

1 Introduction

Cooperation in the minerals sector continues to play a supporting role towards achieving the ASEAN Economic Community (AEC) Blueprint 2025's goal of a *highly integrated and cohesive regional economy; competitive, innovative and dynamic; with enhanced connectivity and sectoral cooperation; and, a more resilient, inclusive, and people-oriented, people-centred community, integrated with global economy.*

To support the AEC 2025 vision, the ASEAN Minerals Cooperation Action Plan 2016-2025 (AMCAP-III) was formulated in two phases, namely, Phase 1 from 2016 to 2020 and Phase 2 from 2021 to 2025. AMCAP III is the third minerals sector plan since AMCAP's inception in 2005, following AMCAP-I (2005-2010) and AMCAP-II (2011-2015). AMCAP has served as the blueprint for ASEAN minerals cooperation to further enhance the dynamic development of the ASEAN minerals sector. The AMCAP-III Phase 1 was adopted by the 15th ASEAN Senior Officials Meeting on Minerals (ASOMM) and endorsed by the 5th ASEAN Ministerial Meeting on Minerals (AMMin) in September 2015 in Vientiane, Lao PDR.

This document sets out Phase 2 of AMCAP-III for the implementation period of 2021-2025.

The **Ministerial Understanding on ASEAN Cooperation in Minerals** at the first ASEAN Ministerial Meeting on Minerals (AMMin) held in Kuching, Sarawak, Malaysia on 4 August 2005 not only marked the formal establishment of the ASEAN Minerals Cooperation Sector, but also instituted the future basis of the cooperation which aimed to:

- i. develop the minerals sector to be an engine for greater economic growth and social progress in the ASEAN region;
- ii. enhance trade and investment in the ASEAN minerals sector; and
- iii. promote environmentally sound and socially responsible minerals development practices.

The AMCAP-III will continue to underscore the important supporting role of the minerals sector in the AEC in stimulating and enhancing business and trade integration in ASEAN Member States. Within the context of a renewed thrust for cooperation under the AEC, the ASEAN Senior Officials on Minerals together with its Working Groups will strive to implement strategic policies, measures and initiatives to *create a vibrant and competitive ASEAN minerals sector for the well-being of ASEAN peoples.* The development of Phase 2 (2021-2025) of the AMCAP-III seeks to advance this mission to *create an advanced and progressive ASEAN minerals sector for ASEAN socio-economic prosperity and environmental well-being through enhancing trade and investment and strengthening cooperation and capacity building for sustainable mineral development in the region.*



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**ASEAN MINERALS COOPERATION
ACTION PLAN 2016-2025 (AMCAP-III)
PHASE 2: 2021-2025**

2 ASEAN Minerals Cooperation Action Plan 2016-2025 (AMCAP-III) Phase 2: 2021-2025

A. OVERVIEW

i) Development of the AMCAP-III Phase 2

The development of the AMCAP Phase 2 was undertaken through series of consultations with ASEAN Member States as led by the AMCAP Task Force which consists of representatives from each ASEAN Member State and the ASEAN Secretariat. This involved extensive consultations both among the Task Force members and between the Task Force and the ASOMM Working Groups, namely: Working Group on Trade and Investment in Minerals (WGTIM), Working Group on Sustainable Minerals Development (WGSMD), Working Group on Capacity Building in Minerals (WGCBM), and Working Group on Minerals Information and Database (WGMID). Malaysia has chaired the Task Force all throughout the preparation of Phase 1 and 2 of AMCAP-III.

Consultations with partners were also conducted, including with the Plus Three Countries (China, Japan, Republic of Korea) under the ASOMM+3 platform, and with the ASEAN Federation on Mining Association (AFMA), Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP), the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) under the ASOMM platform as well as with potential dialogue partners and collaborators.

Preparations to develop the AMCAP Phase 2 were initiated as early as December 2019 but the development and finalisation of the full AMCAP draft experienced delays due to the Covid-19 outbreak in early 2020 that affected Task Force activities and delivery timelines for the AMCAP supporting studies. This required the Task Force to reconsider its initial approach and plans, where instead of conducting physical Task Force meetings, all activities shifted to virtual platforms in the form of series of consultations and coordination meetings with the Working Groups and schedules for the AMCAP delivery having to closely realign with the implementation of the AMCAP supporting studies.

The AMCAP supporting studies, specifically the *Development Prospects of ASEAN Minerals Cooperation (DPAMC)* and the *Scoping Study on the ASEAN Minerals Information and Database (AMDIS Scoping)*, complemented the preparation of this AMCAP Phase 2 in line with the direction of the 19th ASOMM and as endorsed by the 7th AMMin in December 2019. The ASEAN-Australia Development Cooperation Programme (AADCP) II sponsored the supporting studies under the project 'Strengthening ASEAN Cooperation in Minerals (SACM)'. A multidisciplinary team from the Sustainable Minerals Institute of the University of Queensland working with several external experts conducted the said studies.

The 1st AMCAP Task Force Meeting, held back-to-back with the 4th Joint Working Groups Meetings and Associated Meetings from 30 June to 2 July 2020, produced the zero draft of the AMCAP Phase 2 covering tentative overall theme, key focus, outcome-based strategies, action lines, and annual milestones of the AMCAP's programme areas. Meantime, the DPAMC and AMDIS Scoping Studies, which commenced in September 2020, delivered and reported their interim findings, analysis and recommendations to the virtual 2nd AMCAP Task Force and 20th ASOMM Meetings in December 2020. More in-depth analysis and recommendations from the two studies were reported and deliberated in February-March 2021, including at the virtual 5th Joint Working Groups Meetings and Associated Meetings held on 29-31 March 2021. The Task Force together with the Working Groups subsequently refined the AMCAP Phase 2 draft and produced the full draft for deliberation by the 4th AMCAP Task Force Meeting held in conjunction with the 6th Joint Working Groups Meetings and Associated Meetings on 6-8 July 2021.

The final draft of the AMCAP Phase 2 was then submitted to the ASEAN Senior Officials Meeting on Minerals (ASOMM) for adoption.¹ The ASEAN Ministers responsible for minerals endorsed and launched the AMCAP-III Phase 2: 2021-2025 at their 8th ASEAN Ministerial Meeting on Minerals (AMMin) held on 8 October 2021 hosted virtually by Viet Nam.

ii) Key Achievements of the AMCAP Phase 1: 2016-2020

The Final Term Review of the AMCAP-III Phase 1: 2016-2020 presented by the ASEAN Secretariat at the virtual 20th ASOMM held on 3 December 2020 hosted by Singapore, reported a 76% overall achievement rate under AMCAP Phase 1. This covers all 49 action lines² under the four AMCAP programme areas and the annual priorities of the ASEAN minerals cooperation sector from 2016 to 2020. Of the 49 action lines, 37 action lines were completed by end-2020, while 12 action lines were carried over to AMCAP Phase 2, with some targeted for completion within end-2021.

¹ Meantime, interim work plans for the four AMCAP programme areas were prepared and implemented at the beginning of 2021 to bridge the implementation of sector activities, prior to the adoption of AMCAP-III Phase 2.

² The 49 action lines cover 33 action lines originally identified in AMCAP-III Phase 1 and 16 annual priorities of the ASEAN minerals cooperation sector implemented within 2016-2020. Note that during the Mid Term Review in 2018, Phase 1 activities were rationalised by merging some of the action lines considered to have similar nature of activities. The Final Term Review further rationalised the plan by withdrawing some action lines that were viewed by ASOMM as infeasible by the end of Phase 1 or by carrying over action lines to AMCAP Phase 2 (with modifications) for those considered to have continuing relevance.

A summary of the key accomplishments made throughout the AMCAP-III Phase 1 from 2016 to 2020 are highlighted below:

Under **Trade and Investment in Minerals Programme (TIM)**, regular convening of public-private sector forum on minerals cooperation organised by the ASEAN Federation on Mining Association (AFMA) in conjunction with the ASEAN Senior Officials Meeting on Minerals and its associated meetings and events were made. This forum facilitates smart partnership in trade and investments and promote joint venture cooperation among ASEAN private sector companies. To enhance networking and promote investment in ASEAN, ASEAN Member States and AFMA had also actively participated in various international fora including at the annual China-ASEAN Mining Cooperation Forum and Exhibition (CAMCFE) and Singapore's Mining Investment Asia in 2020.

To support promotion of intra- and extra- trade and investment in ASEAN, review of minerals trade and investment data were conducted. Substantive completions include Technical Papers on (i) Identification of Minerals Sector Products using the Harmonised System Nomenclature (6-DIGITS, HS 2017) for Purposes of Generating Regional Statistics on Trade in Mineral Products, and (ii) Identification of Minerals Sector-Related Economic Activities using the International Standards for Industrial Classification (ISIC Rev.4) System for Purposes of Generating Regional Statistics on Investments in the Mining and Minerals Sector. Findings and analysis on the Generation and Extraction of ASEAN Minerals Trade Statistics from the ASEANstats Database (Data on Trade, Investments and Gross Value-Added) were reported by ASEC to the 14th WGTIM in July 2017 and by Indonesia to the 17th WGTIM in July 2020.

In response to the global minerals and mining industry opportunities and challenges, the ASEAN Ministers on Minerals at their 7th AMMin held in December 2019, adopted an internal document on the “Directions on ASEAN Minerals Cooperation in Response to Global Mineral and Mining Industry Opportunities and Challenges”, providing guidance to the senior officials to respond to the growing role of minerals and metals in the global low carbon transition and to take the opportunities presented by operational innovations in the digital age by translating them in the development of the Phase 2 of the AMCAP.

In terms of engagement with dialogue partners and international organisations, which in the AMCAP Phase 1 falls under the TIM programme, the ASEAN minerals cooperation sector continued to strengthen collaboration with China, Japan and the Republic of Korea (ROK) under the ASOMM+3 platform. The ASEAN+3 Minerals Cooperation Work Plan (2016-2020), adopted in 2016, reached 63% accomplishment rate as of 13 ASOMM+3 on 4 December 2020 in which 5 out of 8 action lines were completed, while the remaining action lines are on track for accomplishment by 2021. Within the AMCAP Phase 1 period, ASEAN established engagement with the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) and adopted an ASEAN-IGF Cooperation Plan in 2019. Joint Annual ASEAN-IGF Mining and Sustainability Forum as well as Workshop and Training in conjunction with the ASOMM and Joint Working Groups meetings were regularly conducted under the said cooperation plan. In geoscience and database, ASEAN continued its collaboration with the Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP). Initial engagement with the United States Geological Survey (USGS) was also made during this period.

One of the key achievements made under **Sustainable Minerals Development Programme (SMD)** is the establishment of biennial ASEAN Minerals Awards (AMA) in 2017, led by Brunei Darussalam, to recognise best practices and support the promotion of environmentally and socially sustainable ASEAN minerals sector. Accompanying documentation and/or publication on the best practices from the said awards were also produced, apart from the adoption of the Guidelines for the ASEAN Minerals Awards. The 1st (2017) and 2nd AMA (2019) had recognised a total of 24 awardees from 45 participating companies.

Another key accomplishment of the SMD programme during AMCAP Phase 1 is the launch of the ASEAN Reporting Mechanism (RM) to help track ASEAN Member States' progress and long-term performance in instituting frameworks and tools to support sustainability in the minerals sector. The implementation of the RM commenced in 2019. This is an initial but crucial step in the AMCAP's goal to implement sustainability and assessment frameworks and guidelines in ASEAN.

Public relations materials on the benefits of sustainable mineral resources were produced, including dissemination of a dossier on "Best Practices of Corporate Social Responsibility in Mining and Quarrying in Malaysia" and promotional material on the Benefits of Sustainable Mineral Resource Development.

A number of capacity building activities related with sustainable minerals development were conducted throughout AMCAP Phase 1. These included the conduct of: (i) Mineral Symposium in 2017 by Malaysia, (ii) Workshop on Geo-park and Geo-Heritage in 2018 by Viet Nam), (iii) Mine Closure Legal Framework in ASEAN Member States in 2018 by Lao PDR with support from Germany, (iv) Workshop and Training on Sustainable Mining Practices among ASEAN+3 Countries and IGF in 2019 by Thailand and IGF, (v) R&D to Enhance Value Addition of Minerals-Gadolinium by Indonesia, and (vi) nine (9) capacity building activities on hydrogeology, environmental geology and geo-hazards and four (4) activities on Marine Geosciences between 2016 - 2020 by China under the ASOMM+3 framework.

The development of the repository of capacity building materials within the existing AMDIS is crucial to the **Capacity Building in Minerals (CBM) Programme** to improve effectiveness and replicability of capacity building activities implemented under AMCAP. Within Phase 1 period, about 45 capacity building activities across AMCAP's programme areas had been implemented. Numerous capacity building activities supported by the dialogue partners and international organisations, including under the ASOMM+3, ASEAN-IGF and ASEAN-CCOP platforms had also been conducted. Up to year 2020, China provided scholarship support for 151 young geologists from AMS to pursue post-graduate degrees in the China Geosciences University.

To sharpen the focus of AMCAP implementation in the capacity building area, a rolling Regional Capacity Building Programme under AMCAP was adopted in January 2020. It is aimed to provide a longer-term framework for pursuing capacity building in ASEAN minerals cooperation, communicate regional plans with partners, help secure support and resources for implementation, and initiate a rolling programme that implements cooperation on capacity development under AMCAP. It was built upon the activities and priorities in the remaining AMCAP-III Phase period 1 based on five main topics, namely: (i) resource and reserve estimation, (ii) added value in minerals, (iii) green mining

technologies, (iv) mine environmental management, and (v) mine rehabilitation. The Programme was designed to provide longer-term visibility for capacity building in areas deemed priority by AMS.

To effectively support AMCAP implementation and strengthen ASEAN institutions and human capacities, the ASEAN Minerals Trust Fund was established with contribution from ASEAN Member States. A Mid-Term Review was likewise conducted in 2018 to monitor and assess progress of the implementation of the AMCAP Phase 1, while Final Term Review was reported to ASOMM in December 2020.

An effective **Minerals Information and Database (MID)** through the development of the ASEAN minerals database and system (AMDIS) has consistently been recognized in all AMCAPs as it is crucial to facilitate the ASEAN minerals cooperation itself and provide sufficient data and information to attract investments on minerals into the region. While the existing AMDIS was launched at the 4th ASEAN Ministerial Meeting on Minerals in 2013, the establishment of an ASEAN Industrial Minerals Information System (AIMIS) was first initiated at the 5th ASEAN Summit in 1995. Within AMCAP Phase 1, while awaiting the progress of restructuring/enhancing the AMDIS, efforts to update the existing AMDIS were made which will need to be strengthened and continued under AMCAP Phase 2. Review of the existing AMDIS were also conducted, including assessment of completeness of AMS submission. Upload of relevant materials in the existing AMDIS continued to be made including under the capacity building repository and trade-related data from ASEAN-Stats. Meanwhile, the conduct of AMCAP Scoping Study to facilitate AMDIS restructuring, including assessment of data requirements for the AMDIS to support regional reserve/resource estimation, is ongoing and will be finalised in 2021.

Under MID area, activities conducted mainly within the ASOMM+3 platform to promote technical information exchange, share experiences and best practices on, among others, the development of the AMDIS, scientific and technological research and development of geosciences, the sustainable development of mineral resources. These include: (i) Training Course on Capacity Building on Cross Border Geological Correlation for AMS (2016); (ii) Seminar on Cooperative Working Mechanism and Technical Manual of China-ASEAN Cross-border Geological Map Compilation (July - August 2017, China); (iii) Seminar on China-ASEAN Cross-border Geological Correlation and Map Compilation (August - September 2018, China); (iv) Seminar on 2019 Cambodia Mineral Resources Management and Overseas Exploration Technology (2019, Cambodia); and (v) Online Conference on Geology of SE Asia, Hunting the Next Generation of Resources and New Plate Tectonics (July 2020).

iii) Directives on ASEAN Minerals Cooperation

The overall development and implementation of the AMCAP-III Phase 2 will be guided by the ASEAN Community Vision 2025 towards *an integrated, peaceful and stable community with shared prosperity* wherein the ASEAN Economic Community by 2025 is envisioned to be *a highly integrated and cohesive; competitive, innovative and dynamic with enhanced connectivity and sectoral cooperation; and a more resilient, inclusive, and people-oriented, people-centred community, integrated with the global economy*. Consideration will also be taken of the Ha Noi Declaration on the ASEAN Community Post-2025 Vision to commence the development of the ASEAN Community's Post-

2025 Vision and attendant document(s) to address the increasing complexity of opportunities and challenges facing ASEAN.

To support the said vision, cooperation in the ASEAN minerals sector will prioritise and rationalise AMCAP programmes and activities by ensuring rapid execution of activities and delivery of outputs and outcomes. It will also continue to involve partnership in policy development and programme implementation, including in the following aspects:

- Focus on attraction of investment from leading practice exploration and mining companies which will help increase rates of minerals discovery to provide the resources for a growing minerals sector and expand trade and investment throughout the minerals value chain.
- Expand activities related to sustainable minerals development (SMD) through promotion of SMD and build SMD capacity in AMS and the minerals industry and civil society in order to better achieve SMD outcomes.
- Cooperate and share knowledge with other regional and sub-regional cooperation frameworks within ASEAN and elsewhere as well as with the ASEAN dialogue and development partners to build mineral governance capacity across AMS.
- Provide high quality minerals information through the ASEAN Minerals Database Information System to enable AMCAP implementation and facilitate ASEAN collaboration, help drive investment in minerals development into the ASEAN region, and enhance the availability of information that helps drive improved sector performance.
- Seek other funding opportunities from host countries and dialogue and development partners through both co-funding and in-kind contribution as well as build on and leverage funding from the ASEAN Minerals Trust Fund.
- Create a monitoring, evaluation, research and learning (MERL) mechanism to measure outputs, outcomes and impacts, and progress towards objectives which will provide information for continuous improvement of AMCAP.

Cross-cutting and emerging issues in response to global mineral and mining industry opportunities and challenges such as from clean energy demand, low carbon future, resource efficiency and circular economy, digitalisation and fourth industrial revolution, and the overall thrust towards sustainable development and green growth will also be considered in the initiatives implemented under this AMCAP Phase 2. The response to cross-cutting and emerging issues were in fact initially shaped by the ASEAN Ministers on Minerals (through their direction on ASEAN Minerals Cooperation in Response to Global Mineral and Mining Industry Opportunities and Challenge) in 2019, and, through the Priority Economic Deliverables of Brunei Darussalam's ASEAN Chairmanship (on Imperatives for Regional Cooperation in Minerals to Respond to Opportunities and Requirements of a Minerals-Intensive Future) in 2021.

iv) Global Minerals Trends and Development Prospects for ASEAN

Global Minerals Trends

The AMCAP supporting study, Development Prospects of the ASEAN Minerals Cooperation (DPAMC), indicates that global economic growth and consequent demand for minerals are expected to be strong. This is both in the short-term, as nations emerge from the economic shocks of Covid-19, and in the long-term, as growth in manufacturing and infrastructure resumes, notably in China and elsewhere in Asia as well as in North America and Europe. The study also indicates that minerals prices are expected to remain strong between 2021 and 2025. In the longer-term, both traditional and new application of minerals such as for global energy transformation, digitisation, defence new technology and infrastructure - are forecasted to be very strong in the next 10 years and beyond.

Citing the OECD projection (2019), DPAMC describes that global primary materials use (mostly comprise minerals and energy products) will nearly double from 89 gigatonnes (Gt) in 2017 to 167 Gt in 2060. The study highlights the OECD's projection that metal use is expected to grow most rapidly while construction materials such as sand, gravel and limestone represent the largest share of total materials use.

From a macro perspective, the growth in consumption, manufacturing and infrastructure are driving changes in minerals demand globally and AMS can have the ability, through improved cooperation, to take advantage of the growing demand and of new commodity markets. Within this growing demand, several new emerging trends are expected:

- **Significant increase in minerals demand needed for a cleaner energy future.** Clean energy technologies are predicted to contribute to the rising overall demand of minerals up to 2050, largely from those applied in energy storage technologies, such as lithium, graphite, and cobalt. Renewable energy will also become an important source of demand for the large scale metal mining industry. Wind generation technologies require steel, copper, aluminium, chromium, lead and small amounts of other minerals. Batteries for solar energy are currently dominated by lithium-ion technology which uses significant quantities of lithium, nickel, cobalt, and manganese.
- **Electrification of transport and equipment.** This will drive demand for battery minerals and rare earths for high efficiency motors and copper. The growth of electric vehicles use is expected to continue with prediction of 135 million vehicles to be purchased in the next 10 years. Electric vehicles currently use various versions of lithium batteries, while the high efficiency electric motors utilise rare earth elements in magnets and copper for windings.
- **Shifting towards low carbon future as metals and minerals enable energy efficient application.** Metals and minerals that enable a lower carbon future across multiple activities and technologies, such as aluminium, magnesium, titanium and graphite due to their lightweight properties, and usage in energy efficient technologies. Minerals and metals have vital roles to play in achieving greater efficiency of energy use – from high-tech application in aero engines, to electric motors in lighter-weight construction of aircraft and motor vehicles
- **Increasing digitalisation.** The growth of digital technologies contributes to the upsurge of minerals demand and consumption. All digital technologies use minerals, with increasing demand for non-traditional elements. The United States Geological Survey (USGS 2016) has identified up to 13 different minerals in a typical mobile device such as silica sand, cassiterite, bauxite,

sphalerite, chalcopyrite, tetrahedrite, quartz, arsenopyrite, tantalite, wolframite, spodumene, graphite, and bastnasite. More than one-half of all components in a mobile device are made from minerals.

- **Growth in infrastructure.** Minerals and their products that enable construction of infrastructure, including gravel and crushed stone, sand and cement, plus construction metals including steel, copper and aluminium.
- **Agricultural demand.** Demand for fertilisers and trace elements such as potash and phosphate that enables increased food and fibre production will increase as agricultural producers seek to increase production.
- **Increasing calls for sustainable development and environmental, social and governance (ESG) standards.** Sustainable development is becoming a fundamental factor in attracting global finance and investments, as well as in acquiring social license for minerals development. Efforts to boost minerals development, production and trade will need to see parallel work to address all aspects of mining policy, regulation and governance, including sustainable minerals development.

The above emerging trends have been considered in the design of the AMCAP-III Phase 2, for the ASEAN mineral cooperation to derive benefits from these emerging opportunities as well as to be mindful of emerging challenges arising from such shifts in the sector's operating environment.

ASEAN Minerals Trend

Although the global minerals prices are predicted to be strong in the short and long term, two negative trends are upon the region that require concerted response. First, ASEAN is showing a decline both in ASEAN's market share of global investments in mining/minerals development and in investments into grassroots exploration. This trend is predicted to be continuous for up to 10 years in some AMS. The second negative trend concerns foreign direct investment (FDI) in mining, where ASEAN FDI data is showing a downward trend since 2014, with an outflow rather than inflow in 2018, albeit with some recovery in 2019.

These investment trends in ASEAN are quite concerning because, apart from the pandemic year of 2020, exploration and mining investment at the global level has increased for the past five years. The loss of early-stage exploration investment in ASEAN will reduce the rate of mineral resource discovery required to replace depleting reserves and resources as these are mined. This threatens the long-term future of minerals production within ASEAN and current emerging export opportunities. Furthermore, the trend threatens the ability of AMS to supply raw materials and metals to their own fast-growing manufacturing and construction sectors or to take advantage of evolving opportunities offered by the new global trends in minerals demand.

The AMCAP Phase 2: 2021-2025 will thus be focusing primarily on building investment in all stages of the minerals value chain, with exploration as a start and with attention to gradually building opportunities throughout the minerals value chain, including actions that AMS might take to benefit from these opportunities. Building both geological and policy prospectivity will be key to this approach.

Development Prospects for ASEAN Minerals Cooperation

Findings from the DPAMC highlights that the minerals markets of the ASEAN region provides strong opportunities for the Member States. The study indicates that *investment in the largest market segments for minerals, manufacturing and construction, is growing rapidly. Output from these sectors is growing, hence demand for inputs, dominated by minerals, energy and human capital is growing at a similar pace. Therefore, ASEAN represents a major current and future demand centre for ASEAN-produced minerals.*

The stock-take conducted under the DPAMC reports that several ASEAN Member States have a long history of minerals production, while others are emerging producers. Indonesia, Malaysia, Philippines and Thailand are among ASEAN's major producers at a world-scale production levels. Indonesia is a world-rank mining nation of tin, nickel, copper, gold and bauxite. In 2016, the country produced 18% of mined-tin global production (third largest producer) and 9.5% of nickel, 3.6% of copper, and 2.6% of gold. Indonesia's global mineral reserves are ranked fifth for gold, seventh for copper, sixth for nickel, second for tin, and sixth for bauxite. The minerals sector accounted for 7.2% of Indonesia's GDP in 2016 (including from coal), with total employment in mining and quarrying involving more than 1.4 million persons.

Malaysia produces quite a number of mineral commodities such as bauxite, gold, iron ore, manganese, tin, clays, aggregates, mica, dolomite, earth materials, feldspar, kaolin, limestone, silica sand, sand and gravel, coal as well as natural gas and petroleum. Minerals produced from by-products of tin mining include ilmenite, monazite, xenotime, rutile, struverite (a niobium-tantalum mineral) and zircon as well as silver from gold mining. Other mineral resources like copper, nickel and silica rock, are currently not mined. Malaysia was among the largest global producer of bauxite in 2015, benefiting from the Indonesian export ban for mineral ores. Malaysia also hosts a strategically significant processing plant for rare earth elements, utilising concentrates from a mine in Western Australia.

Philippines holds up to a quarter share of the world's nickel production and 6% of the world's total reserves of nickel. The Philippines is also a major copper producer, with high prospectivity for further discovery of both copper and gold. It also produces cobalt, a key critical mineral. Mining and quarrying sector in 2015 contributed around 1% to national GDP and generated about 240,000 jobs directly.

Thailand is one of the world's leading producers of feldspar, and gypsum, iron ore, manganese, silver, tin, tungsten, zinc and lead, plus a variety of industrial minerals. It was a producer of copper until 2015 as well as gold and silver until 2017. The country is prospective for the fertiliser mineral, potash. The mining and quarrying sector is a small but an increasing employer. The country has opportunities to increase its mineral production.

Myanmar and Viet Nam are also viewed as among the world minerals producers in ASEAN. While Myanmar is one of the world's major producers of rare earths and the second largest producer of tin, Viet Nam is a major world producer of bismuth and tungsten and has been assessed as prospective for copper. In terms of reserves, Viet Nam is assessed as having world class reserves of among others antimony, barite, bauxite, bismuth, copper, fluorspar, graphite, nickel, rare earths, silica sand,

silver, tin, titanium, tungsten, zinc, and zircon. It hosts the world's third largest reserves of bauxite, although a relatively small producer. Viet Nam is also assessed to host the world's largest rare earths reserves, although production is currently small. Mining and quarrying in Viet Nam are estimated to contribute more than 8 per cent of Viet Nam's GDP and to generate some 240,000 jobs.

For Myanmar, although its minerals production is still quite small, it is growing rapidly and provides substantial contribution to its GDP. The country is viewed as a fast-emerging minerals producer, with rapidly growing investments in exploration. Minerals commodities produced by Myanmar include antimony, cement, coal, copper, fluorspar, jade, lead, manganese, natural gas, nickel, petroleum, petroleum products, precious and semiprecious stones, tin, tungsten, and zinc.

Lao PDR is viewed as a geologically prospective country and produces various minerals commodities, including copper, gold, silver, potash, tin, barite, zinc, iron, coal, lead, antimony, marble, pagodite, and limestone. These minerals production are small but contribute significantly to the Lao PDR's national GDP at an average of 6% per year from 2016-2020. Likewise, production of cement, gravel, salt, sand and stone contributed to minor but essential part of Cambodia's economy in 2017 and 2018, which were mostly used in infrastructure construction and buildings. In 2019, exploration activity in Cambodia reached the highest, which could be due to the broadening of products and more valuable production.

Brunei Darussalam has principal extractive resources from oil and gas, which makes up about 90% its goods exports. Only minor quantities of other minerals are produced, of which only cement is recorded. Data on production of extractives, such as sand and gravel is not readily available. Brunei has capacity and potential for minerals processing utilising its abundant energy resources, plus large scale fertiliser (ammonia/urea) and hydrogen production using natural gas as a feedstock.

Meanwhile, although not a mineral producer, Singapore imports a large amount of mineral raw materials for its manufacturing. The country is a gold refining and trading hub for the sector, and hosts along with Indonesia major gold refineries in ASEAN. Minerals trade is important to Singapore, with minerals products making up 14% of total imports and 25% of exports, with metals adding another 3% of exports³. Minerals-intensive electronics make up a large component of exports and sales are forecast to continue to increase.

In terms of intra- and extra- ASEAN trade, per 2018 data provided in the DPAMC study, minerals production contributes to major portion of many ASEAN Member States' economies, notably to Indonesia, Lao PDR, Malaysia, and Myanmar. As a world-scale mining producer, Indonesia generates almost 40% of exports from minerals and processed metals. It is also a major importer of minerals and metals (34% of total imports) to supply for its manufacturing sector and agriculture. For Lao PDR, minerals and metals make more than half of its exports and more than a quarter of its imports. For Malaysia, minerals and metals sector generate 25% of export and 28% of imports. Malaysia's mineral processing and manufacturing sectors generate most of the country's trade activity. In 2018, export value was USD 1.7 billion and imports were valued at USD 2.9 billion. Myanmar, which has some of the fastest growing trade in minerals and metals, generated 30% of total exports in 2018 (valued at USD 30.1 million) and 37% of imports (valued at USD 112.6 million).

³ OECD (2019), Economic Outlook for Southeast Asia, China and India 2020: Rethinking Education for the Digital Era, OECD Publishing, Paris, <https://doi.org/10.1787/1ba6cde0-en>.

The Philippines considers mining as an important sector, nonetheless minerals and metals generate a small but still significant proportion of trade, which is 9% of exports and 24% of imports. Minerals exports were valued at USD 1.3 billion and imports at USD 1.7 billion in 2018. Minerals contribution to Thailand's exports is reported to have declined where mining of copper, gold and silver ceased during the past few years. However, minerals trade value in 2018 was substantial, with exports at USD 1.1 billion and imports at USD 746 million. Despite substantial mineral production in Viet Nam, the DPAMC study points out that data on trade shows a curiously small contribution to both exports and imports which may be because a large part of Viet Nam's production is used domestically. Data from World Integrated Trade Solution (WITS) cited in the DPAMC shows that Viet Nam's minerals export value in 2017 was USD 1.1 billion and import value at USD 844 million.

As in production, exports of 'mineral products' from Brunei Darussalam are dominated by petroleum and non-metallic minerals. Nonetheless, minerals products and metals make up 35% of Brunei's imports, which shows the country's need for raw materials for processing, manufacturing and construction. The value of mineral exports from Brunei in 2018 was small (USD 90,000), while imports were at USD 60.6 million. Cambodia exports only a small amount of minerals, however, mineral products to feed its industries, including agriculture, also make up a significant proportion of imports. The DPAMC study cited WITS' latest data which in 2016 shows that the value of mineral exports from Cambodia was only USD 738,000, while imports totalled USD 99.5 million.

ASEAN therefore represents a major current and future demand centre for minerals production. The AMCAP-III Phase 2 will guide the ASEAN minerals cooperation for the Member States to work together to build minerals investment, grow the minerals sector, expand trade and ensure sustainable approaches to minerals development. To achieve these goals, ASEAN will work closely with its dialogue and development partners in the minerals sector and engage relevant non-government actors including the private sector, civil society and research or educational/training institutions.





B. PROGRAMME AREAS

The Overall Theme of the AMCAP-III Phase 2: 2021-2025 is to ***create an advanced and progressive ASEAN minerals sector for ASEAN socio-economic prosperity and environmental well-being by enhancing trade and investment and strengthening cooperation and capacity building for sustainable minerals development in the region.***

AMCAP-III Phase 2 will continue to be implemented through four Programme Areas as follows:

- i. Trade and Investment in Minerals (TIM)
- ii. Sustainable Minerals Development (SMD)
- iii. Capacity Building in Minerals (CBM)
- iv. Minerals Information and Database (MID)

The Key Focus of each of the Programme Areas above is as follows:

 <p>Trade and Investment in Minerals (TIM)</p>	<p>Boost domestic and international investments in all components of the minerals value chain across ASEAN Member States in order to continue building ASEAN's resource base and underpin mining and processing investment that leads to greater production and trade and value for Member States.</p>
 <p>Sustainable Minerals Development (SMD)</p>	<p>Adopt sustainable minerals development principles and implement leading practices to progressively improve governance and economic, social and environmental outcomes through the collective engagement of Member States, national government and sub-national government, investors in minerals, and relevant non-government actors.</p>
 <p>Capacity Building in Minerals (CBM)</p>	<p>Build human, institutional and technical capacities in minerals governance in the ASEAN minerals sector so as to achieve increased investment, greater output and trade in minerals and mineral products, and strongly positive economic, societal and environmental outcomes.</p>
 <p>Minerals Information and Database (MID)</p>	<p>Develop new strategies and effective tools for collecting and processing data for the ASEAN minerals database and information system in order to improve the quality and availability of minerals data and provide information that will drive investment and support the implementation of AMCAP.</p>

In line with the Key Focus above, ASEAN Member States agreed to design the Outcome-based Strategies (OBS) and Action Lines of each of the Programme Area with due consideration to the global and regional minerals trends as well as development prospects of ASEAN from the findings and analysis of the DPAMC Study.



i. Trade and Investment in Minerals (TIM) Programme Area

The TIM Programme area targets to boost domestic and international investments in all components of the minerals value chain across ASEAN Member States and eventually reverse the negative trend of investment flows to the ASEAN minerals sector. Key to this is promoting ASEAN as a minerals investment destination to stimulate the development of the region's minerals resources, in terms of production and trade/exports. As such, ASEAN will aim to adopt a continual improvement strategy in investor and partner engagement and in making quality

information on ASEAN minerals development available. ASEAN will also pursue investment promotion targeting domestic and international companies in all stages of the minerals value chain.

In this regard, the Outcome-Based Strategies (OBS) and Action Lines of the TIM Programme Area for the period of 2021-2025 are set as follows:

<p>TI1: Promote ASEAN as a minerals investment destination (and thereby help secure investments to develop the region's mineral resources)</p>	<p>TI1.1 - Adopt clear and consistent policy statements and goals regarding minerals development that recognise the current and future importance of the minerals sector to economies, societies, environment and sustainable development, is welcoming of investment, and aim for high standards of minerals governance and minerals development within sustainable development parameters.</p>
	<p>TI1.2 - Identify impediments to investment and barriers to sustainable mineral development, and assess options for prioritised, transparent and consistent approaches to overcome the barriers.</p>
	<p>TI1.3 - Collaborate to address impediments to investment and trade, and promote policies and regulations on minerals investment and trade that align with global leading practice to support a stable and attractive environment.</p>
<p>TI2 - Promote investment to domestic and international companies in all stages of the minerals value chain</p>	<p>TI2.1 - Engage mining associations and minerals companies globally and provide comprehensive, consistent and readily available information on the mineral prospectivity and investment environment across ASEAN and within ASEAN Member States.</p>
	<p>TI2.2 - Promote investment to domestic and international companies in all stages of the minerals value chain, starting with greenfield exploration, and expand to developing the downstream minerals value chain.</p>
	<p>TI2.3 - Encourage investments in minerals processing and promote value addition in downstream minerals development as well as the emergence of regional minerals value chains and the development of new and expanded markets for mineral products, taking advantage of shifts in demand for both new and traditional commodities and manufactured products to respond to a minerals-intensive future.</p>

T13 - Adopt a continual improvement strategy in investor and partner engagement and in making quality information on ASEAN minerals development available	T13.1 - Develop set of initiatives to pursue continuing policy improvement and to provide information on geological and policy prospectivity in ASEAN.
	T13.2 - Create platforms to exchange information and hold regular forums involving the business sectors and stakeholders in the minerals landscape within ASEAN and with dialogue partners and advanced mining countries to promote investment, adopt leading practices and build governance capacity.



ii. Sustainable Minerals Development (SMD) Programme Area

This AMCAP recognises the fundamental need for ASEAN to be demonstrably welcoming of minerals investment in all stages of the value chain, and, to promote (in parallel) leading practice in all aspects of mining policy, regulation and governance, including sustainable minerals development. This is especially relevant given the outlook for new minerals demand that is increasingly driven by global trends to lower emissions for energy transition (e.g., renewable energy and energy storage, electrification of transport) and to adopt digital technologies in the 4th Industrial Revolution (4IR). These leading practice areas will include responsible sourcing, mineral supply security, the drive to reduce emissions from minerals supply chains, resource efficiency and support for evolving efforts to contribute to a more circular economy, lowering of environmental impacts and risks, and the imperatives of obtaining social licence.

Considering all these factors, the primary focus for the Programme Area on Sustainable Minerals Development will emphasise on developing and adopting a set of regional principles for sustainable minerals development to underpin the progressive development of a more comprehensive SMD framework and an “ASEAN Mining Vision”. These will involve broader stakeholder engagement and implementation of leading practices to improve the governance, socio-economic and environmental sustainability of the minerals sector in ASEAN. The principles of sustainability will ensure the positive side of mineral’s multigenerational contribution to society and socio-economic welfare.

The SMD Programme Area will also cover the design and adoption of non-financial incentives that can be used by ASEAN and within ASEAN Member States to promote and encourage adoption of SMD amongst minerals associations, minerals companies, financiers and NGOs. It will also cover assistance to AMS to implement capacity building for SMD (as part of the CBM programme), including supporting the progressive adoption and implementation of the SMD programme area.

The Outcome-Based Strategies and Action Lines of the Programme Area on Sustainable Minerals Development for the AMCAP-III Phase 2 are thus planned as follows:

<p>ES1 – Develop and adopt a set of principles for sustainable minerals development across ASEAN Member States to underpin the progressive development of a more comprehensive SMD framework and an ASEAN Mining Vision</p>	<p>ES1.1 - Work with dialogue partners and relevant international organisations to adapt existing leading practice SMD frameworks from other regions, nations and industry to suit ASEAN and Member States, for progressive adoption.</p>
	<p>ES1.2 - Build greater understanding of, and support for SMD policies and practices within ASEAN Member States, including the close linkages needed to attract leading practice investors across the minerals value chain.</p>
	<p>ES1.3 - Establish a dialogue with and among ASEAN Member States, sub-national governments, investors in minerals and relevant non-government actors to engage them and build support for sustainable minerals development policies, objectives, principles and practices.</p>
<p>ES2 - Design and adopt non-financial incentives that can be used by ASEAN and within ASEAN Member States to promote and encourage adoption of SMD amongst minerals associations, minerals companies, financiers and relevant non-government actors.</p>	<p>ES2.1 - Create opportunities for AMS to share experiences in crafting incentives to encourage adoption of SMD practices, and, collaborate at the regional level to reinforce these national measures.</p>
	<p>ES2.2 - Raise the profile of the biennial ASEAN Mineral Awards as a regional measure to recognise best practices in SMD, publish documentation to create awareness, and explore opportunities to adopt other non-financial incentives for responsible corporate citizenship.</p>

<p>ES3 - Help implement the SMD-related aspects of the capacity building program designed and developed under IH1 and IH2 and ensure that the CBM programme area supports the progressive adoption and implementation of the SMD programme area</p>	<p>ES3.1 - Help guide and implement IH1.1 (minerals governance) and IH 1.2 (sustainable development practice and technologies) to achieve the SMD programme focus of building support for sustainable minerals development policies, objectives, principles and practices.</p>
	<p>ES3.2 - Help guide and implement IH2.1 (innovative technologies such as but not limited to digitalisation or green and resource-efficient technologies in mining and processing operations) to achieve the SMD programme focus of building support for sustainable technologies and leading practices.</p>



iii. Capacity Building In Minerals (CBM) Programme Area

The next phase of the ASEAN Minerals Cooperation Action Plan (AMCAP-III Phase 2) will activate and guide cooperation between ASEAN Member States to achieve their goals in minerals, working with dialogue and development partners, the minerals sector, and relevant non-government actors, including the private sector, civil society and research/educational institutions. Under this programme area, comprehensive capacity-building program which support activities on trade and investment (TIM) as well as sustainable mineral development (SMD) will be undertaken for the benefit of multilevel stakeholders.

The main concerns related to CBM are over the issues of implementing sound governance in mining regulations and limited human capital within. These two issues are consistently identified by the industry and in turn are cited as principal barriers in attracting investments in exploration, mining and mineral processing activities. To enable AMS to overcome these barriers, particular OBS and Action Lines are designed to increase human capacities and capabilities in Mineral Governance. Priority aspects and specialised areas are further enhanced in each OBS and Action line, which are targeted to improve regional institutional and technical capabilities with a programmatic approach to activities in a longer-term framework. To ensure overall consistency, the CBM programme will also manage and monitor the effective implementation of AMCAP with its main role of coordinating all activities across AMCAP’s programme areas.

In view of the above, the Outcome-Based Strategies and Action Lines of the Programme Area on Capacity Building in Minerals for 2021-2025 are formulated as follows:

<p>IH1 - Implement a strategic longer term framework for pursuing regional capacity building in ASEAN, secure support and resources to sustain implementation, and develop suitable platforms for knowledge management</p>	<p>IH1.1 - Design and implement a comprehensive capacity-building program for ASEAN across priority aspects of minerals governance, including leading practice regulation, transparent and efficient approval processes, application of SMD principles and practices, inclusive community engagement, occupational and community health and safety, and value optimisation for host nations and sub-national regions.</p>
	<p>IH1.2 - Continue the implementation of the Regional Capacity Building Rolling Programme for AMCAP across priority aspects of technical and specialised areas in minerals development, including resource and reserve estimation as well as exploration and inspection, added value in minerals, green mining technologies, mine environmental management and mine rehabilitation.</p>
	<p>IH1.3 - Develop a knowledge management platform hosted within the AMDIS to support governance learning amongst ASEAN stakeholders, share information, and report on outcomes and impacts.</p>
<p>IH2 – Further develop and facilitate networking, collaboration and knowledge exchange involving Dialogue Partners and relevant International Organisations on key aspects of the minerals value chain and SMD, including technologies and leading practices</p>	<p>IH2.1 - Engage Dialogue Partners and relevant International Organisations on areas that involve innovative technologies such as but not limited to digitalisation or green and resource-efficient technologies in mining and processing operations and areas that support the downstream development of green energy and other low carbon or resource efficient technologies.</p>
	<p>IH2.2 - Initiate work to improve the knowledge, oversight and governance of development areas that require enhancement, such as for construction materials and industrial minerals critical to the development of the ASEAN region as well as in potentially emerging areas such as in offshore mining.</p>
	<p>IH2.3 - Establish a network of universities and training institutions working on mineral governance and SMD issues, and help build their capacity in teaching and learning, research and development, through collaboration within and outside ASEAN.</p>

IH3 - Manage and monitor the effective implementation of AMCAP, including enhancing the engagement with Dialogue Partners and International Organisations, and broadening sources of funding and technical resources	IH3.1 - Manage and monitor the implementation of AMCAP programme areas through a logic framework and an associated monitoring, evaluation, research and learning (MERL) mechanism to inform continuous improvement in AMCAP activities.
	IH3.2 - Expand engagement with Dialogue Partners and International Organisations to support initiatives in trade and investment, SMD and capacity-building.
	IH3.3 - Broaden sources of funding and technical resources, from both within and outside ASEAN, and secure these to sustain implementation.



iv. Minerals Information and Database (MID) Programme Area

A primary focus of the Programme Area on Minerals Information and Database under the AMCAP-III Phase 2 is to improve the quality and availability of precompetitive geoscience data as well as mineral development and production data to potential investors in exploration, and, package and promote datasets to attract investment.

Through an enhanced ASEAN Minerals Information and Database System (AMDIS), the MID Programme Area is directed to:

- enhance ASEAN cooperation in Minerals Development by enabling the support infrastructure to implement AMCAP and facilitate ASOMM collaboration;
- provide information and minerals-industry specific data that will drive investment in minerals development, including exploration and foreign direct investment, into the ASEAN region; and
- provide information about the ASEAN minerals industry, minerals development in the region, research, capacity building, environmental and community aspects.

The enhanced AMDIS will also target to: (i) provide easily accessible and transparent information about minerals development, production and sustainability to the ASEAN and global public, and (ii) provide a collaboration platform for agencies within ASEAN Member States and ASEAN itself.

- To fulfil the above purpose, the Outcome-Based Strategies and Action Lines of the MID Programme Area which aims to enhance the AMDIS within 2021-2025 are designed based on a 3-platform approach, through an AMDIS Landing Page, WebGIS, and AMCAP Online Collaboration Platform (AOCP). The MID Programme Area is thus focused on: Strengthening the hard and soft infrastructure of the ASEAN Minerals Information and Database System (AMDIS) to ensure effective information and system management, and

Enhancing AMDIS content to provide information and minerals-industry specific data that will drive investment in minerals development, including exploration and foreign direct investment into the ASEAN region.

MD1 - Strengthen the hard and soft infrastructure of the ASEAN Minerals Database and Information System (AMDIS) to ensure effective information and system management	MD1.1 - Implement the restructuring of the AMDIS Landing Page to strengthen system operation and management.
	MD1.2 - Implement the restructuring of the AMDIS WebGIS to improve the availability of pre-competitive geological data.
	MD1.3 - Develop the AMCAP Online Collaboration Platform (AOCP) to facilitate information sharing and management of the AMCAP implementation.
MD2 - Enhance AMDIS content to provide information and minerals-industry specific data that will drive investment in minerals development, including exploration and foreign direct investment into the ASEAN region	MD2.1 - Establish arrangements for the Landing Page that is open to the public and provides general information, infographics on selected trade and investment statistics relevant to investors and the public as well as links to a wide range of relevant information, including the WebGIS and AOCP.
	MD2.2 - Establish arrangements for the WebGIS that is open to the public and provides geoscientific information necessary to improve the availability of pre-competitive geological data and promote minerals investment.
	MD2.3 - Establish arrangements for the AMCAP Online Collaboration Platform (AOCP) that is available by secure login to delegated authorities from the ASEAN Minerals Sectoral Body for sharing information and managing the implementation of the AMCAP.

C. IMPLEMENTATION AND MONITORING

i) Implementation Arrangements

The **ASEAN Ministerial Meeting on Minerals (AMMin)**, consisting of ASEAN Ministers responsible for minerals, is the highest policy making body for ASEAN cooperation in the sector. AMMin discusses issues and developments of common interest and sets policy directions for the cooperation in the ASEAN minerals sector. The AMMin Chairmanship is held by the Minister of the ASEAN Member States hosting the AMMin and its associated meetings and events. So far, AMMin meets on a biennial basis.

The **ASEAN Senior Officials Meeting on Minerals (ASOMM)** is the main operating arm of the AMMin and oversees the Working Groups that assist the Senior Officials in the development and implementation of AMCAP. ASOMM is held once a year to appraise, direct and coordinate ASEAN cooperation activities in the minerals sector. The Chairmanship and hosting of ASOMM are on rotational basis in alphabetical order.

The four ASEAN Minerals **Working Groups (WGs)** assists ASOMM in implementing the AMCAP's four strategic areas. These are:

- Working Group on Trade and Investments in Minerals (WGTIM)
- Working Group on Sustainable Minerals Development (WGSMD)
- Working Group on Capacity Building on Minerals (WGCBM)
- Working Group on Minerals Information and Database (WGMID)

The fifth working group level meeting is the **Joint ASOMM Working Groups Meeting (JWG)**, which was formalised in 2017 to facilitate discussion of all agenda items common to the WGs, and, give opportunity for all Working Groups to interact on cross-cutting issues and on the progress of individual WG works/activities.

In anticipation of an enhanced AMCAP Phase 2 and in order to ensure that the annual implementation work plans benefit from discussion and timely monitoring, ASOMM agreed in April 2020 to convene additional working groups meetings to be held annually in the 3rd quarter of the year. Starting 2021, the meetings of the JWG and WGs shall be held back-to-back twice every year. One to be hosted by the incoming ASOMM Chair and the other by either the incoming ASOMM Chair or by the ASEAN Secretariat. For the chairmanship of the JWGs, the 1st meeting will be chaired by the incumbent ASOMM Chair and the 2nd meeting by the ASOMM Vice-Chair as the incoming ASOMM Chair.

The ASEAN Secretariat shall assist ASOMM and its Working Groups to carry out their functions including providing technical support and assistance in the facilitation, coordination and review of the programmes, projects and activities and leverage to secure funding support.

The ASEAN Minerals Trust Fund shall be utilised to provide funding support to the implementation of AMCAP projects and activities, as duly approved by ASOMM. The ASEAN Member States shall collectively determine the implementation priorities, work programmes, projects and activities under the AMCAP, for consideration and approval by respective WG and ASOMM.

