Role of the Zambian Mining Sector and Current Status of Mining Activity

Masaharu Marutani
JICA Study Team

Seminar for Promoting Investment in Zambia
Tokyo
16 December, 2008
World Copper Resources (Mt)

(World Total 940Mt)

- Chile, 360, 39%
- United States, 70, 7%
- China, 63, 7%
- Peru, 60, 6%
- Russia, 30, 3%
- Kazakhstan, 20, 2%
- Canada, 20, 2%
- Indonesia, 38, 4%
- Mexico, 40, 4%
- Australia, 43, 5%
- Poland, 48, 5%
- Others, 110, 12%
- Zambia, 35, 4%

Rank 9

Mineral Commodity Summaries 2008
World Copper Mine Production (Kt)

(World Total 15,540Kt)

- Chile, 5,557, 35%
- United States, 1,223, 8%
- Peru, 1,190, 8%
- Australia, 870, 6%
- Mexico, 347, 2%
- Poland, 452, 3%
- Kazakhstan, 424, 3%
- Others, 1,970, 12%
- Zambia, 544, 4%
- Canada, 589, 4%
- Russia, 770, 5%
- Indonesia, 773, 5%
- China, 831, 5%

Rank 9

World Metal Statistics Yearbook 2008
Production of Copper in Zambia

Mines Development Department

- **Lumwana copper project**
  - Annual production: 169Kt Cu
  - Reserves: 321Mt @0.7%Cu, 0.015%Co
  - Resources: 417Mt @0.6%Cu,

New copper producer
Photos from the Copperbelt

New shaft of Konkola Deep Mine

Nkana copper smelter
180Kt

Copper Ore Shale Unit
– Underground in Mindola mine

Lumwana concentrator
World Cobalt Reserves (Kt)

(World Total 7,000Kt)

- **Congo**, 3,400, 50%
- **Australia**, 1,400, 20%
- **Russia**, 250, 4%
- **New Caledonia**, 230, 3%
- **United States**, 33, 0%
- **Brazil**, 29, 0%
- **Morocco**, 20, 0%
- **Others**, 130, 2%

- **Zambia**, 270, 4%
- **Cuba**, 1,000, 14%

*Mineral Commodity Summaries, 2008*
World Cobalt Resources (Kt)

(World Total 13,000Kt)

- Congo, 4,700, 35%
- Cuba, 1,800, 14%
- Australia, 1,700, 13%
- New Caledonia, 860, 7%
- United States, 860, 7%
- Russia, 350, 3%
- Canada, 350, 3%
- Brazil, 40, 0%
- Others, 1,100, 9%

Zambia, 680, 5%
Rank 6

Mineral Commodity Summaries 2008
World Cobalt Refined Production (t)

(World Total 53,130t)

- China, 13,245, 26%
- Finland, 9,100, 17%
- Zambia, 4,425, 8%
- Canada, 5,604, 11%
- Morocco, 1,591, 3%
- Brazil, 1,148, 2%
- Congo, 608, 1%
- Others, 3,374, 6%

Rank 4
GDP by Economic Activity

GDP at Market Prices
US$ 11 billion

IMF: Statistical Appendix, 2007

GDP - real growth:
6.2% (2007)

Services 52%
Agriculture 13%
Mining 8%
Manufacturing 10%
Construction 11%
Electricity, gas & water 3%
Tourism 3%

Tourism 3%

Zambia’s Exports and Imports by Commodity

**Exports** (FOB base)
- Metals: 71%
- Others: 12%
- Cereal: 2%
- Sugar: 2%
- Machinery: 7%
- Metalliferous ores: 6%

**Imports** (CIF base)
- Metals: 51%
- Machinery: 22%
- Petroleum: 12%
- Vehicles: 9%
- Electrical machinery: 5%
- Iron and steel: 5%
- Metalliferous ores: 3%
- Fertilizers: 3%
- Telecommunications: 3%
- Others: 38%

Zambian Central Statistical Office, 2007

US$ 4.6 billion

US$ 4.0 billion
Zambia’s Exports and Imports by Country

**Exports**
- FOB base
- Switzerland: 39%
- South Africa: 11%
- Other SADC: 4%
- Congo: 3%
- Other European countries: 3%
- Others: 16%
- China: 7%
- Thailand: 7%
- Egypt: 4%
- Japan: 0%
- India: 3%
- UK: 3%

**Imports**
- CIF base
- South Africa: 46%
- Other European countries: 6%
- UK: 4%
- Others: 15%
- China: 3%
- UAE: 10%
- Other SADC: 3%
- Congo: 3%
- Tanzania: 2%
- Zimbabwe: 6%
- Egypt: 4%
- Japan: 2%
- Others: 16%

US$ 3.8 billion (Exports)
US$ 3.0 billion (Imports)

Zambian Central Statistical Office, 2006
Trade between Japan and Zambia

**Exports FOB base**
- Cars and other motor vehicles: 73%
- Telephone base stations: 10%
- Others: 10%
- Bulldozers and machinery: 7%
- JPY 3.0 billion
  - US$ 25 million

**Imports CIF base**
- Cobalt: 46%
- Refined copper: 20%
- Unrefined copper: 14%
- Copper conc.: 12%
- Tobacco: 7%
- Others: 1%
- JPY 14.8 billion
  - US$ 125 million

Trade Statistics of Japan, 2007
Zambia is a paradise of secondhand Japanese cars
Japanese Imports of Cobalt Metal

10% of Japan’s Cobalt comes from Zambia

- Finland
- Australia
- Canada
- Norway
- Zambia
- Belgium
- Congo
- Others


METI
# Japanese Imports of Metals from Zambia

(Trade Statistics of Japan, 2007)

<table>
<thead>
<tr>
<th></th>
<th>Imported from Zambia (A)</th>
<th>Total imported to Japan (B)</th>
<th>Percentage (A)/(B)</th>
<th>Rank</th>
<th>Imported amount (million ¥)</th>
<th>Imported amount (million US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt mattes and others (t)</td>
<td>988</td>
<td>12,763</td>
<td>7.7%</td>
<td>5</td>
<td>6,688</td>
<td>56</td>
</tr>
<tr>
<td>Unrefined copper (t)</td>
<td>2,353</td>
<td>20,735</td>
<td>11.3%</td>
<td>4</td>
<td>2,093</td>
<td>18</td>
</tr>
<tr>
<td>Refined copper (t)</td>
<td>3,600</td>
<td>102,273</td>
<td>3.5%</td>
<td>6</td>
<td>3,022</td>
<td>25</td>
</tr>
<tr>
<td>Copper concentrate (Kt)</td>
<td>8</td>
<td>5,051</td>
<td>0.2%</td>
<td>12</td>
<td>1,748</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>13,551</strong></td>
<td></td>
<td></td>
<td><strong>13,551</strong></td>
<td><strong>114</strong></td>
</tr>
</tbody>
</table>

92%

Total amount of imports from Zambia to Japan

14,799 | 125

Total amount of exports from Japan to Zambia

3,013 | 25
Mineral Deposits and Occurrences
Licences Issued

Mines Development Department

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>20</td>
</tr>
<tr>
<td>2001</td>
<td>30</td>
</tr>
<tr>
<td>2002</td>
<td>40</td>
</tr>
<tr>
<td>2003</td>
<td>50</td>
</tr>
<tr>
<td>2004</td>
<td>60</td>
</tr>
<tr>
<td>2005</td>
<td>70</td>
</tr>
<tr>
<td>2006</td>
<td>80</td>
</tr>
<tr>
<td>2007</td>
<td>90</td>
</tr>
</tbody>
</table>

- Large-scale Prospecting Licences
- Large-scale Mining Licences
- Small-scale Prospecting Permits
- Small-scale Mining Licences
- Gemstone Licences
- Artisanal Mining Rights
Large-Scale Prospecting Licences

Mines Development Department
Exploration Project: Cheowa Copper-Gold Project

Indicated Resource: 3.5Mt @1.1%Cu, 0.23g/t Au
Inferred Resource: 3.0Mt @1.1%Cu, 0.38g/t Au
## PRESCRIBED FEES, AREA CHARGES, AND MAXIMUM AREAS

### FEES

<table>
<thead>
<tr>
<th>TYPE OF MINING RIGHT OR APPLICATION</th>
<th>APPLICATION FEE IN FEE UNITS</th>
<th>LICENCE FEE IN FEE UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-scale Prospecting Licence</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Large-scale Mining Licence</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Large-scale Gemstone Licence</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Prospecting Permit</td>
<td>500</td>
<td>2,000</td>
</tr>
<tr>
<td>Small-scale Mining Licence</td>
<td>500</td>
<td>2,000</td>
</tr>
<tr>
<td>Small-scale Gemstone Licence</td>
<td>500</td>
<td>2,000</td>
</tr>
<tr>
<td>Artisan’s Mining Right</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td>Transfer of Prospecting, Large-scale Mining, and Large-scale Gemstone licence</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Transfer of Small-scale Mining, Prospecting Permit, or Small-scale Gemstone Licence</td>
<td>500</td>
<td>2,000</td>
</tr>
<tr>
<td>Alteration of Prospecting, Large-scale Mining, and Large-scale Gemstone Licence</td>
<td>500</td>
<td>2,500</td>
</tr>
<tr>
<td>Alteration of Small-Scale Mining, Prospecting Permit, or Small-scale Gemstone License</td>
<td>200</td>
<td>750</td>
</tr>
<tr>
<td>Alteration of Artisan’s Mining Right</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

Fee unit = ZMK180.00
## NON-MINING RIGHTS/OTHERS CATEGORIES

<table>
<thead>
<tr>
<th>LICENCE, CERTIFICATE, OR PERMIT</th>
<th>APPLICATION FEE IN FEE UNITS</th>
<th>CERTIFICATE, LICENCE, OR PERMIT FEE IN FEE UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Processing Licence</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Transfer of Mineral Processing Licence</td>
<td>2,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Alteration of Mineral Processing Licence</td>
<td>500</td>
<td>2,500</td>
</tr>
<tr>
<td>Annual Operating Permit (Large-scale)</td>
<td>500</td>
<td>5,000</td>
</tr>
<tr>
<td>Annual Operating Permit (Small-scale)</td>
<td>250</td>
<td>1,500</td>
</tr>
<tr>
<td>Gemstone sales certificate</td>
<td>250</td>
<td>1,000</td>
</tr>
<tr>
<td>Mineral Import permit</td>
<td>500</td>
<td>3,000</td>
</tr>
<tr>
<td>Mineral Export permit</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td>Geological or Mining consultancy permit</td>
<td>500</td>
<td>2,500</td>
</tr>
<tr>
<td>Mineral Analysis laboratory Permit</td>
<td>500</td>
<td>2,500</td>
</tr>
<tr>
<td>Mineral Analysis Certificate</td>
<td>100</td>
<td>500</td>
</tr>
<tr>
<td>Valuation certificate</td>
<td>250</td>
<td>1,000</td>
</tr>
<tr>
<td>Replacement of licence, permit, or certificate</td>
<td>-</td>
<td>750</td>
</tr>
<tr>
<td>Tonnage fee for building materials</td>
<td>-</td>
<td>5</td>
</tr>
</tbody>
</table>

Fee unit = ZMK180.00
## AREA CHARGES

<table>
<thead>
<tr>
<th>GRZ Fee Units</th>
<th>Year 1-2</th>
<th>Year 3-4</th>
<th>Year 5-6</th>
<th>Year 7 and thereafter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospecting licence (per square km per year)</td>
<td>56</td>
<td>112</td>
<td>224</td>
<td>448</td>
</tr>
<tr>
<td>Large-scale mining licence (per square km per year)</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Large-scale gemstone licence (per hectare km per year)</td>
<td>56</td>
<td>100</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>Prospecting Permit (per hectare km per year)</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>Small-scale mining licences (per hectare km per year)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Small-scale gemstone licence-exempt in Year 1 (per hectare km per year)</td>
<td>100</td>
<td>100</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>Artisan’s mining right (per licence area)</td>
<td>10</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Fee unit = ZMK180.00

## PRESCRIBED MAXIMUM AREAS

<table>
<thead>
<tr>
<th>TYPE OF MINING RIGHT OR LICENCE</th>
<th>MAXIMUM AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Square kilometres</td>
</tr>
<tr>
<td>Prospecting licence</td>
<td>1000</td>
</tr>
<tr>
<td>Large-scale Mining licence or Large-scale Gemstone licence</td>
<td>250</td>
</tr>
<tr>
<td>Prospecting Permit</td>
<td>10</td>
</tr>
<tr>
<td>Small-scale Mining licence</td>
<td>4</td>
</tr>
<tr>
<td>Small-scale Gemstone licence</td>
<td>4</td>
</tr>
<tr>
<td>Artisan’s Mining right</td>
<td>0.0668</td>
</tr>
</tbody>
</table>