The following report is part of a series which attempts to provide a detailed analysis on the ASEAN Economic Community (AEC) Blueprint 2025. Each report will cover a single element of the blueprint, providing a comprehensive look at past achievements, present problems, and the future plans of the AEC. Special attention will be placed upon the strategic measures outlined in the AEC Blueprint 2025. This report aims to provide insight into the viability surrounding regional economic integration under the AEC.

**ASEAN Cooperation in Minerals**

Today’s modern life is greatly supported by minerals. The ASEAN region is endowed with many mineral and energy resources. It is also home to a large share of world reserve of certain minerals. The most important mineral resources produced in ASEAN in large volumes include nickel, copper, tin and bauxite. Those that are produced in smaller volume are gold, lead, zinc, iron ore and gemstones. Table 1 describes the reserves of mineral substances in each member state. More intensive economic activities and cooperation in the region have pushed up the demand for mineral resources, encouraging member states to work together to invest, exploit and trade their mineral reserves. The ASEAN cooperation in minerals began when ASEAN had the first formal meeting of Senior Officials in charge of mineral resources in 1996 in Bali, Indonesia. It was further strengthened when the ASEAN Leaders endorsed the Vientiane Action Programme (VAP) 2004-2010, which called for enhanced trade and investment in the minerals sector and greater cooperation in the utilisation of mineral resources. To guide the cooperation, ASEAN adopted the first ASEAN Minerals Cooperation Action Plan (AMCAP) 2005-2010.

**Table 1: Distribution of Metallic Mineral Reserves in ASEAN**

<table>
<thead>
<tr>
<th></th>
<th>Bauxite</th>
<th>Copper</th>
<th>Gold</th>
<th>Iron Ore</th>
<th>Lead</th>
<th>Nickel</th>
<th>Silver</th>
<th>Tin</th>
<th>Zinc</th>
<th>Other</th>
</tr>
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<tbody>
<tr>
<td>Cambodia</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<td>Indonesia</td>
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<tr>
<td>Lao PDR</td>
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<td>Malaysia</td>
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<td>✔️</td>
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<tr>
<td>Myanmar</td>
<td>✔️</td>
<td>✔️</td>
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<td>✔️</td>
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<tr>
<td>Philippines</td>
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<td></td>
<td>✔️</td>
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<tr>
<td>Thailand</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<td>✔️</td>
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<tr>
<td>Vietnam</td>
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<td>✔️</td>
<td>✔️</td>
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<td>✔️</td>
</tr>
</tbody>
</table>

In the previous AEC Blueprint 2009-2015, the minerals (mining) cooperation was put under the larger scope of infrastructure sector. Since the very beginning, ASEAN has put a priority on the environmental impacts of intensifying cooperation in the sector, ensuring the sustainability of economic development in the region. This report aims at reviewing the progress made thus far, analysing the measures under the new AEC Blueprint 2025, and proposing some recommendations that could improve upon the implementation during the first AEC period.

A. Targets under the AEC 2015 Blueprint

As mentioned above, under the AEC Blueprint 2015, ASEAN cooperation in minerals is categorised under infrastructure, which also covers many other sectors such as transportation and energy. The main objectives in the previous AEC period of 2009-2015 include enhancing trade and investment, and strengthening cooperation and capacity in geological and mineral sector for sustainable mineral development in the ASEAN region.

The strategic actions identified included:
1. Facilitate and enhance trade and investment in minerals.
2. Intensify institutional and human capacity building in ASEAN geological and mineral sector.
3. Promote environmentally and socially sustainable mineral development.
4. Encourage the participation of the private sector in mineral development.

More detailed measures and timelines of the above strategic actions are prescribed in the ASEAN Minerals Cooperation Action Plan (AMCAP) 2005-2010. However, it covers only strategic actions 1-3. The fourth strategy on cooperation with the private sector is not elaborated upon in the AMCAP.
B. Significant Achievements To Date

- The table below explains about the current progress made under each of the strategic action under the AEC Blueprint 2015.

<table>
<thead>
<tr>
<th>Area</th>
<th>Progress</th>
</tr>
</thead>
</table>
| Facilitation and enhancement of trade and investment in minerals    | - By 2005 under the AFTA scheme\(^1\), the CEPT rates for minerals related items are kept at 5 percent for Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand, which are the six first signatories to the CEPT scheme. Brunei Darussalam and Singapore apply zero tariffs on all mineral imports, while Cambodia applies the highest tariff rates in the region. Tariff rates of Myanmar reach 20 percent on gemstone and Vietnam’s rate reaches 20 percent for cement imports. This may indicate that domestic production is important and needs some sort of protection.  
- Investment in the mineral sector is very capital intensive and expensive and this has been a significant barrier particularly since domestic resources are limited to respond to the total demand for investment. Development of the minerals sector in ASEAN depends on FDI inflows of, which provide access to not only finance, but also technology, management skills, and global marketing networks.  
- Several ASEAN countries have also engaged in bilateral agreements to facilitate trade and investment in mineral resources. |
| Institutional and human capacity building in ASEAN geological and mineral sector | - The ASEAN Working Group on Capacity Building in Minerals (WGCBM) has coordinated many capacity development programs, in the specific areas of Reserve and Resource Classification of Mineral Commodities, Mine Safety and Health Management, Mining Environmental Management, Research and Development on the Demonstration of Tin Fuel Catalyst for Saving Energy and Reducing Air Pollution, Geo-Hazards and Risk Management, and Cross Border Geological Correlation.  
- Many of these programs are conducted through partnership with dialogue partners and international organizations. |
| Promotion of environmentally and socially sustainable mineral development | - While ASEAN has pledged to promote environmentally and socially sustainable mineral sector development, the weak governance of the sector has sometimes resulted in substantial environmental problems. Mining projects that are located in forested areas have actually done some harm to the biodiversity, through deforestation and contamination the water supply.  
- The existing mechanism to push companies to be more committed to environmental protection is weak. Mitigation measures are underdeveloped and compensation schemes do not work. |
| Participation of the private sector in mineral development           | - The Asia Pacific Mining Conference has been used by the ASEAN mining industry to voice their views and concerns on the development of the minerals sector. It is a platform regulators and market participants have discussions and exchange ideas. |

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\(^1\) Jane Mélanie, Marina Kim, Sam Hester, Peter Berry, Allison Ball and Karen Schneider, Enhancing ASEAN Minerals Trade and Investment, REPSF Project No. 04/009b, December 2005, p.36
C. Current Issues and Challenges

Governance

- A report on the ASEAN extractive industries\(^2\) has identified several challenges in developing and integrating the regional market of minerals. The first main problem for ASEAN is governance in the sector. This includes weak rule of law, lack of transparency and accountability mechanisms, and unpredictability of public institutions, and absence of effective participation of citizens. The report explains good governance is essential in the extractive industries to ensure an effective value chain. The value chain includes the extraction, processing and sale of the natural resources of raw resources as well as the utilisation of revenues from those sequence of activities. The rank of countries in ASEAN resource governance is given in Table 2. It is based on the Resource Governance Index (RGI) that measures the quality of governance in the oil, gas and mining sectors of 58 countries\(^3\). Indonesia is the highest ranked ASEAN country, which was still not able to achieve a satisfactory composite score.

<table>
<thead>
<tr>
<th>Composite Score</th>
<th>Institutional and Legal Setting</th>
<th>Reporting Practice</th>
<th>Safeguards and Quality Control</th>
<th>Enabling Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>66</td>
<td>76</td>
<td>66</td>
<td>75</td>
</tr>
<tr>
<td>Philippines</td>
<td>54</td>
<td>63</td>
<td>54</td>
<td>51</td>
</tr>
<tr>
<td>Malaysia</td>
<td>46</td>
<td>39</td>
<td>45</td>
<td>39</td>
</tr>
<tr>
<td>Vietnam</td>
<td>41</td>
<td>63</td>
<td>39</td>
<td>31</td>
</tr>
<tr>
<td>Cambodia</td>
<td>29</td>
<td>52</td>
<td>13</td>
<td>46</td>
</tr>
<tr>
<td>Myanmar</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: 0-40 = failing | 41-50 = weak | 51-70 = partial | 71-100 = satisfactory

Source: The Framework for Extractive Industries Governance in ASEAN by IESR, November 2014, p.21

Regulatory Uncertainties

- The second challenge refers to the sector specific issues, which cover uncertainties about investment and licensing process, problems regarding access to land, and particularly uncertainties in regulatory frameworks. These have led to corruption cases in some countries as the uncertainties may provide some room for rent seeking activities.

Price Volatility

- From the market perspective, the highly volatile prices of commodities and fierce competition among producers of minerals in ASEAN markets hampers the potential contribution of the sector to the growth of ASEAN economies and structured. This has hampered the potential contribution that this sector could make as an engine of growth in the ASEAN economies.

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\(^2\) The Framework for Extractive Industries Governance in ASEAN, Institute for Essential Services Reform (IESR), November 2014

\(^3\) The list of 58 countries do not include Brunei Darussalam, Lao PDR, Singapore, and Thailand.

\(^4\) The rank is based on Resource Governance Index (RGI) by the Natural Resource Governance Institute.
D. Plans under the AEC 2025 Blueprint

- For the next period of AEC, the minerals cooperation in ASEAN continues with the previous strategic actions, with more emphasis put on partnership and cooperation with the main stakeholders. The new AEC Blueprint 2025 focuses on the following strategic measures:
  - Facilitate and enhance trade and investment in minerals;
  - Promote environmentally and socially sustainable mineral development;
  - Strengthen institutional and human capacities in the ASEAN minerals sector; and
  - Maintain an efficient and up-to-date ASEAN Minerals Database, including its infrastructure towards achieving deeper integration in the mineral sector.

- In addition, partnership in policy development and programme implementation will be continued through the following key measures:
  a. Exchange information and develop the ASEAN Mineral Database;
  b. Promote and facilitate intra- and extra-ASEAN trade and investment;
  c. Promote environmentally and socially responsible mineral resources management and development;
  d. Intensify private sector participation and public-private sector collaboration in ASEAN mineral cooperation programmes and activities;
  e. Foster cooperation with Dialogue Partners and relevant international and regional organisations in the promotion of scientific and technological R&D in mineral resources development and geosciences, as well as cooperative programmes on technology transfer;
  f. Coordinate and harmonise development policies and programmes on mineral resources;
  g. Exchange technical information, experience and good practices; and
  h. Strengthen cooperation and joint approaches in addressing international and regional issues and concerns of common interest.

E. AEC 2025 Blueprint Analysis

The new blueprint has outlined what needs to be done to further develop and integrate the ASEAN healthcare sector, covering areas such as public and private roles, harmonisation of standards, health tourism, health insurance, and mobility of health practitioners. The table below provides some analysis on the progress on each measure in the blueprint.

<table>
<thead>
<tr>
<th>Issues</th>
<th>Current Status and Development</th>
</tr>
</thead>
</table>
| 1. Trade and investment in minerals | • ASEAN has continued to work on facilitating trade and investment in the region.  
• Some trade figures are given by a joint statement of the Ministers. In 2012, the total intra- and extra-ASEAN trade in major minerals: gold, copper, nickel, tin, iron, bauxite, zinc, coal, and gemstones, was about USD53.5 billion. In 2013, the value increased to USD57 billion.  
1. Indonesia: USD10.9 billion in 2012 and USD12.1 billion in 2013  
2. Thailand: USD9.3 billion in 2012 and USD5.3 billion in 2013  
3. Singapore: USD3.6 billion in 2012 and USD3.1 billion in 2013  
• Below are the top three importers of minerals in ASEAN, Thailand was the major importing country (USD12.2 billion in 2012 and USD16.4 billion in 2013), followed by Malaysia (USD5.2 billion in 2012 and USD6.9 billion in 2013) and Singapore (USD4.4 billion in 2012 and USD4.3 billion in 2013). |

5 The content under this section is taken directly from the AEC Blueprint 2025 (ASEAN Secretariat, 2015).  
6 Joint Press Statement of the Fifth ASEAN Ministerial Meeting on Mineral (5th AMMIN), September 2015
<table>
<thead>
<tr>
<th>Issues</th>
<th>Current Status and Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><strong>Sustainable mineral development</strong></td>
</tr>
<tr>
<td>a.</td>
<td>Promotion of environmentally and socially responsible mineral resources management and development</td>
</tr>
<tr>
<td></td>
<td>• Despite the negative impacts of the minerals sector on the environment, it will continue to be an integral part of ASEAN development in the future. Since it will continue to bring about direct and indirect benefits to local, national and regional economies, the ASEAN Ministers in charge of the minerals sector have encouraged all member states to implement sustainable mining practices at every stage of mineral development focusing on long-life operations, including consideration of environmental impacts of mining to people, biodiversity, forests and water.</td>
</tr>
<tr>
<td></td>
<td>• The ASEAN Mineral Awards is a biennial award established to honour ASEAN mining companies which have made outstanding contributions toward the promotion of environmentally and socially sustainable minerals development in the ASEAN region. The Awards recognise contributions involving actual impacts on community development, implications on ASEAN minerals supply, human resource development, productivity and resource efficiency, and actual measures to address health, safety and environmental performance.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Institutional and human capacities in the minerals sector</strong></td>
</tr>
<tr>
<td>a.</td>
<td>Intensification of private sector participation and public-private sector collaboration</td>
</tr>
<tr>
<td></td>
<td>• As mentioned previously, the WGCBM has continued to organise and facilitate capacity building programs for ASEAN officials in charge of the sector development. Many of these programs are conducted with support from dialogue partners and international organisations.</td>
</tr>
<tr>
<td></td>
<td>• The 11th Asia-Pacific Mineral Resource Exhibition and Conference was held in 2016 and became a forum for industry players, investors and private sector organisations and corporations in the mineral resource industry to talk to the regulators. Discussion revolve around current opportunities and facilities available with regards to capital raising and funding requirements, current government policies and legislations including positive changes towards promoting and enhancing mineral resource development, and various other opportunities for cooperative ventures in mineral resource trade and investment and networking. This event was held back-to-back with the 16th ASEAN Senior Officials Meeting on Minerals (ASOMM), 9th ASOMM+3 Consultations and 4th Private Sector Forum on Cooperation in Minerals in ASEAN.</td>
</tr>
<tr>
<td>4</td>
<td><strong>ASEAN minerals database</strong></td>
</tr>
<tr>
<td>a.</td>
<td>Exchange of technical information, experience and good practices</td>
</tr>
<tr>
<td>b.</td>
<td>Development of the ASEAN Minerals Database</td>
</tr>
<tr>
<td>c.</td>
<td>Greater cooperation with Dialogue Partners and relevant organisations to promote R&amp;D in mineral resources development</td>
</tr>
<tr>
<td></td>
<td>• In cooperation with the Geological Survey of Japan, the ASEAN Mineral Database and Information System (AMDIS)(^7) was launched in 2013. The AMDIS was developed using Free and Open Source Software (FOSS) and the Open Geospatial Consortium (OGC) standards. The system is composed of the local databases and the centralised Geographic Information System (GIS), which are accessible from the portal site.</td>
</tr>
<tr>
<td></td>
<td>• AMDIS shows that mineral resources are abundant in the region. A lot of data are missing and member states are committed to ensuring that these gaps be addressed accordingly.</td>
</tr>
</tbody>
</table>

\(^7\) Okubo, Ohno, Bandibas, Wakita, Oki, Takahashi, ASEAN Mineral Database and Information System (AMDIS), December 2014
F. Conclusion: Moving Forward with the AEC 2025 Plans

- To address the problem of weak governance in the sector\(^8\), ASEAN should consider a more robust regional policy framework that will (i) improve the legal, regulatory and institutional frameworks to pursue economic, social and environmental objectives, (ii) enhance accountability, transparency, and stakeholder consultation, and (iii) develop systems to deliver tangible benefits to the people. Such governance framework must serve to address the development divide and accelerate the economic integration of the less developed ASEAN member countries.

- The framework mentioned above should also put a strong priority and ensure the implementation of environmental friendly way of mining practices, as encouraged by the Ministers. Development of an ASEAN directive on minerals extraction could be the answer as it will provide standardised safe methods of doing business.

- Stronger dialogue and cooperation between the private sector and regulators will greatly improve how the sector is developed and further promote trade and investment of mineral resources across the region. These resources are very important in supporting the economic and industrial activities, and therefore greater involvement of the market participants in the development of any ASEAN framework could significantly accelerate the implementation of the measures under the AEC blueprint and AMCAP.

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\(^8\) Fabby Tumiwa, ASEAN Framework on Extractive Industries Governance, Institute for Essential Services Reform, August 2014
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Lifting-the-Barriers Reports, CIMB ASEAN Research Institute, 2015
Fabby Tumiwa, ASEAN Framework on Extractive Industries Governance, Institute for Essential Services Reform, August 2014
Jane Mélanie, Marina Kim, Sam Hester, Peter Berry, Allison Ball and Karen Schneider, Enhancing ASEAN Minerals Trade and Investment, REPSF Project No. 04/009b, December 2005
Okubo, Ohno, Bandibas, Wakita, Oki, Takahashi, ASEAN Mineral Database and Information System (AMDIS), December 2014

Related Publications

Lifting-the-Barriers Report Minerals, Oil and Gas 2014
ASEAN Research Digest Minerals, Oil and Gas 2014

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