<td>Joint Venture</td>
<td>58,300</td>
<td>Carat</td>
<td>2.91</td>
</tr>
<tr>
<td></td>
<td>Ruby &amp; Sapphire</td>
<td>1,849,042</td>
<td>Carat</td>
<td>96.90</td>
</tr>
<tr>
<td>Total Gems</td>
<td></td>
<td></td>
<td></td>
<td>1,330.00</td>
</tr>
<tr>
<td>Kachin State</td>
<td>Joint Venture</td>
<td>17,258,772</td>
<td>Kg</td>
<td>40,831.87</td>
</tr>
<tr>
<td></td>
<td>Quartzite &amp; Amber</td>
<td>80,319</td>
<td>Kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>17,425,166</td>
<td>Kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quartzite &amp; Amber</td>
<td>343,905</td>
<td>Kg</td>
<td></td>
</tr>
<tr>
<td>Sagaing Region</td>
<td>Private</td>
<td>944,343</td>
<td>Kg</td>
<td>44,190.69</td>
</tr>
<tr>
<td></td>
<td>Quartzite &amp; Amber</td>
<td>6,682</td>
<td>Kg</td>
<td></td>
</tr>
<tr>
<td>Total Jade</td>
<td></td>
<td></td>
<td></td>
<td>85,022.56</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>86,352.56</td>
</tr>
</tbody>
</table>

The value of gems and jade is on the basis of the valuation made by the valuation committees. This value is used for the determination of the royalties on production.
Environmental Legislations

2. National Environmental Policy 1994
3. Myanmar’s Agenda 21/ 1997
7. National Environmental Conservation Committee NECC was formed in place of NCEA in (2011)
Environmental Legislations

Phases of a Gem Mining Project

Production Permit

Construction of access roads

Site preparation and clearing

Active mining

Open-pit mining

Placer mining

Underground mining

Reworking of inactive or abandoned mines and tailings

Disposal of overburden and waste rock

Gem extraction

Beneficiation

Tailings disposal

Site reclamation and closure

Environmental and social impacts
Environmental Legislations

Environmental and Social Impacts of Mining

- **Air Pollution**
  - Fumes and noxious smells cause concern for communities living near mine sites

- **Water/ Water Stress**
  - Sediment discharge from mining activities cause siltation of water ways
  - Non-compliance with regulation to inform of public water use and pay water tax

- **Deforestation**
  - Land degradation and no site rehabilitation and mine closure plans or practices in place by companies

- **Land acquisition**
  - People have limited legal ownership over the land on which they live and farm leaving them with little protection incase of land acquisition

- **Damage to land, crops and water sources**

- **Loss of livelihoods**
  - Migration and farmers becoming daily workers
  - Drug/ HIV
Environmental Legislations

Sustainable Mining Industry

- **Minimizing** land disturbance and waste production
- **Reducing** water and energy consumption
- **Preventing** soil, water, and air pollution at mine sites
- **Conducting** successful mine closure and reclamation activities

Mining can become more **environmentally sustainable** by developing and integrating practices that reduce the environmental impact of mining operations.

Public consultation
Sustainable Gem Mining in Myanmar

(a) Artisanal and Small Scale Gem Mining
(b) Large Scale (Mechanized) Gem Mining

- Mining from;
  (1) Primary gemstone deposits
  (2) Secondary gemstone deposits such as; alluvial, elluvial, fracture-filled and cave deposits
Sustainable Gem Mining in Myanmar

Precolonial days (1800-1885)

U Hmat, The Ruby King

Indigenous mining
Sustainable Gem Mining in Myanmar

Colonial days (1885-1947)  Burma Ruby Mine Ltd. Mine, Mogok (1889-1931)
Sustainable Gem Mining in Myanmar

Post Independence Era (1948 – 1962)

- 1,000 mining plots operation
- In 1958; Caretaker government of General Ne Win
- Reintroduced to the mine licensing system ("twin-tsa")

Aerial photo of Mogok, 1954
Sustainable Gem Mining in Myanmar


- In 1960s: great potential of the ruby-bearing marble deposits
- In 1969: Burmese Ministry of Mines nationalized all industries
- In 1976: Myanmar Gems Corporation (MGC)

Government officials visiting the Pansho mine in 1973
Sustainable Gem Mining in Myanmar

Primary Ruby Mining at Dattaw & Kyauk-sar Taung, Mogok (1995-2015)
Sustainable Gem Mining in Myanmar

Primary Gemstone Mining at Mong Hsu (1995-2015)
Sustainable Gem Mining in Myanmar

Primary Sapphire Mining at Baw Mar, Mogok (1995-2018)
Sustainable Gem Mining in Myanmar

Alluvial Ruby & Sapphire Mining at Shunt-Pan and Inn-gaung, Mogok (1995-2015)
Sustainable Gem Mining in Myanmar

(Mechanized Mining)

Uru Boulder Conglomerate (thickness- 300m) at Kanpwint Oo mine near Hwehka
Sustainable Gem Mining in Myanmar
(Mechanized Mining)
Sustainable Gem Mining in Myanmar
Sustainable Gem Mining in Myanmar

Alluvial Sapphire Rush Area at Mogok (2013)
(ASM Mining)
Sustainable Gem Mining in Myanmar

Amber (Burmite) Mining at Hukaung Valley in Kachin State (2010-2017)

(ASM Mining)
Sustainable Gem Mining in Myanmar

Estimate geographical distribution of gemstone mining and production

Estimate geographical distribution of gemstone cutting and polishing

Source: NRGI
Sustainable Gem Mining in Myanmar

Gemstone value chain
Sustainable Gem Mining in Myanmar

Gemstone value chain

Diamond (Botswana)
- Mining Subsidiary (Botswana)
- Marketing Subsidiary (Belgium)
- Rough Sorting & Marketing
- Production
- Mining Company (Headquarters: UK)
- Diamond Holder Sale
- Cutting & Polishing
- Retail
- Jewelry Manufacturing (Vietnam)
- Jewelry Company (Headquarters: USA)

Coloured gemstones (Madagascar)
- Production
- Citizen Miner (Madagascar)
- Malagasy Traders (Mine Site)
- Malagasy Traders (CITY)
- Sri Lankan Traders (CIT)
- Sri Lankan Traders (CITI)
- Manufacturing Company (Italy)
- CUTTING & POLISHING COMPANY (SRI LANKA)
- Jewelry Manufacturing
- Jewelry Company (USA)
- Retail

Source: NRGI

Banned rough gemstone export in 2008
Sustainable Gem Mining in Myanmar

Gemstone value chain

- **Rough Trading**
- **Free Trading**
- **Polished Trading**

**Smuggling**

**Tax**

**Jewelry Export/Import Order (22nd Jan. 2018)**

**Supporting value-added processing (cutting, polishing, treatment)**

**Example:** Thai, Sri Lanka for gemstone value chain, Zambia (Gemfield Co.) for Emerald
Sustainable Gem Mining in Myanmar

Gemstone value chain

# Identifying areas of comparative advantage.

# Supporting skill development and technology transfer.

# Facilitating integration with global markets.

# Offering competitive fiscal terms.

# Extending credit to industry.
Conclusion

- Clear and strict legislation and guidelines for artisanal and small scale mining ASM should be promulgated.
- The environmental and social impact assessment before the mining projects start should be recognized.
- Establishment of modern and efficient laboratory and training is necessary.
- Therefore, efficient guidelines of environmental conservation (EIA) are needed and continuous monitoring (EMMP) and Life Cycle Assessment (LCA) are essential for the sustainable gem mining in Myanmar with effective Corporate Social Responsibility (CSR).
- Development of a **National Gemstone Sector Strategy** to provide strategic framework for the responsible development of the sector over coming years. This would also include a public consultation process and possibly a national conference.
Sustainable Gem Mining in Myanmar

Suggestion

1. Develop a jade and gemstone policy.
2. Revise the legal framework.
3. Reform gems institutions.
4. Strengthen the licensing process.
5. Formalize citizen miners.
6. Adjust fiscal terms.
7. **Amend the valuation process.**
8. Support domestic beneficiation.
10. Improve transparency.

For the fiscal years between 2011/2012 and 2015/2016, the Government received royalties of MMK 337 to MMK 450 (worth less than USD .50) per kilogram of jade declared and MMK 13 to MMK 18 (worth USD .01 to .02) per carat of gemstone declared. These figures suggest that Myanmar's resources have been routinely valued well below the fair market rate.
THANKS YOU